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POLITICAL ORTHODOXY AS A SOURCE OF SOFT POWER IN RUSSIA AND SERBIA

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Abstract

Balkan states have remained susceptible to Russian influence in the 21st century due to a concurrence of contemporary and historical factors. In Serbia, such factors have contributed to the high favourability of Russia among the general public, despite government leadership attempts to balance between these sentiments and relationships with the West. To best understand these trends, one of the most compelling examples is the role of the Russian Orthodox Church (ROC) and the Serbian Orthodox Church in serving as forces to strengthen the shared history of these two nations. Since the fall of the Soviet Union, the ROC has served as a vital partner to Putin and to the Russian government in justifying their ideologies, along with the strong transnational presence of the ROC as a soft power. Accordingly, the role of religious institutions as public diplomacy actors is exceedingly important to understand in today's global setting. For states like Serbia, this presents a setup whereby Russian positions may be shared or reinforced through religious channels. It is, therefore, crucial for scholars, political analysts and public policy makers to better understand the link between religion and public diplomacy, and to formulate policies and programmes that specifically consider activities disseminated by religious institutions.

Key words: Serbian Orthodox Church, Russian Orthodox Church, political Orthodoxy, neo-traditionalism, soft power.

ПОЛИТИЧКО ПРАВОСЛАВЉЕ КАО ИЗВОР МЕКЕ МОЋИ У РУСИЈИ И СРБИЈИ

Апстракт

Државе на Балкану и даље су подложне руском утицају у XXI веку, пре свега због преклапања актуелних и историјских чинилаца. Ти фактори су у Србији, у општој популацији, допринели израженој склоности ка Русији, упркос настојањима државног врха да се успостави равнотежа између таквих тенденција и односа са Западом. Да би се ти токови боље разумели, један од најупечатљивијих

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примера је улога Руске православне цркве (РПЦ) и Српске православне цркве у истицању заједничке историје два народа. Након распада Совјетског Савеза, РПЦ има улогу виталног савезника Путина и руске владе у оправдавању њихове идеологије, али и институције меке моћи у међународним односима. У том смислу, ангажман верских институција као актера јавне дипломатије постаје све важнији у разумевању данашњег глобалног поретка. За државе као што је Србија, то представља оквир у којем се руски ставови могу популарисати или оснаживати црквеним, верским путем. Стога је кључно за научнике, политичке аналитичаре и креаторе јавних политика да јасније разумеју везу између религије и јавне дипломатије, те да што боље формулишу практичне политике и програме који узимају у обзир активности које спроводе верске институције.

Кључне речи: Српска православна црква, Руска православна црква, политичко православље, неотрадиционализам, мека моћ.

INTRODUCTION

Balkan states have remained susceptible to Russian influence in the 21st century due to a concurrence of contemporary and historical factors.¹ In Serbia, such factors have contributed to the high favourability of Russia among the general public, despite government leadership attempts to balance between these sentiments and relationships with the West. To best understand these trends, one of the most compelling examples is the role of the Russian Orthodox Church (ROC) and the Serbian Orthodox Church (SOC) in serving as forces to strengthen the shared history of these two nations. Since the fall of the Soviet Union, the ROC has functioned as a vital partner to Putin and the Russian government in justifying their ideologies, along with the strong transnational presence of the ROC as a soft power (with an ability to influence the domestic population and others through the power of attraction). Accordingly, the role of religious institutions as public diplomacy actors is very important to understand in today's global setting. Those who hold strong religious identities gain information from these networks and have a high degree of trust in that data, given the intimate, prominent role of faith in their lives. For states like Serbia, this presents a setup whereby Russian agendas may be shared or reinforced through religious channels. For example, the patriarchs of these two Churches have openly shared their alignment in the aftermath of Russia's war of aggression against Ukraine.

Since the beginning of the war in Ukraine, conversations between Patriarch Kirill and Patriarch Porfirije have firmly placed the SOC as supportive of the ROC and the faithful people in Russia. On the 27th of

¹ This paper is based on my presentation at the international conference *State (In)Stability and Communist Legacy in Central and Southeastern Europe*, Zagreb, Croatia and Online, Libertas International University, 10 November 2023;

April 2022, a conversation took place between the Patriarch of Moscow and All Russia and the Patriarch of Serbia through remote video communication. The primates of the two Churches exchanged Paschal greetings and cordial acclamations. During a prolonged talk, they discussed the events in Ukraine. Special attention was given to the humanitarian situation in Donbas. Patriarch Kirill thanked the Patriarch of Serbia for the support and solidarity of the canonical Ukrainian Orthodox Church (UOC), emphasising that “there is the firm belief that in this grave time the Serbian Church is with us”². He specially mentioned the fundraising organised in Serbian churches with the blessing of Patriarch Porfirije for the canonical UOC and her primate, Metropolitan Onufriy. Importance was given in the talk to the situation of the UOC. Patriarch Kirill informed Patriarch Porfirije about the grave situation of the canonical Church. Porfirije said that the events in Ukraine directly touched his heart and the hearts of fellow-bishops and all the Orthodox Serbian people, who also endured hard trials at the end of the 20th century. “We share your feelings and pray for you and ready to do all that is possible to support the Russian Orthodox Church and the faithful people in Russia and in Ukraine”, said Porfirije (DECR, 2022). He also informed Patriarch Kirill about topical events in the church life of the Patriarchate of Serbia. A discussion followed about the situation in the world Orthodoxy and in the sphere of inter-Orthodox relations.

Concerning these ‘Orthodox knots’ between the two Churches, it would be helpful to tackle at least some of the following questions. What are these knots? How many ropes are there to create those knots? How complex is their entanglement? How close are those ties among the Orthodox Churches and believers? What is the real meaning of the ecclesiastical-political mythemes such as *russkiy mir* or *srpski svet*? Is it a unified cultural, spiritual and linguistic space – which, for the Church, if realised, could produce a greater collective unity among Orthodox people? Or is it just a geopolitical trope, a chimera suggesting the existence of a separate world of Russian or Slavic spirituality, the integrity of which was violated by political events? In other words, do these notions have any real substance?

RUSSKIY MIR

Since becoming president in 2000, Vladimir Putin has sought to fortify the relationship between the Russian state and the Orthodox Church to claim a morally superior ideology that is grounded in the valid-

² <https://www.pravmir.com/his-holiness-patriarch-kirill-talks-with-primate-of-serbian-orthodox-church>. Accessed on 6 October 2023;

ity that the ecclesiastical doctrine provides. To that effect, Vladimir Putin and Patriarch Kirill (Gundiaev) have worked together closely to create a partnership in which their respective institutions are entangled in a mutually beneficial relationship. Thus, Kirill was able to endorse to Putin the concept of traditional values, the concept of *russskiy mir* (Russian World) – a unified cultural, spiritual and linguistic space – which, for the Church, if realised, would produce a greater collective unity among Orthodox people of the formerly Soviet republics. As Alicja Curanović has aptly put:

Russkiy mir has a subtle mythological aura, it assumes the existence of a separate world of Russian spirituality, the integrity of which was violated by political events, but which will be re-created, and the first step in this direction is overcoming the internal schism of the Russian church.

(Curanović, 2012)

Indeed, traces of *russskiy mir* extend back to the late 15th-century *Legend of The White Cowl*, upon which the 16th century monk Philotheus conceived the theory of Moscow as the third and final Rome. The ‘triumph’ of the Russian state and the Russian Church was further developed by the 19th-century Slavophiles. With passion and persuasiveness, writers such as A. Khomiakov and I. Kireyevsky sought to recover Russia’s true Orthodox identity — an identity that, for them and for their followers, had been overtaken by the Western theologies of Roman Catholicism, Protestantism, and the philosophies of socialism, individualism, and capitalism. Thus, Khomiakov employed the term ‘Russian spirit’ (*russskiy dukh*), while Soloviev and Berdiaev referred, in a similar context, to the ‘Russian idea’ (*rusaskaia ideia*).

In the post-Soviet period, during the late 1990s, Petr Shchedrovitsky and Efim Ostrovsky addressed the concept of ‘Russia’s World’ (*mir Rossii*), describing it “as a peaceful reestablishment of Russia’s identity and its reconnection with its past and its diasporas” (Laruelle, 2015, p. 4). However, in 1999, the term ‘Russian World’ explicitly occurred in its present form in the Shchedrovitsky-Ostrovsky article “Russia: The Country that Does Not Exist: Creating an ‘image’ of Russia today means building a new system of connections between Russians” (Laruelle, 2015, p. 5). Finally, *russskiy mir* was used, for the first time officially, in 2001 by Vladimir Putin in his address to the first World Congress of Compatriots Living Abroad. On that occasion, Putin stated the following: “The notion of the Russian World extends far from Russia’s geographical borders and even far from the borders of the Russian ethnicity” (Laruelle, 2015, p. 6). Coined in the late 1990s, the concept of the Russian World was gradually adopted by Russian state agencies, expressing Russia’s policy in the post-Soviet diaspora and the country’s public diplomacy toward the Western world.

Nowadays, against this ‘Russian world’ stands the ‘corrupt West’, led by the United States and Western European nations, which has capitulated to ‘liberalism’, ‘globalization’, ‘Christianophobia’, ‘homosexual rights’ promoted in gay parades, and ‘militant secularism’. Over and against the West and those Orthodox who have fallen into schism and error (e.g. Ecumenical Patriarch Bartholomew) stands the Moscow Patriarchate, along with Vladimir Putin, as the true defenders of Orthodox teaching, which they view in terms of traditional morality, a rigorist and inflexible understanding of tradition, and veneration of Holy Russia. Vladimir Storchak, professor at the Department of State-Confessional Relations in Moscow, recognises messianic claims or overtones in all the major trends of Russian social and political thought of the 19th and early 20th centuries, including the *narodniks*, *zapadniki*, anarchists, Bolsheviks, Slavophiles, Russian nationalists, and Eurasianists (Storchak 2005). Accordingly, representatives of the Moscow Patriarchate today point out the historical continuity of Russian statehood in order to emphasise Russia’s superior position. For example, Patriarch Kirill contended on several occasions that Russia’s current mission was the maintenance of the Holy Rus legacy³. Thus, in the opening address of the 17th World Russian People’s Council summit in 2013, Patriarch Kirill stated:

Russia as a country-civilization has something to teach the rest of the world. It is our experience in shaping fair and peaceful relations. There were neither nations-lords nor nations-slaves in [Kievan] Rus. Russia has never been a prison of nations; here there were no nations of the first or second rank. Wasn’t precisely this the reason for a strong national resistance toward fascism, which proposed an opposite vision of international order? Apart from this, we as a civilization, have had a great experience in preserving a multipolar order. We have a great tradition of self-limitation, so important in the face of the future prospect of a deficit of resources and an ecological crisis. It is also the idea of traditional values which prevents the destruction of the concept of the family and the relations between women and men established by God⁴.

In this context, it is particularly important to identify what narratives are being spread through Church channels and understand their ultimate goal. Is the ultimate goal to sow discord, to delegitimise the West,

³ Two other prominent clerics, accompanying the Russian Primate, are Vsevolod Chaplin, head of the Synodal Department for Church and Society Relations and Hilarion Alfeyev, head of the Synodal Department of External Relations;

⁴ “Vystuplenie Sviatishhego Patriarkha Kirilla na otkrytii XVII Vsemirnogo russkogo narodnogo sobora”, 2013, at <http://www.patriarchia.ru/db/text/3334783.html>. Accessed on 6 October 2023;

or to enhance the image of Russia? Current scholarship on a distinctly Russian brand of public diplomacy situates its strategies not as desiring to make people more amenable to Russia but in making the alternative, or the West, appear so immoral and undesirable that people feel compelled to look more favourably upon that which is ‘morally just’. Religion has a major role to play in justifying morality in Russia’s policies, while, at the same time, spreading this message across international borders. Curanović claims that:

According to the ROC’s narrative, history clearly shows that Russia is predestined to be the guardian of global balance, not merely in geopolitical but first and foremost in a moral/ethical sense. Russia’s activity in the international arena plays a part in the eternal clash of the forces of good and evil... The success of the domestic mission conditions the external mission. In order to help (save) other countries, Russia should first secure its own civilizational sovereignty. As presented by the ROC’s narrative, the world balance, the peace, that Russia is predestined to treasure, is above all threatened by the West and the processes triggered by Western policy, specifically globalization, unipolar dominance, aggressive secularism, hyper-individualism and liberalism, and terrorism.

(Curanović, 2018, p. 7)

At any rate, in 2007, the Kremlin established the Russkiy Mir Foundation, a project initially focused on fostering closer political and economic ties with Russian speakers in the formerly Soviet republics (the so-called ‘New Abroad’). As the legal successor to the USSR, recognised as such by the international community, the Russian Federation has sought to establish its foreign relations upon a doctrine proclaiming the entire geopolitical landscape of the former Soviet Union as the crucial domain of its national interest. However, this initial impetus evolved into a political and social worldview that challenged the basic tenets of Western civilization. Hence, the neo-Soviet image of *russkiy mir* was to incorporate: the Russian Federation, and Ukraine, Belarus, Kazakhstan and Latvia. Curanović adds that “Moreover, Russia in the twenty-first century should be prepared to ‘accept’ new territories, particularly South Ossetia, Abkhazia and all of Moldova” (Curanović, 2012, p. 110). Russia, therefore, claims the right to intervene for the protection of its diaspora, which has clearly been manifested by Moscow’s military intervention in the Donbas and the broader aggression in Ukraine. For Kirill, aspirations to expand the Church’s influence and transform Moscow into a Third Rome invoke the idea of a Manifest Destiny, whereby Orthodoxy is seen as the truest form of Christianity – a notion that can only be expanded with the privileges, access, and support that the Russian government can provide. For the Russian world has a common political centre (Moscow), a common spiritual centre (Kyiv as the mother of all Rus’), a common language

(Russian), a common church (the ROC, Moscow Patriarchate), and a common patriarch (the Patriarch of Moscow), who works in symphony with a common president/national leader (Putin) to govern this Russian world, as well as to uphold a common distinctive spirituality, morality, and culture (Volos Declaration, 2022).

There is, indeed, a common origin, and even a common history, of Russians, Ukrainians, and Belarusians:

But [they] all went very distinct developments as well. A common history in the past does not automatically imply commonalities in the present. The statements from Russia which try to justify Ukraine's belonging to the Russian orbit (and to justify the war when Ukraine does not want to belong to that orbit) are based on a premodern understanding of nationhood and state. But both phenomena, nationhood and state, are *historical*: they arose at one point in history, and they may again disappear. In any case, the primordial understanding in the Russian argumentation, as well as the use of anthropomorphic terms like "fraternal states," cannot match the complex reality of political processes. It is a dilettantish use of history, one seen previously in Putin's infamous article outlining similar points in summer of 2021.

(Bremer, 2022)

Concerning Ukraine, the largest Orthodox body in the country is the Ukrainian Orthodox Church-Moscow Patriarchate (UOC-MP), which is autonomous (internally self-governing), but falls under the ecclesial authority of the 'mother' ROC. The next largest is the Ukrainian Orthodox Church-Kyiv Patriarchate (UOC-KP), followed by the much smaller Ukrainian Autocephalous Orthodox Church. The latter two, however, are not formally recognised by the wider Orthodox world. Interestingly enough, Kirill was not in the audience when Putin announced that Crimea was once again part of Russia. Since then, he has not moved to incorporate the Crimean dioceses of the UOC-MP into the ROC proper. He has also been resolute in characterising the fighting in the Donbas as fratricidal, averring that "in internecine conflicts there can be no winners, there can be no political gains that are worth more than people's lives". The UOC-MP's current head, Metropolitan Onufry of Kiev and all Ukraine, occupies an unenviable position as the leader of an internally divided church. Marred by its association with Russia and its refusal to clearly support either Kiev or Moscow, the UOC-MP is losing members to the more nationalist UOC-KP. The official position of the SOC regarding the Orthodox Churches in Ukraine is that the SOC does not recognise the uncanonical 'intrusion' by the Patriarch of Constantinople into the canonical territory of the 'Most Holy Russian Church', given that the Kiev Metropolitanate cannot in any way be identified with the current Ukraine, which is made up of dozens of other dioceses. It was transferred to the

Moscow Patriarchate in 1686, which, in view of the SOC Holy Synod can be concluded on the basis of various documents (The Position, 2019).

As the Russian war in Ukraine continues, the Russian Patriarch plays a major role in interpreting the assault as an issue of ‘salvation’ to protect Ukraine from corrupting Western influences, as it were, calling Putin’s leadership ‘a miracle of God’ (Horowitz, 2022). At the same time, he has characterised the war as “a just defense against liberal conspiracies to infiltrate Ukraine with ‘gay parades’” (Horowitz, 2022). Putin himself vindicated the annexation of Crimea by referring to the concept of *russkiy mir*, with references to Russians as living in a ‘divided nation’ and emphasising the aspiration of historic Russia for the restoration of unity. In his unhindered imperial ambitions, he also pointed out to a ‘broad Russian civilization’, the sphere of Russian interests, that has to be protected from outside forces, particularly the West. As Putin claimed back in 2012:

Our foreign policy [. . .] reflect[s] Russia’s unique role on the world political map as well as its role in the history and development of civilization [. . .] [hence] we intend to be consistent in proceeding from our own interests and goals rather than decisions dictated by someone else.

(Putin, 2012)

It is apparent that the ROC may provide an ideological framework for Putin’s ‘civilizational’ enterprise. Moscow’s emphasis on defending its cultural and spiritual uniqueness are to be best understood within the context of inter-civilizational rivalry and profound ontological insecurity on Kremlin’s side, with regard to international relations. In Russian foreign policy, as argued by Curanović:

The religious factor performs mostly functions of identity-formation (civilizational identity and the vision of the global order: that is, civilizational multi-polarism), community-building (depending on the context, a union of conservative civilizations, a union against American imperialism, a union of those excluded, of Orthodox believers and so on), legitimization (due to its religious tolerance in the role of mediator between civilizations, deeply rooted in its tradition, Russia has special interests in its spiritual space, and a mandate to care for Orthodox believers and so on), and is an instrument of cultural expansion (*russkiy mir*) and diplomacy.

(Curanović, 2012, p. 150)

It is clear that the major contender of the contemporary Russian state is the world of the West, with its value-relativism, individualism, liberalism and ‘hedonism, which are opposed to Orthodox values and its view of the collective good. Hence, Russia’s increasingly vocal claim that it is a defender of religious liberty and the rights of believers around the world, which perfectly corresponds to the ideology and discourse of the

ROC. This, indeed, is a very convenient agenda that unites the Russian state and the Church in their international pursuits. In other words, Kremlin has upheld a position against ‘rampant Western hedonism’, with the goal of formulating a distinctive geopolitical identity for itself, whereas the ROC has benefitted from its increased and unhindered access to political power (Soroka, 2022, p. 21).

The church seems to outwardly enjoy a good deal of influence and prestige over the government, despite the formal separation of church and state protected in the 1993 Constitution. Putin and his entourage, for their part, prefer to reinforce such perceptions. They are frequently photographed attending liturgical services and otherwise paying respect to the Church as a hallmark for national identity. The Russian president, often seen wearing an Orthodox three-bar cross, frequently emphasised how he was secretly baptized by his mother during Soviet times. However, the ROC is not an institution subordinate to the Kremlin and it still represents diverse opinions and perspectives. As a result, the real synergies are not to be sought between the church and the Kremlin, but between a flourishing civil religion, ‘Orthodoxy without Christ’, on the one hand, and Putin’s demagogic (and often inflammatory) rhetoric, on the other.

Ukrainian Orthodox archimandrite Cyril Hovorun claims that the political leadership of Putin’s Russia was initially cautious in employing the rhetoric and dogmas of the post-Soviet civil religion developed within the Russian Church and society. However, during his third term as president of the Russian Federation (2012–2018), Vladimir Putin adopted it as a new ideology of the Russian state. In other words, after becoming a “state religion”, civil religion turned into a political religion (Hovorun 2018, p. 77).

With his doctrine of ‘Eurasianism’ seen as an original Eurasian civilization different from the liberal Western civilization, Alexandr Dugin has become a leading ideologue of this political religion – Russian political Orthodoxy:

Dugin sees Byzantium as a model for such civilization. He explains Byzantium as an eternal principle, or *archē*, of the Russian historical mission. Byzantium, for Dugin, is not only about the past but also about the present and the future of Russia. Dugin preaches Byzantium as an absolute value along with the absolute value of God and of the church. For Dugin, Byzantium was a chilastic kingdom of Jesus Christ... As with other totalitarian ideologies that emerged in Orthodox contexts, references to Byzantium join Dugin’s call for violence. Indeed, he has repeatedly called for the use of violence to fulfil the Byzantine mission of Russian civilization... Thus, the violent post-Soviet political religion... culminated in the Russian aggression against Ukraine that followed the Ukrainian Revolution of Dignity during the winter of 2013–2014.

(Hovorun, 2018, pp. 77-78)

POLITICAL ORTHODOXY AS A SOURCE OF SOFT POWER

When looking at Orthodoxy from the Serbian perspective, not only does 81% of the population in Serbia identify as Orthodox⁵ but they also view their religious and national identity as closely intertwined. This leaves the door open for ROC political missionary activity, particularly given the favourable view many Serbs have towards Russia. Russia opposed the 1999 NATO bombing that sought to end the crisis in Kosovo and has played, in its role as a permanent member of the United Nations Security Council, a huge role in preventing Kosovo from being recognised as an independent state. In the religious domain, Serbian Orthodoxy has remained closely aligned with the ROC, as it is one of the SOC's strongest supporters in the opposition to Kosovo independence – a region that the SOC considers its birthplace.

Serbia is useful for Russia as a stronghold in the soft underbelly of Europe – a secondary front, as it were, considering that Serbia is an EU candidate country. Belgrade's aspirations to EU membership are not contradictory to Russian interests because the appearance of EU structures in Serbia will strengthen the informal pro-Russian 'lobby': Greece, Cyprus, Bulgaria and Slovakia.

If it had not been for the outbreak of war in 1992 and 1999, Belgrade would have remained on the margins of the Kremlin's foreign policy, and the Russian–Serbian Orthodox brotherhood would not have seen a 'renaissance' in the public debate. Anti-Western sentiments in Russia and Serbia were instigated by the bombing of Serbia in 1999, evoking especially violent reactions in Russia. The Kremlin and all political groups fiercely protested against NATO's actions. About 90% of Russians thought that the West had no right to attack Yugoslavia. The Moscow patriarchate immediately condemned the NATO operation, which Alexy II recognised as "a sin and a crime against international law", while then Metropolitan Kirill (Gundaev) called it the next crusade against Orthodox believers by the Antichrist. Although in reality the Kremlin could not accomplish much, the ROC's diplomacy was very active. Alexy II came to Belgrade and assured the Serbian nation of Russians' support. Together with Pavle, Patriarch Alexy II held a solemn liturgy, which was an important socio-political event and a symbol of Russian–Serbian brotherhood.

A new test for Russian diplomacy was the 'October Revolution' in 2000, as a result of which Slobodan Milošević was removed from power by the opposition. The ROC was pragmatic throughout this challenging period. During the first visit of President Vojislav Koštunica to Moscow, there was a meeting of the Serbian leader with Alexy II in the presence of

⁵ <https://n1info.rs/vesti/popis-veroispovest-srbija-2022>. Accessed on 6 October 2023;

Patriarch Pavle. A month later, Igor Ivanov and Metropolitan Kirill went to Belgrade for talks on cooperation between the two states. After a clear lessening in the Russian elites' interest in Serbia following the year 2000, the Orthodox churches were the ones to take the initiative in bilateral contacts. Belgrade's strong appreciation of the role that the ROC plays in maintaining good relations between Russia and Serbia can be seen in the statement of the then Foreign Affairs Minister Vuk Jeremić in Moscow, who asserted that a visit to Russia is not complete without talks with the ROC. The activity of the Russian church is important for Serbia mainly in the context of the status of Kosovo. From the outset, the Kremlin has consistently refused to recognise Kosovo's independence, appealing to the necessity of respecting the sovereignty and territorial integrity of Serbia, and promising to veto Kosovo's application for membership in the UN. Russia tries to convince Serbia that it is in a position to offer it an alternative model of development to that of the EU.

Taken collectively, the presence of historical and contemporary religious alignments and a common Slavic identity connect Serbia and Russia in ways that lead Serbia to be sympathetic to Russian attempts at defaming Western powers. In relations with Serbia, the Kremlin uses the religious factor mostly to legitimise Russia's interests by emphasising its traditionally close ties with Serbia and its special role in the Balkans. Being the vanguards of Orthodox Slavdom, they were the least subjected to Westernisation and 'saved', as it were, their own tradition, Slavic identity and sense of belonging to Orthodox civilization. The idea of Slavic solidarity, used ideologically by Belgrade, meets with a positive response from Moscow. Appealing to the solidarity of Slavs, the Kremlin can play the role of Serbia's patron in international relations and advocate for its interests. According to this view, Serbia, when subjected to 'civilizational aggression', can count only on Russia's support. This includes Russian support in completing the interior of the St Sava Temple, various donations, artistic assistance, etc.

Therefore,

Despised by some and admired by others, Russian soft power in Serbia appears to be ubiquitous and overshadows Moscow's other ties to the Balkan country, including energy cooperation and shared opposition to Kosovo's independence. Capitalizing on the historical grudge that many Serbs hold against the West, Russia enjoys enormous respect and popularity in Serbian society.

(Samorukov and Vuksanovic, 2023)

Up until mid-2022,

The Kremlin's invasion of Ukraine had changed surprisingly little in the attitudes of Serbs toward Russia. Serbia still remains a global pro-Russian outlier, even compared to Western-skeptic coun-

tries in the developing world. As many as 63 percent of polled Serbs held the West responsible for the outbreak of the Russia-Ukraine war: significantly more than in all other polled countries... The BCSP poll revealed that 51 percent of Serbs believed Russia to be Serbia's most important international partner, while 66 percent called Russia the country's 'greatest friend'.

(Samorukov and Vuksanovic, 2023)

Scholars have often underestimated the soft-power potential of the Russian Orthodox Church (ROC). Instrumentalised for political purposes, supported by an identitarian populism, the ROC has served in the post-Soviet period as a crucial mnemonic agent of the public memory production. Hence the ROC represents a critical civil society actor (post-Soviet civil religion), with its brand of neo-traditionalism finding a ready market among certain societies abroad, such as Serbia. Both the Serbian Orthodox Church and the ROC adhere to the Slavophile⁶ view of nation as a communal organism, fostering thus an 'organic' idea of society resembling the peasant commune. For example, the famous Orthodox theologian Nikolaj Velimirović regarded Serbian society as a 'people's organism' encompassing the church, the state (the monarchy), and state institutions such as the armed forces and the education system, with the SOC as the centre of that organism. The increasing involvement of the SOC in the sphere of education, culture and 'people's defence' is founded on this ideology of one of the SOC's leading theologians – who was later canonised as a saint. Views of this kind are often heard at Orthodox-national youth gatherings and in the rhetoric of SOC elders. To give just one more example: in an interview given on the eve of Christmas 2002, the late Serbian Primate, Patriarch Pavle, asked:

Are the [political – M.V.] parties sufficiently mature for social relations to be organic, like in a body where every organ performs its own function with which it is tasked for the overall benefit of the organism? And the organism as a whole has no other interest than the good of each of its organs . . . the Church has always favoured such organic relationship in society.

(Daily *Danas*, 5–7 January 2002)

The SOC and the ROC are equally authoritarian and distrustful of liberal individualism promoted by Western thought. They are also highly conservative in their social values and antagonistic towards non-traditional religious groups and denominations. In the early 1990s, the ROC's response

⁶ The Slavophiles were a small Moskow group of intellectuals from the mid-19th century who were loyal to the Russian autocratic regime, although their views on the character of the nation and the state differed from the official state positions;

to the possible alteration of Russia's religious landscape was characteristic of its view that religious and cultural reform endangered the country's identity and strength. Religious populism is an 'identitarian' populism, whereby 'Orthodox values' are accommodated to the ethno-national ideals and mythologies of the Serbian and Russian people. In that respect, both the Church and the government share analogous interpretation of Russian history and tradition. The country's history is cherished by both the religious and the secular authorities, who give special emphasis to its rich cultural and spiritual traditions and military accomplishments. Finally, their perception of the West and international community, expressed in their respective foreign relations, is very similar.

All in all, the Orthodox Church has become a significant centre of political and social power, dependent on the two autocratic regimes. Both governments contribute to such a hybridisation in the public sphere and, thus, infringe the separation between church and state. I tend to call this religious-political syncretism political Orthodoxy⁷. Political orthodoxy rejects, for example, secular values and a democratic political culture, becoming, thus, anti-European. This is apparent not only from the speeches and public proclamations of members of nationalist political parties and para-clerical organisations, but also from statements of the church hierarchy contributing, in their own right, to this form of religious populism. In the years following the demise of the Milošević regime, the Serbian government oriented itself politically towards European integration, while the SOC has maintained a conservative position. For example, the SOC was very critical of the European Constitution draft of 2004, whose preamble did not explicitly mention Christianity as the basis of European civilization and culture. In debates concerning the EU constitution, there were arguments that Europe unnecessarily and easily renounced its parent in favour of laicism that did not bring good to anyone. According to this opinion, Europe flies away, as it were, from itself into a forthcoming 'peril'.

The SOC today is probably the second most important power centre in Serbia (after the government), in numerous cases acting as an advisor and confidant, especially with regard to the Kosovo problem. In such a political context, the SOC began increasingly offering a new ideological framework for state institutions such as the army and the education system, filling – at its own initiative, but also with the support of the state – the ideological void created after the fall of communism. The process of desecularisation in Serbia resembled, to a greater degree, the return of the Holy in Russia. This entailed the new role of the Church in education, public media, the Army, and public life in general. New favourable laws

⁷ Originally, I employed the term political Orthodoxy (*političko pravoslavlje*) in Vukomanović 2013. This term resembles another notion that has already been used for decades in relation to Islamic religion, and that is – political Islam;

on religious freedom were passed in both countries. It is interesting that, for decades, Patriarch Kirill has cultivated deep ties to the Russian Armed Forces. In 1992, only a few weeks after the collapse of the USSR, he gave a speech in front of 5,000 high-ranking officers of the former Red Army, in which he suggested that Orthodoxy could inspire patriotism and fill the ideological void of Marxism-Leninism. This affiliation with the armed forces is, however, overwhelmingly cultural rather than faith-driven.

It would be too simplistic, though, to view the Orthodox Church in Russia and Serbia as simply an extension of the state, just as it is naive to assume that it has much power to achieve political objectives over the state's 'crown'. The truth falls in between, with Putin's and Vučić's governments leaning on the church to provide it a veneer of historical and cultural legitimacy, and the church relying on the government to uphold its position as a moral arbiter for society. But unlike the Serbian case, which is more particularistic and focused on the preservation of a nation, the Russian version of political Orthodoxy is more universalistic and occupied with supporting the empire. The Russian political religion is, therefore, imperial and imperialist in its character (Hovorun, 2018, p. 67).

The character of the current Serbian political imaginary was perhaps suitably expressed by Aleksandar Vulin, the former Serbian Minister of Internal Affairs (now the head of the Security Information Agency), when he claimed, obviously under Russian influence⁸, that:

The creation of the Serbian World (*srpski svet*) is an unstoppable process. It is important that all Serbs, no matter where they live, be uniform and that they decide together on all matters of national interest in Belgrade, the capital of all Serbs... Serbian World means that Serbs are united as a political nation, that they decide together on all the most important national issues, that they are always here for their Serbia, as much as Serbia is with them wherever they live... And whoever thinks that Serbs are not, and that there is no Serbian World, that it should not be, had better come over and look at us, to see our beautiful children and realize that they are gravely mistaken; for there are Serbs, and there is the Serbian World

(*Al Jazeera*, 25 June 2022)⁹

⁸ Vulin is otherwise known for his frequent visits to Russia and his cooperation with the Russian Federation Secretary of the Council for National security Nikolai Patrushev. Russia and Serbia secretly established the „Working Group for Fighting Color Revolutions“, whose goal is to prevent mass demonstrations and closely monitor opposition activists, NGOs and independent journalists. Based upon Russian instructions of May 2020, Serbia started its public persecution of journalists and NGO activists, allegedly suspected of money laundering and terrorist activities (<https://www.danas.rs/vesti/politika/vulin-i-patrushev-srbija-i-rusija-zajedno-protiv-obojenih-revolucija/>);

⁹ <https://balkans.aljazeera.net/news/balkan/2022/6/25/vulin-stvaranje-srpskog-sveta-proces-koji-se-ne-moze-zaustaviti>. Accessed on 6 October 2023.

Although the SOC has managed to establish very solid relations with the Serbian state since 2000, it still has weak contact with civil society, unlike the Roman Catholic Church in Poland before the fall of communism (Vukomanović, 2014, p. 136). There exists in Serbia today, even among younger people, a certain reluctance to accept political and social pluralism – an outcome of the Enlightenment – and to embrace instead an archaic and monistic model of nation and state. It is no accident that, in this context, the SOC's populist enmity targets Serbian educators, or pro-pluralism and pro-Europe 'new ideologues', independent intellectuals and NGO activists. According to such an ecclesiastical view, the patriarchal, quasi-democratic model of *sabornost* should have replaced the authoritarian socialist political model. The revival of the 19th-century Russian Slavophile principles of *sobornost* and *narodnichestvo* was, in fact, a consequence of abandoning the modern pluralistic model of society.

CONCLUSION

The absence of a strong civil society and dysfunctionality of liberal democracy are the principal conditions that nurture religious conservatism and neo-traditionalism. In such a socio-political setting, individuals and human rights are not adequately acknowledged. Instead, individuals and their rights are reduced to ethno-national dimensions of society. Thus, the populists and authoritarians 'hijack' not only religion but also the public sphere in general, by misusing the confessional self-identification and dissatisfaction of citizens for their own populist agendas and goals. In the context of the Western Balkans, in which religious institutions are expected to enrich the civic and pluralistic landscape, the civil society does not thrive, because religious leaders and their institutions are in many cases co-opted by the ruling political authorities. This condition also hinders the development of a democratic political culture. Therefore, in order to build a strong democratic culture and system and avoid the advance of religious populism, societies in the Western Balkans need to develop a strong rational, critical, democratic and civic culture.

When politicians capture Orthodoxy by side-lining its theology and by strongly re-affirming ethno-national identity, the Orthodox hierarchy and believers themselves cannot remain silent. To be sure, secularists could easily adhere to this trend and use it to further their cause of removing religion from the public sphere, but the most efficient response to this 'identitarian' trend is theologically informed, profound, sophisticated 'confessional' politics. Politicians themselves may indeed frequent their churches, but that does not mean that they have any profound spiritual or theological attachment to Orthodox Christianity. Those politicians are apparently interested in 'Orthodox values', but such an axiology is often accommodated to the ethno-national ideals and mythologies. As a rule, the

use of religion by neo-traditionalists, conservatives and authoritarians is very selective: religious imagery and commitments are installed primarily to demonstrate who is *in*, and who is *out*, of the people's *sabor*. They also favour external manifestations of their faith over personal and relational ones. Religion is, accordingly, deprived of personal, spiritual aspects and understood primarily in territorial, ethnic, or political terms. On the other hand, there are many Orthodox 'identitarians' who know, or care, very little about the teachings and practices of their own denomination.

It is, therefore, crucial for scholars and political analysts to better understand the link between religion and public diplomacy, and to formulate policies and programmes that specifically consider activities performed by religious institutions. For example, what kinds of narratives are being distributed to the Serbian public through Orthodox channels and Russian media outlets, and how are these messages being echoed or reinterpreted by Serbian networks? How does religion influence Russia's overall public diplomacy framework in Serbia? How to inform the public about the less-known aspects of the social and political dimensions related to the role of religion? What is the accountability of the media in monitoring inter-church relations in the Western Balkans?

While there is a slight variation in doctrines and manifestations between different branches of Orthodoxy, and even within national Churches themselves, the dominant strand of religious thought present in Serbia leans towards ideological alignment with the ROC, on the one hand, and the theological and academic influence of Greek theologians, on the other. The high percentage of confessional self-identification of the Serbian population with Orthodox Christianity intensifies the effects of information distributed by the SOC, causing its impact to be more intimately held by the Serbian public. As a result of that, Orthodoxy does serve as an important component of Russia's public diplomacy strategy in the Western Balkans, and Serbia in particular.

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ПОЛИТИЧКО ПРАВОСЛАВЉЕ КАО ИЗВОР МЕКЕ МОЋИ У РУСИЈИ И СРБИЈИ

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Резиме

Научници су често потцењивали потенцијал меке моћи нелибералне Русије чије су политичке, као и културне вредности, све пријемчивије популистички настројеном и конзервативном бирачком телу у либералним демократијама широм света. У том контексту, Руска православна црква представља кључног актера цивилног друштва чији (нео)традиционализам налази погодно тржиште у иностранству. И Српска и Руска православна црква виде друштво као некакав организам заједнице. Они су скептични у погледу индивидуализма који промовише либерална мисао. Оне су, исто тако, конзервативне у погледу друштвених вредности и изузетно осетљиве на било какво угрожавање властитог религијског поља од стране нематичних религијских група и заједница. Религијски по-

пулизам је „идентитетски“ популизам, при чему су „православне вредности“ прилагођене етно-националним идеалима и митологијама народа у Србији и Русији. Религија бива инструментализована у политичке сврхе уз помоћ тог идентитетског популизма, при чему црква има улогу кључног актера у производњи и очувању националног памћења. У случају Русије и Србије, Православна црква је снажан центар политичке моћи који зависи од два аутократска режима. Обе владе доприносе таквој хибридизацији у јавној сфери, а аутор овог текста тај религијско-политички синкретизам назива политичким православљем.

У односима са Србијом, Кремљ највише користи верски чинилац како би легитимисао интересе Русије путем истицања традиционално блиских веза са Србијом и њеном посебном улогом на Балкану. Као предводници православног словенства (славизма), Срби су, у тој визури, најмање подлегли „западњаштву“ и тако очували властиту традицију, словенски идентитет и осећај припадности православној цивилизацији. Идеја словенске солидарности, коју Београд идеолошки усваја и примењује, наилази на позитиван пријем у Москви. Апелујући на солидарност Словена, Кремљ може имати улогу покровитеља Србије у међународним односима, заступајући њене интересе. Према том гледишту, Србија може рачунати само на руску помоћ када се суочи са било каквим „цивилизацијским ударом“.






WHERE THERE IS A WILL, THERE IS A WAY: THE SOCIAL TEACHING PRACTICES OF PRIMARY SCHOOL TEACHERS DURING THE COVID-19 PANDEMIC

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Abstract

The study aimed to examine the implementation of social teaching practices (STP) in primary schools in Serbia during the COVID-19 pandemic. We explored how the flexibility of STP relates to teachers' socioemotional competencies (SEC), general teaching difficulties during the pandemic, their satisfaction with the education system, and perception of professional future on a sample of 817 teachers. Research findings suggest that those teachers with higher SEC, less teaching difficulties, and those who are more satisfied with the education system and more optimistic about their professional future implement more STPs. Differences in STPs were also found regarding the teachers' gender, education cycle, and teaching modality. The study indicated that use of STPs by teachers in times of crisis can be empowered with diverse support opportunities through professional development.

Key words: socioemotional learning (SEL), social teaching practice, pandemic education, primary school.

ГДЕ ИМА ВОЉЕ, ИМА И НАЧИНА: СОЦИЈАЛНЕ НАСТАВНЕ ПРАКСЕ НАСТАВНИКА У ОСНОВНИМ ШКОЛАМА ТОКОМ ПАНДЕМИЈЕ КОВИД-19

Апстракт

Истраживање је усмерено ка процени могућности коришћења социјалних наставних пракси (СНП) у условима пандемијског образовања. На узорку од 817 наставника основних школа испитана је флексибилност социјалних наставних

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пракси у вези са социоемоционалним компетенцијама (CEK) наставника, генералним тешкоћама извођења наставе током пандемије, задовољством наставника образовањем у време пандемије и перцепцијом будућности професије. Резултати истраживања упућују на то да социоемоционално компетентнији наставници, наставници задовољнији функционисањем образовног система у време пандемије, као и наставници оптимистичнији у вези са својом професионалном будућношћу примењују више СНП. Откривене су разлике у примени социјалних наставних пракси у односу на пол, образовни циклус и модалитет наставе. Резултати истраживања упућују на то да примена социјалних наставних пракси у кризним временима може бити унапређена различитим могућностима подршке у склопу професионалног развоја наставника.

Кључне речи: социоемоционално учење (СЕЛ), наставне праксе, пандемијско образовање, основне школе.

INTRODUCTION

The functioning of the education system during the COVID-19 pandemic brought a lot of changes to the primary teaching process. During the pandemic, teaching seems to have become a more difficult and complex profession than it had previously been. Face-to-face communication with students, which is so important for teachers' work, suddenly became risky for them. Research shows that teachers and school counsellors identify online communication with students to be a great difficulty, generally describing it as one-way, with inadequate, incomplete, or simply missing feedback (Aladrović Slovaček & Matković, 2020; Đerić, 2021). Moreover, communication with stakeholders is often one-way too, where are teachers most often not involved in the decision about the modalities of pandemic education. However, authors (Jones & Kessler, 2020; Sequeira & Dacey, 2020) find that teachers are often isolated from one another, and that school cultures often fail to provide counselling services to help them cope with the daily stressors associated with working in the educational system during the pandemic. The pandemic is, more than ever, challenging the capacities of teachers to be flexible, adapt and overcome obstacles in achieving educational goals with their students while maintaining positive relationships and influences.

Caring, emotionality, understanding of others, and the ability to build connections with students are all necessary attributes of the teachers' profession. Along with the COVID-19 crisis, the socioemotional capacities of teachers in primary education especially comes to focus. We are all witnesses of the caring behaviours of teachers who want their students to understand the content of their class, and feel good and safe at the same time. Miller (2021) notes that during pandemic education teachers practice authentic care and cultivated connectedness by acting as warm demanders, and responding to students' socioemotional needs during the online teaching process. Teachers' socioemotional learning (SEL)

skills are even more important for students who are often surrounded by other added stressors (beside the pandemic) that make it difficult for them to learn. Researchers report that, along with shifting education in a virtual context, the lack of access to educational space and family responsibilities often cause students with socioeconomic disadvantages to disengage (Sequeira & Dacey, 2020). In such cases, teachers become the main source of support. The current educational practice is full of examples of teachers supporting socioeconomically disadvantaged students (Khlaif et al., 2020). But experience from the pandemic shows that most educational institutions over-rely on the teachers' sense of care for their students to make up the difference for the lack of proper resources necessary to provide safe and effective education during the pandemic (Sequeira & Dacey, 2020). Overloading and over-relying on the teachers seem to be only a consequence of inadequate crisis management in education. Research results show that the ones that are expected to be in charge of teacher professional support (school counsellors) often report that their support of the online teaching processes is missing (Đerić, 2021). Research results indicate that placing additional demands on teachers has a negative impact on the personal and professional well-being of teachers worldwide (Allen et al., 2020; Alves et al., 2020).

Scientific evidence shows a decrease in primary school students' academic and socioemotional performance, along with absenteeism, as consequence of COVID-19 crisis (Santibañez & Guarino, 2021). One of the important protective processes which contributes to the overall well-being and thriving of students, and which can be used for the prevention of these problems during the pandemic is SEL. SEL is the process through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel, and show empathy for others, establish and maintain positive relationships, and make responsible decisions (Collaborative for Academic, Social, and Emotional Learning – CASEL, 2020). There is a growing interest in the adoption and implementation of the SEL framework in schools worldwide. It identifies five interrelated sets of cognitive, affective, and behavioural competencies – self-management, self-awareness, social awareness, relationship skills, and responsible decision making (CASEL, 2020). Teachers are generally aware of the importance of developing students' SEC through the learning process and report about applying socioemotional practice. But even teachers themselves tend to minimise the importance of personal teacher SEC (Rodríguez et al., 2020). To identify common teaching practices that promote the students' SEC, Yoder (2014a) reviewed existing literature that focused on the relationship between specific instructional practices, positive learning environments, and student SEC. Yoder (2014a) identified 10 teaching practices that promote social, emotional, and academic skills, which can further be divided into two types of teaching approaches: those

that focus on STP, and those that focus on instructional teaching practices. STP are student-centred discipline, teachers' language, responsibility and choice, and warmth and support. To be effective at student-centred discipline, teachers need to use disciplinary strategies that are developmentally appropriate for their students and that motivate students to want to behave in the classroom (Yoder, 2014a). As most parents worked from home during the pandemic, discipline in the online classroom was frequently controlled with their help. Teachers often briefed the parents before the lesson began, giving them suggestions how to prevent the misbehaviour of their children (Lathifah et al., 2020). Teacher language refers to how the teachers talk to students. Teachers should encourage student effort and work, restating what the student did and what that student needs to do to improve (Yoder, 2014a). During a pandemic, some aspects of non-verbal communication cannot be used (e.g., smiles, high-five), but there are still some that a pandemic cannot take away (e.g., comforting, supportive voice) (Jensen, 2021). Responsibility and choice refer to the degree to which teachers allow students to make responsible decisions about their work in their classroom, in a democratic manner (Yoder, 2014a). Teachers reported difficulties in the distance learning practice during the pandemic related to digital tools, social interaction and motivation, and students' and teachers' workload and compromised well-being (Lepp et al., 2021). Organised peer mentorship practices help students feel responsible in the classroom, building connections and relationship at school (Coyne-Foresi & Nowicki, 2020). Warmth and support refer to the academic and social support that students receive from their teacher and from their peers (Yoder, 2014a). During the pandemic, more self-regulation among teachers is required to distance themselves from job demands, as is communication with educational management, colleagues, students, and their families. Scientific evidence worldwide addresses primary school teacher burnout problems (Amri et al., 2020). Research results show that stress in the classroom is 'contagious'. For example, the levels of stress in teachers correlate with the levels of stress in students (Oberle & Schonert-Reichl, 2016). Studies indicate that self- and co-regulative strategies are related to a lower risk of teachers experiencing burnout (Pyhältö et al., 2020). Higher digital competencies in teachers are related to lower job stress levels as well (Košir et al., 2020).

In summary, few studies examine the extent to which primary school teachers implement STPs, especially in the educational context during the pandemic. The present study was designed with the aim to examine the implementation of STPs during the COVID-19 pandemic in primary schools in Serbia. Based on the model of the relationship between teachers' SEL skills and the SEL teaching practices (Yoder, 2014b), we expect that STPs are closely related to teacher SEC. Furthermore, we investigated the flexibility of STPs involving important factors of pandemic education such as satisfaction with the education system in Serbia, the

perception of professional future, and general teaching difficulties as a consequence of the COVID-19 crisis in Serbia. Also, differences in the implementation of STPs were examined in relation to the teachers' gender and age, years of service, education cycle, and teaching modality.

METHOD

Participants

The research sample consisted of 817 teachers (15.2% male) from public primary schools in Serbia, ages 23 through 64 ($M = 45.56$, $SD = 9.35$). When it comes to their years of working in education, the mean is 18.40 ($SD = 9.83$), with a range between 0 and 40. One third of the teachers (34.8%) teaches within the first education cycle (first to fourth grade), and two thirds (65.6%) teach the second cycle (fifth to eighth grade). When it comes to the modality of classes performed during the first semester of the 2020/2021 school year, 26.8% ($N = 219$) of teachers worked with students in person (out of which 81.6% are teachers of the first education cycle, and 18.6% are teachers of the second), 70.9% ($N = 579$) had the experience of working both in person and online (out of which 16.7% are teachers of the first cycle, and 83.3% of the second), and only 9 participants worked online throughout the whole semester.

Instruments

Social Teaching Practices. The assessment of STP was based on 23 items of the *Self-Assessing Social and Emotional Instruction and Competencies: A Tool for Teachers* (Yoder, 2014b), section "Social Teaching Practices" ($\alpha = .94$, in the present study). It consists of four five-point Likert scales that examine how often and how well teachers implement ST practices: *Student-centred Discipline* (eight items, $\alpha = .89$), *Teacher Language* (three items, $\alpha = .89$, inter-item correlations mean of .72), *Responsibility and Choice* (five items, $\alpha = .86$ and inter-item correlations mean of .56), and *Warmth and Support* (seven items, $\alpha = .86$).

Teachers' Social and Emotional Competencies. Teachers' SEC were evaluated using a scale from *Self-Assessing Social and Emotional Instruction and Competencies: A Tool for Teachers* (Yoder, 2014b), section "Teacher Social and Emotional Competencies" ($\alpha = .92$, in the present study). The instrument comprises 21 items, scored on a four-point Likert scale, that examine teacher's perception of their SEC: *Self-awareness* (five items, $\alpha = .77$, inter-item correlations mean of .40), *Self-management/Emotion Regulation* (four items, $\alpha = .71$, inter-item correlations mean of .40), *Social Awareness* (four items, $\alpha = .74$, inter-item correlations mean of .45), *Relationship/Social Skills* (four items, $\alpha = .83$, in-

ter-item correlations mean of .55), and *Responsible Decision Making* (four items, $\alpha = .81$, inter-item correlations mean of .52).

Satisfaction with the education system. Degree of satisfaction with the education system in the period of the pandemic was measured using the *Satisfaction Scale with the Education System* (SSES; Alves et al., 2021), which consists of seven items (five-point Likert scale) with good reliability in the present study ($\alpha = .80$). SSES explores the support teachers received during the crisis (from the Ministry of Education, school management and their colleagues) and the way classes are organised – whether teachers are satisfied with the amount of time they spend for their classes, the amount of administrative work, the scope of work and the level of student commitment.

Teaching difficulties. Teaching difficulties were assessed through the *Teaching Difficulties Scale*, a part of *Perception Scale of Well-Being within the Professional Situation in Times of Pandemic* (PSWbPSTP; Alves et al., 2021). It consists of three items answered on a five-point Likert scale, and has high reliability in the present study ($\alpha = .83$). This scale explores the difficulties teachers face in implementing distance learning, using digital platforms, and evaluating the teaching process.

Perception of professional future. The teachers' perception of their professional future was assessed with the *Professional Future Perspective Scale* (PFPS; Alves et al., 2021). It consists of a total of six items (five-point Likert scale) divided into two scales measuring positive perceptions (four items, $\alpha = .74$, inter-item correlations mean .43), and negative perceptions (two items, $\alpha = .74$, inter-item correlation .59). Positive perceptions examine the future perspective in relation to achievement, happiness, working conditions and prestige. Negative perceptions are related to the increase in work and bureaucracy.

Procedure

Data was collected on a voluntary basis through an online survey. Teachers were contacted through the e-mail addresses of schools, and they were sent an invitation letter with information about the study, and the link to the online questionnaire. No personal data was collected (not even e-mail addresses). Researcher's contacts were given alongside the invitation, so the participants had the chance to contact the research team for assistance or questions about the survey. No such requests were made. All public elementary schools in Serbia were contacted this way with the aim of soliciting their teachers' participation in the study. Data was collected in the period between February and April 2021. The average time needed to fill out the survey was 40 minutes.

Statistical Analyses

Data was collected through Google forms and stored in an online excel sheet, then imported to SPSS, version 20. Reliability assessment was conducted with Cronbach's alpha coefficient and inter-item correlation analysis. The relationships between research constructs were tested through the t-test for independent samples, calculations of effect size, two-way ANOVA, Pearson's correlation, and partial correlation.

RESULTS

The results show that the correlation between STPs and teachers' SEC is moderate positive. Thus, teachers with higher SEC implement more STPs. The connection is strongest in *Warmth and Support*, whereas Pearson's correlation coefficient reaches a values above .50 in *Social Awareness* and *Responsible Decision Making*. On the other hand, *Self-awareness* is the competence with the weakest (but still moderate) correlation with all STPs. *Teaching Difficulties* have a significant low negative correlation with all STPs. *Satisfaction with the Education System*, and *Positive Perception of Professional Future* have a significant low positive correlation with all examined practices. *Negative Perception* is the only scale with only one significant, but still low, correlation with one STP – *Responsibility and Choice*. These results suggest that those teachers who have less teaching difficulties, and who are more satisfied with the education system and more optimistic about their professional future implement more STPs. The results of the correlation analysis, done through Pearson's correlation coefficient, are presented in Table 1.

Table 1. Correlations between STP, SEC, teaching difficulties, satisfaction with the education system, and perception of professional future

| STP | SEC | | | | | TD | SES | Professional future | |
|-----|---------|---------|---------|---------|---------|----------|---------|---------------------|--------|
| | SEA | SM | SOA | RSS | RDM | | | PPF | NPF |
| SCD | .374*** | .450*** | .428*** | .468*** | .467*** | -.230*** | .258*** | .251*** | -.056 |
| TL | .373*** | .434*** | .443*** | .408*** | .454*** | -.146*** | .163*** | .181*** | .008 |
| RC | .367*** | .435*** | .431*** | .458*** | .465*** | -.193*** | .225*** | .239*** | -.072* |
| WS | .432*** | .482*** | .510*** | .481*** | .505*** | -.165*** | .165*** | .176*** | .004 |

Note. SCD = Student-centered Discipline; TL = Teacher Language;

RC = Responsibility and Choice; WS = Warmth and Support; SEA = Self-awareness;

SM = Self-management/Emotion Regulation; SOA = Social Awareness;

RSS = Relationship/Social Skills; RDM = Responsible Decision Making;

TD = Teaching Difficulties; SES = Satisfaction with the Education System;

PPF = Positive Perception of Professional Future;

NPF = Negative Perception of Professional Future.

* $p < .05$; *** $p < .001$.

Years of working in education, as well as age, do not show any significant connections with STPs. Gender differences are significant when it comes to *Teacher Language* ($t(799) = -2.89, p < .01$) and *Warmth and Support* ($t(785) = -1.96, p < .05$), where women reach slightly higher average scores. The effect size for gender influence is very small, with reaching eta squared of 0.01 in *Teacher Language* and 0.004 for *Warmth and Support*. Teachers of the first education cycle have significantly, but just slightly higher scores on all four scales of STP compared to teachers of the second cycle. Differences are strongest with *Warmth and Support* ($t(787) = 3.77, p < .001$, eta squared 0.03), followed by *Student-centered Discipline* ($t(778) = 4.52, p < .001$, eta squared 0.03), *Teacher Language* ($t(793) = 4.19, p < .001$, eta squared 0.02), and *Responsibility and Choice* ($t(787) = 3.77, p < .001$, eta squared 0.02).

Following the findings about the connection of the education cycle with STP, partial correlation analysis was conducted with controlling the *education cycle* variable. The results of partial correlation analysis confirm the achieved values of Pearson's coefficient. The values of the correlation coefficient drop slightly only when it comes to the correlation of the STP and *Satisfaction with the Education System*, and the margin is even lesser in the relationship of STP and SEC, but none of these differences in the correlation coefficient are statistically significant. Since there is a high percentage of teachers of the first education cycle that performed classes only in person, and a high percentage of teachers of the second cycle that performed classes both in person and online, two-way ANOVA was implemented to eliminate the possibility of interaction between these factors in relation to the STPs. The results of the analysis show that there is no significant interaction between these variables when it comes to all four teaching practices. In the analysis of the connections of modality of the classes teachers performed during the first semester of the 2020/2021 school year, the nine teachers who only performed classes online were excluded from the analysis due to small category size. Those teachers that performed their classes only in person achieved slightly, but significantly, higher scores on all STPs. These differences range from $t(788) = 2.10, p < .05$ (for Teacher language) to $t(773) = 2.67, p < .01$ (for *Warmth and Support*), with very small effect sizes (eta squared ranges from 0.005 to 0.009).

DISCUSSION AND CONCLUSION

Our research findings confirm that, as expected, STPs significantly correlates with all aspects of the SEC framework, even in the pandemic context. In addition, the flexibility of STPs is related to general teaching difficulties teachers faced, their satisfaction with the education system, as well as their perception of their professional future. Differences in STPs

regarding teachers' gender, education cycle and teaching modalities were also found.

Firstly, our research results go in line with the above presented model of the relationship between teacher SEL skills and the SEL teaching practices (Yoder, 2014b), and with the sequences of the other models involving SEL, e.g., the proposed models of teacher SEC and classroom and student outcomes – the prosocial classroom model (Jennings & Greenberg, 2012), the model of socioemotional education implementation framework (Cefai et al., 2018), the model of systemic SEL in educational settings (Weissberg et al., 2015), etc. STPs facilitate the development of the students' socioemotional and academic skills. Teachers' SEC, including teachers' well-being, are considered to be the key factor of SEL. Developing proper teacher SEC assessment is necessary to understand influences on the quality of social teaching practices and the implementation of specific SEL-based programmes. Research results indicate that highly socioemotional competent teachers implement STP more successfully. As expected, STPs correlate significantly with all aspects of the SEC framework. For example, by practicing student-centred discipline, teachers show compliance with SEL and positive discipline (e.g., school-wide positive behavioural interventions and supports - SWPBIS), as complementary and compatible approaches (Gueldner et al., 2020). Through the development of consistent and logical rules and consequences, students begin to learn how to regulate their own behaviour and problem-solve difficult situations that arise in the classroom. Research evidence supports student-centred discipline tools integrated with online teaching too (Gulo, 2020; Cho et al., 2020). SEL competent teachers communicate with students with warmer and caring behaviour. Despite scientific papers about teachers who were 'acting like robots' during the pandemic, teaching based on students' experience can also be found (Literat, 2021), and most evidence shows that they promoted caring behaviour and compassion (Miller, 2021; Searles, 2020). With the pandemic in mind, it is important to know that, as is the case with students, teachers cannot develop their social and emotional skills in isolation. Research results show that adopting co-regulative strategies seems to be more helpful than self-regulated strategies in burnout prevention, and decreasing the risk of experiencing exhaustion and inadequacy during teacher-student interactions. Furthermore, strong self-regulation combined with low levels of co-regulation was related to an increased risk of experiencing cynicism (Pyhältö et al., 2020). Teachers can use check-in questions before starting virtual classes to connect with students too. Students can pick a particular emoji that represents their emotions and post it in a chat box, or students can simply draw a picture of an emoji face, or pick a GIF or a song instead of an emoji. A quick survey tool might be used to check their feelings. When it is necessary, teachers can meet with the student privately in a separate

online session, or connect students with the school counsellor (Kamei & Harriott, 2021). Teachers showed their flexibility in the practice of encouraging students to achieve their maximum academic and prosocial engagement. Researchers of the online teaching setting highly recommend video feedbacks that, contrary to textual feedback, communicates tone and voice, facial expressions, and body language, and represents a more personalised and supportive style of communication (Ryan, 2021). Research evidence shows that video feedback works the best for moderate-to-high achievers who perform poorly on an assessment task (Ryan, 2021). The online setting does not have to be an obstacle, for example, to creating age-appropriate class jobs and responsibilities for students during online lessons or on virtual learning platforms that enhance their sense of ownership and responsibilities. These jobs can be small tasks such as being a timekeeper or discussion facilitator (Kamei & Harriott, 2021).

Results show that female teachers implement more STPs related to warmth and support, and teacher language. This finding is in line with research that identifies warmth as a key factor for understanding gender bias in the caregiving profession (Halper et al., 2019). Another explanation might consider that females were found to be more resilient during the pandemic (Fernández-Prados et al., 2021). Teachers of the first cycle reported more STPs than the ones teaching within the second cycle. One explanation for this might be found in the prioritisation of the conventional aspects of teacher preparation (e.g., subject matter teaching) over SEC during the pre-service education of teachers of the second cycle (Pavin et al., 2005) Furthermore, higher grades need more SEL competent teachers, as students are expected to achieve a higher standard in current SEC (e.g., after the fourth grade, students have to use strategies to manage their own emotions and be self-reflective, and have to understand their impact on others and find community resources to help them self-manage by grade 12) (Yoder, 2014a).

The current study supports research results that state teachers who report greater educational management support are more SEL competent, and manage to implement STPs more successfully (Alves, Lopes, & Precioso, 2021). Researchers have already recognised the COVID-19 crisis as extreme situation of the VUCA (volatile, uncertain, complex, ambiguous) world (Hadar et al., 2020). Researchers and educators are working on adopting educational technology in circumstances of the VUCA world (Reeves, T.C. & Reeves, P.M., 2015). Nevertheless, regardless of the level of development, educational systems worldwide had difficulties in the teaching process during the pandemic (Aladrović, Slovaček & Matković, 2020; Bergdahl & Nouri, 2020; Đerić, 2021; Khlaif et al., 2020; Leep et al., 2021). Difficulties in the learning process can be classified as technical difficulties, difficulties related to communication and engagement with students and their parents, and difficulties regarding teachers' and

students' well-being (Leep et al., 2021). Research results indicate that teachers who suddenly have to manage problems related to digital teaching tools and the evaluation process find less room for the adoption of pedagogical teaching tools (Leep et al., 2021). This finding is in line with the consideration that, while problems in education in socioeconomically poor countries involve technical and pedagogical problems, richer countries focus on the improvement of the pedagogical aspects of teaching (Bergdahl & Nouri, 2020; Khlaif et al., 2020; Leep et al., 2021). In other words, education must first be available to all students, and only then should it offer socioemotional and other advantages. Conversely, it might be said that SEL competent teachers positively perceived actual external support because they needed it less, and were more optimistic about their professional future. Problems in the professional support of online teaching were especially recognised in city schools (Đerić, 2021). Almost a year later, it seems as though teachers showed great adaptability and flexibility in relation to their teaching practice during the pandemic, regardless of whether they received greater support in the meantime or relied on their own internal capacities to a greater extent. The more teachers were optimistic about their professional future (e.g., perceiving that it will be more valued), the more STPs were implemented. Future social recognition of the teaching profession might positively affect teacher's motivation and higher engagement. Research results suggests that teachers felt more valued during the pandemic than ever before, especially by students' parents (Asbury & Kim, 2020).

In general, the COVID-19 pandemic raised the need for teachers' flexibility and adaptability during current educational changes. Luckily, teachers' tendencies to care have not been lost during the transition from traditional education to education during and after the pandemic. Research findings implicate the importance of raising the teachers' ability to successfully implement SEL teaching practices and promote SEC in their classrooms. It would be significant for education in the post-pandemic era to introduce more opportunities for teachers to master STPs. European Union policy-makers suggest that teacher education programmes should include SEC frameworks, including the development of the teachers' own SEC (Cefai et al., 2018). Research results suggest the need to address SEC at the pre-service level, and possibly with a curriculum that develops throughout their years of training and across their curricula (Hadar et al., 2020). This approach acknowledges the importance of this domain being included throughout the professional development continuum. Authors note that professional development programmes in Serbia rarely include a socioemotional component (Tošić Radev & Pešikan, 2017). Nevertheless, research results indicate that primary school teachers in Serbia showed the capability to adopt socioemotional practices even in turbulent and complicated times of crisis. However, this does not mean that they do not need further support in personal socioemotional development and teach-

ing practices involving SEL. Based on the model of the relationship between teacher SEL skills and SEL teaching practices, authors bring an SEL coaching toolkit for coaches and administrators to support teachers in the development of social and emotional skills in their classrooms (Yoder & Gurke, 2017). Experiences in Indiana, North Carolina, Ohio, and Oregon, among other places, may serve as examples of good STPs during the pandemic (Yoder et al., 2020). The idea is that, at times of crisis like the one caused by the pandemic of COVID-19, building teachers' own competencies and related STPs is still equally or even more important for facilitating SEL. This implies incorporating practices such as mindfulness and stress management techniques, which have been shown to successfully contribute to the development of SEC in teachers (e.g., Matiz et al., 2020), as is the case with the general public (e.g., Kozina et al., 2021). Sporadic evidence about the implementation of RULER – an SEL evidence-based approach to social and emotional learning (SEL) developed at the Yale Center for Emotional Intelligence – during the pandemic is given (Dutmer & Academies, 2020).

There are a few limitations to this study that should be noted. Research results might have been quite different if data was collected at the beginning of the pandemic in Serbia. It would be interesting for researchers to explore the process of the teachers' adaptation to the changes caused by the pandemic (or another future crisis related to changes), including the relevant psychological and social factors. It seems that teachers had time to adapt to and re-connect with academic and socioemotional educational goals. Another limitation refers to our choice of including only STP variables given by the model of the relationship between teacher SEC and the SEL teaching practices (Yoder, 2014b), even though we are deeply aware of the importance of instructional teaching practices for students' academic and socioemotional development as well. Since research results indicate that the connections with the explored factors were not strong, which means that there are also other possible relevant variables that correlate with teachers' STPs during the pandemic, future research should include a wider range of factors. In addition, it would be significant to explore the whole SEL framework during times of crisis, including the exploration of students' SEC, and parental support in the distance learning process. This could be valuable for a greater understanding of the process of socioemotional learning and its outcomes related to academic achievements, positive development, and students' well-being.

In conclusion, the present study confirms the importance of the relationship between STPs and teachers' SEC, and provides insights into some factors that contribute to the successful implementation of STPs in situations of continuous crisis. Our research findings can serve as a basis for planning professional development programmes which focus on enhancing the teachers' use of STPs, as well as for planning practical support activities for their work in times of crisis.

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ГДЕ ИМА ВОЉЕ, ИМА И НАЧИНА: СОЦИЈАЛНЕ НАСТАВНЕ ПРАКСЕ НАСТАВНИКА У ОСНОВНИМ ШКОЛАМА ТОКОМ ПАНДЕМИЈЕ КОВИД-19

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Резиме

Функционисање образовног система током пандемије вируса КОВИД-19 произвело је бројне изазове за наставнике у основним школама, захтевајући од њих да буду флексибилни, да се прилагоде и да превазиђу препреке у остваривању образовних циљева ученика. Социјално-емоционално учење један је од важних заштитних процеса, који може допринети општем благостању и напредовању ученика у условима пандемијског образовања. Оно се односи на процес путем којег деца и одрасли стичу и ефективно примењују знања, ставове и вештине потребне за разумевање и управљање емоцијама, постављање и постижање позитивних циљева, исказивање емпатије, успостављање и очување позитивних односа, и доношење одговорних одлука. Истраживање је усмерено ка процени могућности коришћења социјалних наставних пракси (СНП) које промовишу социјалне, емоционалне и образовне вештине ученика у условима пандемијског образовања. На узорку од 817 наставника основних школа испитана је флексибилност социјалних наставних пракси у вези са социоемоционалним компетенцијама (СЕК) наставника, генералним тешкоћама извођења наставе током пандемије, задовољством наставника образовањем у време пандемије и перцепцијом будућности професије. Резултати истраживања упућују на то да социоемоционално компетентнији наставници, наставници задовољнији функционирањем образовног система у време пандемије, као и наставници оптимистичнији у вези са својом професионалном будућношћу примењују више СНП. Откривене су разлике у примени социјалних наставних пракси у односу на пол, образовни циклус и модалитет наставе. Може се закључити да су наставници основних школа у Србији показали способност да усвоје социоемоционалне праксе чак и у турбулентном и компликованом друштвеном тренутку који је произвела пандемијска криза. Треба свакако истаћи да резултати истраживања упућују на то да примена социјалних наставних пракси у кризним временима може бити унапређена различитим могућностима подршке у склопу професионалног развоја наставника. Стога, налази реализоване студије могу послужити као основа за планирање програма стручног усавршавања са фокусом на унапређење употребе СНП од стране наставника, као и за планирање активности практичне подршке њиховом раду у сличним ванредним ситуацијама.

EUROPEAN SOCIO-POLITICAL ELITES' ATTITUDES TOWARDS MIGRATION

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Abstract

This paper analyses the attitudes of European socio-political elites towards migration, with a particular focus on their views on current migration movements that are partly common and partly divergent, depending on the interests that guide them and their societies. Regarding the attitudes of socio-political elites towards the migrant issue, it is observed that the creators of European policies mainly advocate for the 'externalisation' of control over the migration issue, primarily involving the relocation of migrant rights outside the EU borders and disregarding their human rights. There is also a noticeable trend of informal deviation from the principles of human rights and freedoms associated with the migration problem, approaching the perspectives of the so-called Visegrád Group, while fundamentally remaining on liberal positions in this domain. The subject of this paper is the relationship between European socio-political elites and current migrations, and the methods applied in the paper include scientific-descriptive, comparative, and content analysis. The aim of the paper is to analyse the most dominant attitudes and indicate the consequences of specific decisions made by individual European socio-political elites regarding migration.

Key words: socio-political elites, migration, Europe, EU, migration policy.

ОДНОС ЕВРОПСКИХ ДРУШТВЕНО-ПОЛИТИЧКИХ ЕЛИТА ПРЕМА МИГРАЦИЈАМА

Апстракт

У раду је анализиран однос европских друштвено-политичких елита према питању миграција, с посебним освртом на њихове ставове према актуелним миграционим кретањима који су једним делом заједнички, а другим различити, у зависности од интереса којима се руководе они и њихова друштва. У оквиру излагања о ставовима друштвено-политичких елита према мигрантском питању констатовано је да се креатори европских политика углавном залажу за „екстернализацију” контроле над мигрантским питањем, што се првенствено односи на

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измештање мигрантских права изван граница ЕУ и игнорисање њихових људских права. Такође је уочљив тренд неформалног одступања од начела људских права и слобода која су повезана са проблемом миграција и приближавања ставовима тзв. Вишеградске групе, али се принципијелно остаје на либералним ставовиштима у овом домену. Предмет истраживања овог рада је однос европских друштвено-политичких елита према актуелним миграцијама, а методе које се у раду примењују су научно дескриптивна анализа, компаративна анализа и анализа садржаја. Циљ рада је да се анализом најдоминантнијих ставова укаже на последице одређених одлука појединих европских друштвено-политичких елита према миграцијама.

Кључне речи: друштвено-политичке елите, миграције, Европа, ЕУ, миграциона политика.

INTRODUCTION

The attitudes of socio-political elites towards migration primarily depend on their interests and ideological positions, including their party affiliations. Consequently, their response to the contemporary challenges and threats posed by migration generally aligns with the policies they advocate, with rare exceptions.

Due to the lack of consensus and a collective approach among European socio-political elites involved in decision-making regarding migration policy, the migrant issue often gets transferred to the supranational level of decision-making.

In an effort to find valid responses to the migration question that has shaken the entire European continent, European socio-political elites resort to various solutions, ranging from enhanced border control, adoption of migrant quotas, and the enactment of new legislation, such as the Asylum Law, aiming for complementary solutions.

CONCEPTUAL DEFINITION OF SOCIO-POLITICAL ELITES AND MIGRATION

The term ‘elite’ is commonly used to refer to individuals of the highest rank in a profession, society, or nation. The root of the word ‘elite’ comes from the Latin verb *eligere*, meaning to choose, from which the French noun *l'élite* is derived, meaning selected, exceptional, or the best. This term entered political theory only in the late 19th century (Botomor, 1967, as cited in Simeunović, 2009, p. 269).

According to Jacques Coenen-Huter, elites, in the singular form, refer to those who stand out as the best in their field of action compared to those who do not differ much from the masses. Therefore, this term is often synonymous with managerial elites. In the plural form, it encompasses individuals who hold prominent positions in different areas of ac-

tivity, without excluding their extraordinariness. In this case, it can refer to elites competing for the same goal or various specialised elites operating in different domains (Coenen-Huter, 2005, p. 11-12).

Thus, elites can consist of at least three diverse groups: a group whose predominance is based on “acquired qualifications and specific talents”, a group of traditional superiority that does not necessarily specialise in anything specific, and a group that serves as a “nursery” for diverse qualifications and talents (Nadel, 1956, p. 414, as cited in Scott, 1990).

Giovanni Busino suggests that this term refers to a minority in a given society and time, possessing privileges and prestige derived from natural or acquired qualities valued in society (Busino, 1992, p. 4). He specifically emphasises that a small circle of this elite holds political power (Busino, 1992, p. 55). In this sense, socio-political elites can be defined as a type of elite that makes key decisions for a society from positions of power and the greatest social influence.

When it comes to the conceptual definition of migration, one of the definitions provided by the EU states that it represents “the movement of persons, either across an international border (international migration) or within a state (internal migration), for a period of at least one year, irrespective of the causes (voluntary and/or involuntary) and the means (regular and/or irregular) used” (European Commission, n.d.). Additionally, it is essential to mention the definition by the International Organization for Migration (IOM), which views migration as “the movement of persons away from their habitual place of residence, either across an international border or within a state” (IOM, n.d.).

Pieter Kok defined migration in 1999 as “the movement of people from one habitual place of residence to another at some distance” (Kok, 1999, p. 19). However, not all population movements can be called migrations. Migrations are not the same as settlements. Migration movements can be individual and/or temporary phenomena, while settlements are “more massive and inherently long-term” (Vukotić, 2016, p. 10).

Dragan Simeunović argues that migrations are a repetitive process because they tend to renew, continue, and complete themselves if they are artificially interrupted (Simeunović, 2015, p.10).

One of the key elements of almost every migration movement consists of the following five elements: “space, flow, duration in time, residence or domicile, and the individual’s activities in the new space, as well as the various consequences of these activities” (Jugović, 2020, pp. 110-111).

The current migrant crisis that has shaken the European continent is often, and mostly incorrectly, associated with refugee migrations.

Specifically, refugee migrations should be seen as the emigration of migrants to the first safe or secure country, rather than the crossing of

an entire continent by migrants trying to reach their desired destination. Germany and Sweden are the most common European countries of origin for this category of individuals. When we consider that these migration flows are primarily driven by Europe's need for low-skilled workers, it can be concluded that the current migration movements from the Middle East and Africa to Europe are difficult to predominantly categorise as refugee migrations.

In the past two years, the wave of refugee migrations from war-affected Ukraine has mostly spilled over to neighbouring countries, such as Russia, Poland, and Germany, with some of the important reasons for choosing some of these countries being the religious and cultural affinity between refugees and the local population.

According to the United Nations High Commissioner for Refugees (UNHCR) data from November 2022, since the beginning of the conflict in Ukraine, over eight million refugees have immigrated to neighbouring countries, with the largest number finding refuge in Russia (nearly three million), as well as in Western European countries like Poland (around 1.5 million) and Germany (over one million) (*Od februara osam miliona*, 2022).

Contemporary migration movements pose a challenge not only to the destination countries and particularly to transit states (Gligorić, 2019, p. 494) but also to the international community as a whole. In this regard, it can be said that today's migrations as global and local phenomena are subject to various ideological interpretations and inconsistent political responses (Jugović, 2020, p. 111), with socio-political elites leading the way.

SOCIO-POLITICAL ELITES AND MIGRATION MOVEMENTS TOWARDS EUROPEAN COUNTRIES

European history, among other things, speaks of uprooted people who fought for survival, mass migrating from one country or continent to another aware of the dangers that could befall them on their journey, particularly the possibility of being 'swallowed up' by the sea while attempting to move to a more favourable place for a better life. What has fuelled mass migrations within and from Europe for centuries, and especially what drove them during the past century (Glynn, 2016, as cited in Gatrell, 2020, p. 2), can be attributed to common reasons for migration, such as fleeing poverty, wars, diseases, and the general desire for a better life.

However, numerous migrations to Europe have also taken place, often on a larger scale. The intensity and magnitude of these migrations have usually been proportionate to Europe's economic prosperity and the impoverishment of other parts of the world, to which the political and economic elites of certain European countries, labelled as 'colonial powers', have contributed significantly.

Today, as well as in earlier years, the responsibility for the large number of migrants and their direction towards European countries lies in the decisions of individual socio-political elites, namely strategic decision-makers. It could be said that their responsibility, in addition to causing migration prompted by wars and internal conflicts, i.e., refugee migrations, also lies in allowing mass migration movements. If these movements are not 'touched upon' or controlled, they could lead to eventual catastrophic political and economic stagnation, affecting the development of a range of countries as a consequence. Moreover, the decisions of political elites significantly influence the way of life and the success of the integration for migrants, particularly for the category of mostly impoverished individuals who flee from a lack of prospects and poverty towards a better, more prosperous life.

European socio-political elites have not yet reached a consensus on migration and asylum issues, although there is agreement regarding shifting responsibilities for deterring refugees to other countries. For example, Turkey is requested to keep Syrian refugees, while Libya is asked to stop and ideally deport migrants attempting to cross the Mediterranean Sea. In fact, policy makers in Europe advocate for the 'externalisation' of control, in the context of transferring the rights of migrants outside European borders and 'ignoring' the human rights of this category of individuals. In this regard, there is increasing criticism of the 'outdated' 1951 Refugee Convention, and there are more frequent proposals to initiate a debate on immigration based on the "state's right to control its borders" (Holbrook, 2015, as cited in Gatrell, 2020, p. 12).

The political elites of many European countries, preoccupied with directing migration movements, often fail to realise that they are losing their country's most valuable social capital – young (educated) people. The longer the mass departure of young individuals from their homelands continues, the more difficult it will be for these countries to implement necessary reforms, and they will increasingly need highly educated young people, as well as skilled, not just low-skilled, workers.

In addition to all of the above, a significant proportion of irregular migrants make up the migrant population in migration channels. This category of individuals generally guarantees cheap labour for the countries they migrate to because "due to the fear of job loss and deportation, they accept any job offered to them" (Marković, 2018, p. 218). This often refers to so-called '3D jobs'¹, which are performed not only by irregular migrants but also by low-skilled workers (*ibid.*).

¹ '3D' is an acronym referring to dangerous, dirty, and demeaning/demanding jobs;

Furthermore, it is necessary to mention migrants who perform jobs for which they are overqualified, which often leads to ‘status frustration’². Greece, with around 60%, and Italy, with over 40% of employed immigrants who are overqualified for the job they perform, are among the leading countries in this category of migrants (OECD/European Union, 2015, pp. 116-117, as cited in Marković, 2018, p. 219).

In the history of post-war Europe, opportunistic migrations were central. West Germany was at the forefront, signing bilateral agreements with Italy, Turkey, and Yugoslavia to engage guest workers. Those who took advantage of this opportunity were grateful for the chance to earn money for a better life and support their families (Miller, 2012, p. 570, as cited in Gatrell, 2020, p. 5).

When it comes to European socio-political elites as creators of migration policies, the origins of their design can be traced back to a five-year programme that began with the conclusions of the European Council Summit in Tampere in 1999 (2000-2005), which marked the beginning of EU migration policy. This programme guarantees “absolute freedom of movement within the territory of the European Union for all its citizens and for all immigrants who legally reside in this area” (Šantić & Obradović, 2016, p. 125). Subsequently, the Hague Program (2005-2010) followed in 2004, which relates to ten EU priorities. Within this programme, among other things, the establishment of Frontex (FRONTEX/European Border and Coast Guard Agency) was proposed, and later founded with the aim of integrating and standardising border control and surveillance operations. Additionally, the Global Approach to Migration (GAMM) was developed as a comprehensive framework for external migration policy, with the external dimension of EU migration policy focusing on dialogue and cooperation with third countries linked by shared interests (Šantić & Obradović, 2016: 126). After this, the Stockholm Program (2010-2014) followed in 2009, within which certain priorities were differentiated, including the intensification of cooperation among member states. These mentioned programmes point to the “central role of the EU in articulating migration policy” (Dragić, 2016, pp. 115-118).

In addition to the mentioned programmes, there is another one, the so-called post-Stockholm Program, referred to as a ‘political orphan’ that nobody wanted to adopt as their own, and it was adopted in 2014 at the Council of Europe summit (Parkers, 2015, p. 3, as cited in Dragić, 2016, p. 118).

² These are jobs that are below the level of one's acquired qualifications (high level of formal education). This leads to what is known as status discord or status frustration, which is associated with precariat (Standing, 2011, p. 10, as cited in Marković, 2018, p. 219);

When it comes to the human rights of migrants, it is important to mention the actions of the Global Migration Group, which advocates for the respect of basic rights for all migrants, “regardless of their migration status” (GMC, as cited in Radojković, 2017, pp. 40-41), which include:

the right to life, liberty, and security of person, freedom from arbitrary arrest or detention, and the right to seek and enjoy asylum from persecution; the right to freedom from discrimination based on race, sex, language, religion, national or social origin, or other status; the right to protection from abuse and exploitation, freedom from slavery and servitude, and freedom from torture, cruel, inhuman, or degrading treatment or punishment; the right to a fair trial and access to justice; the right to protection of economic, social, and cultural rights, including the right to health, an adequate standard of living, social security, adequate housing, education, and fair and favorable working conditions; and other human rights guaranteed by international human rights instruments to which the state has acceded, as well as customary international law.

(GMC, as cited in Radojković, 2017, pp. 40-41)

All these rights of migrants fall within the realm of proclaimed and widely adopted human rights. However, for these rights to be applied in practice, it is necessary for the legal systems of countries that advocate for the respect of migrants' human rights to provide effective access to justice, which is not the case in a significant number of European countries.

In this regard, the European Commission often issues reminders of European regulations that indicate that absolute human rights and freedoms cannot be subject to limitations, even in extraordinary circumstances such as the migrant crisis (Dimovski, 2021b, p. 1065).

As for addressing the issue of a large number of migrants in individual countries, Article 80 of the Lisbon Treaty is particularly important, as it relates to the principle of solidarity and fair sharing of responsibilities among EU member states. On the other hand, the much-praised Dublin Agreement has proven to be ineffective as it creates “disproportionate pressure on member states that are primarily affected, mostly in Northern Europe” (Fratzke, 2015, as cited in Dragić, 2016, p. 120). Requests for asylum of individuals relocated under the Dublin Regulation are often not considered or they are “prevented from accessing the procedure for determining refugee status” (Lalić, 2009, p. 763, as cited in Dragić, 2016, p. 120).

It is particularly concerning that EU member states generally do not adhere to measures agreed at the EU level, but are more inclined towards ‘individual reactions’ to the migrant crisis. If this trend continues, the quality of EU legislation implementation would be “jeopardized, and the political role of the Union marginalized over time” (Dragić, 2016, p. 122).

During the migrant crisis, in 2016, the European Commission released a document in collaboration with the Secretariat of the Organiza-

tion for Economic Cooperation and Development, presenting statistical data on the ‘recruitment’ of migrant workers in Europe (Recruiting Immigrant Workers: Europe). In this regard, it is stated that after the economic crisis of 2008, there was a decrease in the inflow of corresponding, mainly highly skilled migrant workers. The research showed that during the migrant crisis, the EU accounted for “31% of the total number of highly educated migrants worldwide, while in North America, it was almost twice as high (57%)” (OECD/EU, 2016, as cited in Grečić, 2019, p. 81). This indicates that migrants in the EU during that period were ‘less educated’ than those in the US.

The Schengen Agreement of 1985, as well as later legal instruments related to it, were designed to facilitate intra-European migration, and thus freedom of movement became the “cornerstone of European cooperation” (Rochau, 1965, as cited in Gatrell, 2020, p. 7). In this regard, Peter Gatrell notes that freedom of movement has always been conditional, as “national self-interest meant that ‘safes’ were made available to those states that wanted to ‘control’ migration within the EU, especially the arrival of third-country nationals” (Gatrell, 2020, p. 12).

Although prior to the current migrant crisis, political elites in EU countries strongly advocated for the implementation of the Schengen border management regime, after 2015, it was precisely those European countries that spoke most about this regime that were the first to start implementing processes to protect their state borders, including the ‘militarisation of state borders’. Justifications for maintaining this type of engagement of border police and military units for border protection by European socio-political elites include the current wave of refugees from Ukraine as a consequence of the Russo-Ukrainian conflict.

It could be said that contemporary migrations have become a kind of battleground, a source of bitter disputes among nationalist and liberal political leaders, as well as a source of disharmony within the EU (Gatrell, 2020, p. 14). This is confirmed by the “resistance of long-time residents who become strangers in their own homelands” (Laqueur, 2007, as cited in Gatrell, 2020, p. 14), and previous decades have shown that not all new immigrants are willing to adapt and integrate into the community, at least not to the extent that suits European societies.

As an example of a positive attitude of the host population towards the migrant population, it is necessary to emphasise the Republic of Serbia, which, despite being predominantly Christian, has maintained a positive and fair approach towards migrants, regardless of their predominantly Islamic faith.

This is supported by the fact that our citizens have experienced migration as a major human catastrophe, and research shows that people tend to behave with more solidarity in conditions of significant disasters (Cvetković et al., 2018).

*THE RESPONSE OF SELECTED SOCIO-POLITICAL ELITES
TO CHALLENGES AND THREATS CAUSED BY MIGRATION
IN EUROPE*

The relationship between migration and freedom of movement is closely intertwined, and disruptions of this connection occur, among other factors, through the construction of barriers or walls. It could be argued that walls are actually a “constant of international relations” (Vallet & David, 2012, p. 111, as cited in Živojinović, 2018, p. 21), dating back to the construction of the Great Wall of China, Hadrian’s and Antonine Walls, as well as the Roman Limes, and continuing through medieval fortifications, to contemporary forms of separating interest spheres, states, or opposing blocs (Živojinović, 2018, p. 21).

As Hannah Arendt suggests, city walls and national borders have almost always served the purpose of delimiting and demarcating a space within which people can move freely, leading to the conclusion that freedom remains “spatially limited” (Arendt, 1991: 238, as cited in Živojinović, 2018, p. 22).

This ‘restriction’ is also present in contemporary developments as a consequence of the migration crisis, particularly in the stances of certain global political power players.

For populist leaders, migration control is far less important than creating the illusion of its effectiveness. The renowned German philosopher, Immanuel Kant, is credited with developing the thesis that states should voluntarily open their borders to foreigners if their intentions are peaceful. However, contemporary states are now increasing border control with “heightened vigilance” (Cohen, 2019, pp. 201-202).

The two dominant and opposing viewpoints among representatives of socio-political elites regarding the resolution of the migration crisis, which were most pronounced within the EU from the outbreak of the crisis until 2021, are Angela Merkel’s position and Orbán’s ‘vision’. Merkel’s stance emphasised “respecting international humanitarian obligations” (OSCE, 2016, pp. 5-6) and opposing borders and walls, rejecting any “upper limits on the number of refugees that Europe should admit”. One of Merkel’s appeals was to replace illegality with legality, which clashed with Orbán’s view that saw the refugee crisis as a “mass invasion”. Hungarian Prime Minister Viktor Orbán predicted an increase in the number of refugees in 2015, the majority of whom were “raised in another religion and radically different culture”, which contradicted the EU’s identity that, according to him, is “rooted in Christianity” (*ibid.*).

Orbán’s vision remains unchanged to this day, as he continues to advocate for the revival of Christian identity in opposition to liberalism. Regarding former Chancellor Merkel, after her withdrawal from the political scene, she has been criticised for a lack of vision, and her name has been associated with the catchphrase ‘EU crisis manager’ (Adler, 2021).

In addition to the aforementioned European viewpoints on migration, it is significant to mention the perspective of a political leader from the East, Russian Federation President Vladimir Putin, who noted that the “European melting pot³” assimilates newcomers with interruptions and heating, but is incapable of “cooking” all the growing migration flows. The reflection of this is seen in politics through the emergence of ‘multi-culturalism’, which rejects integration through assimilation (Nikifor, 2014, p. 190-191).

Undoubtedly, there are differences in approaches to addressing contemporary migration issues between Western and Eastern European countries, as well as those in the north and south of the continent, manifested through the responses of European socio-political elites to pressing problems related to migratory movements.

Following the outbreak of the migrant crisis, some European borders were closed, leading to the phenomenon of ‘fragmentation’ within the European Union, and the need for ‘restructuring’ the European continent. The countries that were the first to respond to the influx of migrants by erecting fences were Hungary, Slovenia, Austria, and Croatia. The decisions were made by their socio-political elites.

However, despite the perceived effectiveness of these methods, it is clear that the construction of fences and the provision of ‘palliative humanitarian aid’ cannot solve uncontrolled migrations. Instead, efforts should be directed towards improving living and working conditions in poorer countries worldwide, especially those from which migrants predominantly come to Western European countries (Štavljanin, 2021).

The measures and decisions taken by representatives of political elites in individual countries undoubtedly influence the situation on the ground regarding migration. An illustrative example is the agreement reached in 2016 during a meeting of police chiefs in Zagreb, which included the closure of the Greek-Macedonian border. However, even after the agreement was reached, thousands of people were stranded between the borders due to insufficient cooperation among the states in accepting and directing migrants (*Zbrka oko izbeglica*, 2016).

Although European migration policy imposes a quota system on each member state, specifying the number of migrants to be accepted, some EU member states, particularly those in the Visegrád Group – Hungary, Poland, Czech Republic, and Slovakia – have decided, based on the views of their political representatives, to disregard the “EU bureaucrats’ regulations” in Brussels. This demonstrates to all European political leaders and not just the elites of the EU that they consider EU membership not necessarily linked to certain responsibilities (Simeunović, 2022, p. 434).

³ The term ‘melting pot’ refers to the homogenisation of a heterogeneous society, primarily used in the context of immigrant assimilation in the United States;

The lack of consensus among EU member states and other European countries regarding migration issues, as well as the erection of fences, has had a domino effect – as one country made its borders more impenetrable, each subsequent country introduced stricter controls (Perišić, 2018, p. 96). This was particularly evident in the cases of Hungary, Slovenia, and Croatia.

Despite Germany's commitment in September 2015 to voluntarily settle 500,000 refugees from Turkey annually, along with other EU member states as envisioned in the European Stability Initiative (ESI) plan (Štiglmajer, 2013, as cited in OSCE, 2016, p. 6), it succumbed to the renewal and fortification of borders, as well as the increase in the number of border authorities, especially along the Austrian border.

Regarding the results of implementing EU obligations in establishing a “voluntary solidarity mechanism” concerning the relocation of migrants to other countries, four European countries – Italy, Greece, Malta, and Cyprus – condemned the mentioned system in mid-November 2022, highlighting that as “countries of first entry into Europe”, they bear the greatest burden in establishing the mentioned mechanism (*Četiri mediteranske zemlje*, 2022).

Since this measure has not proven particularly effective, the European Commission introduced a new strategy in mid-2021 – the Voluntary Return Strategy for migrants who do not have the right to stay in the EU. Of those individuals who do not have the right to stay in the EU, only less than 30% voluntarily return to their country of origin (*EK predstavio novu strategiju*, 2021).

According to the estimation of the European Parliament Research Service, the costs of voluntary returns are significantly more favourable than the costs of returns from transit countries. Specifically, the cost of return from transit countries amounts to 2,500 euros per person, while the cost of forced return is 3,414 euros, and the funding for voluntary return is only 560 euros per person. Additionally, the agreement provides for a more flexible solidarity mechanism among member states, allowing those member states that do not want to accept asylum seekers to take on the “obligation of return” for irregular migrants (*EK predstavio novu strategiju*, 2021).

In the field of migration policy, it is essential to mention the concept of ‘communitarisation’⁴, which pertains to visas, asylum, immigration, and the international movement of people, and which can significantly reduce the powers of national parliaments of EU member states through: (1) loss of decision-making authority (powers transferred to the Council or, if necessary, the European Parliament under the supervision of the Court of Justice); (2) loss of legislative initiative (after five years, it

⁴ For more information, see <https://glosbe.com/en/en/communitarization>;

becomes the prerogative of the European Commission); (3) loss of prevention power (elimination of the unanimity decision-making procedure of the Council, in line with the new Article 67 of the Treaty on the Functioning of the European Union); and (4) weakening of control powers, which can become indirect, etc. In light of these powers, some EU countries seek to “transfer” migration control to third countries (Lavenex, 2006, p. 329, as cited in Azoulai & Vries, 2014, pp. 60-61). In fact, by distancing themselves from EU policies, individual member states bypass cooperation with EU institutions, although they should, in principle, turn to official Brussels first (Azoulai & Vries, 2014, pp. 60-61). Cooperation among EU countries in the field of migration changed in the mid-1990s, opening up numerous opportunities for stronger lobbying by non-governmental organisations in this area (Azoulai & Vries, 2014, pp. 60-61). Virginie Guiraudon states that such distancing by individual member states from EU policies could increase the involvement of populist-leaning NGOs (Guiraudon, 2001, as cited in Azoulai & Vries, 2014, p. 61).

Significant steps towards implementing the Migration and Asylum Pact in 2021 are reflected in the adoption of EU Regulation 2021/2303, which established the European Union Agency for Asylum (EUAA) in January 2022⁵, as well as in the EU Strategy on Voluntary Return and Reintegration and the implementation of the Action Plan on Integration and Inclusion. Prior to this, the leading EU institutions demonstrated their commitment to achieving the Migration and Asylum Pact by presenting their legislative priorities for 2021 in a Joint Declaration in December 2020, along with Joint Conclusions on policy goals and priorities for the 2020-2024 period (Gregori, 2022, p. 8).

The repercussions of the current situation in the Balkans regarding migration can be viewed through several perspectives, with two situations being particularly prominent. The first is the period following the outbreak of the migrant crisis, characterised by a mostly welcoming attitude towards migrants and the formulation of an ‘open-door’ policy. The second is the period between mid-2016 and the present day, during which the attitude towards migrants has shifted towards scepticism and fear (Gregori, 2022, p. 7).

After German Chancellor Angela Merkel launched the famous slogan “We can do it” (*DE* Wir schaffen das) in late August 2015, it encouraged some European countries on the Western Balkan route to facilitate the easier movement of asylum seekers towards Germany by providing them with bus and/or train transport. Among these countries, Macedonia and Serbia took the lead (Coco, 2017, p. 296, as cited in Perišić, 2018, p. 94).

⁵ The mentioned agency replaced the existing European Asylum Support Office (EASO);

Austria's decision to limit the admission of asylum seekers in early 2016 triggered a chain reaction in the region, resulting in stricter control of migrants at entry points and leading to their returns or refusals of admission. This primarily affected those of Afghan origin. As a consequence, Greece engaged in diplomatic activities to address the issue of 'migrant accumulation' at the border with Macedonia. On the other hand, Germany expressed dissatisfaction with the measures implemented by Austria, as Austrian authorities had 'allowed' too many migrants to pass through towards Germany.

In Germany, Angela Merkel's stance on migration led to a decline in her popularity, despite the fact that Germany was the only European country to reap significant economic and other benefits from migration movements in the early years of the migrant crisis. On the other hand, the once staunch stance of Viktor Orbán, which was criticised by the majority of European political elites, became tacitly accepted by the European majority after 2019, enhancing Orbán's 'prestige' both domestically and internationally.

Regarding the situation in the Western Balkan region in terms of migration, the views of its political leaders and European political leaders align in some aspects, but differ in others. While some perceive migration issues as an "institutional-political verification of security risks" (Smajić, 2021), as was the case in Bosnia and Herzegovina immediately after the outbreak of the migrant crisis, with discussions continuing in the country throughout 2020 regarding the "legal deportation of over 9,500 irregular migrants from countries not in conflict zones" (Smajić, 2021), others strive to ensure the respect for the basic rights of migrants, as is the case in our country.

In the current circumstances regarding migration movements towards Europe, it is important to mention the wave of refugees from the East, specifically from Ukraine and Russia, which was triggered by the conflict between these two countries in February 2022. There are differences between the migrants comprising these two waves, not only in terms of those coming from the Middle East and Africa being immigrants while those coming from Ukraine are refugees but also in terms of their religious and cultural structure. While migrants from the Middle East and Africa are predominantly of the Islamic faith, those coming from Ukraine are Christians, mainly Catholics. The growing resistance in EU countries to the large influx of migrants from the Middle East and Africa undoubtedly stems from the fact that Muslim migrants traditionally face difficulties in integrating into European societies, even in countries where they have been present for a long time, such as the United Kingdom, France, or Belgium. On the other hand, refugees from Ukraine already share key European values with members of the societies they migrate to. Overall, this influences the decision-making process of European political elites, as reflected in the documents regarding EU migration policy.

This suggests that socio-political elites should take into account not only the rational but also the irrational effects of the decisions they make, particularly regarding religious, racial, and ethnic dimensions, as they have a significant impact on social cohesion and stability. Furthermore, contemporary socio-political elites need to be held accountable for their actions through diverse democratic mechanisms, as their decisions affect an increasing number of people, including those who are not citizens of the countries they lead.

CONCLUSION

Based on the aforementioned, it can be concluded that European socio-political elites have partially shared and partially divergent views on migration. In both cases, they are guided by the economic and political interests of their countries, or the EU if their states are its members. There is a noticeable deviation from the political principles proclaimed by these societies regarding human rights and freedoms when it comes to migration. The main reasons for this can be identified as financial, cultural, and religious in nature. A significant justification for this divergence among European socio-political elites lies in the evident slow and insufficient integration of migrants into European societies, particularly those of the Islamic faith, who constitute a vast majority of migrants arriving in Europe in the past decade. This is also demonstrated by the more positive attitude of European political elites towards refugees from Ukraine, who are of Christian faith and culturally relatively close to the European societies they flee to.

The significance of financial reasons for the distancing of European socio-political elites from proclaimed principles is evident in the greater degree of deviation among poorer European countries, at least when it comes to adopting official political positions. In wealthier European states, the formal stance of their socio-political elites remains close to the proclaimed democratic principles regarding migration and the treatment of migrants. However, precisely these societies witness a significant political rise of the right-wing and xenophobia as a reaction to such stances of their political elites, best exemplified by the case of former German Chancellor Angela Merkel.

Despite all of this, it can be concluded that European countries, especially EU member states, remain committed not only declaratively but also fundamentally to the principles and values of human rights and freedoms that have been, and continue to be the political banner of those societies. They have affirmed this commitment in many ways, including adopting appropriate decisions concerning xenophobia even before the intensification of migration flows in 2015 (Dimovski, 2021a, p. 740). In fact, it can be said that over time, due to pragmatic reasons, there has

been a certain correction of these attitudes, with elites from wealthy European societies looking to the nationally efficient migration policies of the Visegrád Group countries for guidance. This is evidenced by the new regulations adopted by the EU concerning migration, which fully preserve the spirit of the principles related to human rights and freedoms in the domain of migration policy, while allowing for certain deviations from them in practice. Undoubtedly, this reflects the views of European socio-political elites, both when it comes to norm-setting and the implementation of migration policy.

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ОДНОС ЕВРОПСКИХ ДРУШТВЕНО-ПОЛИТИЧКИХ ЕЛИТА ПРЕМА МИГРАЦИЈАМА

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Резиме

Иако европске друштвено-политичке елите углавном немају усаглашен став према мигрантској политици, оно што им је заједничко јесте да се оне углавном руководе економским и политичким интересима својих земаља, те неретко и идеолошким опредељењима политичких партија које представљају. Такође, да се констатовати да су све значајнија одступања од принципа прокламованих од стране европских друштвено-политичких елита на плану људских права и слобода која се доводе у везу са миграцијама, те да је степен тих одступања већи код сиромашнијих европских земаља.

Ауторка је у раду понудила одговоре појединих друштвено-политичких елита на изазове и претње узроковане миграцијама у Европи. Као два доминантна става супротстављена су становишта Меркелове и Орбана, која указују на несумњиво постојање великих разлика у одговорима на актуелна мигрантска питања између носилаца политичке власти у Европи и самој ЕУ, као и на јачање тенденције окретања европских друштвено-политичких елита својим националним интересима, што је у потпуности на трагу Орбанових ставова.

На крају рада нуде се и поједине препоруке на плану супротстављања безбедносним изазовима и претњама које носе савремене миграције ка Европи, а које се тичу одговорнијег приступа европских друштвено-политичких елита према миграцијама и миграционим токовима.

ASSESSING THE EPIDEMICS AND PANDEMICS' IMPACT ON SUPPLY CHAINS IN THE AUTOMOTIVE INDUSTRY

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Abstract

Today, supply chains operate in a very uncertain global environment, so one of the basic tasks is to maintain a higher level of resilience. Great threats to the resilience of supply chains, which occur at time intervals, are labelled in literature as health crises. The appearance of diseases, due to their nature may cause epidemics and pandemics', which can greatly endanger stability and lead to interruptions in supply chain processes. A major problem cited in literature concerning the specifics of such situations relates to the limited ability to predict both the causes and consequences of such actions. Due to that, it is difficult to manage crisis situations, and as a logical consequence, there are immeasurable negative effects. The aim of this paper is to examine the negative effects of various epidemics and pandemics on production in the automotive industry. The analyses were employed with the aim of defining the extent to which an epidemic and a pandemic disrupt production activities in supply chains. In addition, it is important to consider the characteristic of viruses, as well as the differences in the average values of production in the years when the crisis occurred. In order to analyse the hypotheses, the authors used Wilcoxon's test to check the statistical significance of changes in production levels. To examine the significance of the difference in average changes in production for the duration of the epidemics and the pandemics, the authors used Friedman's test in SPSS.

Key words: supply chain, automotive industry, production, viruses, pandemic.

ПРОЦЕНА УТИЦАЈА ЕПИДЕМИЈА И ПАНДЕМИЈА НА ЛАНЦЕ СНАБДЕВАЊА У АУТОМОБИЛСКОЈ ИНДУСТРИЈИ

Апстракт

Данас ланци снабдевања функционишу у веома неизвесном глобалном окружењу, па је један од основних задатака одржавање већег нивоа отпорности. Претње које угрожавају отпорност ланца јављају се у временским интервалима

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и у литератури су означене као здравствен екризе. Појава болести, које својим деловањем изазивају епидемије и пандемије, може у великој мери угрозити стабилност и довести до прекида процеса у ланцима снабдевања. Велики проблем који се наводи у литератури, а који се тиче специфичности оваквих ситуација, односи се на ограничену способност предвиђања како узрока тако и последица кризних ситуација. Из тог разлога је тешко управљати кризним ситуацијама, а немерљиви негативни ефекти представљају логичну последицу. Циљ овог рада је да испита негативне ефекте у производњи у аутомобилској индустрији узроковане појавама различитих епидемија и пандемија. Коришћене анализе имају за циљ да дефинишу у којој мери епидемије и пандемије ремете производне активности у ланцима снабдевања. Поред тога, важно је анализирати карактеристике вируса, као и разлике у просечним вредностима производње у годинама када је криза наступила. У циљу испитивања хипотеза, аутори су користили Вилкоксон тест за проверу статистичке значајности промена нивоа производње. У циљу испитивања значајности разлике у просечним променама производње у годинама епидемија и пандемија, аутори су користили Фридманов тест у SPSS-у.

Кључне речи: ланац снабдевања, аутомобилска индустрија, производња, вируси, пандемија.

INTRODUCTION

The disasters caused by epidemic or pandemic outbreaks are different from other disasters due to two specific features: their long-term disruption and their increasing propagation (Dasaklis et al., 2012). The importance of addressing epidemic/pandemic outbreaks nowadays is even greater, as the general framework in which they may occur has dramatically changed during the last years (Dasaklis et al., 2012, p.393). The global cost of an epidemic/pandemic depends on the number of affected countries, and then on the required duration of lockdown policies (Sharma et al., 2020). A greater appreciation of the economy-wide impacts of epidemics/pandemics (i.e. to determine macro-economic trends towards a general equilibrium model, rather than effects on only one sector or market) is warranted (Smith et al., 2019). The extremely negative impact of epidemics/pandemic seriously jeopardises the business of the supply chain, preventing activities among partners.

The phrase 'Black Swan' is mentioned in London in the 16th century, and is based on the teachings of the Old World, which start with the assumption that all swans must be white, because all historical writings indicate this. In this sense, there is no possibility that black swans exist. After the black swan was discovered in Australia in 1697, the term 'Black Swan' began to be used as a synonym for denying something that was considered impossible. Facing the black swan caused a big surprise. The 'Black Swan' effect is defined by the following attributes: rarity - an event that is outside the scope of normal expectations; extreme impact and hindsight - despite its status 'outside the scope of

normal expectations'; and the fact that the occurrence of such an event must be explained, after it has been shown that such an event occurred and that it could have been predicted (Anđelković, 2015). The last pandemic to occur, as a risk factor of supply chain disruption, has all the characteristics of a black swan phenomena (Belhadi et al., 2021). Previous researches were focused on natural disasters, wars and terrorism, political environment, economic instability, economic downturns, and social and cultural problems (Ghadir et al., 2022), whereas pandemics were ignored.

Requirements are placed to researchers for a better understanding of supply chain phenomena in crisis conditions caused by epidemic/pandemic in order to help supply chain managers better prepare for the next crisis and foster translucency (i.e., the ability to simultaneously restore some processes and change – often radically – others) (Craighead et al., 2020, p.838). The situation related to the SARS-CoV-2 (Severe Acute Respiratory Syndrome Corona virus 2) virus has greatly affected the business activities in supply chains, and a similar impact could be seen several times in the last 30 years. The corona virus (COVID-19) outbreak shows that an epidemic/pandemic can seriously wreak havoc on supply chains around the globe (Queiroz et al., 2020).

Global financial implications are likely to be felt across all industries. Companies in the tourism, transport of people and goods, hospitality, logistics, automotive and aviation sectors are particularly exposed (Mihajlović & Trajković, 2020). The final extent of losses is not yet known, but the development of economic models, combined with epidemiological models and network analysis techniques, can yield more realistic estimates and aid in selecting appropriate strategies in a timely manner (Yu & Aviso, 2020, p.183).

LITERATURE REVIEW

The interruptions that have occurred in chains in recent years were very often caused by threats arising from health crises. Although not highlighting epidemics or pandemics specifically, four of the five disruptions are clearly related to pandemic/epidemic disruptions (Golan et al., 2020, p.223). Emerging pandemics threaten global health and economies, and are increasing in frequency (Pike et al., 2014). One of the problems is the degree of transmission, which is very pronounced when it comes to viruses. Presently, global supply chains are widely believed to transmit the crisis across countries (Bonadio et al., 2020). Since supply chains currently operate in the global market, connections with international partners are the key to the realisation of business activities.

In the past three years, global supply chains, especially in the manufacturing sectors (i.e. automobile, electronics, pharmaceutical etc.) and service sectors (i.e. airline, retail suppliers, transportations etc.), have

been influenced by the serious effects of the SARS-Cov-2 virus, or the Covid-19 disease, spreading. Border closures and lockdowns around the world caused problems in supply. Global supply chains have been profoundly impacted due to their high dependency on their vulnerable suppliers. For example, around 200 firms listed as Fortune Global 500 firms work with factories in Wuhan, where the outbreak originated (Kilpatrick & Barter, 2020).

The automotive industry is especially important for a country's economy because of its contribution to the reduction of unemployment, and its contribution to the increase of gross domestic product. For example, the UK's annual turnover in the automobile industry is over £82bn, adding a significant £18.6bn to the economy while employing over 823,000 personnel across the wider automotive sector (Belhadi et al., 2021). Therefore, in crisis situations, the governments of countries make enormous efforts to ensure the survival of the automotive industry. Wuhan, China provinces, as a focal point of the SARS-CoV-2 virus, is the location of lot producers of components to global automobile manufacturers (Flegontova & Ponomareva, 2020, p.21). Closing producing capacities in Wuhan had a direct influence on global automotive production (Belhadi et al., 2021). The pandemic caused by the spread of the SARS-CoV-2 virus led to the closure of sales halls, as well as production plants. For example, the Mazda-Toyota joint-venture project was stopped, as was the project of Fiat Chrysler Automobiles in Detroit. Manufacturing plants for producing automobiles and their parts around the world slowed their work because of the protocols designed to increase security, such as temperature screening before entering the site, wearing medical-grade masks, and social distancing (Belhadi et al., 2021).

The outbreak in Wuhan was not the first time Asian economies were faced with the spread of viral infections. Countries from this continent have already experienced SARS-CoV (Severe acute respiratory syndrome corona virus) and MERS-CoV (Middle East respiratory syndrome corona virus), and the negative consequence of these diseases. The purpose of this paper is to summarise the impact of SARS, MERS, and SARS-CoV-2 on the automotive industry, with specific focus on some characteristics of these diseases. SARS-CoV-2 caused significant supply shocks due to non-pharmaceutical interventions, such as lockdowns, while SARS and MERS mainly caused demand shocks (Tanaka, 2022).

The onset of the disease, due to the spread of the SARS-CoV (Severe acute respiratory syndrome corona virus), MERS-CoV (Middle East respiratory syndrome corona virus) and SARS-CoV-2 viruses, destabilised supply chains to varying degrees. Connectivity among partners was also emphasised in previous epidemics such as SARS-CoV and MERS-CoV. SARS was a new disease in autumn of 2002, and it first occurred in Guangdong Province, China, and spread to 29 countries, with 8422 cases

and 916 fatalities (Cherry & Krogsrad, 2004). One study examined the impact of SARS on business activities in Canada. The outbreak of severe acute respiratory syndrome (SARS) in Toronto and other cities in 2003 showed a heightened sensitivity of places in the global economy to rapid changes brought on by the acceleration of social and ecological relationships (Keil & Harris, 2006, p.491).

Chou et al. (2004) examined the impact of SARS on Taiwan's economy. They reported that nearly 30% of international flights into Taiwan were cancelled during the outbreak, reducing passenger count by 122,000 in the second quarter of 2003 (Chou et al., 2004, p. 89).

Nearly ten years later, on the 13th of June, 2012, the first case of the Middle Eastern Respiratory Syndrome (MERS) disease was recorded in Jeddah, Saudi Arabia. Due to the virus' rapid transmission, the country that suffered the greatest losses was the Republic of Korea. The rapid and wide spread of the MERS-CoV infection in South Korea during the outbreak had a disastrous impact on the whole country, and highlighted our limited knowledge of MERS (Min et al., 2016). The MERS infection in the Republic of Korea has had a special impact on the labour market. More than half of the waged workers among young, middle aged and old people in Korea are non-regular workers (Lee & Cho, 2016).

According to IHS Markit Automotive, 11 of the Chinese provinces which were on strict lockdown account for more than two-thirds of the vehicle production in the country. Additionally, these provinces supply auto-parts to carmakers in the US, Europe, and South Korea (Ayittey et al., 2020, p.473). Automotive sectors are similarly international, with highly specialised suppliers that make short-term substitution difficult (Guan et al., 2020, p.583).

The authors of one study simulated the dependence between China and other markets at the begging of the pandemic. In addition, they looked at the spill-over effects on the rest of the world. With the spread of COVID-19 to highly developed western countries, labour and transportation constraints in Germany and many of the countries that supply auto parts and raw materials caused a decrease in production by the German automotive sector amounting to 28.8% (24.8% directly due to local containment, and 4.0% due to effects upstream) (Guan et al., 2020, p.583). Such decreases in German production rippled upstream to suppliers in Hungary, Spain, Italy and the United States, and downstream, with demand for German cars decreasing in the United States, China and Austria by 29.1%, 37.6% and 22.3%, respectively. In the case of a global spread, and more widespread and longer-term lockdowns, the output of the German automobile industries decreased by a further 0.9% (Guan et al., 2020, p.583).

According to Fortune (2020), more than 94% of the top 1000 companies have been negatively affected by this outbreak (El Baz & Ruel, 2021). Major automobile companies have been cutting jobs with decreas-

ing sales, owing to the ongoing pandemic (Belhadi et al.,2021). Apart from being a global health concern, COVID-19 continues to have major consequences on the world economy, and experts have predicted that COVID-19 will lower global gross domestic product growth in 2020 by one-half of a percentage point (from 2.9% to 2.4%) (Gupta et al., 2020).

In examining the impact of SARS-CoV-2 on supply chains, the authors Inoue and Todo examined Japan's connection with other regions. Therefore, this study examines the propagation of the economic effect of the lockdown of a city to prevent the spread of COVID-19 to other regions through supply chains (Inoue & Todo, 2020). In their study, the authors simulated the locking effect of large industrial cities. Due to its size and importance, they focused on Tokyo. When Tokyo is locked down, the value-added production of Tokyo immediately becomes almost zero. Because the daily production of non-essential sectors in Tokyo is estimated to be 309 billion yen, or approximately 2.9 billion US dollars, the total direct loss of production in Tokyo due to lockdown is 309 billion yen multiplied by the number of days in the lockdown period (Inoue & Todo, 2020).

RESEARCH METHODOLOGY

All business activities are currently preoccupied with the ongoing COVID-19 pandemic. The current impact of this outbreak on the manufacturing firms is already very severe, and medium-to-long-term impacts are predicted to be higher than that of any other previous major outbreaks such as the 2003 outbreak of SARS (Paul & Chowdhury, 2020, p.107). In order for the analysis to be complete, the authors of this paper will look at the current pandemic in relation to the two health crises in the last 30 years to have left somewhat greater consequences. In addition to the current crisis, the analysis will focus on data from the years 2003 and 2012, when the world, or at least some part of it, was faced with the SARS-CoV and MERS-CoV viruses. The focus of the analysis will be on production in order to see the impact of these viruses on business activities. The authors will examine whether the appearance of the virus causes a decrease in production in the automotive industry. Also, we will examine whether there are significant differences in the percentage changes in the level of production in the years when the crises occurred.

The following figures show the production trends and the absolute values to be used in the analysis.

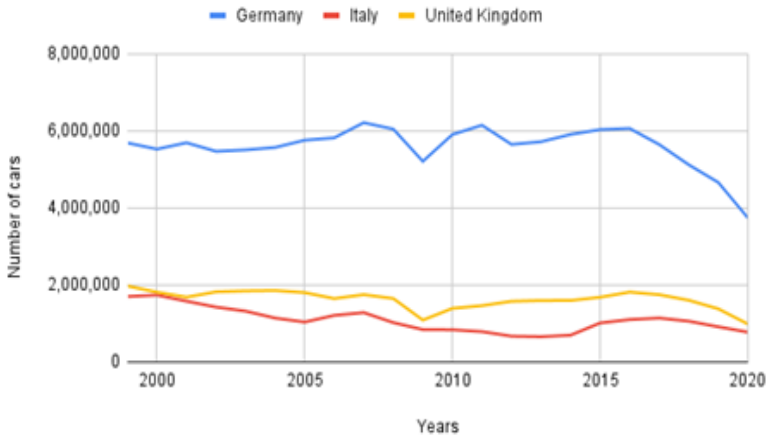


Figure 1. Numbers of cars produced in Europe

Source: Authors according to OICA, <https://www.oica.net/production-statistics/>, Accessed 10th June 2021.

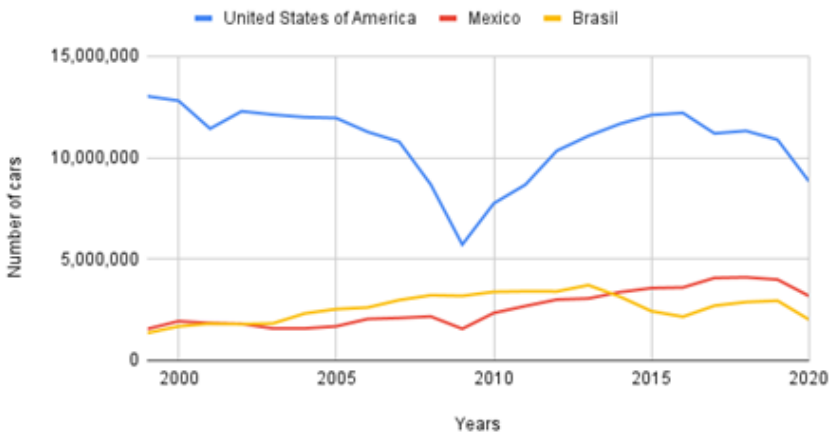


Figure 2. Numbers of cars produced in America

Source: Authors according to OICA, <https://www.oica.net/production-statistics/>, Accessed 10th June 2021.

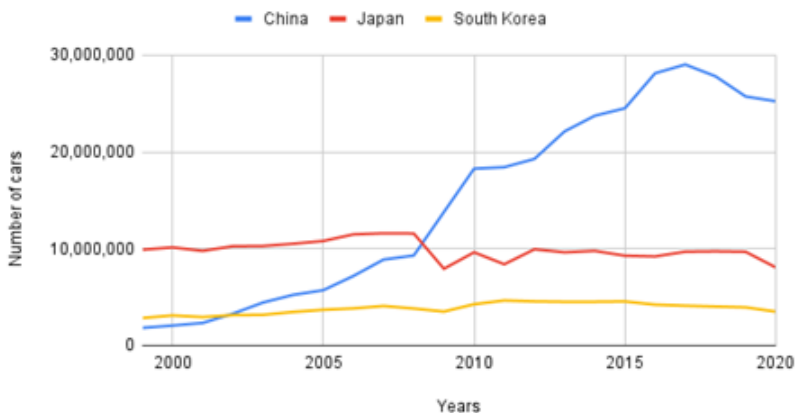


Figure 3. Numbers of cars produced in Asia

Source: Authors according to OICA, <https://www.oica.net/production-statistics/> Accessed 10th June 2021.

In order for the analysis to be complete, the mentioned crisis years and production in the automotive industry will be considered from the aspect of the characteristics of the mentioned viruses. Table 1 presents the basic indicators of these viruses, which will be evaluated later in the paper.

Table 1. Characteristics of patients with SARS-CoV-2, SARS-CoV, and MERS-CoV

| Virus | Transmission human to human | Incubation period (Days) | Mortality rate | Confirmed cases |
|------------|---|--------------------------|-------------------------------------|--|
| SARS-CoV | Transmitted mainly between humans through close contact- YES | 2-7 | 10% | 8096 |
| MERS-CoV | Limited transmission between humans through close contact-YES | 5-6 | 34.4% | 2519 (From 2012 until January 31, 2020) |
| SARS-CoV-2 | Human-to-human transmission occurs through close contact-YES | 7-14 | 2.03% (28.10.2021.) ¹ | 246251235 (28.10.2021) |

Source: Rabaan et al., 2020

¹Based on author's calculation according to Worldometers, <https://www.worldometers.info/coronavirus/>, Accessed 28th October 2021.

In order to conduct the research, the authors used Wilcoxon's and Friedman's tests. Wilcoxon's test works with metric (interval or ratio) data that is not multivariate normal, or with ranked/ordinal data. Generally, it is the non-parametric alternative to the dependent samples t-test. Wilcoxon's sign test tests the null hypothesis that the average signed rank of two dependent samples is zero. Whenever you have data that is composed of definite scores, Wilcoxon's signed rank test is preferred. In the analysis, the authors used Friedman's test. This non-parametric alternative to analysis of variance for repeated measures has been applied because of a small sample and, therefore, non-fulfilment of assumptions for the application of parametric methods. Friedman's test is used to test for differences between groups when the dependent variable being measured is ordinal. It is used to determine whether or not there is a statistically significant difference between the means of three or more groups in which the same subjects show up in each group. It can also be used for continuous data that has violated the assumptions necessary to run the one-way ANOVA with repeated measures.

The Evaluation of Virus Characteristics

The first characteristic of the virus refers to the mode of transmitting the infection and to the subject involved in the transmission. In all three viruses, this segment is identical, since all viruses are transmitted through contact between humans. Another characteristic refers to the incubation period. A longer incubation period makes it difficult to detect the virus. After that, the mortality rate and the total number of cases will be analysed. It is important to note that the data relating to the SARS-CoV-2 virus pandemic used in the analysis was observed in the moment of writing this paper, as the long term effects of the infection are still unknown due to the duration of pandemic.

Virus evaluation is performed on the basis of the fact that the authors assigned coefficients based on a comparative analysis of these characteristics. In the analysis of the sequence, the coefficient values indicate a lower danger, and also a lower degree of virus influence. When it comes to transmission, the coefficient assigned by the authors is 1, since all viruses are transmitted from one human to another through direct contact. When it comes to the incubation period, it is the longest in relation to SARS-CoV-2, and therefore a coefficient of 3 was assigned. The highest mortality rate will correspond to the highest coefficient. This is the case with the MERS-CoV virus, while, according to current data, the lowest mortality rate relates to the current pandemic. When talking about the number of cases, it is by far the largest in relation to the current pandemic, and the smallest in relation to the epidemic of the MERS-CoV virus; accordingly, the coefficient assigned is 1. The values regarding the relativity of these indicators are shown in the table below. According to the

characteristics of the virus, the current pandemic has the greatest impact on the automotive industry, which is going to be tested.

Table 2. Evaluation of viruses

| Virus | Transmission human to human | Incubation period (Days) | Mortality rate | Confirmed cases | SUM |
|------------|-----------------------------|--------------------------|----------------|-----------------|-----|
| SARS-CoV | 1 | 1 | 2 | 2 | 6 |
| MERS CoV | 1 | 2 | 3 | 1 | 7 |
| SARS-CoV-2 | 1 | 3 | 1 | 3 | 8 |

Source: Authors according to Rabaan et al., 2020 and Worldometers, <https://www.worldometers.info/coronavirus/>, Accessed 28th October 2021.

The Impact of the Virus on the Automotive Industry

By evaluating these virus characteristics, we can assume that the current pandemic has the greatest impact on the automotive industry. If we look at the charts and individual trends in production in a specific country, the following can be pointed out.

According to the data related to production in Germany, it can be said that, in 2003, there was no negative impact on production because Germany achieved a growth of 0.7% compared to the previous year. During 2012, a decline of 8.1% was observed compared to the previous year, with a tendency to stabilise. In 2020, the decline was the most drastic and it amounted to 24% compared to the previous year. For the German market, it can be said that the smallest impact was exerted by the SARS-CoV epidemic, while the largest negative impact is present in the current pandemic, according to the movement of production.

When it comes to Italy, the relative negative values of production are recorded in all three years subject to this analysis. In 2003, there was a decrease in the decline compared to the previous one, while a drastic increase followed in 2012. Since this is a country which suffered huge consequences in the health sector during the current pandemic, that impact was transferred to the economy and the year 2020 recorded double digit negative values. It can be said that the SARS-CoV epidemic had the least impact, while it is impossible to precisely gauge the impact of the other two, because the relative values of the decline are almost identical.

In 2003 and 2012, the UK market achieved an insignificant growth in production compared to previous years, and it can be said that the crisis in that period did not have a significant impact. During 2020, significant consequences for car production were noticed, and the decline in production was 29%. For the UK market, it can be concluded that the biggest impact is exerted by the current pandemic, while the impact is relatively identical in the first two cases.

Speaking of the US market, it can be said that there was a decline in production amounting to 1.3% in 2003, which continues in the current pandemic, noting that the decline in 2020 reached as much as 19%. During 2012, growth tendencies were recorded, so it can be said that the smallest impact was achieved in that year. Current data indicates that the current pandemic has the greatest impact.

When it comes to Mexico, there was a decline in 2003, and there was an increase in production activities in 2012. Data for 2020 indicates a large drop in production amounting to 21%. It can certainly be said that the biggest consequences are the ones from the current pandemic.

In the case of Brazil, 2003 does not show any significant effect on production, while a smaller decline can be observed in 2012. Certainly, the worst impact is expected in the current pandemic, because a drastic drop in production of 32% was recorded in 2020.

Talking about China, growth was achieved in 2003 compared to the previous year. In 2012, a growth of 4.6% was recorded. The biggest consequences are recorded in the current pandemic, wherein negative values exhibit a tendency to increase. Relevant experts point to the fact that the Chinese car market is shrinking, since the initial focus of the current pandemic was the Chinese province of Hubei. According to industry consultant LMC Automotive, China's auto market will shrink between 3% and 5% in 2020 if the corona virus outbreak continues into the second quarter (Ayitney et al., 2020, p.474).

The situation is similar when it comes to Japan, which records the most significant losses in the current pandemic. Data indicating the severity of the consequences can be seen through the losses that occur in both the internal and the external environment of the chains themselves. The results indicate that when Tokyo is locked down for only one day, the production loss outside Tokyo, albeit these areas are not locked down, is already 252 billion yen, or 82% of the production loss in Tokyo (Inoue & Todo, 2020).

South Korea recorded a slight increase in 2003, and a slight decline in 2012. The situation is similar to other analysed countries when it comes to the current pandemic, because South Korea records a drop in production amounting to 11%.

Based on the above data, it is possible to assume that the greatest negative impact is exerted by the current pandemic, and the authors test that hypothesis in the continuation of the paper. Additionally, the authors test the statistical significance of the change in production in the specific years when the viruses appeared.

RESEARCH RESULTS AND DISCUSSION

In order to test the stated hypotheses, the authors examined the significance of the change in the level of production in the years when the viruses appeared, and in the year before their appearances using Wilcoxon's test. The following table shows the values of production in the specific years used in the analysis.

Table 3. Number of produced cars in the years when the epidemics and pandemics occurred

| Country | P2002 | P2003 | P2011 | P2012 | P2019 | P2020 |
|--------------------------|----------|----------|----------|----------|----------|----------|
| Germany | 5469309 | 5506629 | 6146948 | 5649260 | 4661328 | 3742454 |
| Italy | 1427081 | 1321631 | 790348 | 671768 | 915305 | 777165 |
| United Kingdom | 1823018 | 1846429 | 1463999 | 1576945 | 1381405 | 987044 |
| United States of America | 12279582 | 12114971 | 8661535 | 10335765 | 10880019 | 8822399 |
| Mexico | 1804670 | 1575447 | 2681050 | 3001814 | 3986794 | 3176600 |
| Brazil | 1791530 | 1827791 | 3407861 | 3402508 | 2944988 | 2014055 |
| China | 3286804 | 4443686 | 18418876 | 19271808 | 25720665 | 25225242 |
| Japan | 10257315 | 10286218 | 8398630 | 9943077 | 9684298 | 8067557 |
| South Korea | 3147584 | 3177870 | 4657094 | 4561766 | 3950617 | 3506774 |

Source: OICA, <https://www.oica.net/production-statistics/>, Accessed 10th June 2021.

Based on Wilcoxon's test, the authors obtained the results shown in the following table.

Table 4. Statistic significance of changes in car production in the consecutive years

| Years | Test statistics | p value (Significance) |
|---------------|-----------------|------------------------|
| P2003 - P2002 | Z=-0.178 | 0.859 |
| P2012 - P2011 | Z=-1.125 | 0.260 |
| P2020 - P2019 | Z=-2.666 | 0.008 |

Source: Authors calculations

According to the realised level of significance (p-value), the authors concluded that there wasn't statistically significant decline in production in automotive industry during the crisis caused by the SARS-CoV and MERS-CoV viruses, while that was different in relation to the SARS-CoV-2 pandemic. In the first two cases, those values are higher than the reference values (0.05), while the value is lower and amounts to 0.008 in the case of the current pandemic. Testing results showed that only the SARS-CoV-2 virus caused significant changes in production in the automotive industry. Based on the virus characteristics, it has been proven that the greatest negative impact on production in automotive supply

chains is exerted by the current pandemic. Further in the analysis, the authors tested the statistical significance of the differences in production levels between the three specific years in which the health crises occurred. In order to define these differences, relative changes in production in years when the crises appeared and one year preceding each of the crises was used. The relative changes are shown in the following table.

Table 5. Relative changes in production in the consecutive years

| Country | P2003-P2002 | P2012-P2011 | P2020-P2019 |
|----------|-------------|-------------|-------------|
| Germany | 0.0068 | -0.081 | -0.1971 |
| Italy | -0.0739 | -0.15 | -0.1509 |
| UK | 0.0128 | 0.0771 | -0.2855 |
| USA | -0.0134 | 0.1933 | -0.1891 |
| Mexico | -0.127 | 0.1196 | -0.2032 |
| Brazil | 0.0202 | -0.0016 | -0.3161 |
| China | 0.352 | 0.0463 | -0.0193 |
| Japan | 0.0028 | 0.1839 | -0.1669 |
| S. Korea | 0.0096 | -0.0205 | -0.1123 |

Source: Authors calculations

In order to examine whether there is a significant difference in the average relative changes in the level of production in the years when the crises began, the authors used Friedman's test. Based on the values of χ^2 (Chi-square) and the significance level (Asymp. Sig), it can be concluded that there is a significant difference in the percentage changes in production levels between the years in which the viruses occurred. This analysis showed the different impact of health crises on the automotive industry. More precisely, it showed a significant difference in the impact between specific viruses that acted on production in the automotive industry.

This test showed a positive correlation with Wilcoxon's test. The authors confirmed the hypothesis regarding significant differences in the percentage changes in the level of production in the years when the crises began, and also showed the coincidences occurring in the ongoing pandemic via the results of Wilcoxon's test. Testing further revealed significant differences between the percentage changes in the years when the viruses appeared, which showed that each virus had different levels of impact.

During further analysis, the authors examined the specific years in which the viruses appeared, to determine which of those showed a statistically significant difference in the effects of the crises on the automotive industry. Based on Wilcoxon's test, the authors found that a statistically significant difference in effects in the automotive industry exists when we compare the years 2012 and 2020. There is also a significant difference when comparing 2003 and 2020, while there is no significant difference between 2003 and 2012.

CONCLUSIONS

Pandemics of emerging infectious diseases can have very negative consequence. Due to the great impact that health crises can have on the automotive industry, numerous studies examining these impacts are being done. The catastrophic impact of the spread of the SARS-Cov-2 virus has influenced the emergence of a serious number of articles, studies and researches. However, there is still a lack of systematisation of the results obtained by researchers and scientists in the previous period regarding the impact of the spread of this disease on the supply chain. But all researchers agree on one theme – that the emergence of this virus has shown that supply chains continuously find ways to increase their resilience and sustainability (Moosavi, Fathollahi-Fard & Dulebenets, 2022).

The emergence of the pandemic and the effects of its spread through supply chains have shown the low level of resilience of global supply chains and the need to work on defining measures to increase their resilience in health crisis conditions in the future. However, due to their global character, pandemics like this will require global cooperation and the harmonisation of measures to increase resilience not only between companies in the supply chain but also between countries (Golan et al., 2020, p.223). This is the only way to reduce the probability of new pandemics, or to minimise their negative effects if they do occur (Strange, 2020). For these reason, models that simulate the spread of viruses have been created, aimed at reducing the rate of transmission. Disease spread models have been developed to predict the spread patterns and the effect of intervention strategies on populations with complex social and spatial structures (Ekici et al., 2014, p.12). The models were created so that even in conditions of upcoming epidemics and pandemics, business could be conducted with the reduction of harmful effects.

In the literature that examines the domain of the impact of epidemics and pandemics on supply chains in the automotive industry, the current pandemic occupies a dominant place, because it is assumed that it will have the greatest impact. Such attitudes influenced the authors of this paper, and ultimately shaped the analyses presented. The comparison between the health crises analysed by the authors in this paper aimed to examine the different impacts that similar situations may have on automobile production. Such situations are especially specific because there is a pronounced spill-over effect of negative influences, and for that reason, countries from different continents were included in the paper.

Based on the research, the authors conclude that the greatest impact on the levels of production in the automotive industry was achieved by the current pandemic. In addition, a statistically significant difference was observed in the level of average production in years

marked as the beginning of the epidemics and pandemics. The effect that such disturbances have on the supply chains in the automotive industry is undeniable, as is the fact that the chains must increase their resilience in order to more effectively withstand similar situations in the future.

This article also has a few limitations. The first one may relate to the choice of countries analysed in the paper. The authors have made this choice believing that these countries can be identified as those that significantly participate in the automotive industry worldwide, which is the result of a free assessment. Another limitation of the analysis relates to the fact that the SARS-CoV-2 pandemic is still ongoing. The data used by the authors to calculate indicators may change in the long run due to the uncertainty of the current pandemic.

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ПРОЦЕНА УТИЦАЈА ЕПИДЕМИЈА И ПАНДЕМИЈА НА ЛАНЦЕ СНАБДЕВАЊА У АУТОМОБИЛСКОЈ ИНДУСТРИЈИ

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Резиме

Отпорност ланаца снабдевања може бити угрожена бројним факторима из интерног и екстерног окружења. Степен контролабилности фактора који делују из екстерног окружења је мањи, те дејство поменутих фактора може у значајнијој мери дестабилисати ланце снабдевања. Епидемије и пандемије, као фактори који свој утицај остварују из екстерног окружења, утичу на ланце снабдевања реметећи процесе и активности у њима. Посматрајући епидемије и пандемије, и поредећи их са бројним ризицима из екстерног окружења, у литаратури се наводе специфичности које појаву здравствених криза сврставају у посебну категорију ризика. Тренутна ситуација са пандемијом вируса Sars Cov-2 је актуелизовала питање отпорности ланаца. У литаратури се наглашава став о томе да нису ланци снабдевања у свим индустријама подједнако изложени утицају епидемија и пандемија. Ланци снабдевања у аутомобилској индустрији често могу бити изложени већем утицају, што се може посебно показати анализама које испитују

утицај текуће пандемије. У циљу испитивања утицаја епидемија и пандемија урађене су бројне анализе које су показале различите ефекте које здравствене кризе остварују на активности и процесе у ланцима снабдевања, на тај начин де-стабилишући отпорност мањој или већој мери. Анализа у овом раду показала је различити утицај који појаве вируса остварују на производне активности у ланцима снабдевања. Показана је статистички значајна разлика у утицајима помених вируса. Кроз анализу је указано на значај утицаја здравствених криза на аутомобилску индустрију, са циљем развоја даљих истраживања и испитивања последица, које су због трајања пандемије још увек несагледиве.

THE PERCEPTION OF E-LEARNING QUALITY IN HIGHER EDUCATION: SEM-ANN APPROACH

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Abstract

The pandemic resulted in lockdown measures worldwide, which forced humanity to seek online alternatives to almost every human activity, including the education system. This research aims to develop a new integrated model to determine the predictors of the quality of E-learning during the pandemic disruption. This paper provides the development of the traditional approach based on Structural Equation Modelling (SEM) into the prediction method based on the Artificial Neural Network (ANN). This research was conducted on a sample comprising 1,254 students of the University of Belgrade. The results show that Authority initiative had the most important influence and significance in predicting the perception of the Quality of E-learning during the pandemic. At the same time, the Information Security predictor had the most negligible impact. The findings contribute to the raising the academic community and policy-makers awareness to the necessity of dealing with quality in E-education to a greater extent, especially in emergencies such as pandemics. The suggested combination of constructs that predict the Quality of E-learning has never been analysed in previous research by applying SEM-ANN methodology, which represents the additional contribution of this study.

Key words: quality, E-learning, pandemic, higher education, SEM-ANN.

ПЕРЦЕПЦИЈА КВАЛИТЕТА Е-УЧЕЊА У ВИСОКОМ ОБРАЗОВАЊУ: SEM-ANN ПРИСТУП

Апстракт

Пандемија је изазвала мере закључавања широм света које су приморале човечанство да прибегне онлајн алтернативама у скоро свакој људској активности, што је био случај и са образовним системом. Ово истраживање има за циљ да развије нови интегрисани модел за одређивање предиктора квалитета е-учења током COVID-19 пандемије. Овај рад обезбеђује развој традиционалног присту-

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па заснованог на моделирању структурних једначина (SEM) у методу предвиђања засновану на вештачкој неуронској мрежи (ANN). У овом истраживању је учествовало 1.254 студената Универзитета у Београду. Резултати показују да иницијатива управе факултета има најважнији утицај и значај у предвиђању перцепције квалитета електронског учења током пандемије. Истовремено, предиктор „сигурност информација“ има најмање значајан утицај. Резултати доприносе подизању свести академске заједнице и твораца политика о потреби да се више баве квалитетом е-образовања, посебно у ванредним ситуацијама као што је пандемија. Предложена комбинација конструктора који предвиђају квалитет е-учења никада није анализирана у претходним истраживањима применом SEM-ANN методологије, што представља додатни допринос ове студије.

Кључне речи: квалитет, Е-учење, пандемија, високо образовање, SEM-ANN.

INTRODUCTION

The COVID-19 pandemic disruption has resulted in social distancing and lockdown measures which forced people worldwide to use electronic services for learning, work, and leisure (Favale et al., 2020). Hence, information and communication technology has been used to maintain organisations' core business more than ever (Yallop & Aliasghar, 2020). Additionally, it has never been more necessary to set up supplemental E-learning so rapidly (Tretter et al., 2020). In Europe, many schools, faculties and universities diverted regular class meetings to online meetings (Randjelovic et al., 2022). Non-traditional learning and teaching forms became necessary, and the only way to maintain the teaching process' continuity (Stanković, 2020). In, those days, E-learning was becoming a mainstream teaching and communication tools (Das De et al., 2020). In the circumstances caused by the pandemic, education systems in many countries underwent changes in regular functioning. In early March 2020, all higher education institutions within the University of Belgrade temporarily stopped their work and switched to various E-learning platforms. The University of Belgrade also followed the government's proposed measures, and faculties within the same university had to undergo rapid changes. The faculties had the freedom to decide how to hold their planned classes, and which platforms and applications they would employ. Although distance and E-learning are not unknown at these faculties, a small number of them wanted to transfer traditional to virtual classes and obligations, which is corroborated by data that only several faculties have accredited distance study programmes. On the other hand, there is an area where E-learning is not an acceptable solution due to practical exercises such as experiments and activities within faculties of medicine, dentistry, pharmacy, sport, technology, etc. However, the COVID-19 pandemic left educational institutions no choice, and this necessary transformation could significantly affect students' satisfaction, and thus their expectations regarding the quality of E-learning.

This study aims to integrate different models to examine the perception of the quality of E-learning during the COVID-19 pandemic. Therefore, the objectives of this study are twofold. In order to address the existing literature gap concerning the pandemic's impact on education, a conceptual model was put forth. This model was then examined using Structural Equation Modeling (SEM) to fulfil the first aim of exploring the potential influence of *simplicity of using* and *authority-driven initiatives* on the *quality of E-learning* amid the coronavirus situation. Additionally, the impact of control variables *information security* and *accuracy* on the quality of E-learning was examined. The second aim is to develop a new model that predicts the perception of the quality of E-learning during the pandemic caused by COVID-19. For this purpose, SEM model dimensions serve as inputs in ANN modelling.

THEORETICAL BACKGROUND AND HYPOTHESES

E-learning is an “application of IT that is widely used in the educational sector” (Pour et al., 2019, p. 116). Before the coronavirus, E-learning was becoming more and more popular in high education due to various teaching and learning opportunities for educational institutions and students (Pham et al., 2019). E-learning is structurally different compared to conventional learning (Jung, 2010), but it mainly provides students with a personalised and flexible way to study and learn (Cidral et al., 2018). Students want to study, work, and learn whenever and wherever they want. Still, it is believed that E-courses are perceived as lower quality courses due to limited interaction, particularly in presentations, and lack of peer and teacher support (Uppal & Gulliver, 2017). On the flip side, virtual activities reduce education costs and provide flexible accessibility of education without being hindered by place and time (Larmuseau et al., 2019). Despite the popularity of the online learning environment, delivering a quality E-service should still be an important goal for universities to retain and attract students without losing their productivity. As Farid et al. (2018, p. 3) assert, “the future of E-learning depends on the quality of E-learning systems”. Accordingly, the quality of E-learning is an indicator of success that is not easy to build and manage (Brosser & Vrabie, 2015). Agariya and Singh (2012) stated that E-learning quality is the gap between students' experience with the offered E-services and their expectations. Further, given the large number of stakeholders, their different ways of thinking, and the requirements that need to be taken into account, E-learning's quality is an extremely complex issue (Brosser & Vrabie, 2015). Guided by the definition of Martínez-Caro et al. (2014), E-learning quality can be defined as the degree to which educational authorities meet stakeholders' needs or expectations. Two angles of identifying the quality of E-learning have been observed in

literature. These are the quality of the software or platform for the realisation of education, and the quality of the education process itself (Nikolić et al., 2018).

As stated above, it is important to emphasise the necessity to understand how to manage the quality of E-learning. Numerous studies have shown that quality is the most significant factor for E-learning systems (Misut & Pribilova, 2015). As discussed before, quality can be evaluated by many indications and attributes which may have various influences on quality, such as pedagogy, authority, institution, learning background, instructor, performance, simplicity, information security and accuracy, interaction, learner, admin, etc. (Nikolić et al., 2018). Similarly, various models and approaches for quality assurance in E-learning can be found in literature (Misut & Pribilova, 2015). Those authors believe that the quality policies of successful learning with the support of information technology are equal to those in the traditional approach. Finally, by embracing E-learning as a relatively new approach to education, it should be emphasised that well-composed elements will ensure success regardless of applied technology (methods) (Misut & Pribilova, 2015).

Authority Initiative

Students' perception of the professor as an authority influences the education system (Gil-Madrone et al., 2020). The big challenges of authorities (faculties, universities, or teachers) in the distance learning process are innovative and structural changes, and their support to students in becoming E-learners (Levinsen, 2007). The significance of computer literacy skills should first run from the institutional level (Cvetković et al., 2021; Biškupić et al., 2015). Although there are no national recommendations for quality in E-learning, universities should engage lecturers/professors who have adequate references to ensure E-learning quality (Delva et al., 2019). A competent authority is characterised by the creation of learning conditions where warmth, truth, loyalty, and faith in students' potential have precedence (Gil-Madrone et al., 2020), particularly during the pandemic period. Research within higher education institutions in South Korea showed that staff support is the most powerful influencer, which explained about 80% of the variance in the quality of E-learning (Jung, 2010). Biškupić et al. (2015) pointed out that students' motivation is closely correlated with professors' contribution to the E-class and using technology overall. Therefore, the role of authority in students' guidance is essential, and without authority initiative and support in the integration of ICTs in education, the quality of E-service is nigh impossible. Therefore, the following hypothesis is set: *H1 – authority initiative* had a positive impact on the *quality of E-learning* during the pandemic period.

Simplicity

Some research has shown that effort and time management are the most important and positive predictors of academic quality performance (Neroni et al., 2019). Student engagement is the force and effort students invest in their E-learning environment (Bond et al., 2020). It is formed by various fundamental and internal factors, including the combined interaction of relations, learning processes, and learning conditions (Bond et al., 2020). Additionally, the degree to which students believe that using digital tools would be free of any effort is defined as simplicity of use (Mohammadi, 2015). It also refers to the ease of use (Ameen et al., 2019), or expected effort (Milošević et al., 2015a).

Educators proficient in using digital tools can design engaging and interactive online courses, making the learning process more simple, effective and enjoyable for students (Basar et al., 2021). Authorities can encourage the creation of high-quality, organised, and easily navigable digital content for E-learning. When educational materials are well-structured and readily available, students can more effectively engage with the content, leading to better learning outcomes (Samat et al., 2020). Furthermore, students sense self-confidence when some established practices ensure a friendly environment and when professors deal with procedures to overcome disruptive situation issues (Gil-Madrona et al., 2020). Mahdizadeh et al. (2008) and Sørrebø et al. (2009) acknowledge that the professors' behaviour, motivation, and willingness to use E-learning are important facilitators and initiators of the students' utilisation of E-learning. In other words, without top-down initiative in the context of E-learning, the down-top reaction cannot be expected. Hence, the following hypothesis was formulated: *H2 – authority initiative* positively affected the *simplicity of use* in the E-learning process during the pandemic period.

Previous investigation has proved that perceived ease of use positively impacts the students' tendency to accept modern technology and has an important influence on perceived usefulness (Sabah, 2016). If learning applications and platforms are essentially easy to use, students will be more enthusiastic about examining their characteristics and permanently intending to use them (Hamid et al., 2016). According to Milošević et al. (2015b), simplicity of use can improve communication with students and professors, expand discussion, simplify post information about lectures and exams, and other university activities, thus improving the quality of the educational process. Accordingly, the next hypothesis is: *H3 – simplicity of use* in E-learning positively influenced the *quality of the E-learning* process during the pandemic period.

Information Accuracy and Security

The backbone of each E-learning process is information (Farid et al., 2018). One of the most important challenges students face in virtual education is the reliability and accuracy of released or published information (Dehghani et al., 2019). Accuracy of information exchange is a very significant quality dimension to raise students' understanding within the E-learning environment (Alla & Faryadi, 2013). In this context, the accuracy of information includes all information received from the authorities (professors and faculties), such as e-class schedules, deadlines, teaching material, assignments, or grades. Seddon and Kiew (1994) found a positive relationship between user satisfaction and information quality, and the accuracy of information is seen as one of the information quality constructs. During information sharing on learning platforms, students want to ensure that only those to whom the information is intended can see it (Siemens et al., 2017). It is not only a matter of personal information (name, surname, and grades) but also a matter of the students' personal views, opinions, and assignments. According to ISO 27000:2018, information security is defined as "preservation of confidentiality integrity and availability of information". Jerman-Blažić and Klobučar (2004) highlight that private risk may take different concerns in the online environment than those found in its physical counterpart, especially if professors use non-university-based learning platforms that the university/faculty cannot operate. According to the theory of communication, based on the IS success model, E-learning's quality also encompasses the accuracy, security, and efficiency of the information system (Lee & Lee, 2008). Hence, it is assumed that: *H4* – students who value the *accuracy of information* more valued the *quality of E-learning* in the pandemic period equally; and *H5* – students who value *information security* more valued the *quality of E-learning* in the pandemic period equally.

According to the developed hypotheses, the conceptual model is illustrated in Figure 1.

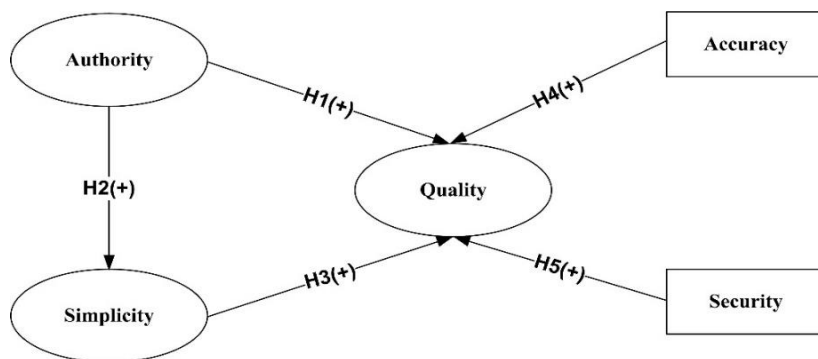


Figure 1. The Conceptual Model

RESEARCH METHODOLOGY

In this research, a two-step multi-analytical approach is employed to investigate if *authority initiative* and *simplicity of using* impact the *quality of E-learning* and predict the perception of the quality of E-learning during the pandemic period caused by COVID-19. According to previous research (Sharma, 2017; Asadi et al., 2019; Sohaib et al., 2020), this approach includes integrating SEM and ANN analyses (Zabukovsek et al., 2018). The first step of research is related to SEM, which contains two parts: a measurement model for validation of theory and modelling relationships among variables, and a structural model for testing three hypotheses. For the other two hypotheses, an analysis of variance (ANOVA) was additionally employed. In the second step, all SEM model significant variables served as input parameters for the ANN model. ANN is utilised to accurately predict significant factors for the perception of the quality of E-learning during the pandemic period. Although SEM methodology has been employed to test and verify hypothetical relationships, there is little research about its integration into other artificial intelligence algorithms (Xu et al., 2019). Moreover, there is less research that applies this integrated methodology in the field of the quality of E-learning. Thus, the literature gap is overcome. Because of its ‘Black Box’ operations, ANN does not provide testing of statistical hypotheses for their input variables, but it has some advantages compared with SEM and multiple regression analysis. For solving the proposed research problem, the ANN method can disclose both linear and non-linear relationships (Xu et al., 2019), enabling the prediction of the perception of the quality of E-learning during the pandemic period.

Sampling and Data Collection

To practically explore the extent to which the students of the University of Belgrade apply E-learning systems and which factors influenced the quality of E-learning during the pandemic period, a quantitative research method was used. For research purposes during a state of emergency, the authors modified and adapted the initial questionnaire based on previous studies, shown in the Appendix (Ahmad & Love, 2013; Milošević et al., 2015a). In the authors’ opinion, the selected constructs – *authority initiatives*, *simplicity*, *security* and *accuracy* in E-learning are vital for maintaining and enhancing the quality of education provided in online environments. Through resource allocation, standardisation, accessibility, professional development, quality assurance, and innovation, educational authorities can foster an environment that supports effective and meaningful learning experiences for students, regardless of their location or circumstances. Furthermore, simplicity in E-learning is a key factor in determining the success of E-learning initiatives. By prioritising user-

friendly design and implementation, educational institutions can enhance the overall quality of E-learning, create positive learning experiences, and foster a more inclusive and effective learning environment for all students. Regarding security, it is seen as an appropriate element for the quality of E-learning because investing in robust security measures demonstrates a commitment to the safety and well-being of students and educators, contributing to a successful and effective E-learning experience. Also, accuracy in E-learning is a crucial element that underpins the quality of the entire learning experience because it affects the learners' trust, engagement, outcomes, and ability to apply knowledge effectively.

The data was gathered by distributing the questionnaire as an online survey to students who use distance learning systems at the University of Belgrade. The students filled out the questionnaire during the first months of the COVID-19 pandemic period in 2020. The oldest and the biggest university students in Serbia (the University of Belgrade) were selected with random sampling. The survey included 1,254 respondents who correctly completed the questionnaire. After closing the survey, we conducted the data analysis process. To test the hypotheses and predict the model constructs, SPSS and AMOS v.22.0 statistical software were used.

The Measurement Model

The measurement model aims to determine the measurement instruments' internal reliability, discriminant, and convergent validity. Nunnally (1978) considers that internal consistency is confirmed if the value of Cronbach's Alpha is more than 0.6. The results depicted in Table 1 indicate that the analysed model's internal consistency values are acceptable. Average Variance Extracted (AVE) was applied to evaluate convergent validity. The value of AVE should be high than 0.5 (Fornell & Larcker, 1981). The results of convergent validity (Table 1) are also acceptable in this study. Besides, discriminate validity was also obtained. That indicates that the calculated values of the AVE's square root for each construct are higher than correlations between two specific constructs (Fornell & Larcker, 1981; Anderson & Gerbing, 1988). The discriminate validity values are displayed in Table 1 with bold numbers on the diagonal. Confirmatory factor analysis (CFA) was conducted in this study to assess the validity of the variables. The value of standardised item loading for each metric is more than 0.5, with p-values less than 0.001. This also confirmed the validity of the instrument. The relative chi-square value for the defined measuring model is 2.87, which is below the required limit of 3, indicating that this model has an acceptable fit. Several different model indices of fit were evaluated, including the RMSEA, where excellent model fit was suggested by values less than or equal to 0.06. The value of RMSEA, in this case, is 0.06, which further

suggests that the model fit is adequate. The obtained values of NFI-0.93; RFI-0.91; IFI-0.95; TLI-0.95; CFI-0.95 indicate a good model fit, which is in accordance with Hooper et al. (2008), where accepted values are between 0.90 and 0.95. Therefore, construct validity and reliability in the measurement model are achieved, and structural model analysis is presented in the following section of the paper.

Table 1. The reliability and validity of the defined model

| Construct | Item loading | Cronbach Alpha | CR | AVE | Authority | Simplicity | Quality |
|-----------------------|--------------|----------------|-------|-------|--------------|--------------|--------------|
| Authority (A) | | | | | | | |
| A1. | 0.535 | | | | | | |
| A2. | 0.713 | 0.689 | 0.689 | 0.428 | 0.654 | | |
| A3. | 0.700 | | | | | | |
| Simplicity (S) | | | | | | | |
| S1. | 0.707 | | | | | | |
| S2. | 0.593 | | | | | | |
| S3. | 0.806 | 0.824 | 0.825 | 0.502 | 0.625** | 0.709 | |
| S4. | 0.708 | | | | | | |
| S5. | 0.712 | | | | | | |
| Quality (Q) | | | | | | | |
| Q1. | 0.777 | | | | | | |
| Q2. | 0.810 | | | | | | |
| Q3. | 0.778 | 0.833 | 0.889 | 0.577 | 0.676** | 0.609** | 0.760 |
| Q4. | 0.512 | | | | | | |
| Q5. | 0.803 | | | | | | |

**p-value<0.001

The Structural Equation Model

In the next step, SEM was employed to test the hypotheses. This technique is utilised to analyse the structural relationship among constructs (latent and observed) (Sheykhfard & Haghghi, 2020). A goodness-of-fit model was achieved (χ^2/df -2.42; RMSEA-0.067; NFI-0.94; RFI-0.92; IFI-0.97; TLI-0.95; CFI-0.96), and all fit indices in the structural model are satisfactory and fit well. To test relationships between the constructs, Figure 2 depicts factor loadings and standardised coefficients evaluated in the SEM. Standardised path coefficients were calculated to verify each construct’s significance in the path model and presented in Table 2. To assess the linear dependencies between the dependent and independent variables, the analysis of variance (ANOVA) method was performed. Variables such as Information Accuracy and Information Security were used as independent variables. The dependent variable presents

the calculated average values of the answers of the group of questions within *Quality of E-learning*. The main parameters of which ANOVA consist are: the sum of squares of parameters, degree of freedom (df), mean of squares, F-ratio of parameters and statistical significance (p-value) (Arsić et al., 2019; Özakın & Kaya, 2020). Table 3 shows that *Information accuracy* and *Information security* have linear relationships with the *quality of E-learning*.

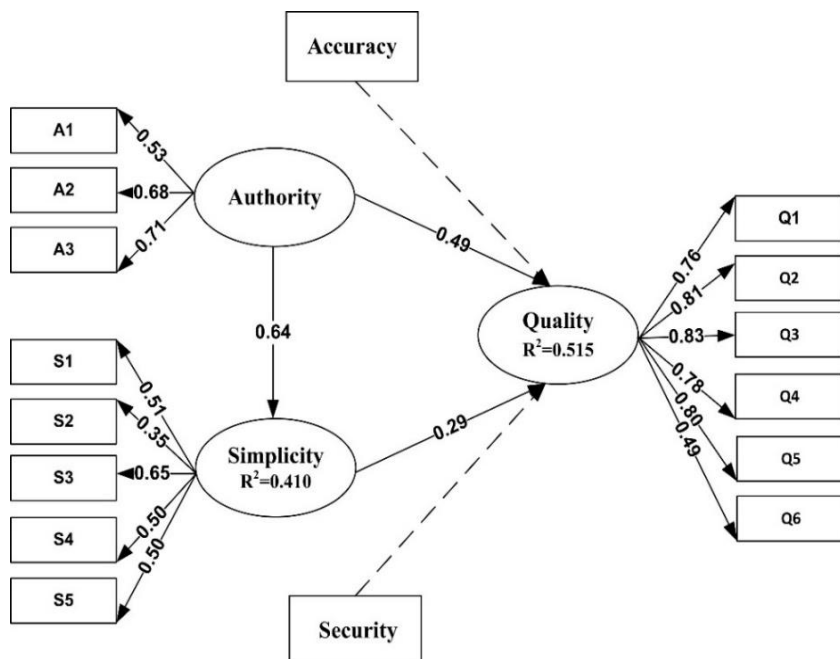


Figure 2. The results of the Structural Equation Model

Table 2. The results of SEM

| Hypothesis | Standardized weights β | Estimate | SE | t - value | Conclusion |
|-----------------------|------------------------------|----------|-------|-----------|------------|
| H1: A \rightarrow Q | 0.494 | 0.371 | 0.072 | 5.181** | Accepted |
| H2: A \rightarrow S | 0.640 | 0.601 | 0.073 | 8.215** | Accepted |
| H3: S \rightarrow Q | 0.293 | 0.234 | 0.060 | 3.296** | Accepted |

**p-value < 0.001

Table 3. The results of ANOVA

| | | | Sum of Squares | df | Mean Square | F-test | p-value |
|----------------------|-------------------|---------------------------|----------------|------|-------------|---------|---------|
| Accuracy- Quality | Between Groups | Combined | 222.352 | 4 | 55.588 | 87.261 | 0.000 |
| | | Linearity | 95.623 | 1 | 95.623 | 150.107 | 0.000 |
| | | Deviation of linearity | 16.227 | 3 | 5.409 | 8.491 | 0.000 |
| | Within Groups | | 795.654 | 1250 | 0.627 | | |
| Security- Quality | Between Groups | Combined | 100.612 | 4 | 25.153 | 34.245 | 0.000 |
| | | Linearity | 76.209 | 1 | 76.209 | 10.756 | 0.000 |
| | | Deviation of linearity | 17.153 | 3 | 5.718 | 7.785 | 0.000 |
| | Within Groups | | 917.394 | 1250 | 0.735 | | |

ANN Modelling

The Artificial Neural Network (ANN) was developed by Haykin (1994) and defined as “a massively parallel and distributed processor composed of simple processing units“ (Xu et al., 2019, p. 4), which have a neural propensity to accumulate data and knowledge from the experiment, making it available for use. The most important ANN algorithm element is a multi-process information processing system that employs simple processing elements with a high level of mutual connection (Bayar et al., 2009). These processing elements, commonly called neurons, work in line with solving certain problems. A Multilayer Perceptron (MLP) back propagation feed forward method is employed in this study. The MLP is the most utilised and popular ANN method (Sohaib et al., 2020; Yakubu et al., 2020), which was developed in the defined model by using the software SPSS 22.0.

The artificial neural network consists of three layers of neurons, such as the input, hidden, and output layers, including the number of neurons to process separately for each layer. Neurons of the input layer represent information about the input parameters such as the Simplicity of E-learning, the Authority initiative, the Information Accuracy, and the Information Security, which in the ANN model represents independent (exogenous) variables. Four neurons represent the hidden layer, while the only neuron in the output layer produces the output information presented in the model as an indicator of the *Quality of E-learning*, as a dependent (endogenous) variable (Figure 3).

In this study, ten iterations were performed to cross-validate the model (Table 4) until the error between the measured output (*Quality of E-learning*) and the calculated value was minimised and remained constant, according to the recommendation of different authors (Hammerstrom, 1993; Goh, 1995). Hence, model training was performed with 72.7%, while 27.3% was used for model testing. The synaptic weights of the input neuron on the hidden and output neuron are shown in Figure 3.

Exactness can be measured by the root mean square error (RMSE), where the ANN was validated by calculating RMSE in both the training and testing datasets (Sharma et al., 2017). The RMSE is computed using equations (1) and (2), where SSE is „the sum of squared error and MSE is the mean squared prediction error” (Sohaib et al., 2020, p. 13143).

$$\text{MSE} = 1/n * \text{SSE} \quad (1)$$

$$\text{RMSE} = \sqrt{\text{MSE}} \quad (2)$$

The obtained values of RMSE in ten iterations of the training and testing model are depicted in Table 4. Additionally, the mean of the training model is 0.047, and the mean of the testing model is 0.074. The model with a vast number of neurons in the higher layer and with the strongest influences which predicts quality perception, was obtained in the tenth iteration (Figure 3).

Table 4. Results of Artificial Neural Network Model (SEE and RMSE)

| Artificial Neural Network | Training (72.7% of data sample 1254) N=912 | | Testing (27.3% of data sample 1254) N=342 | |
|---------------------------------|---|-------|--|-------|
| | SSE | RMSE | SSE | RMSE |
| ANN1 | 0.611 | 0.046 | 0.762 | 0.076 |
| ANN2 | 0.644 | 0.046 | 0.654 | 0.075 |
| ANN3 | 0.661 | 0.048 | 0.797 | 0.077 |
| ANN4 | 0.609 | 0.047 | 0.682 | 0.070 |
| ANN5 | 0.655 | 0.048 | 0.646 | 0.071 |
| ANN6 | 0.645 | 0.046 | 0.723 | 0.079 |
| ANN7 | 0.612 | 0.046 | 0.730 | 0.075 |
| ANN8 | 0.620 | 0.046 | 0.745 | 0.078 |
| ANN9 | 0.689 | 0.048 | 0.610 | 0.070 |
| ANN10 | 0.656 | 0.046 | 0.593 | 0.072 |
| | Mean | 0.047 | Mean | 0.074 |

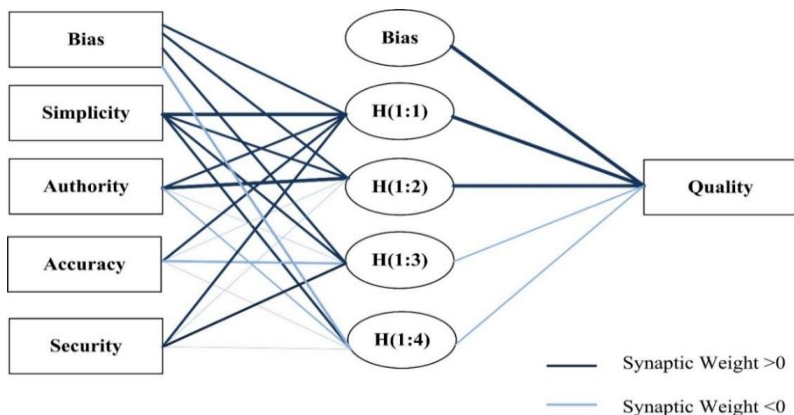


Figure 3. The model of Proposed Artificial Neural Network

Table 5 depicts sensitivity analysis performance. Sensitivity analysis is an important approach for explaining the connection and impact of each input parameter on the research model’s outputs (Nourani & Fard, 2012). Sensitivity analysis was computed by averaging the mean significance of the independent variables that can help predict the dependent variable (Chong, 2013). The sensitivity analysis results showed that *Authority initiative* was the most influential independent variable in predicting *Quality of E-learning* perception during the pandemic period. The other important variables that help predict the same construct were the *Simplicity of E-learning*, *Information Accuracy*, and *Information Security*.

Table 5. Independent variables’ importance

| Constructs | Importance | Normalised Importance |
|------------|------------|-----------------------|
| Authority | 0.474 | 100.0% |
| Simplicity | 0.303 | 63.9% |
| Accuracy | 0.155 | 32.7% |
| Security | 0.069 | 14.6% |

RESULTS AND DISCUSSION

This paper highlights the extension of the traditional approach based on SEM methodology by integrating it into the ANN prediction method. Our hypotheses were tested using SEM methodology, and the results indicate that all hypotheses can be accepted (H1, H2, H3, H4, and H5). The regression coefficients (β -path coefficients) have positive values within the considered hypotheses. For the analysed hypotheses in the defined model, the following results were obtained. With hypothesis H1, it was assumed that *Authority initiative* significantly and positively influenced *Quality of E-learning* during the pandemic period. The results presented in Figure 2 and Table 2 indicate that the construct of *Authority initiative* has a statistically significant influence on the *Quality of E-learning* ($\beta_{A-Q}=0.494$; $SE=0.072$; $t=5.181$; $p\text{-value}<0.001$). These findings confirm that hypothesis H1 is accepted. These results are in line with the findings of Jung (2010) and Delva et al. (2019). The analysis of the association between *Authority initiative* and *Simplicity of E-learning* during the pandemic period shows that hypothesis H2 is accepted ($\beta_{A-S}=0.640$; $SE=0.073$; $t=8.215$; $p\text{-value}<0.001$). This result correlates with previous claims by Mahdizadeh et al. (2008) and Sørrebø et al. (2009). Hypothesis H3 (*Simplicity in E-learning* positively influenced the *Quality of E-learning* during the pandemic period) is also supported because a significant association was obtained between the considered constructs ($\beta_{S-Q}=0.293$; $SE=0.060$; $t=3.296$; $p\text{-value}<0.001$). Tan et al. (2014) point out that ease of use in E-learning can significantly improve the quality of interaction

between students and professors. Hypotheses H4 and H5 were tested to determine whether the students who paid more attention to control parameters such as *Information Accuracy* and *Security* afforded a higher value to the *Quality of E-learning*. Based on the results obtained by using the ANOVA method (Table 3), the positive influence of the linear dependence between *Information Accuracy* and the *Quality of E-learning* (H4) with statistical significance was confirmed (F-test=87.261 and p-value <0.000). Finally, a statistical significance in the relationship between *Information Security* and the *Quality of E-learning* was also noticed (F-test=34.245 and p-value<0.000). Based on this, hypothesis H5 is also accepted. The obtained results are statistically significant in both cases, which means the model explains that a higher level of the students' perception of accuracy and security of information has implications for the higher level of perception of the Quality of E-learning. A similar conclusion about the impact of information quality on service delivery quality is found in the research of Alsabawy et al. (2016).

The value of the coefficient of determination R^2 represents the percentage of variance in the dependent variable explained by other variables directly related to it (*Authority Initiative* and *Simplicity of E-learning*). The results point out that the construct *Authority Initiative* explains 64% of the variance of the construct *Simplicity of E-learning*, while the overall model explains 51.5% of the variance in the *Quality of E-learning* during the pandemic period. A similar result is noted in Alla and Faryadi (2013), and Siemens et al. (2017).

The strength of each input predictor (*Authority initiative*, *Simplicity of E-learning*, *Accuracy* and *Security of information*) on the output predictor such as the *Quality of E-learning* is rated employing ANN sensitivity analysis to confirm the SEM results. The ANN findings usually verify the SEM results, which is also the case in this research. The ANN model results depict that *Authority initiative* is the most influential predictor of the *Quality of E-learning*. The same result is presented in the SEM analysis. In contrast, the ANN results show that the *Security of information* predictor is the least influential predictor of the *Quality of E-learning*. The findings indicate that the University of Belgrade ensured student trust and showed an ability to protect privacy before the pandemic. Consequently, the security of information was de facto recognised as the least valuable quality dimension. On the other hand, Jung (2010) points out that professors and other teaching staff are the most powerful influencers of E-learning quality. Their initiatives and activities affect students' academic development in ordinary circumstances (Sutherland & Hall, 2018). Hence, it indicates that the perception in a position of authority remains a significant predictor because competent authorities during the pandemic had to put in additional effort to ensure the continuity and the quality of the teaching process. This integrated SEM-ANN method of-

fers better in-depth findings concerning the relative importance of the input constructs, thus presenting valuable information about the perception of the quality of E-learning during the pandemic period.

CONCLUSION

Although some professors are not inclined to use new digital technologies in a learning environment and offer resistance to their application, pandemic disruptions caused by COVID-19 forced teaching staff to adapt and accept the only available way of E-learning at that moment. One of the most important ways of determining the quality of E-learning is the student perspective. Hence, by integrating methods and techniques, this study intends to identify and predict the factors that affect the perception of the quality of E-learning during pandemics, and to clarify their interrelationships through the perspective of the students of the University of Belgrade. The results showed that *Authority* and *Simplicity* significantly and directly affect the *Quality of E-learning*. A significant and direct impact is also found between control variables *Authority* and *Simplicity*. Nonetheless, mutual dependence is established between *Information Accuracy* and *Quality of E-learning*, and between *Information Security* and *Quality of E-learning*.

According to the literature review, and to the best of the authors' knowledge, this paper's main contribution is the fact that little research has been done on the same or similar topic during the COVID-19 pandemic. This study developed a model by integrating input predictors to the output construct *Quality of E-learning* that enabled the proposed model's predictions. The suggested combination of constructs that predict the *Quality of E-learning* has never been analysed in previous research by applying this methodology, which represents an additional contribution of this study. The obtained findings can also contribute to raising the awareness of the academic community and policy-makers to the necessity of dealing with quality in E-education to a greater extent, especially in emergencies such as pandemics. Furthermore, virtual universities in developing countries such as Serbia may benefit from these findings in raising the quality level of their E-learning during the pandemic and in general. This research has significant implications for higher education institutions' quality assurance of the E-learning system. The study's findings offer important recommendations to decision-makers, service providers, developers, and designers in higher education institutions on evaluating and improving the quality of E-learning. In response to emergencies, it is crucial for decision-makers in the educational system to provide adequate financial and technological resources to support distance-learning projects. Taught by experience in the pandemic, it can be recommended that each university have a quality assurance division to control and improve

the quality of the E-learning process continually, given that changes are expected in our world.

Exploring the perception of quality in the age of COVID-19 was indeed a challenge for this paper's researchers. It should be highlighted that the research findings are relevant in times of duress. Although the data collection period was short due to the event's topicality, the sample size can still be observed as a limitation of the study. The limitation in terms of questions pertaining to the defined constructs and the constructs themselves is also a recommendation for future directions of research. For example, in defining the simplicity of E-learning during the coronavirus, technical issues faced by professors and students were not considered. Furthermore, research on the relationship between student satisfaction and service quality, and whether they impact student behaviour and intent after the COVID-19 pandemic can be the next step in future investigations. The conceptual model can also be upgraded with new constructs such as quality information, IT infrastructure services, or system quality (technical issue) within the framework of emergency disorders. Comparing the perceptions of teaching staff and students at the time of the pandemic would also be interesting for further consideration. In the end, several issues arise as part of the broader picture. One of them is whether *Simplicity in E-learning*, by inertia, tends to the minimal investment of students' further work efforts. This cognition would potentially influence E-learning quality in the academic communities' future activities.

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ПЕРЦЕПЦИЈА КВАЛИТЕТА Е-УЧЕЊА У ВИСОКОМ ОБРАЗОВАЊУ: SEM-ANN ПРИСТУП

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Резиме



Период пандемије изазвао је мере закључавања широм света које су приморале човечанство на онлајн компензацију у образовном систему. Као резултат, е-учење је постало главно средство наставе и комуникације, и будућност електронског учења зависи од квалитета система за е-учење. Ова студија има за циљ да идентификује и предвиди факторе који утичу на перцепцију квалитета е-учења током пандемија применом ново-интегрисаног SEM-ANN модела. Резултати показују да иницијатива управе факултета има најважнији утицај и значај у предвиђању квалитета електронског учења током пандемија, док најмањи утицај има предиктор „сигурност информација“. Ово истраживање има значајне импликације на високошколске установе у обезбеђивању квалитета система е-учења. Добијени резултати такође могу допринети подизању свести академске заједнице и твораца политике да се више баве квалитетом онлајн образовања, посебно у ванредним ситуацијама као што су пандемије. Виртуелни универзитети земаља у развоју могу имати користи од овог истраживања у смислу подизања квалитета е-учења током пандемија и уопште.

THE EFFECTS OF COVID-19 ON MULTIFRACTALITY AND LONG-MEMORY IN ETHEREUM'S RETURNS

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Abstract

The global COVID-19 pandemic has shaken the global economy, not sparing the cryptocurrency market. In this paper, we investigate the impact of the COVID-19 pandemic on the dynamics of log returns of the Ethereum. The observed period is divided into three parts: the pre-pandemic period, the pandemic-induced shock, and the period after the pandemic-induced shock on the cryptocurrency market. The research focuses on the impact of the pandemic on the degree of non-linearity and multifractality of log returns. To assess the degree of non-linearity, we used the BDS test and the value of the largest Lyapunov exponent. For multifractality, long-range correlations and information efficiency, we used MF-DFA (Multifractal Detrended Fluctuation Analysis). The research results show that all observed periods have a pronounced non-linearity, but that there is no evidence of the existence of low-dimension chaos. Also, based on the results of the MF-DFA analysis, we conclude that the COVID-19 pandemic has significantly affected the long memory of the log returns of the Ethereum; however, their dynamics and characteristics are returning to the trends present before the pandemic.

Key words: COVID-19, cryptocurrency market, multifractality, chaos, market efficiency.

ЕФЕКТИ КОВИД-19 ПАНДЕМИЈЕ НА МУЛТИФРАКТАЛНОСТ И ДУГОРОЧНУ МЕМОРИЈУ ПРИНОСА *ETHEREUM*-а

Апстракт

Глобална пандемија КОВИД-19 узбуркала је глобалну економију, па и тржиште криптовалута није било поштеђено. У овом раду истражујемо утицај КОВИД-19 пандемије на динамику логаритамског приноса Ethereum-а. Посматрани период подељен је на три дела: период пре пандемије, период шока који је изазан пандемијом и период након шока изазваног пандемијом на тржишту

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криптовалута. Акцент истраживања је на утицају пандемије на степен нелинеарности и мултифракталности приноса. За процену степена нелинеарности користили смо BDS тест и вредност највећег Лапуновљевог експонента. За мултифракталност, дугорочне корелације и информациону ефикасност користили смо MF-DFA (Multifractal Detrended Fluctuation Analysis). Резултати истраживања показују да сви посматрани периоди имају изразиту нелинеарност, али да нема доказа о постојању нискодимензионалног хаоса. Такође, на основу резултата MF-DFA анализе закључујемо да је пандемија КОВИД-19 значајно утицала на дугорочну меморију логаритамских приноса *Ethereum*-а. Међутим, њихова динамика и особине враћају се трендовима присутним пре пандемије.

Кључне речи: COVID-19, тржиште криптовалута, мултифракталност, хаос, тржишна ефикасност.

INTRODUCTION

Cryptocurrencies are privately-issued digital money based on a decentralised network relying on blockchain technology. It is a system that is independent of monetary authorities, where the security of cryptocurrencies is based on the security of the algorithm that monitors all transactions. Since the appearance of Bitcoin, as the first successful implementation of the concept of a decentralised money transfer system (Nakamoto, 2009), the cryptocurrency market has been continuously developing. The cryptocurrency market is significantly different from traditional markets because it can be transacted 24 hours a day, there is no limit to the fluctuation range, and the barrier to entry is low (Cheng, Liu, & Zhu, 2019). Cryptocurrency users increasingly treat their investments as a speculative financial asset rather than a means of payment (Glaser, Zimmermann, Haferkorn, Weber, & Siering, 2014; Elliott & de Lima, 2018). Low barriers to market entry allow the presence of a large number of inexperienced investors (outsiders), whose behaviour can be irrational (susceptible to rumours, emotions, etc.), which, along with market immaturity, can lead to its inefficiency. Cryptocurrency markets are subject to oscillations, with episodes of extreme volatility. Financial markets can react to natural disasters, crises, terrorist attacks and epidemics. One such event is the COVID-19 pandemic (Goodell, 2020). Due to the rapid spread of the coronavirus around the world, the World Health Organization officially declared the beginning of the pandemic on 11 March 2020. Concerns about the transmission of the coronavirus, and uncertainty about the duration and the economic consequences of the pandemic have affected people's economic behaviours. In conditions of uncertainty, people generally react more to public information and follow the behaviour of the majority, which can also reflect on market trends in the form of herd behaviour. Repeated patterns of behaviour among investors on the market can lead to a rise in volatility, speculative bubbles and crashes.

The smallest cryptocurrencies follow the largest, which indicates that investors base their decisions on the performance of the leading cryptocurrencies (Vidal-Tomás, Ibáñez, & Farinós, 2019). Bitcoin is still the dominant cryptocurrency that, along with Ethereum, accounts for the largest share of the total market capitalisation on cryptocurrency markets. Launched in 2015, Ethereum is a special Blockchain, with a special token called Ether (ETH symbol in exchanges). While Bitcoin is only a payment network, Ethereum is programmable technology for building apps and organisations, holding assets, transacting and communicating without being controlled by a central authority (www.ethereum.org). In late 2022, the share of Bitcoin in total market capitalisation was around 39%, and Ethereum's was around 19%. (Coinmarketcap, 2022). The duration of the Covid-19 pandemic brought about the need to assess how it affected cryptocurrency market dynamics. Research by Naeem, Bouri, Peng, Shahzad & Vo (2021) shows that the COVID-19 pandemic has had negative effects on the efficiency of leading cryptocurrencies. Danylchuk et al. (2020) applied fractal and entropy analysis to simulate the cryptocurrency market, and concluded that the cryptocurrency market has indeed reacted to the COVID-19 crisis, but that pre-pandemic trends are returning. Lahmiri & Bekiros (2021) found that the level of stability in cryptocurrency markets significantly dropped during the pandemic, and that they showed greater instability and more irregularities during the COVID-19 pandemic compared to international stock markets. Using asymmetric multifractal detrended analysis, Kakinaka & Umeno (2021) investigated the market efficiency of major cryptocurrencies during the COVID-19 pandemic, and found that they showed stronger multifractality in the short term, but weaker multifractality in the long term. A study on the level of efficiency of the cryptocurrency market before and after the COVID-19 pandemic based on multifractal analysis showed a positive impact of COVID-19 (Mnif, Jarboui & Mouakhar, 2020). Diaconășu, Mehdián & Stoica (2022) used abnormal returns and abnormal trading volumes methodologies to find that the efficiency of Bitcoin increased during the pandemic, thus turning this stressful period into an advantage for this cryptocurrency. Wu, Wu, & Chen (2022) showed that the Bitcoin market kept efficient during the pandemic, had a similar efficiency to spot gold, and was more efficient than Ethereum, Binance Coin, and the S&P 500 were during the pandemic. Mnif, Salhi, Trabelsi, & Jarboui (2022) applied multifractal analysis to quantify the impact of the spread of COVID-19 on gold-backed cryptocurrencies, and found the presence of herd behaviour, but at a lower level than in the case of the Bitcoin market. Assaf, Bhandari, Charif, & Demir, E. (2022) investigated long-memory behaviour in cryptocurrency returns and their fractal characteristics. The authors found a change in long-range correlation for most cryptocurrencies, with a noticeable downward trend in persistence after the 2017 bubble, and then a dramatic drop after the outbreak of COVID-19.

The largest number of studies deals with the study of Bitcoin dynamics, and a small number with other cryptocurrencies (Corbet, Lucey, Urquhart, & Yarovaya, 2019). In this research, we choose to study the returns of Ethereum as the second cryptocurrency by market capitalisation. Accordingly, the aim of the paper is to test the multifractality and long-term memory of Ethereum returns, proceeding from the assumption that the COVID-19 pandemic had an impact on the dynamics of the time series of cryptocurrency returns. The paper is organised as follows. After the introduction, the second part of the paper gives a theoretical overview of the used methodology. The third part of the paper presents the research results, and the final part summarises our conclusions.

METHODOLOGY

The research focuses on the impact of the pandemic on the degree of non-linearity and multifractality of the log return. Tsallis entropy (TsEn) is one of the indicators of critical phenomena in complex systems, and represents a measure of orderliness, uncertainty and randomness of time series. We used the value of the TsEn indicator to separate the observed period into three segments: the period before the pandemic, the period of the pandemic-induced shock, and the period after the pandemic-induced shock on the cryptocurrency market. To assess the degree of non-linearity, we used the BDS test, Hurst exponent, and the value of the largest Lyapunov exponent. For multifractality, long-range correlations and information efficiency, we used MF-DFA (Multifractal Detrended Fluctuation Analysis).

BDS Test

The BDS test (Brock, Dechert, Lebaron, & Scheinkman, 1996) is applied to identify non-linear serial dependence in time series. Due to the apparently random numbers, the series can give the impression of white noise. In that case, the non-linear pattern can remain hidden. In order to gain insight into the behaviour of such time series, it is important to detect non-linear hidden patterns. The BDS test is essentially a statistic based on the correlation integral, which measures how many times a pattern repeats itself in the data. Before testing for non-linearity, a simple linear dependence, or certain daily seasonality in the data is filtered out. For X_t , where $t=1,2,\dots,T-m$ data m -histories are defined as $X_t^m = (x_t, x_{t+1}, \dots, x_{t+m-1})$. The correlation integral at embedding dimension m is computed as (Gunay & Kaşkaloğlu, 2019):

$$C_m(\varepsilon) = \frac{1}{(T-m+1)(T-m)} \sum_{\forall t,s} I_\varepsilon(x_t^m, x_s^m) \quad (1)$$

where $I_\varepsilon(x_t^m, x_s^m)$ is an indicator function that equals one if $\|x_t^m - x_s^m\| \leq \varepsilon$, and zero otherwise. According to Brock, Dechert, Lebaron, & Scheinkman (1996) the BDS test statistic follows as:

$$W_{m,T}(\varepsilon) = \sqrt{T} \frac{(C_{m,T}(\varepsilon) - C_{1,T}(\varepsilon)^m)}{\sigma_{m,\tau}}, \tag{2}$$

where σ is the standard deviation of the sample data.

Tsallis Entropy

Entropy represents a measure of orderliness, uncertainty and randomness of time series. Financial time series can rarely be described as a stochastic process with a Gaussian probability density function. Distributions are often elongated with the so-called heavy tail due to the existence of extreme values. Tsallis entropy, which is often called non-extensive or non-additive entropy, simply describes a system with a long memory and is effective in detecting tails in the obtained data entropy distributions. The entropy presented by Tsallis (1988) is based on a generalisation of the Shannon entropy and is defined as follows:

$$S_q = \frac{k}{q-1} \left(1 - \sum_{i=1}^n p_i^q \right), \tag{3}$$

where k is a positive constant, n is the number of microstates in the system, p_i probabilities that correspond to microstates and meet the condition $\sum_{i=1}^n p_i = 1$. The number $q \in R$ represents an entropic index that describes a system with non-extensive properties and is used to characterise the degree of non-extensivity of the system. For continuous probability distributions, the entropy is computed as:

$$S_q = \frac{1}{q-1} \left(1 - \int f(x)^q dx \right), \tag{4}$$

where $f(x)$ is the probability density function. When $q < 1$, it indicates rare occurrences; when $q > 1$, it indicates recurring occurrences, and $q \rightarrow 1$ reduces Tsallis entropy to Shannon entropy. High entropic index values can be considered a long memory parameter because they occur when there is a long-term relationship between states in the system (Danylchuk et. al., 2020).

Lyapunov Exponents

The assessment of the properties of non-linear dynamic systems and the presence of low-dimensional chaos in the data can be performed using Lyapunov Exponents. These exponents represent a quantitative measure of the system's chaotic behaviour, that is, they measure its sensitivity to initial conditions. Chaos produces a certain loss of information in the initial phase,

which can explain the complex behaviour of real systems. Calculating the largest Lyapunov exponent makes it possible to distinguish deterministic chaos from ‘noise’ caused by random external influences. In a chaotic system, the distance between two initially close points increases exponentially. The change in distance over time $d(t)$ is shown by the following formula:

$$d(t) = C e^{\lambda t}, \quad (5)$$

where C is a constant that normalises the initial separation, and λ is the Lyapunov exponent. For an n -dimensional system, there are n different values of the Lyapunov exponent. If $x_{t+1} = f(x_t)$, $t \in T$, $x \in R^n$, Lyapunov exponents can be defined as (Wolf, Swift, Swinney, & Vastano, 1985):

$$\lambda = \lim_{T \rightarrow \infty} \frac{1}{T} \log_e \|J_{t-1} J_{t-2} \dots J_0\|, \quad (6)$$

where J is a Jacobian matrix of partial derivatives for the map f .

If the largest Lyapunov exponent has a value greater than zero, it indicates a deterministic chaotic behaviour of the system. A positive Lyapunov shows the average rate at which the distance between two close points grows exponentially. A negative value indicates a stochastic system.

Fractal Analysis and Hurst Exponent

The presence of long memory and the existence of long-range correlations in the observed data is verified by appropriate non-parametric tests. Hurst (1956) developed rescaled range analysis (R/S), a non-parametric methodology that measures the intensity of long-range correlations in time series, and enables the distinction between random and non-random series. The Hurst exponent is one of the methods for time series analysis with fractal characteristics. To measure the degree of complexity, we look for a relationship between how quickly the size changes as the scale decreases. The self-similarity of a fractal time series can be described by the value of the fractal dimension. The law that establishes the relationship between the magnitude of the change and the scale is the power law, which is shown by the following relation:

$$y \sim x^D, \quad (7)$$

where D represents the fractal dimension.

The multiscale method is based on the correlation of multifractal analysis and the Hurst exponent. The multifractal spectrum identifies deviations of the fractal structure in time periods with large and small fluctuations. Kantelhardt et al. (2002) developed a method for multifractal characterisation of non-stationary time series, which is based on a generalisation of detrended fluctuation analysis (DFA). Multifractal detrended fluctuation analysis (MF-DFA) estimates the multifractal spectrum of time series by estimating the multifractal spectrum of power law exponents. According to Kantelhardt et al. (2002) the generalised multifractal DFA (MF-DFA) procedure involves the following five steps.

In the first step, the ‘profile’ or cumulative sum $Y(i)$ is identified as follows:

$$Y_i \equiv \sum_{k=1}^i [x_k - (x)], \quad i = 1, \dots, N \quad (8)$$

where x_k is the time series of length N , and (x) is the mean value of the entire series.

The second step involves dividing the profile Y_i into non-overlapping segments of equal length s . In order not to ignore the parts of the series that remain due to the divisibility of N with time scale s , the same procedure is repeated from the other end. Thus, $2N_s$ is obtained.

The next step estimates the local trend of the segments using the least-square fitting polynomial $y_v(i)$ for each segment of length v :

$$F^2(s, v) \equiv \frac{1}{s} \sum_{i=1}^s \{Y[(v-1)s + i] - y_v(i)\}^2, \text{ for } v = 1, \dots, N \quad (9)$$

and

$$F^2(s, v) \equiv \frac{1}{s} \sum_{i=1}^s \{Y[N - (v - N_s)s + i] - y_v(i)\}^2, \text{ for } v = N_{s+1}, \dots, 2N_s. \quad (10)$$

Local trends are removed in all segments, and the trend removal process is repeated for different values of s .

In the fourth step, the average for all segments is calculated to obtain the fluctuation function of the q -th order ($q \neq 0$):

$$F_q(s) \equiv \left\{ \frac{1}{2N_s} \sum_{v=1}^{2N_s} [F^2(s, v)]^{q/2} \right\}^{1/q} \quad (11)$$

$F_q(s)$ depends on DFA of order m , and is defined only for $s \geq m + 2$. To see how the generalised q -dependent fluctuation functions $F_q(s)$ depend on the time scale s for different values of q , steps 2 to 4 are repeated for several time scales s .

Finally, the scaling behaviour of the fluctuation functions is determined by analysing the log-log plots $F_q(s)$ versus s for each value of q . $F_q(s)$ grows as a power-law:

$$F_q(s) \sim s^{h(q)}. \quad (12)$$

For stationary time series, $h(2)$ is identical to the Hurst exponent H , so the function $h(q)$ represents the generalised Hurst exponent (Kantelhardt et al., 2002). The DFA method shows long-term correlations of non-stationary time series, and ignores obvious random correlations that are a consequence of non-stationarity (Danylchuk et al. 2020). It is significant for the investigation of multifractality in financial time series. With-

in MF-DFA, the power-law relation between the q -order RMS (root-mean-square) is equal to the Hurts exponent of the q -th order (Ihlen²⁰¹²).

If the value of the Hurst exponent is $H = 0.5$, the observed series is stochastic, that is, it follows a random walk. If H is in the range $0 < H < 0.5$ the observed series shows the existence of antipersistence, generating reversals much more often than a random walk. Processes are short-range dependent. When H is in the range $0.5 < H < 1$, the observed series is the trend-resistant time series, and shows a long memory. As multifractality is associated with the presence of long-memory in cryptocurrency returns data, it opposes the efficient market hypothesis (EMH) in finance theory.

Based on the Hurst exponent, the inefficiency index can be defined as follows (Gu, Shaob & Wang, 2013):

$$InfIdx = |H(2) - 0.5|, \quad (13)$$

where $H(2)$ is the Hurst exponent calculated by the MF-DFA method when $q = 2$. If $H(2) > 0.55$ or $H(2) < 0.45$ then we assume that the market is inefficient.

RESULTS AND DISCUSSION

Data and Descriptive Statistics

In this paper, we use the hourly closing prices of the Ethereum cryptocurrency in the interval between 6 January 2019 and 17 January 2022 (data source: Coinbase). The interval is divided into three parts: Ethereum price trend before Covid-19 (symbol ETH-Pre-Covid19, from 06/01/2019 to 16/3/2020, 10461 observations), Ethereum price trend during Covid-19- induced shock (symbol ETH-Covid19, from 16/3/2020 to 24/5/2021, 10440 observations), and Ethereum price trend after Covid-19-induced shock (symbol ETH-Post-Covid19, from 24/5/2021 to 17/1/2022, 5713 observations). We use logarithmic returns on prices in our analyses. For the sake of comparison, some tests show the results for the white noise series – WNOISE. A graphic representation of the observed series is shown in Figure 1. A graphical representation of the log return of each series is given in Figure 2.

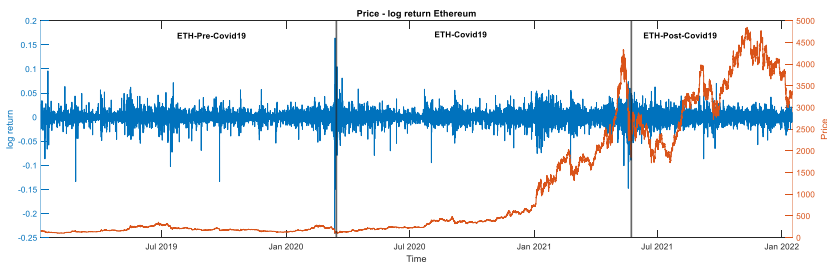


Figure 1. Graphic presentation of Ethereum price and return trends

Source: Authors' calculations

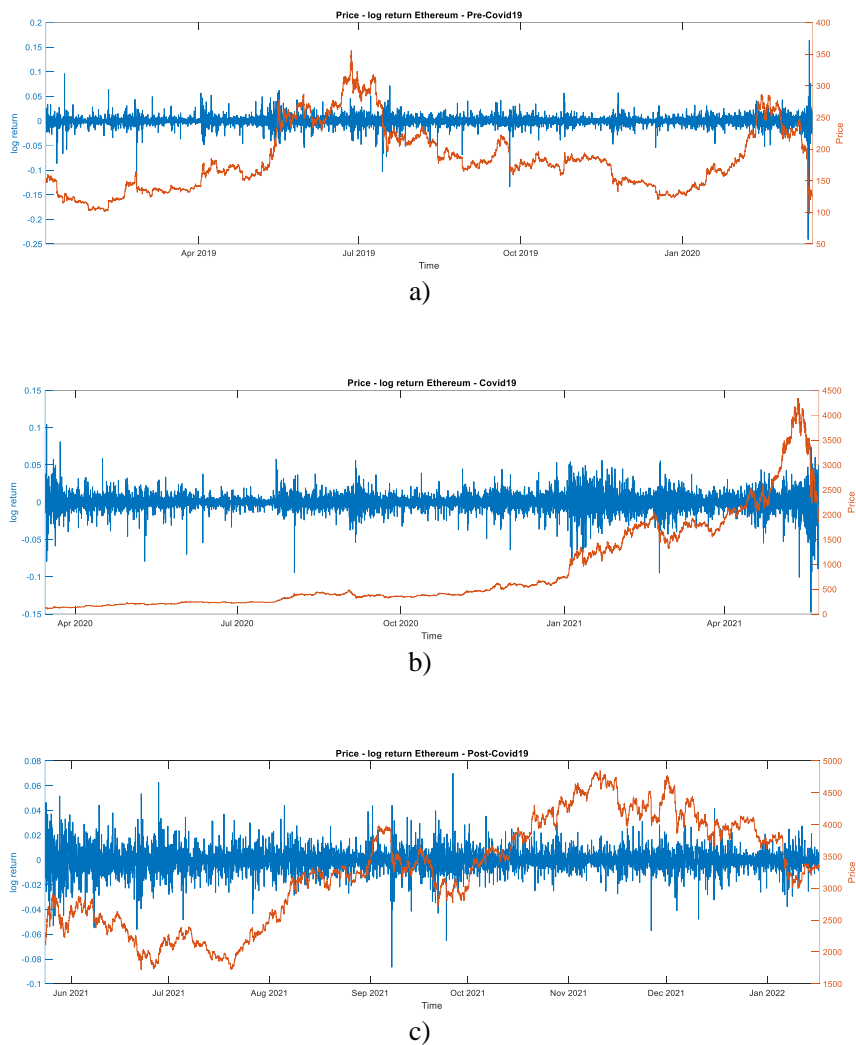
Summary statistics are given in Table 1. The results of the Jarque-Bera test statistic reject the null hypothesis of normality of the distribution of log returns for all observed series. Also, all unit root and stationarity tests show that log returns are stationary for all series. All observed series have a significantly negative coefficient of skewness, but for ETH-Post-Covid19 it is not significantly large. The kurtosis value is significantly higher than 3 for all observed series, but the value for the period before Covid-19 (ETH-Pre-Covid19) is extremely high. Based on the presented tests, we can conclude that none of the observed series have a normal distribution of log returns.

Table 1. Summary statistics of the hourly log returns of ETH-Pre-Covid19, ETH-Covid19 and ETH-Post-Covid19.

| | <i>Pre-Covid-19</i> | <i>COVID-19</i> | <i>Post-COVID-19</i> |
|---|-------------------------------|-----------------|----------------------|
| <i>Observation</i> | 10461 | 10440 | 5713 |
| | Descriptive statistics | | |
| <i>Mean</i> | 0.000 | 0.000 | 0.000 |
| <i>Median</i> | 0.000 | 0.000 | 0.000 |
| <i>Maximum</i> | 0.164 | 0.081 | 0.070 |
| <i>Minimum</i> | -0.241 | -0.148 | -0.087 |
| <i>Std. Dev.</i> | 0.010 | 0.011 | 0.010 |
| <i>Skewness</i> | -1.672 | -0.765 | -0.152 |
| <i>Kurtosis</i> | 74.721 | 14.787 | 8.588 |
| | Nonnormality test | | |
| <i>Jarque-Bera (CV=5.9433)</i> | 2246959.000 | 61450.100 | 7455.438 |
| <i>p-val</i> | 0.000 | 0.000 | 0.000 |
| | Unit Root tests | | |
| <i>Augmented Dickey-Fuller test statistic</i> | -105.854 | -75.382 | -74.560 |
| <i>p-val</i> | 0.000 | 0.000 | 0.000 |
| <i>Phillips-Perron test statistic</i> | -106.017 | -103.119 | -74.560 |
| <i>p-val</i> | 0.000 | 0.000 | 0.000 |
| <i>KPSS-Kwiatkowski-Phillips-Schmidt-Shin</i> | 0.204 | 0.047 | 0.120 |
| | Random Walk hypothesis | | |
| <i>Variance Ratio Test</i> | 2.000 | 1.667 | 0.686 |
| <i>p-val</i> | 0.170 | 0.331 | 0.934 |
| <i>Rank Score Variance Ratio Test</i> | 8.728 | 5.876 | 1.969 |
| <i>p-val</i> | 0.000 | 0.000 | 0.135 |
| <i>Sign Variance Ratio Test</i> | 9.360 | 8.365 | 3.946 |
| <i>p-val</i> | 0.000 | 0.000 | 0.001 |

Source: Authors' calculations

Table 2 shows the results of the ARCH test. The ARCH test examines the existence of volatility clustering (heteroscedasticity) in time series. The results of the test strongly reject the null hypothesis of no volatility correlation in all observed periods. The clustered volatility (clustered) and persistence are much more pronounced during the pandemic.



*Figure 2. Graphic presentation of price and return trends:
a) Pre-Covid19 b) Covid_19 and c) Post-Covid19.
Source: Authors' calculations*

Table 2. Results of the ARCH test on data heteroskedasticity.

| ARCH (CV=18.3070) | | |
|----------------------|----------|-------|
| | Stat | p-val |
| Pre-Covid-19 | 858.806 | 0.000 |
| Covid-19 | 1091.271 | 0.000 |
| Post-Covid-19 | 219.073 | 0.000 |

Source: Authors’ calculations

Figure 3 shows the CDF (Cumulative distribution function) of absolute normalised log returns. Power-law distribution of tails is clearly observed for all observed periods. The widest range of scaling was in the period before the COVID-19 pandemic, and the narrowest in the period after the pandemic shock.

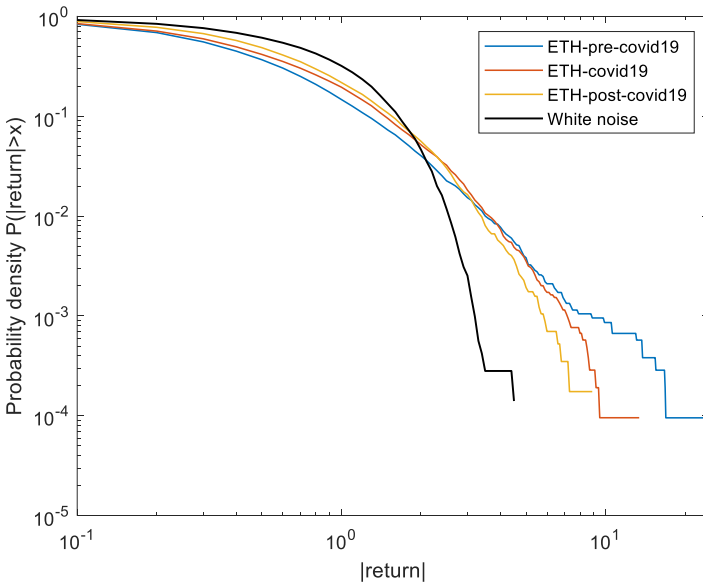


Figure 3. Cumulative distribution of normalised absolute log-returns for Ethereum

Source: Authors’ calculations

Table 3 shows the values of parameters α and x_{min} , calculated according to the procedure described by Clauset, Shalizi and Newman (2007). The table shows the results for the distribution of positive returns $\alpha (+)$, negative returns $\alpha (-)$, and the range between the slopes of positive and negative returns (Range= $\alpha (+)$ - $\alpha (-)$). The difference between the negative and positive tails of the distribution during the pandemic is very small, indicating a relative uniformity of positive and negative events. The difference between the negative and positive tail after the pandemic-

induced shock is significantly higher than the difference in the pre-pandemic period. During the observed period after the pandemic, negative events are dominant, in contrast with the period before the pandemic.

Table 3. Power law parameters. (+) and (-) indicate coefficients for positive log returns and negative log returns, respectively.

| Power Law distribution | | | | | | | |
|--|----------|------------|--------------|---------------|--------------|---------------|---------|
| $(p(x) \sim x^{-\alpha} \text{ for } x \geq x_{\min})$ | | | | | | | |
| | α | X_{\min} | $\alpha (+)$ | $X_{\min}(+)$ | $\alpha (-)$ | $X_{\min}(-)$ | Range |
| Pre-Covid-19 | 3.41651 | 1.65648 | 3.58361 | 1.65648 | 3.30347 | 1.86590 | 0.28014 |
| Covid-19 | 3.21486 | 1.21891 | 3.23549 | 1.16953 | 3.20581 | 1.27852 | 0.02968 |
| Post-Covid-19 | 3.53977 | 1.38137 | 3.13618 | 1.04362 | 3.56085 | 1.34977 | 0.42467 |
| WNOISE | 5.12818 | 1.47546 | 4.60354 | 1.30508 | 4.50117 | 1.27456 | 0.10237 |

Source: Authors' calculations

Tests for Non-linearity and Chaos

The results of the non-linearity check on the Ethereum market in all observed periods were obtained using the BDS test. The results are shown in Tables 4, 5 and 6. In all combinations of embedding dimension ($m=2\dots 6$) and epsilon ($s=0.5, 1.0, 1.5, 2.0$), the null hypothesis of linear dependence of log returns is rejected ($p\text{-val}=0.000$) for all observed periods. The BDS test clearly suggests that the Ethereum market is characterised by a non-linear dependence structure. These results provide strong evidence against the IID assumption of returns on efficient markets.

Table 4. BDS results for ETH-Pre-Covid19

| ETH-Pre-Covid19 | BDS-Non-linearity test | | | |
|-----------------|------------------------|---------|---------|---------|
| m | $s=0.5$ | $s=1.0$ | $s=1.5$ | $s=2.0$ |
| 2 | 0.020 | 0.026 | 0.018 | 0.010 |
| 3 | 0.026 | 0.049 | 0.039 | 0.024 |
| 4 | 0.022 | 0.065 | 0.058 | 0.039 |
| 5 | 0.016 | 0.073 | 0.076 | 0.055 |
| 6 | 0.012 | 0.075 | 0.090 | 0.068 |

Source: Authors' calculations

Table 5. BDS results for ETH-Covid19

| ETH-Covid19 | BDS-Non-linearity test | | | |
|-------------|------------------------|---------|---------|---------|
| m | $s=0.5$ | $s=1.0$ | $s=1.5$ | $s=2.0$ |
| 2 | 0.020 | 0.029 | 0.023 | 0.014 |
| 3 | 0.024 | 0.055 | 0.051 | 0.035 |
| 4 | 0.020 | 0.071 | 0.077 | 0.058 |
| 5 | 0.015 | 0.076 | 0.097 | 0.080 |
| 6 | 0.010 | 0.075 | 0.112 | 0.099 |

Source: Authors' calculations

Table 6. BDS results for ETH-Post-Covid19

| Post-Covid-19 | | BDS-Non-linearity test | | | |
|---------------|---------|------------------------|---------|---------|--|
| m | $s=0.5$ | $s=1.0$ | $s=1.5$ | $s=2.0$ | |
| 2 | 0.015 | 0.017 | 0.014 | 0.009 | |
| 3 | 0.021 | 0.029 | 0.030 | 0.021 | |
| 4 | 0.020 | 0.032 | 0.041 | 0.032 | |
| 5 | 0.017 | 0.031 | 0.050 | 0.044 | |
| 6 | 0.013 | 0.028 | 0.055 | 0.055 | |

Source: Authors’ calculations

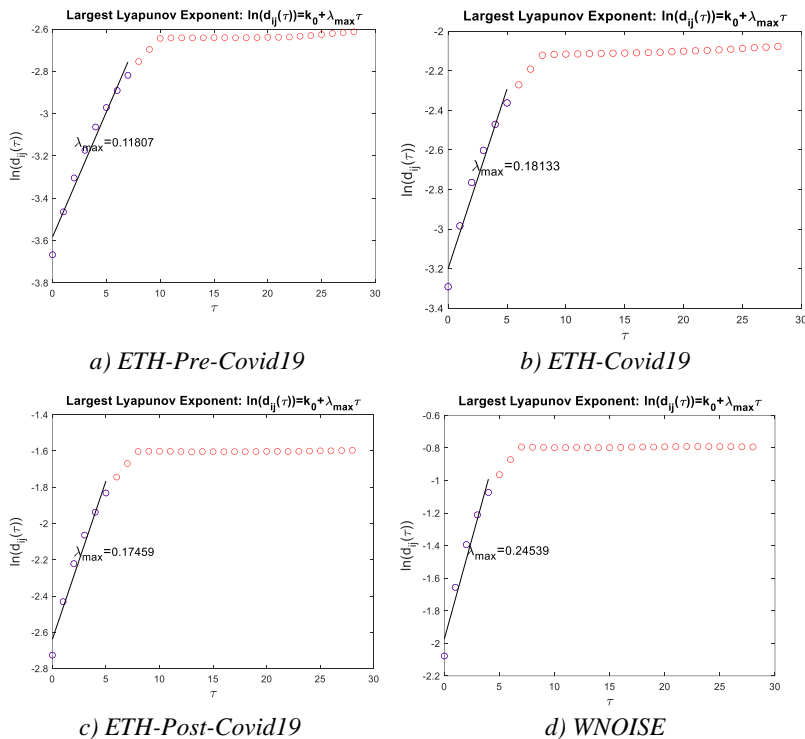


Figure 4. Largest Lyapunov exponent (λ)

Source: Authors’ calculations

Table 6. Largest Lyapunov exponent (λ)

| Largest Lyapunov exponent | λ_{\max} |
|---------------------------|------------------|
| Pre-Covid-19 | 0.11807 |
| Covid-19 | 0.18133 |
| Post-Covid-19 | 0.17459 |
| WNOISE | 0.24539 |

Source: Authors’ calculations

As we mentioned earlier, the largest Lyapunov exponent (LLE) is used to estimate the chaos in the observed time series. The results of the LLE calculation, based on the procedure (Mohammadi, 2020a), are shown graphically (Figure 4) and in Table 6. The calculations show the existence of a positive Lyapunov exponent in all observed periods. A smaller value of λ in the pre-pandemic period indicates a potentially greater predictability of returns based on past information. However, the calculation of the largest Lyapunov exponent for high-frequency financial time series tends to be larger than the true exponent due to noise. To overcome this problem, Gencay and Dechert (1992) proposed an algorithm for LLE estimation based on the use of feedforward neural networks. The calculation of LLE by this algorithm according to the procedure (Mohammadi, 2020b) is given in Table 7 for overlapping dimensions m from 2 to 6. For all observed series, λ is negative, so we can reject the null hypothesis of a positive largest Lyapunov exponent, i.e. we can reject the hypothesis of the existence of low-dimensional chaos.

Table 7. Largest Lyapunov exponent (λ) with feedforward neural networks

| Largest Lyapunov exponent (λ) | $m=1$ | $m=2$ | $m=3$ | $m=4$ | $m=5$ | $m=6$ |
|---|----------|----------|----------|----------|----------|----------|
| Pre-Covid-19 | -0.43754 | -0.50558 | -0.54127 | -0.58009 | -0.63549 | -0.74441 |
| Covid-19 | -0.57014 | -0.59477 | -0.62820 | -0.67290 | -0.74558 | -0.94951 |
| Post-Covid-19 | -0.51328 | -0.54867 | -0.58901 | -0.64918 | -0.77071 | - |

Source: Authors' calculations

Tsallis Entropy

Tsallis entropy (TsEn) is one of the indicators of critical phenomena in complex systems. Figure 5 shows the movement of Tsallis entropy during the entire observed period. The TsEn indicator shows a rapid decline at the beginning of the pandemic (16/3/2020), and rapid growth on 24 May 2021. Therefore, the value of the TsEn indicator clearly separates three periods: the period before the pandemic (ETH-Pre-Covid19, from

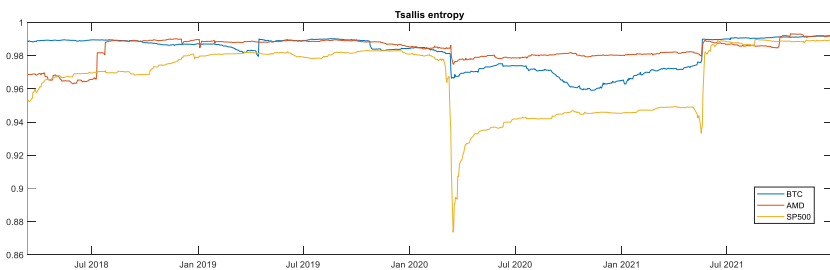
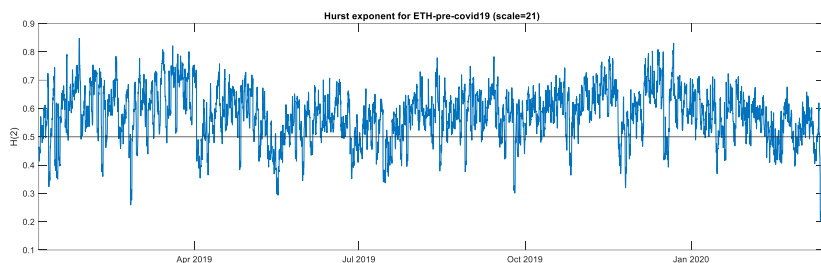


Figure 5. Dynamics of Tsallis entropy from 6/1/2019 to 17/1/2022.

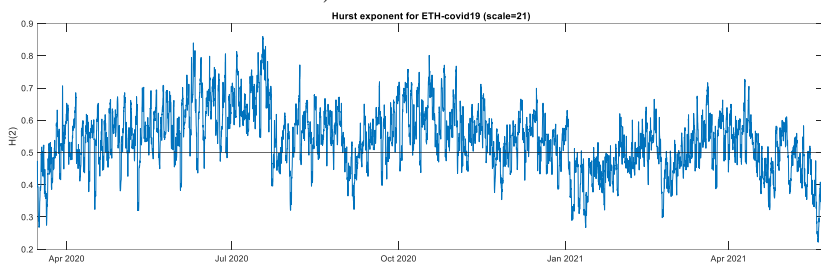
Source: Authors' calculations

6/1/2019 to 16/3/2020), the period of the pandemic-induced shock (ETH-Covid19, from 16/3/2020 to 24/5/2021), and the period after the pandemic-induced shock (ETH-Post-Covid19, from 24/5/2021 to 17/1/2022).

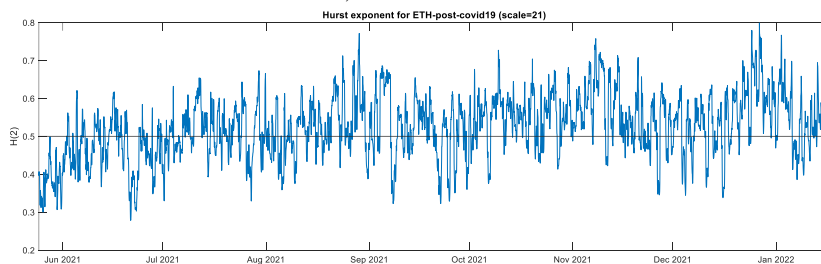
Multifractality



a) ETH-Pre-Covid19



b) ETH-Covid19



c) ETH-Post-Covid19

Figure 6. Hurst exponent (scale=21):

a) ETH-Pre-Covid19; b) ETH-Covid-19; c) ETH-Post-Covid19

Source: Authors’ calculations

In Figure 6(a), we see that the Hurst exponent during the entire period before the pandemic shows the existence of long-memory ($H(2)>0.5$). The beginning and end of the pandemic period is marked by anti-persistence ($H(2)<0.5$) (Figure 6(b)). The first half of the observed after pandemic shock period remains anti-persistent. However, in the second half of the observed

period, the Hurst exponent indicates long-memory and a return to the dominant behaviour of the period before the pandemic (Figure 6(c)).

Table 8. Results of testing the long-memory.

| Hurst exponent (scale=21) | $H(2)$ | InffIdx | Min Hurst | Max Hurst | Range |
|------------------------------|---------|---------|-----------|-----------|---------|
| Pre-Covid-19 | 0.58899 | 0.08899 | 0.15792 | 0.84756 | 0.68964 |
| Covid-19 | 0.53732 | 0.03732 | 0.22210 | 0.85997 | 0.63787 |
| Post-Covid-19 | 0.53740 | 0.03740 | 0.27886 | 0.79903 | 0.52017 |
| WNOISE | 0.48712 | 0.01288 | 0.29810 | 0.63735 | 0.33925 |

Source: Authors' calculations

The verification of the existence of long-term correlation of returns, and the existence of long-memory for the observed periods is shown in Table 8. The verification of the existence of long-memory is based on the estimation of the Hurst exponent using the MF-DFA (Multifractal detrended fluctuation analysis) method for different scales of the observed time series ($scale_{min} = 11$, $scale_{max}=1024$), taking into account different degrees (q) of the partition function. The table shows the results for $q=2$, used to estimate the index of market inefficiency (InffIdx). Hurst's $H(2)$ exponent is significantly higher than 0.55, that is, InffIdx is significantly higher than zero for the period before the pandemic. These results show that the Ethereum market was inefficient before the pandemic. However, during and after the pandemic, the Hurst exponent does not show that the Ethereum market behaves inefficiently ($H(2)<0.55$). Taking into account the results on the graphic (Figure 3(c)), we can conclude from the second half of the observed period after the pandemic shock that the market is returning to the behaviour before the pandemic, i.e.. the Ethereum market is inefficient.

The Hurst exponent ($H(2)$) is not sufficient for a multiscale analysis of the complexity of time series. For this purpose, the generalised Hurst exponent $h(q)$ is used, with degree q belonging to some predefined range according to the properties of return tails. It can be calculated with the help of MF-DFA. A measure of time series complexity and multifractality properties can be found in the Hurst exponent distribution and the multifractality spectrum (Figure 7).

The width of the multifractal spectrum – Range (Table 8) shows that the Ethereum market of the period before the pandemic and during the pandemic shock was significantly less efficient than the market of the period after the pandemic shock. Also, the spectrum width shows that the pre-pandemic Ethereum market was less multifractal than was the case during and after the pandemic shock.

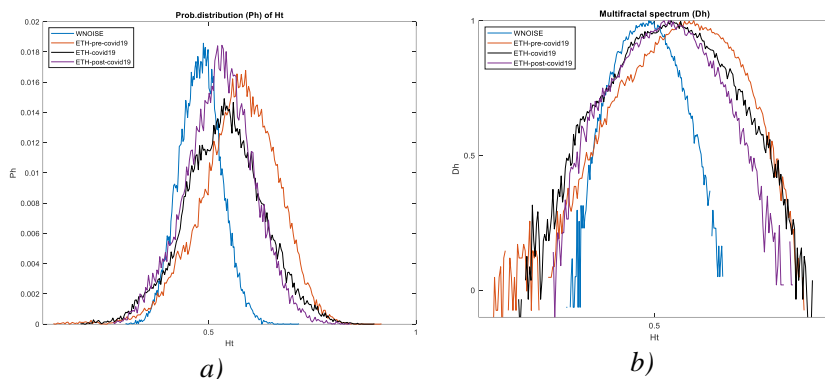


Figure 7. The probability distribution (a) and multifractal spectrum (b).
 Source: Authors' calculations

CONCLUSION

In this paper, we studied the properties of long-term correlation, multifractality, and chaotic hourly logarithmic returns of the Ethereum cryptocurrency. The time period of the analysis is the interval between 6 January 2019 and 17 January 2022, and this interval is divided into three parts: the period before the COVID-19 pandemic (from 6/1/2019 to 16/3/2020), the period of the COVID-19 pandemic-induced shock (from 16/3/2020 to 24/5/2021) and the period after pandemic-induced shock (from 24/5/2021 to 17/1/2022). The limits of the interval are determined by the Tsallis entropy indicator, which has sharp peaks on 16/3/2020 and 24/5/2021.

Based on the results of the ARCH and BDS tests, we can conclude that Ethereum returns in all observed periods have pronounced heteroscedasticity and non-linearity. The research results show that return distribution corresponds to a power law in all observed periods. The difference between the negative and positive tails of the distribution of returns during the pandemic shock is very small, indicating a relative uniformity of positive and negative events. In contrast, the difference between the negative and positive tails is pronounced in the pre-pandemic period and the period after pandemic shock.

The study of the multifractal and chaotic characteristics of Ethereum return volatility is based on the use of MF-DFA (Multifractal Detrended Fluctuation Analysis) and LLE (Largest Lyapunov Exponent) methods. From the perspective of non-linearity and chaos, returns in the pre-pandemic period had slightly higher predictability than in the periods during and after the pandemic shock. The value of the Hurst exponent $H(2) > 0.5$, in all observed periods, shows that the Ethereum volatility market has a

long memory in all periods, which also indicates that the market of Ethereum can be predictable based on past data. The dynamics of the Hurst exponent during the entire period before the pandemic show the existence of long-memory. The beginning and end of the pandemic-induced shock period was marked by anti-persistence ($H(2) < 0.5$). The first half of the period after pandemic shock remained anti-persistent. However, in the second half of the observed period, the Hurst exponent indicates long-memory and a return to the dominant behaviour of the period before the pandemic. Anti-persistence is present in the second half of the pandemic shock period and in the first half of the period after the pandemic-induced shock. However, the long-memory effect is re-established in the second half of the observed period after the pandemic-induced shock, indicating that Ethereum's return behaviour is returning to pre-pandemic characteristics.

The results of the efficient market hypothesis (EMH) tests are in line with the results Cheng, Liu & Zhu (2019), Corbet, Lucey, Urquhart and Yarovaya (2019), Kakinaka and Umeno (2022), and Mnif, Salhi, Trabelsi and Jarbouli (2022) reached in their studies. More specifically, the non-linearity, non-normality of the return distribution and potential predictability in all observed periods provide strong evidence against the efficient market hypothesis.

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ЕФЕКТИ КОВИД-19 ПАНДЕМИЈЕ НА МУЛТИФРАКТАЛНОСТ И ДУГОРОЧНУ МЕМОРИЈУ ПРИНОСА *ETHEREUM*-а

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Резиме

Криптовалуте су приватно-смотовани дигитални новац базиран на децентрализованој мрежи изграђеној на блокчејн технологији. Тржишта криптовалута су подложна осцилацијама, са епизодама екстремне волатилности. Глобална пандемија КОВИД-19 узбуркала је глобалну економију, па и тржиште криптовалута није било поштеђено. Услед тога је настала је потреба да се процени како је пандемија утицала на динамику овог тржишта. Највећи број истраживања бави се проучавањем динамике биткоина, а мали број другим криптовалутама. У овом истраживању определили смо се да истражимо утицај КОВИД-19 пандемије на динамику логаритамског приноса Ethereum–а, као друге криптовалуте по тржишној капитализацији. Анализа је обухватила временски период између 6. јануара 2019. године и 17. јануара 2022. године, и овај интервал је подељен на три дела: период пре КОВИД-19 пандемије (од 06.01.2019. до 16.03.2020.), период шока на тржишту криптовалута изазваног пандемијом КОВИД-19 (од 16.03.2020. до 24.05.2021.) и период после шока изазваног пандемијом (од 24.05.2021. до 17.01.2022). Границе интервала одређене су индикатором Tsallis ентропије која дана 16.03.2020. и 24.05.2021. године достиже највише степене. Акцент истраживања је на утицају пандемије на степен нелинеарности и мултифракталности приноса.

На основу резултата ARCH и BDS тестова можемо да закључимо да приноси *Ethereum*-а у свим посматраним периодима имају изражену хетероскедастичност и нелинеарност. Резултати истраживања показују да у свим посматраним периодима дистрибуција приноса одговара степеном закону (енгл. power law). Разлика између негативног и позитивног репа дистрибуције приноса током шока на тржишту услед пандемије је врло мала, што указује на релативну уједначеност позитивних и негативних догађаја. Насупрот томе, разлика између негативног и позитивног репа изражена је у периодима пре и после пандемијског шока. Проучавање мултифракталне и хаотичне карактеристике променљивости приноса Ethereum засновано је на коришћењу MFDDFA (енг. Multifractal Detrended Fluctuation Analysis) и LLE (енг. Largest Lyapunov Exponent) метода. Из перспективе нелинеарности и хаотичности, приноси у периоду пре пандемије су имали нешто вишу предвидљивост него у периодима током и након шока изазваног пандемијом.



Вредност Хурстовог експонента показује да тржиште волатилности *Ethereum*-а има дугорочну меморију у свим периодима, што такође указује да тржиште *Ethereum*-а може да буде предвидљиво на основу података из прошлости. Динамика Хурстовог експонента током целог периода пре пандемије показује постојање дугорочне меморије. Почетак и крај периода шока обележила је област антиперзистенције. Док је прва половина посматраног периода после пандемијског шока задржала антиперзистентност, у другој половини периода Хурстов експонент указује на дугорочну меморију и повратак на доминантно понашање у периоду пре пандемије. Антиперзистентност је присутна у другој половини периода шока и у првој половини посматраног периода после пандемијског шока. Међутим, ефекат дугорочног памћења се поново успоставља у другој половини посматраног периода после пандемијског шока, што указује на то да се понашање приноса Ethereum–а враћа на особине пре периода пандемије. Нелинеарност, ненормалност дистрибуције приноса и потенцијална предвидљивост у свим посматраним периодима пружају јак доказ против хипотезе ефикасног тржишта (EMH).

DOES EMPLOYER BRANDING RETAIN EMPLOYEES? JOB SATISFACTION AS A MEDIATOR

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Abstract

The development and quality of human capital determine contemporary companies' long-term competitive potential. Consequently, in addition to the goods and services market, companies aspire to be competitive in the labour market in order to acquire and retain skilled employees. Creating a distinct employer brand is a successful strategic reaction by top management to the increasing pressures to reduce turnover rates. This study aims to look at job satisfaction's role as a mediator in the link between employer brand and employee retention. The research was conducted on a sample of 128 companies in the Republic of Serbia, with primary data acquired by the survey method. We applied the PLS-SEM and found that satisfaction acts as a competitive mediator in the relationship between organisational culture and employee retention, and as a complete mediator in the link between training and development, and retention. Furthermore, the analysis showed that job satisfaction appears as a complementary intervening variable in the employer reputation-employee retention path. The study provides a foundation for a more comprehensive understanding of the complex nature of the interaction between the investigated components of the employer brand and staff retention, as well as assistance for management decision-making in the creation of initiatives to prevent voluntary turnover.

Key words: employer brand, job satisfaction, employee retention.

ДА ЛИ БРЕНДИРАЊЕ ПОСЛОДАВЦА МОЖЕ ЗАДРЖАТИ ЗАПОСЛЕНЕ? ЗАДОВОЉСТВО ПОСЛОМ КАО МЕДИЈАТОР

Апстракт

Дугорочна конкурентска способност савремених компанија директно је условљена развојем и квалитетом људског капитала. Зато, осим на тржишту роба и услуга, оне настоје да буду конкурентне и на тржишту рада, у циљу аквизиције и задржавања квалитетних кадрова. Изградња јединственог брэнда послодавца ефективан је стратегијски одговор управљачког врха на растуће захтеве за сма-

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њивањем стопа флукуације. Истраживање у овом раду има за циљ да испита медијаторску улогу задовољства послом у односу брэнда послодавца и задржавања запослених. Истраживање је спроведено на узорку од 128 компанија у Републици Србији, при чему су примарни подаци прикупљени методом анкете. Применом PLS-SEM-а утврђено је постојање компетитивног медијаторског утицаја задовољства послом у односу организационе културе и задржавања запослених и пуног медијаторског ефекта у релацијама тренинга и развоја и задржавања. Поред тога, анализа је показала и комплементарни медијаторски ефекат задовољства послом у односу репутације послодавца и задржавања запослених. Рад пружа основу за комплетније разумевање комплексне природе односа анализираних димензија брэнда послодавца и ретенције запослених, као и подршку менаџерском одлучивању у формулисању стратегија редукције добровољне флукуације.

Кључне речи: брэнд послодавца, задовољство послом, задржавање запослених.

INTRODUCTION

With the widespread practice of job offshoring and the rapid advancement of information technology, talented individuals may apply for job positions in foreign companies around the world. In this way, the employers' rivalry loses local attributes, making it difficult to keep the most important employees in the long run. If the employee believes that another company's offer is superior to the one supplied by the existing employer, he will undoubtedly leave the company. The establishment of the employer's brand is one of the strategic tactics that have proven beneficial in addressing this issue. Although the notion was first proposed in terms of the influence on future labour market candidates, current research highlights the impacts of the employer brand on developing positive work attitudes among current workers (Rai & Nandy, 2020). Similar to the idea of branding in consumer marketing, a strong employer brand leads to a competitive advantage and supports staff retention in firms (Backhaus & Tikko, 2004). Moreover, employees who rate their employer's brand favourably are less likely to leave if they receive an offer from another company (Bussin & Mouton, 2019).

It is predicted that the expenses of an employee's departure, including their replacement, amount to approximately 30% of an employee's average yearly income (Mahan, Nelms, Jeeun, Jackson, Hein, & Moffett, 2020), with these costs increasing dramatically in relation to the occupancy of the highest positions within the organisation. According to the last Work Institute Retention Report (Nelms, 2022), the average cost of turnover for a US employee is around \$15000. The consequences of this problem extend beyond direct financial losses when one considers that the departure of an employee can result in the loss of the company's main customers or clients, a drop in productivity among the team of employees who remain in the company, and damage to the company's reputation, which affects the devaluation of the employer's brand. Further-

more, the departure of an employee raises the possibility of crucial information about the organisation's activities being leaked to competitors (Bharadwaj & Yameen, 2020).

Previous research has found that employees who have expressed a low degree of job satisfaction are more likely to depart (Olusegun, 2013; Liu, Wu, & Mao 2019). Rather than recruiting the best applicants, companies must focus on motivating workers to stay with them and contribute to the long-term attainment of corporate goals, which is why they should also focus on increasing employee satisfaction (Tanwar & Prasad, 2016). In this regard, numerous previous studies have found that different dimensions of the employer brand have a significant impact on the creation of positive employee attitudes, such as satisfaction (Tanwar & Prasad, 2016) and intention to stay with the organisation (Ahmad & Daud, 2016; Kashyap & Verma, 2018; Rai & Nandy, 2020). The purpose of this study is to investigate whether job satisfaction acts as a mediator in the relationship between the different dimensions of employer brand and employee retention in companies operating on the territory of the Republic of Serbia. Although some studies have been conducted on the association between these factors, studies that holistically investigate the mediating function of satisfaction in the relationship between specific characteristics of the employer brand and employee retention are rare. By distinguishing several constructs within the employer brand while examining the mediating role of satisfaction, we seek to fill this gap in the existing literature.

LITERATURE REVIEW

An employer brand, according to Martin, Gollan and Grigg (2011), indicates an organisation's overall recognition among key stakeholders in terms of offering a high-quality work experience, as well as a distinct corporate identity that employees respect and confidently advocate to others. It arises as a result of employer branding, which represents a long-term targeted strategy aimed at recruiting and retaining employees (Hillebrandt & Ivens, 2013). Due to the high costs and potential negative effects for the business that key employee departures might cause, a structured approach to managing their retention is required. According to Ul Hadi and Ahmed (2018), a favourable impression of the employer brand increases the probability of employees remaining with the employer.

Employee retention rates may be increased by establishing optimal policies and practices that match employee expectations (Kashyap & Verma, 2018). Individual evaluation of the degree to which the job fulfils the individual's values and expectations defines their job satisfaction (Coomber & Barribal, 2007). As a result, the study looked at whether satisfaction may function as a mediator in the link between employer brand aspects and employee retention. Employee satisfaction and retention are

identified as employer brand outcomes in the model created by Gaddam (2008), whereby employee satisfaction is a determinant of retention in the organisation. According to Allen, Bryant and Vardaman (2010), the choice to leave a job is a complicated process in which an individual estimates their present employment and compares it to possible alternatives. As these authors point out, particular organisational and individual characteristics have a direct influence on work attitudes such as satisfaction and commitment, which they regard to be the most significant drivers of employee retention. Employees who perceive their employer's brand as favourable have a greater degree of job satisfaction, according to Bussin and Mouton (2019), while Youcef, Ahmed and Ahmed (2016) proved the presence of a direct effect of employee satisfaction on the intention to remain in the company. As a result, employees who are dissatisfied with their jobs are more prone to consider leaving (Liu et al., 2019). A study done by Olusegun (2013) revealed that work satisfaction has a considerable effect on the intention to leave the job.

The employer brand is a reflection of the prevalent organisational culture. Corporate culture qualifies as an employer branding strategy tool because of its contribution to organisational attractiveness (Barbaros, 2020), which was found to be a strong predictor of employee retention (Joseph, Sahu, & Khan, 2014). If organisational values, attitudes and norms set in the corporate environment fail to align with the requirements and expectations of its workforce, it is improbable that the organisation will be able to maintain employee retention in the long run. Organisational culture is considered one of the most important factors in attracting and retaining key employees (Shah & Sarkar, 2017). According to the research by Tetteh and Brenyah (2016), a supportive organisational culture has positive effects on employee retention. Furthermore, as stated by Kashyap and Verma (2018), the social value of the employer brand, which is a derivation of organisational culture, is a strong predictor of turnover intention. Girma (2019) found that job satisfaction negatively mediates the relationship between innovative culture and turnover intention in companies in Ethiopia. The findings of the research conducted by Habib, Aslam, Hussain, Yasmeen, and Ibrahim (2014) demonstrated that organisational culture impacts both the satisfaction and retention of employees. The enhancement of staff retention may be achieved by companies via the implementation of a healthy organisational culture. The cultivation of a desirable organisational culture may be achieved by placing emphasis on concepts such as transparency, collaboration, and inclusivity. However, if the business fails to sustain this specific attention over an extended period, for example by disregarding the needs of its employees, there is a possibility that employee retention might be adversely affected. A further approach that businesses may choose to maintain a high quality workforce in the workplace is through enhancing job satisfaction levels

within the organisational setting. Enhancing corporate culture may be achieved via several strategies, such as fostering employee empowerment through autonomy and recognition, as well as prioritising investments in employee well-being. These measures have the potential to directly impact a company's capacity to recruit and retain talented individuals. Moreover, they may also have an indirect effect by enhancing overall job satisfaction. Based on previous research, the following hypothesis was developed: H1 – job satisfaction mediates the relationship between organisational culture and employee retention.

Training and development, as a component of employer brand, has proven to be a significant factor in employee retention in many activities. In contemporary companies, there is a higher probability of employee retention when individuals see that their skill sets are being nurtured and challenged. The provision of relevant and captivating training opportunities is anticipated to contribute to workers' perception of being supported and esteemed. This phenomenon has the potential to result in increased levels of job satisfaction and employee retention. The provision of training opportunities has been indicated to enhance individuals' self-assurance, which can eventually lead to increased levels of job satisfaction and make employees stay with their current employer longer. In the research conducted by Abba (2018), training and development was positively associated with employee retention in the Nigerian banking sector. Positive effects of training and development were also found in the study by Udayanga, Jayarathna, Silva, Rashaad, and Dissanayake (2021), conducted on a sample of employees working in a multinational corporation in Sri Lanka. According to a prior study, the development value of the employer's brand, which relates to training and development in meaning and substance, is highly connected with the desire to quit the job (Ahmad & Daud, 2016). In a study of IT employees done by Kashyap and Verma (2018), this characteristic of the employer brand was found to be a strong predictor of the intention to quit the job. Furthermore, Nguyen and Duong (2021) found that training and development and job satisfaction are both positively associated with the retention of young employees. Using data from Saudi Arabia fast food franchisees, Jehanzeb, Hamid and Rasheed (2015) discovered a strong positive association between successful training programmes and job satisfaction, whereas job satisfaction was negatively correlated with employees' turnover intention. According to the findings of Lehtonen, Nokelainen, Rintala, and Puhakka (2022), more access to learning resources, and more opportunities for professional progress were associated with reduced turnover intention. The above provided the foundation for developing the following study hypothesis: H2 – job satisfaction mediates the relationship between training and development and employee retention.

Reputation is an important aspect of developing a good employer brand. Although reputation enhancement is typically targeted at external stakeholders, it may also contribute to better employee attitudes toward work. In this regard, Helm (2012) proved that pride and job satisfaction mediate the link between perceived external reputation and turnover intention among workers in different industries. A strong company reputation is a valuable asset that is difficult to replicate, thus promoting an employer's competitiveness within the labour market. Being employed by an esteemed company may engender a sense of pride and respect inside an employee, ultimately fostering a deep sense of affiliation and loyalty towards the employer over an extended period of time. The aforementioned fact may also add to the sensation of satisfaction, hence promoting the retention of employees. Furthermore, it is widely believed that employee satisfaction is a legitimate indicator for assessing the efficacy of employer reputation. Moreover, we argue that these variables reflect mutual dependence, as a greater rate of employee retention and heightened job satisfaction contribute to the promotion and advocacy of a company within its immediate environment, hence improving the external reputation of the employer. Analysing the sample of 98 companies operating in the Republic of Serbia, Mirić and Slavković (2022) determined a mediating effect of job satisfaction in the relationship between corporate reputation and employees' intention to stay. Barik and Jain (2023) found a positive association between brand and reputation and employee retention among employees in private academic institutions. The presented findings were the foundation for developing the following research hypothesis: H3 – job satisfaction mediates the relationship between employer reputation and employee retention.

Figure 1 presents the applied research model.

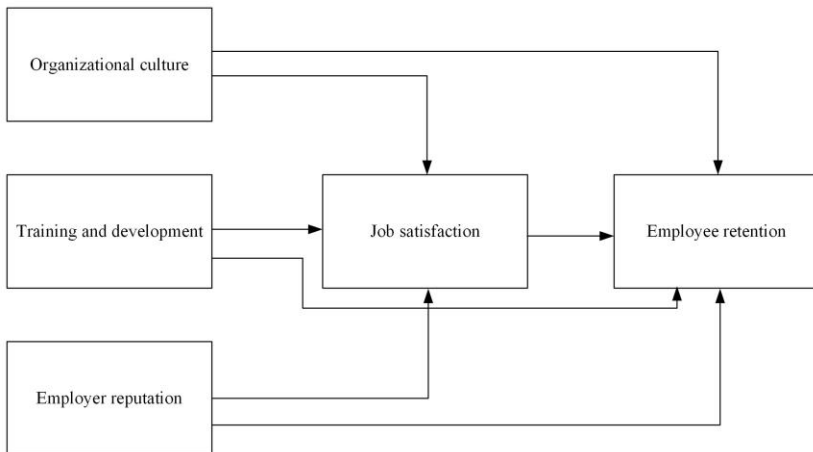


Figure 1. The research model

Source: Authors

METHODOLOGY

For the objectives of this empirical study, 260 questionnaires were distributed, and a total of 128 completed questionnaires were returned. A single answer was gathered from each company, using the snowball sampling approach. The analysis included only those companies that employed a minimum of ten individuals. After applying exclusion criteria, we compiled a list of 128 companies operating in the central part of the Republic of Serbia.

The minimum sample size for conducting the analysis was determined using the ‘10-times rule’ method. The ‘10-times rule’ technique, as described by Hair et al. (2011), is a commonly used approach for estimating the minimum sample size in PLS-SEM. This method is based on the premise that the sample size should exceed ten times the highest number of the inner or outer model linkages directed toward any latent variable inside the model. Given that our model consists of seven arrows directed towards the dependent variable, it is necessary to have a minimum sample size of 70 observations in order to execute Partial Least Squares Structural Equation Modelling (PLS-SEM).

A certain number of questionnaires was distributed in person, while the rest were made available electronically. A cover letter was attached to every questionnaire form sent, wherein researchers noted how respondents’ answers would be kept confidential. The average stated time for completing the electronic questionnaire was less than 6 minutes. The survey was conducted in the period between January and May 2022. The questionnaire was divided into four sections. To ensure a high reliability of the analysed variables, the items were developed based on a review of the relevant literature. Once the English scales were translated into Serbian, we proceeded to modify the items in order to align them with the specific cultural and linguistic particulars of the Serbian context. A pre-test was done on a sample of 30 respondents in order to assess the validity of the instrument and get feedback on question interpretation, so as to avoid biased answers. The first section addresses the employer brand and includes 18 statements grouped into three subscales. Seven statements, based on research by Ghosh and Srivastava (2014), were used to assess organisational culture – for instance, one such statement is *The company encourages teamwork*. Training and development is measured using five items previously adopted by Knox and Freeman (2006), and Tanwar and Prasad (2016), while the remaining six statements pertain to reputation (Highhouse, Lievens, & Sinar, 2003; Tanwar & Prasad, 2016). The examples are *Management invests in the training and development of employees* and *Many people are interested in working for this company*, respectively. The second section of the questionnaire evaluates employee satisfaction using seven statements based on a study by Lepold, Tanzer, Bregenzer, and Jimenez (2018), one of which is *I am satisfied with how I*

get along with my superiors. To assess employee retention, a scale containing six statements was developed by modifying items from studies done by Kyndt, Dochy, and Michielsen (2009), and Zopiatis, Constanti, and Theocharous (2014); the statement *I am not searching for a new job* is part of this scale. The final section of the questionnaire collected general information about the company and respondents. A five-point Likert scale was employed to rate the respondents' agreement with the presented items.

The statistical software package for social sciences (SPSS) 26.0 and SmartPLS was used to examine the data. After discussing the sample structure, we verified the reliability of the measurement scale and then performed descriptive statistics, correlation, and regression analyses.

Table 1. The sample structure

| Variables | | Frequency | % |
|---------------------|-------------------|-----------|------|
| Number of employees | 10 – 49 | 38 | 29.7 |
| | 50 – 249 | 37 | 28.9 |
| | > 250 | 53 | 41.4 |
| Activity | production | 62 | 48.4 |
| | service | 66 | 51.6 |
| Gender | female | 75 | 58.6 |
| | male | 53 | 41.4 |
| Age | ≤ 25 | 26 | 20.3 |
| | 26 – 35 | 68 | 53.1 |
| | 36 – 55 | 20 | 15.6 |
| | > 55 | 14 | 10.9 |
| Educational level | High school | 39 | 30.5 |
| | University degree | 64 | 50.0 |
| | Master degree | 25 | 19.5 |

Source: Authors

Over half of the sampled companies have 250 or more employees. Those with between 10 and 49, and between 50 and 249 employees participated in the study to approximately equal proportions. There is also approximate equality according to the type of activity, since there were only slightly more service enterprises in the sample than manufacturing companies. The analysis of the sample structure based on the gender of the respondents reveals a larger participation of women, with the dominating age group being between 26 and 35 years of age. Furthermore, participants with university degrees had the greatest percentage of involvement in the sample observed.

RESEARCH RESULTS

The proposed research model was tested using the Partial Least Square Technique for Structural Equation Modelling. In a two-step approach, a measurement and a structural model are assessed separately.

Table 2. Measurement model

| Constructs | Composite reliability | Cronbach's α | AVE |
|--------------------------|-----------------------|---------------------|-------|
| Organisational culture | 0.949 | 0.937 | 0.729 |
| Training and development | 0.937 | 0.916 | 0.749 |
| Employer reputation | 0.931 | 0.911 | 0.694 |
| Job satisfaction | 0.938 | 0.923 | 0.685 |
| Employee retention | 0.932 | 0.912 | 0.697 |

Source: Authors

The composite reliability values for the variables observed in this study varied from 0.931 to 0.949, exceeding the suggested criterion of 0.7. A Cronbach's alpha coefficient was used to assess the internal consistency of the items employed. Nunnally (1978) defines the construct as reliable if the value of Cronbach's alpha exceeds 0.7. Its scores, ranging from 0.911 for employer reputation to 0.937 for organisational culture, indicate a high degree of the items' internal consistency within each construct. According to Hair et al. (2010), all values of the average variance extracted (AVE) were found to be more than 0.5, which suggests that convergent validity is confirmed.

Table 3. Discriminant validity (HTMT_{0.90} criterion)

| Constructs | 1 | 2 | 3 | 4 | 5 |
|--------------------------|-------|-------|-------|-------|---|
| Organisational culture | - | | | | |
| Training and development | 0.775 | | | | |
| Employer reputation | 0.826 | 0.812 | | | |
| Job satisfaction | 0.891 | 0.804 | 0.830 | | |
| Employee retention | 0.594 | 0.696 | 0.769 | 0.784 | - |

Source: Authors

The confirmation of discriminant validity was achieved by using the heterotrait-monotrait (HTMT_{0.90}) criteria developed by Henseler et al. (2015). The results shown in Table 3 indicate that the observed values are below the threshold of 0.90, further indicating that our measurement model meets the requirements for discriminant validity.

Table 4. Structural model fit indices

| Constructs | Stone-Geisser Q2 | R ² | GOF |
|--------------------|------------------|----------------|------|
| Job satisfaction | 0.732 | 0.750 | 0.74 |
| Employee retention | 0.500 | 0.622 | 0.56 |
| SRMR | 0.062 | | |

Source: Authors

The quality of the structural model was verified using the cross-validated Redundancy Index (also known as Stone-Geisser's Q2). The calculation was performed with the blindfolding technique in PLS. All Q2 values fall within the positive range, indicating that the structural model is of high quality. The coefficient of determination (R²) indicates that 75% of the variance in work satisfaction, and 62.2% of the variance in employee retention could be explained by the model. The SRMR (standardised root mean square residual) of the model was found to be 0.06, which is much lower than the threshold of 0.08 set by Hu and Bentler (1998). The calculation of the Goodness-of-fit Index (GOF) included the use of the formula $\sqrt{(R^2 \times \text{Stone-Geisser Q2})}$. All the numbers shown in Table 4 fall within the permissible range of 0 to 1.

Table 5. Results of testing direct effects

| Relationship | Path coefficient | t-Value | p-Value |
|---|----------------------|---------|---------|
| Organisational culture → Job satisfaction | 0.518 ^{***} | 6.380 | 0.000 |
| Organisational culture → Employee retention | -0.386 ^{**} | 3.370 | 0.001 |
| Training and development → Job satisfaction | 0.208 ^{**} | 3.003 | 0.003 |
| Training and development → Employee retention | 0.152 | 1.512 | 0.131 |
| Employer reputation → Job satisfaction | 0.214 [*] | 2.461 | 0.014 |
| Employer reputation → Employee retention | 0.430 ^{***} | 4.187 | 0.000 |
| Job satisfaction → Employee retention | 0.602 ^{***} | 4.420 | 0.000 |

Note: p < 0.05 (*); p < 0.01 (**); p < 0.001 (***)

Source: Authors

The Smart PLS algorithm was used to assess the structural model. Table 5 presents the path values for direct effects. The results indicate that organisational culture had a positive effect on job satisfaction ($\beta=0.518$; $p<0.001$), and a negative effect on employee retention ($\beta=-0.386$; $p<0.01$). Training and development positively affects job satisfaction ($\beta=0.208$; $p<0.01$), but lacks significant impact on employee retention. Employer reputation is a positive predictor of both job satisfaction ($\beta=0.214$; $p<0.05$) and employee retention ($\beta=0.430$; $p<0.001$). Job satisfaction appears to be a strong antecedent of employee retention ($\beta=0.602$; $p<0.001$).

Table 6. Results of testing indirect effects

| Relationship | Path coefficient | t-value | p-value |
|--|------------------|---------|---------|
| Organisational culture → Job satisfaction → Employee retention | 0.312 | 3.617 | 0.000 |
| Training and development → Job satisfaction → Employee retention | 0.125 | 2.281 | 0.023 |
| Employer reputation → Job satisfaction → Employee retention | 0.129 | 2.285 | 0.022 |

Note: $p < 0.05$ (*); $p < 0.01$ (**); $p < 0.001$ (***)

Source: Authors

Table 6 shows the evidence for indirect effects. Job satisfaction was found to be a statistically significant mediator in the relationship between all analysed employer brand dimensions and employee retention. Job satisfaction competitively mediates between organisational culture and employee retention ($\beta=0.312$; $p<0.001$), changing the direction of the impact compared to the direct effect. The results also showed that job satisfaction has a full mediator role in the relationship between training and development and employee retention ($\beta=0.125$; $p<0.05$), considering that the direct relationship between these two variables was insignificant. Our results also indicated that employer reputation impacts employee retention partially via job satisfaction ($\beta=0.129$; $p<0.05$).

DISCUSSION OF RESEARCH RESULTS

Our study found that three investigated aspects of the employer's brand had a statistically significant positive effect on job satisfaction, with organisational culture having the largest impact. The findings suggest that fostering an organisational culture that promotes autonomy in decision-making, proactive behaviour, collaboration, and employee well-being is associated with increased levels of job satisfaction. Moreover, the presence of an organisational culture that fosters a supportive environment among workers and superiors is likely to enhance job satisfaction. Nevertheless, the findings indicated that the organisational culture was not established in a manner that promotes long-term employee retention within the companies included in the sample. While the organisational culture does contribute to job satisfaction, it also encompasses some characteristics that have a detrimental impact on staff turnover within the company.

The implementation of training and development programmes has been shown to have a favourable influence on employee satisfaction; however, it does not provide a statistically significant impact on employee retention within the company. This implies that the current level of op-

opportunities for employee growth and advancement is insufficient, hence serving as an obstacle for long-term employee retention within the company. In this study, training programmes, opportunities for increasing knowledge and skills, and the transparency of information regarding vacant positions in the company have no effect on employee turnover. It comes out that the employees in this sample place greater emphasis on other aspects of the employer brand when making employment decisions.

Both employment satisfaction and employee retention are positively impacted by the reputation of the employer, as demonstrated by the results presented. In this regard, if the employee's environment perceives the company in which they work to be a desirable place to work and its products and services to be of high quality, the likelihood of their satisfaction and long-term retention in the company increases. Thus, enhancing the employer's reputation was identified as an effective strategy for raising job satisfaction and reducing turnover in a company.

The results indicated that job satisfaction has a significant and positive effect on employee retention. Specifically, employees' satisfaction with their work environment, their relationships with co-workers and superiors, the level of responsibility they are given, and the compensation they receive for their work determines their likelihood of remaining with their current employer. The strong impact holds great importance in the model, given that job satisfaction emerges as the only mediating variable and the sole direct predictor of employee retention.

Our set of hypotheses referred to the intervening role of job satisfaction in the relationships between employer brand values and employee retention. In relation to indirect effects, presented mediation paths proved statistically significant. The results revealed that job satisfaction acts as an intervening variable in the relationship between organisational culture and employee retention. Thus, hypothesis H1 is confirmed. When examining the direct effects, it was shown that organisational culture had a detrimental influence on the retention of employees. Nevertheless, the examination of indirect effects revealed a significant positive indirect impact of organisational culture on retention, which is entirely realised through job satisfaction. This suggests that the correlation between organisational culture and employee retention is contingent upon the degree of job satisfaction. The incorporation of job satisfaction into the relationship between organisational culture and employee retention alters the direction of impact, resulting in a shift towards a positive effect. This implies a competitive mediation effect of job satisfaction in the observed relationship. Job satisfaction interacts with organisational culture to provide employee retention. The findings suggest that if an organisation's culture is weak, management can compensate for it by fostering a high level of job satisfaction among employees, thereby retaining them. Essentially, the organisational culture by itself is insufficient to foster employee retention;

instead, it accomplishes this through ensuring greater job satisfaction. This result partially corresponds to the results of the study conducted by Niguse (2019). Moreover, these findings align with the study conducted by Lin and Huang (2021), which demonstrated that job satisfaction serves as a complete mediator in the relationship between learning organisational culture and turnover intention. Our research results are comparable to the findings of Abbas et al. (2020), which revealed that organisational culture directly influences employee satisfaction, which in turn has a negative impact on employee turnover.

Hypothesis H2 was also verified. The results indicated that job satisfaction fully mediates the relationship between training and development and employee retention. The direct impact of training and development was not statistically significant, but when job satisfaction was included, the indirect path became statistically significant, indicating that indirect-only or full mediation occurred. This means that job satisfaction can compensate for limited training possibilities, career development programmes, and knowledge and skills improvement opportunities. This study outcome is quite predictable, considering that in the modern environment, employees place a high value on opportunities to learn and enhance their abilities, which also ensures future career advancement and job security. Furthermore, employees' chances of being promoted to higher positions in the company grow as a result of training and development, which adds to meeting their need for self-actualisation and keeping them loyal to their current employer. Our results are consistent with the research conducted by Jehanzeb et al. (2015), who discovered that job satisfaction fully mediates the relationship between effective training and employee turnover intentions. Furthermore, our results are comparable to those of Kasdorf and Kayaalp (2022). They found that job satisfaction mediates the relationship between employee career development and intent to stay.

The results also showed that job satisfaction acts as a mediator in the relationship between employer reputation and employee retention, confirming hypothesis H3. The path from reputation to retention was reduced in absolute size when job satisfaction was introduced. When job satisfaction was included, the observed impact remained consistent in direction, indicating the complementary mediator effect. With job satisfaction included in the path, the employer's reputation is still able to predict employee retention, but with reduced predictive power. This means that one part of the main effect of reputation on retention is realised via job satisfaction. Consequently, job satisfaction is a process variable that partially explains the influence between reputation and employee retention. In other words, the positive effects of employer reputation on employee retention are achieved through job satisfaction. Thus, it was revealed that the company's internally perceived reputation positively contributes to

employee satisfaction and retention. Furthermore, employer reputation among the investigated antecedents had the greatest impact on employee retention, placing this dimension in the spotlight while developing an HRM strategy. Our results are in compliance with the research conducted by Helm (2012), which showed that job satisfaction mediates the relationship between perceived external reputation and turnover intentions.

CONCLUSION

According to the conducted research, ensuring high levels of employee satisfaction may enable long-term contributions to organisational goals. In order to enhance job satisfaction, the company should first create an organisational culture that promotes mutual respect, support, open communication, and teamwork. The employer is expected to establish a specific training and development strategy for its personnel, and to support the ongoing improvement of their knowledge and abilities. Simultaneously, the company must raise awareness of the need to develop a strong reputation in the community.

The study found that satisfaction had a competitive mediation influence in the link between company culture and employee retention. A complete mediator impact of satisfaction was observed in the relationships between training and development and staff retention. Furthermore, the study determined that job satisfaction complementary mediates the relationship between corporate reputation and employee retention. This implies that these variables' cause-and-effect interactions are influenced in part by the level of satisfaction. Such a result indicates that insufficient training and development programmes will not interfere with employee turnover if their job satisfaction is high. Furthermore, a company's mediocre reputation will assure staff retention if they are satisfied with their job. Consequently, for those employees whose expectations from their employer are met to a high degree, the link between reputation and retention tends to lose some of its significance.

The theoretical contribution of the performed research is manifold. First, the applied model has a distinct structure that contributes to the study's uniqueness. Furthermore, the research investigates the mediating effects of job satisfaction to understand the process of influence of employer brand aspects on employee retention. Lastly, the study identified employer reputation as the most important predictor of employee retention, and organisational culture as the most prominent factor of satisfaction among the observed components of the employer brand.

The paper also represents a pragmatic contribution by providing decision-makers with practical implications for managing staff retention. The findings of this study suggest that managers establish a strong corporate culture and invest in staff training programmes to facilitate the learn-

ing of new information and skills. Managers are also reminded of the importance of employer reputation in developing positive work attitudes. As a result, they should work to improve the company's reputation, both internally and externally. The study also stresses the significance of increasing job satisfaction. Managers are advised to implement more satisfaction improvement strategies to compensate for potentially poor culture, training and development initiatives, and unfavourable reputation, so as to neutralise any negative effects on staff retention.

Our research has certain limitations. One of them is evident in the small sample size, as there is a possibility that it does not reflect a real image of the connection between the employer brand and employee retention. Second, the study only covers an isolated period, making it impossible to monitor the dynamics of changes in the employees' working attitudes toward the company. Bearing that in mind, the study should be replicated on a bigger sample and over a longer period of time. There are also certain limits to the applied research paradigm. Because the investigated antecedents of employee retention, such as culture and reputation, are multidimensional structures, future research might benefit from testing the impact of the individual aspects of these variables.

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ДА ЛИ БРЕНДИРАЊЕ ПОСЛОДАВЦА МОЖЕ ЗАДРЖАТИ ЗАПОСЛЕНЕ? ЗАДОВОЉСТВО ПОСЛОМ КАО МЕДИЈАТОР

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Резиме

Под притиском нових постигнућа у области информационо-комуникационих технологија и промена у очекивањима запослених, конкуренција послодавца на тржишту рада губи локалне атрибуте и постаје све интензивнија. У својеврсном рату за таленте, компаније примењују различите стратегије како би обезбедиле потребан ниво знања и вештина за постизање пројектованих циљева. Савремена истраживања препознала су значај брендирања послодавца не само за привлачење квалитетних кандидата, већ и за њихову дугорочну ретенцију на заузетим позицијама. Иако је одређен број студија верификовао ефекте различитих аспеката бренда послодавца на радне ставове, нејасни су механизми којима се формира намера запослених да остану у предузећима, нарочито у домаћем пословном контексту. Ово истраживање спроведено је на узорку запослених у 128 предузећа која своју делатност обављају на територији Републике Србије. У настојању да делимично отклони уочени истраживачки геп, студија испитује медијаторску улогу задовољства послом у односу бренда послодавца и задржавања запослених. Бренд послодавца је процењен кроз три димензије, укључујући организациону културу, тренинг и развој и репутацију послодавца. Применом одговарајућих статистичких метода утврђено је да задовољство послом има компетитивни медијаторски ефекат у односу организационе културе и задржавања запослених, и пун медијаторски утицај у односу тренинга и развоја и задржавања. У релацији репутације послодавца и задржавања запослених утврђен је комплементарни медијаторски ефекат задовољства послом. Идентификовањем задовољства послом као медијаторске варијабле у претходно поменутих везама ово истраживање нуди извесан теоријски допринос постојећој литератури. Анализа је показала у којој мери задовољство послом посредује у посматраним релацијама и на који начин мења јачину повезаности ових конструката, обезбеђујући и одређене практичне импликације за менаџере предузећа. Тако се резултатима овог истраживања сугерише повећана активност на унапређењу иницијатива за имплементацију програма тренинга и развоја, као и рад на креирању снажне културе и изградњи позитивне репутације у окружењу.

HOW FOREIGN DIRECT INVESTMENT AFFECTS NATIONAL COMPETITIVENESS: THE CASE OF THE WESTERN BALKAN COUNTRIES

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Abstract

The purpose of this study is to examine the relationship between direct foreign investment and the competitiveness of the economies of the Western Balkan countries (Albania, Bosnia and Herzegovina, Macedonia, Montenegro, and Serbia) in the period between 2008 and 2017. The countries of the Western Balkan region were included in the analysis due to the fact that, in the last two decades, there has been a noticeable trend of increasing interest of foreign investors in investing in the countries of the region, both because of their good geographical position and because of the advantages they provide in terms of realising the basic, profit motivation of foreign investors. The research was conducted using the UNCTAD database, the international comparable base of data. First, an analysis of the dynamics of foreign direct investment flows in the countries of the Western Balkan region was performed. In order to examine the relationship between foreign direct investment and national competitiveness, Pearson's linear correlation coefficient and Spearman's rank correlation coefficient were applied. The Granger causality test was performed to assess the degree of influence of direct foreign investment on the competitiveness of the economies of the observed countries. The obtained research results not only contribute to the development of the existing literature on foreign direct investment and national competitiveness but also provide valuable knowledge to economic policy-makers about the possibilities of using the potential of foreign direct investments to improve the competitive and development performance of the national economy.

Key words: foreign direct investment, national competitiveness, Western Balkans countries, Republic of Serbia.

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КАКО СТРАНЕ ДИРЕКТНЕ ИНВЕСТИЦИЈЕ УТИЧУ НА НАЦИОНАЛНУ КОНКУРЕНТНОСТ: СЛУЧАЈ ЗЕМАЉА ЗАПАДНОГ БАЛКАНА

Апстракт

Сврха ове студије је да испита однос између директних страних инвестиција и конкурентности привреда земаља Западног Балкана (Албаније, Босне и Херцеговине, Македоније, Црне Горе и Србије) у периоду између 2008. и 2017. године. Земље региона Западног Балкана су узете у анализу јер је у последње две деценије приметан тренд пораста интересовања иностраних инвеститора за улагања у земље региона, како због њиховог доброг географског положаја, тако и због предности које пружају у смислу остваривања основне, профитне мотивације страних инвеститора. Истраживање је спроведено коришћењем базе података UNCTAD-а, која представља међународну упоредиву базу података. Најпре је извршена анализа динамике токова страних директних инвестиција у земљама региона Западног Балкана. Да би се испитао однос између страних директних инвестиција и националне конкурентности примењени су Пирсонов коефицијент линеарне корелације и Спирманов коефицијент корелације ранга. За процену степена утицаја директних страних инвестиција на конкурентност привреда посматраних земаља коришћен је Грејндеров тест узрочности. Добијени резултати истраживања не само да доприносе развоју постојеће литературе о страним директним инвестицијама и националној конкурентности, већ и дају драгоцену сазнања креаторима економске политике о могућностима коришћења потенцијала страних директних инвестиција за унапређење конкурентских и развојних перформанси националне економије.

Кључне речи: стране директне инвестиције, национална конкурентност, земље Западног Балкана, Република Србија.

INTRODUCTION

The competitiveness of a country's economy in contemporary conditions is becoming a necessary condition for its existence. This requires the engagement of all available resources, and their optimal use. By working together, countries can improve their competitive positions thanks to higher gross domestic product. In addition, it is possible to improve the existing living conditions of citizens by providing a better standard of living. In the circumstances of the opening of the economies of the countries of the Western Balkans imposed by the processes of globalisation and liberalisation, foreign direct investments became a generator of the development of their national economies in the following period (Andrašić et al., 2018). Foreign direct investment in the modern age is becoming a key development factor for many host countries, and a means to improve their competitiveness. Decisions regarding their attraction in the host countries belong to the domain of strategic decisions, taking into consideration the choice of the location for its implementation, the available resources that the multinational corporation brings with it, as well as the review of the entire investment environment. As an interna-

tionalisation strategy, they bring with them a package of resources that significantly contribute to improving the competitive performance of host economies. In this regard, the issue of improving national competitiveness is becoming crucial, and the focus of those entities responsible for implementing economic policy (Petrović-Randelović et al., 2018). It is currently especially important in countries undergoing the process of structural transformation, and in developing countries.

The paper focuses on the possible effects of foreign direct investment on the competitiveness of Western Balkan economies. These countries opened their doors to foreign capital starting with the year 2000 by passing regulations allowing its inflow (Deichmann, 2020). The main focus is considering this issue in the case of the Republic of Serbia. Cross-border investment in this country is set to become its key development factor in the coming period. This became especially relevant after the decision to construct the development path towards membership in the European Union. Having in mind the possible effects that foreign direct investment can have on the competitiveness of the selected countries, the contribution of the paper is reflected in providing certain guidelines to economic policy-makers. They primarily refer to the more efficient use of the potential of foreign direct investment, all with the aim of improving the country's competitive performance.

According to the aforementioned, the structure of the paper is as follows. After introductory considerations, the first section deals with earlier arguments of the authors who considered this topic in their studies. The second part of the paper is devoted to the methodology used in this research. The third section summarises the obtained research results. Concluding remarks are given in the last part of the paper.

LITERATURE REVIEW

The relationship between foreign direct investment and national competitiveness has attracted a lot of attention from the academic community, and has been the subject of numerous empirical studies in the last three decades. This relationship is extremely complex, and due to its complexity, relations of mutual connection and mutual dependence are established between foreign direct investments and national competitiveness. In other words, there are two-way connections between these two phenomena: foreign direct investment contributes to the improvement of the competitive performance of the host country, while the competitive performances of the host country are at the same time important determinants of attracting not only a larger volume, but also higher quality flows of foreign direct investment (Radukić & Petrović-Randelović, 2014, p. 518).

In the literature on foreign direct investment, there are many studies dealing with the issue of making strategic decisions regarding foreign

direct investments (AlQur'an, 2022; Bi et al., 2022; Ercilasun et al., 2015; Hayali, & Kucukkosman, 2020; Kuzey et al., 2021; Milovanović & Marković, 2022; Polat, 2017). The purpose of these studies is to identify the factors that determine decisions on the location of foreign direct investments. This strategically based decision is determined by numerous factors, among which the level of competitiveness of the host country's economy stands out as very important.

Numerous empirical studies examine the influence of the level of national competitiveness of the host country on the inflow of foreign direct investment. Popovici and Calin (2012) found that the investment process in seven Central and Eastern European countries follows the trends of national competitiveness, and that the decline in investment inflows during a crisis is determined by the crisis of investor confidence. Similarly, Zlatković (2016) indicates that the preconditions for the growth of foreign direct investment *per capita* in the Western Balkans are more competitive infrastructure, health and primary education, improved innovations, and accelerated technological readiness.

Examining the relationship between foreign direct investment and the pillars of competitiveness of the World Economic Forum is the subject of research of Stankov et al. (2019). The obtained results indicate that the key role in attracting foreign direct investment is played by the market size factor. In addition, labour costs significantly reflect the achieved competitiveness of the host country, and they are often used as a determinant of foreign direct investment.

For the purpose of measuring Poland's competitive position, Wisniewski (2018) used two groups of time series: the GCI series, and the one that follows the flows of foreign direct investment. It was found that there is a two-way causality between these variables, and that the infrastructural competitiveness of Poland plays a key role in attracting foreign direct investment. Recently, Rathnayake et al. (2023) found that the level of national competitiveness measured by the Global Competitiveness Index and Logistics Performance Index achieved a positive impact on the inflow of foreign direct investment in certain African countries (Lesotho and Algeria), but not in all of them (like Mauritius, Namibia and Rwanda).

The results of numerous empirical studies show mixed findings on the impact of foreign direct investment on national competitiveness. For example, in a recent study, Paren (2017) examined the relationship between the value of foreign direct investment inflows and the national competitiveness of the Visegrad Group economies in the 2005-2016 time period. The results of the empirical study indicate that the values of the obtained correlation coefficient oscillated in the observed period, i.e., that there is a positive correlation between foreign direct investment inflows per capita and the individual pillars of competitiveness taken in certain years.

Molendowski et al. (2017) examined the relationship between foreign direct investment and national competitiveness in EU-10 member states between 2004 and 2016. The obtained results indicate that the inflow of foreign direct investment contributed to improving national competitiveness in only six countries (Czech Republic, Lithuania, Romania, Bulgaria, Latvia and Poland), while this cannot be said to be the case in the other countries of the examined group (Hungary, Slovenia, Estonia and Slovakia). Also, the authors noted that the effects of foreign direct investment on national competitiveness were pronounced only in three countries (Poland, Bulgaria and Romania). Similarly, Meemak (2021) found that the effect of foreign direct investment differs among ASEAN countries.

Gamariel and Hove (2019) indicate that foreign direct investment inflows have influenced the export competitiveness of Sub-Saharan Africa countries. In addition, they point out that these countries must work on building and strengthening capacities in the field of human capital to take advantage of technology transfer and strengthen economic ties. In that case, these countries could expect greater benefits from the inflow of foreign direct investment.

In a recent study, Šinik (2019) examined whether the effects of foreign investors were reflected in the export activities of the Republic of Srpska in the 2008-2018 period. This author concluded that investments did not significantly affect the growth of exports of the Republic of Srpska, and thus its competitiveness, in the observed period.

RESEARCH METHODOLOGY

The aim of this study is to determine the impact of foreign direct investment on national competitiveness in Western Balkan countries. Based on the defined goal of the research, the following research hypothesis was defined: H1 – there is a positive link between foreign direct investment and the competitiveness of the economy.

The starting point of the analysis is the examination of the dynamics of foreign direct investment in Serbia, and their comparison with these flows in other Western Balkan countries (Albania, Bosnia and Herzegovina, Macedonia, and Montenegro). For the purposes of the analysis, a period of ten years was taken into consideration – the period between 2008 and 2017. Furthermore, the relationship between the foreign direct investment and the national competitiveness of the selected countries was examined using: (1) Pearson's linear correlation coefficient; (2) Spearman's rank correlation coefficient; and (3) Granger's causality test.

In this study, foreign direct investment is taken as a hypothetical independent variable, with World Bank data used as the primary database. Having in mind that exports are an indicator that measures the in-

ternational competitiveness of the surveyed countries, it will be taken as a hypothetically dependent variable. The share of exports of each of the considered countries in the total exports of the group of surveyed countries (G5) will be considered. An overview of the above statements is shown in Table 1.

Table 1. Variables used in the research

| | |
|---------------------------|---|
| FDI inflow | Inward foreign direct investment |
| FDI outflow | Outward foreign direct investment |
| Inward FDI stock | Inbound stock of foreign direct investment |
| Outward FDI stock | Outward stock of foreign direct investment |
| Share in total G5 exports | Share in total G5 exports (Western Balkans countries) |

Source: Autor's own presentation

RESEARCH RESULTS

The dynamics of foreign direct investment inflows in the Western Balkans countries in the period between 2008 and 2017 are very uneven, observed both year by year and country by country (Figure 1). Serbia had the highest FDI inflow within the group of countries, shown as a percentage of the total FDI inflow for the EU28 during the period between 2008 and 2017.

Serbia had the highest value of FDI inflow in 2008 (1.04%), and it achieved a similar value in 2011. During the period between 2008 and 2017, the value of FDI inflows for Serbia ranged from 0.27% (2012) to 1.04% (2008). The lowest FDI inflow was observed in Macedonia (0.02%) in 2012, as well as in Montenegro and Bosnia and Herzegovina (less than 0.10%).

Regarding FDI outflows, the following results were obtained. Based on the collected data, it can be seen that Serbia is directly responsible for the largest percentage of FDI outflows, where its share in relation to the EU28 is many times ahead of the G5 countries (Figure 2). The exception is the year 2009, when Serbia had a share of 0.01%. Serbia's share in the EU28 also displayed constant growth, from 0.05% to 0.13% in 2014. On the other hand, years with negative FDI outflow are observable (2012 and 2016) in some G5 countries (Macedonia and Montenegro). Thus, the outflow of FDI in Macedonia amounted to -0.01% in 2012, while it amounted to a -0.03% share of the EU28 in total in Montenegro.

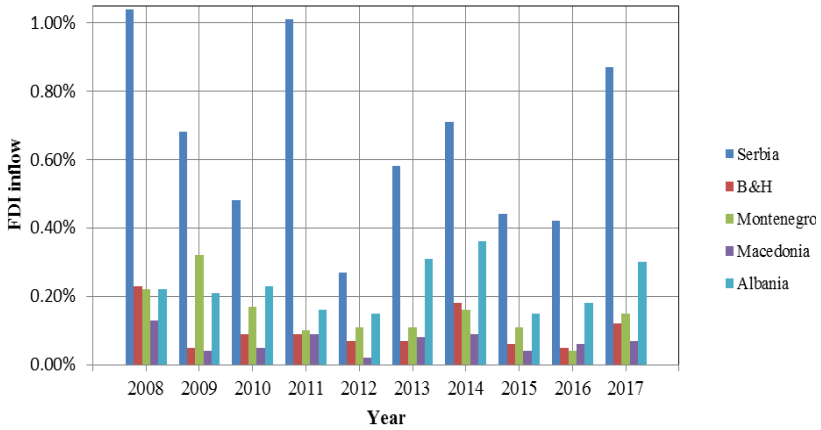


Figure 1. FDI inflows for the Western Balkan countries shown as a percentage of the EU28 in total

Source: Autor’s research based on the World Bank Indicators database

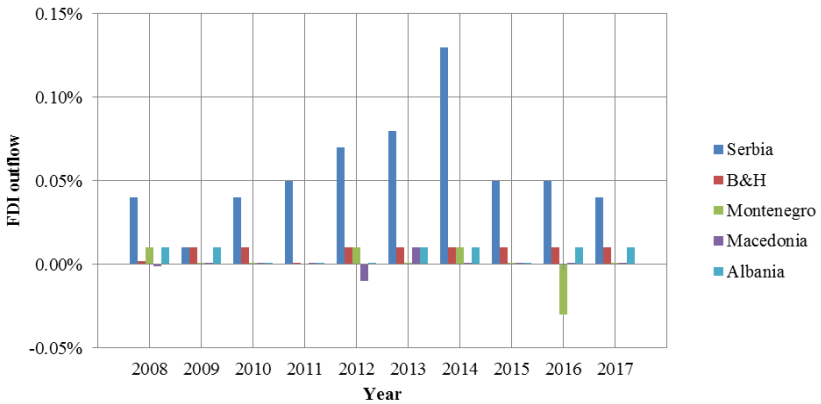


Figure 2. FDI outflows for Western Balkan countries shown as a percentage of EU28 share

Source: Autor’s research based on the World Bank Indicators database

Regarding the inward FDI stock (Figure 3), it can be seen that Serbia lagged behind the Western Balkan countries in the period between 2008 and 2012, while Bosnia and Herzegovina is in first place, with an approximate share of 0.08 % in relation to EU28 in total. Starting in 2013, Serbia rose to have an average of 0.35% share in the EU28 in total, while other countries remained at levels similar to the period between 2008 and 2013. Therefore, based on the data from the figure, it can be noticed that Serbia was constantly ahead in terms of inward FDI stock in relation to other countries in the region in the observed period.

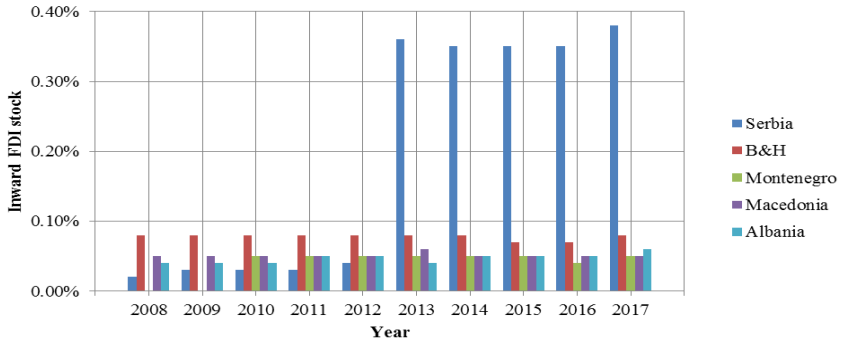


Figure 3. Inward FDI stock for Western Balkan countries shown as a percentage of the EU28 share

Source: Autor's research based on the World Bank Indicators database

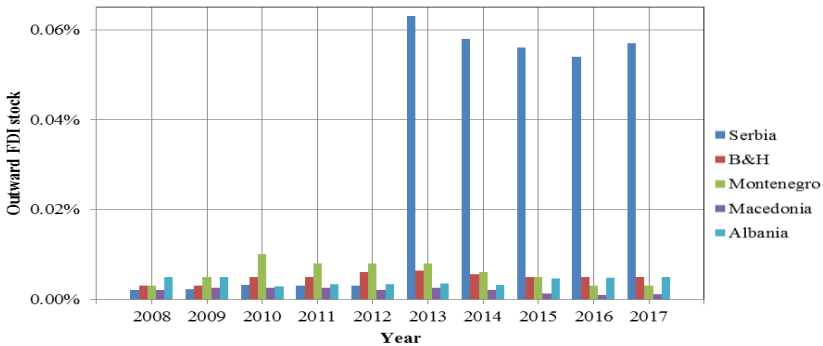


Figure 4. Outward FDI stock for Western Balkan countries as a percentage of the EU28

Source: Autor's research based on the World Bank Indicators database

The outward FDI stock for Western Balkan countries as a percentage of the EU28 share in total is shown in Figure 4. It can be noticed that Serbia did not stand out in terms of outward FDI stock in relation to other countries in the region in the period between 2008 and 2012, when these values were less than 0.01%. Since 2013, it can be noticed that Serbia is becoming the leader in the region, with values over 0.05%. The maximum value of outward FDI stock was achieved in 2013 and 2014, when it was 0.06%.

After considering the dynamics of foreign direct investments, this empirical research will test whether there is a positive relationship between foreign direct investments and the competitiveness of each country individually. Table 2 shows Pearson's correlation coefficient for each country separately (r), as well as statistical significance (p).

Looking at each country separately, it can be seen that there is a significant positive correlation between the competitiveness of the economy of the Republic of Serbia and inward/outward FDI stock ($r = 0,97$, $p < 0,0001$). There is a negative correlation between the outward FDI stock and the competitiveness of the economy of Bosnia and Herzegovina ($r = -0,84$, $p = 0,0020$). A moderate correlation was also observed between FDI inflows and outflows in Montenegro, while a negative correlation was observed between inward and outward FDI stock and the competitiveness of the Albanian economy (presented in Table 2).

Table 2. Pearson's correlation coefficient between the national competitiveness of the Western Balkan countries and FDI

| Variable | G5 country | r | p | sig |
|-------------------|------------------------|---------|--------|-----|
| FDI inflow | Serbia | -0.3380 | 0.3400 | |
| FDI outflow | Serbia | 0.3060 | 0.3900 | |
| Inward FDI stock | Serbia | 0.9780 | 0.0000 | *** |
| Outward FDI stock | Serbia | 0.9790 | 0.0000 | *** |
| FDI inflow | Bosnia and Herzegovina | 0.0030 | 0.9930 | |
| FDI outflow | Bosnia and Herzegovina | -0.2500 | 0.4860 | |
| Inward FDI stock | Bosnia and Herzegovina | -0.4550 | 0.1870 | |
| Outward FDI stock | Bosnia and Herzegovina | -0.8390 | 0.0020 | *** |
| FDI inflow | Montenegro | 0.6900 | 0.0270 | ** |
| FDI outflow | Montenegro | 0.5880 | 0.0740 | * |
| Inward FDI stock | Montenegro | -0.5870 | 0.1260 | |
| Outward SDI stock | Montenegro | -0.2650 | 0.4590 | |
| FDI inflow | Macedonia | 0.3360 | 0.3420 | |
| FDI outflow | Macedonia | -0.3270 | 0.3560 | |
| Inward FDI stock | Macedonia | 0.1320 | 0.7160 | |
| Outward FDI stock | Macedonia | -0.2620 | 0.4650 | |
| FDI inflow | Albania | -0.3720 | 0.2900 | |
| FDI outflow | Albania | -0.3080 | 0.3860 | |
| Inward FDI stock | Albania | -0.5840 | 0.0760 | * |
| Outward FDI stock | Albania | -0.8000 | 0.0050 | *** |

Source: Autor's own presentation

Based on the presented results, we can conclude that there is a statistically significant positive correlation between foreign direct investment and national competitiveness in Serbia and in Montenegro, while this correlation is negative in the case of Albania and Bosnia and Herzegovina.

Below is an analysis of the relationship between foreign direct investment and the national competitiveness of the selected countries done using Spearman's rank correlation coefficient. The analysis of Spearman's rank correlation coefficient, as we can see from Table 3, gives us almost identical results to the results of Pearson's coefficient analysis. The only difference is in the level of significance for FDI Outflow in Montenegro, which is at Spearman's level of 0.05.

Table 3. Spearman's rang coefficient between the national competitiveness of the Western Balkan countries and FDI

| Variable | G5 country | Spearman r_s | p | sig |
|-------------------|------------------------|----------------|--------|-----|
| FDI inflow | Serbia | -0.0303 | 0.9337 | |
| FDI outflow | Serbia | -0.1757 | 0.6272 | |
| Inward FDI stock | Serbia | 0.7939 | 0.0061 | *** |
| Outward FDI stock | Serbia | 0.8182 | 0.0038 | *** |
| FDI inflow | Bosnia and Herzegovina | -0.0424 | 0.9074 | |
| FDI outflow | Bosnia and Herzegovina | -0.2121 | 0.5563 | |
| Inward FDI stock | Bosnia and Herzegovina | -0.4909 | 0.1496 | |
| Outward FDI stock | Bosnia and Herzegovina | -0.8545 | 0.0016 | *** |
| FDI inflow | Montenegro | 0.7333 | 0.0158 | ** |
| FDI outflow | Montenegro | 0.7575 | 0.0111 | ** |
| Inward FDI stock | Montenegro | -0.3212 | 0.3654 | |
| Outward SDI stock | Montenegro | -0.3090 | 0.3848 | |
| FDI inflow | Macedonia | 0.4787 | 0.1615 | |
| FDI outflow | Macedonia | -0.2484 | 0.4887 | |
| Inward FDI stock | Macedonia | 0.2969 | 0.4047 | |
| Outward FDI stock | Macedonia | -0.3333 | 0.3465 | |
| FDI inflow | Albania | -0.3212 | 0.3654 | |
| FDI outflow | Albania | -0.3212 | 0.3654 | |
| Inward FDI stock | Albania | -0.6000 | 0.0667 | * |
| Outward FDI stock | Albania | -0.80606 | 0.0048 | *** |

Source: Autor's own presentation

Having in mind that the correlation did not prove the causality of the observed phenomena, the Granger test of causality was applied (with $\alpha = 5\% = 0.05$ and H_0 : variable *A* does not cause (Granger-cause) variable *B*).

The null hypothesis was rejected in the cases of FDI outflow, inward FDI stock, and outward FDI stock. This result indicates that FDI outflow, inward FDI stock, and outward FDI stock cause, in terms of Granger, the competitiveness of the Western Balkan countries measured by their share in the total exports of the Western Balkan countries. The results of the Granger causality test for these countries are presented in Table 4.

Table 4. Granger causality test for Western Balkan countries

| Null hypothesis | F-test | p | sig |
|---|---------|--------|-----|
| The share in exports does not cause FDI inflow in terms of Granger | 0.0170 | 0.8969 | |
| FDI inflow does not cause a share in exports in terms of Granger | 2.0799 | 0.1562 | |
| The share in exports does not cause FDI outflow in terms of Granger | 1.0771 | 0.3049 | |
| FDI outflow does not cause a share in exports in terms of Granger | 10.6870 | 0.0021 | *** |
| The share in exports does not cause inward FDI stock in terms of Granger | 0.0382 | 0.8459 | |
| Inward FDI stock does not cause a share in exports in terms of Granger | 9.2277 | 0.0040 | *** |
| The share in exports does not cause outward FDI stock in terms of Granger | 0.0129 | 0.9101 | |
| Outward FDI stock does not cause the share in exports in terms of Granger | 6.6467 | 0.0133 | ** |

Source: Autor's own presentation

In order to confirm the results, the Granger causality test was applied individually to each of the countries in the region (Tables 5, 6, 7, 8, and 9.). Table 5 shows the results of the Granger causality test for Serbia. The null hypothesis can be rejected in the case of the inward FDI stock, and outward FDI stock (with risk $\alpha = 10\% = 0.10$). This result indicates that the inward FDI stocks and the outward FDI stocks Granger-cause the competitiveness of the economy of Serbia measured by the share of exports of Western Balkan countries ($p = 0.09$; $p = 0.07$).

Table 5. Granger causality test for Serbia

| Serbia | | | |
|--|--------|--------|-----|
| Null hypothesis | F-test | p | sig |
| The share of exports does not Granger-cause FDI inflow | 0.0497 | 0.8324 | |
| FDI inflow does not Granger-cause the share of exports | 2.3245 | 0.1879 | |
| The share of exports does not Granger-cause FDI outflow | 0.0859 | 0.7813 | |
| FDI outflow does not Granger-cause the share of exports | 0.8280 | 0.4046 | |
| The share of exports does not Granger-cause the inward FDI stock | 3.2703 | 0.1303 | |
| Inward FDI stock does not Granger-cause the share of exports | 4.1480 | 0.0973 | * |
| The share of exports does not Granger-cause outward FDI stock | 3.8452 | 0.1072 | |
| Outward FDI stock does not Granger-cause the share of exports | 4.9416 | 0.0768 | * |

Source: Autor's own presentation

Table 6 shows the results of the Granger causality test for Bosnia and Herzegovina. The null hypothesis can be rejected in case of the outward FDI stock (with risk $\alpha = 10\% = 0.10$). This result indicates that the outward FDI stock causes, in terms of Granger, the improvement of the competitiveness of the economy of Bosnia and Herzegovina measured

by its share in the total exports of the Western Balkan countries ($p = 0.06$).

Table 6. Granger causality test for Bosnia and Herzegovina

| Bosnia and Herzegovina | | | |
|--|--------|--------|-----|
| Null hypothesis | F-test | p | sig |
| The share of exports does not Granger-cause FDI inflow | 0.0254 | 0.8797 | |
| FDI inflow does not Granger-cause the share of exports | 1.2039 | 0.3225 | |
| The share of exports does not Granger-cause FDI outflow | 1.1110 | 0.3401 | |
| FDI outflow does not Granger-cause the share of exports | 2.5109 | 0.1739 | |
| The share of exports does not Granger-cause the inward FDI stock | 0.0002 | 0.9883 | |
| Inward FDI stock does not Granger-cause the share of exports | 0.2183 | 0.6600 | |
| The share of exports does not Granger-cause outward FDI stock | 0.1289 | 0.7342 | |
| Outward FDI stock does not Granger-cause the share of exports | 5.3525 | 0.0686 | * |

Source: Autor's own presentation

The results of the Granger causality test for Montenegro are presented in table 7. This result indicates that the outward FDI stocks causes, in terms of Granger, the improvement of the competitiveness of the economy of Montenegro measured by the share in total exports of the Western Balkan countries ($p = 0.09$).

Table 7. Granger causality test for Montenegro

| Montenegro | | | |
|--|--------|--------|-----|
| Null hypothesis | F-test | p | sig |
| The share of exports does not Granger-cause FDI inflow | 2.6487 | 0.1646 | |
| FDI inflow does not Granger-cause the share of exports | 1.9711 | 0.2193 | |
| The share of exports does not Granger-cause FDI outflow | 0.0342 | 0.8605 | |
| FDI outflow does not Granger-cause the share of exports | 0.0949 | 0.7705 | |
| The share of exports does not Granger-cause the inward FDI stock | 0.1121 | 0.7598 | |
| Inward FDI stock does not Granger-cause the share of exports | 1.4161 | 0.3196 | |
| The share of exports does not Granger-cause outward FDI stock | 4.2118 | 0.0954 | * |
| Outward FDI stock does not Granger-cause the share of exports | 1.7264 | 0.2459 | |

Source: Autor's own presentation

In the case of Macedonia, the null hypothesis can be rejected in the case of FDI outflow (with risk $\alpha = 10\% = 0.10$) in both directions: the competitiveness of the economy measured by the share of exports of the Western Balkan countries causes, in terms of Granger, FDI outflow, and FDI outflow causes, in terms of Granger, the competitiveness of the economy measured by the share of the exports of G5 countries ($p = 0.03$; $p = 0.06$) (Table 8).

Table 8. Granger causality test for Macedonia

| Macedonia | | | |
|--|--------|--------|-----|
| Null hypothesis | F-test | p | sig |
| The share of exports does not Granger-cause FDI inflow | 0.0674 | 0.8055 | |
| FDI inflow does not Granger-cause the share of exports | 0.8038 | 0.4111 | |
| The share of exports does not Granger-cause FDI outflow | 7.9125 | 0.0374 | ** |
| FDI outflow does not Granger-cause the share of exports | 5.2973 | 0.0696 | * |
| The share of exports does not Granger-cause the inward FDI stock | 0.0635 | 0.8110 | |
| Inward FDI stock does not Granger-cause the share of exports | 0.0441 | 0.8420 | |
| The share of exports does not Granger-cause outward FDI stock | 1.6568 | 0.2544 | |
| Outward FDI stock does not Granger-cause the share of exports | 1.5314 | 0.2708 | |

Source: Autor's own presentation

Based on the presented results of the Granger causality test for Albania (Table 9), the following conclusions can be drawn.

Table 9. Granger causality test for Albania

| Albania | | | |
|--|--------|--------|-----|
| Null hypothesis | F-test | p | sig |
| The share of exports does not Granger-cause FDI inflow | 0.4846 | 0.5174 | |
| FDI inflow does not Granger-cause the share of exports | 0.0096 | 0.9256 | |
| The share of exports does not Granger-cause FDI outflow | 9.3813 | 0.0280 | ** |
| FDI outflow does not Granger-cause the share of exports | 4.9816 | 0.0760 | * |
| The share of exports does not Granger-cause the inward FDI stock | 0.0651 | 0.8088 | |
| Inward FDI stock does not Granger-cause the share of exports | 2.1835 | 0.1995 | |
| The share of exports does not Granger-cause outward FDI stock | 0.2009 | 0.6727 | |
| Outward FDI stock does not Granger-cause the share of exports | 1.8819 | 0.2285 | |

Source: Autor's own presentation

The null hypothesis can be rejected in the case of FDI outflow (with risk $\alpha = 10\% = 0.10$), and in both directions: the competitiveness of the economy measured by the share in the total export of Western Balkan countries Granger-causes FDI outflow, and FDI outflow Granger-causes the competitiveness measured by the share in total exports of G5 ($p = 0.02$; $p = 0.07$). Having in mind that the correlation did not prove the causality of the observed phenomena, the Granger test of causality was applied (with $\alpha = 5\% = 0.05$ and H_0 : variable A does not cause (Granger-cause) variable B).

CONCLUSION

In this study, we examined the impact of foreign direct investments on the competitiveness of the economies of the Western Balkan countries in the period between 2008 and 2017. A time period of ten years was tak-

en into account during this research, having in mind that there was a change in the methodology for assessing global competitiveness by the World Economic Forum after 2018, and that the crisis caused by the COVID-19 pandemic in 2020 called into question the validity of the methodology for the assessment of global competitiveness. Accordingly, the paper starts with analysing the dynamics of foreign direct investment inflow for the selected Western Balkans countries. Observing the dynamics of FDI inflow for the selected Western Balkans countries, certain conclusions can be drawn. First, Serbia had the highest FDI inflow within the G5 group of countries, observed as a percentage of the total FDI inflow for the EU28 in the period between 2008 and 2017. Serbia recorded the highest FDI inflow in 2008 (1.04%), and achieved a similar value in 2011. In the 2008-2017 period, the value of FDI inflows for Serbia ranged from 0.27% (2012) to 1.04% (2008). The lowest FDI inflow was observed in Macedonia (0.02%) in 2012, and Montenegro and Bosnia and Herzegovina (less than 0.10%).

Regarding FDI outflow, it can be noticed that Serbia is directly responsible for the largest percentage of FDI outflow, i.e., it is many times ahead of the other G5 countries in terms of its share in relation to the EU28. The exception is the year 2009, when Serbia had a share of 0.01%. In addition, Serbia's share in the EU28 displayed a constant growth – from almost 0.05% to 0.13% in 2014. In some G5 countries (Macedonia and Montenegro), years with negative FDI outflow can be observed (2012 and 2016). In Macedonia, the FDI outflow in 2012 was -0.01% of the share, while it was -0.03% of the EU28 share in total in Montenegro.

Looking at the inward FDI stock, it can be seen that Serbia lagged behind the other G5 countries in the period between 2008 and 2012, while Bosnia and Herzegovina were in first place (0.08% share in relation to the EU28 in total). Starting in 2013, Serbia is in the lead (on average 0.35% share in the EU28 in total), while other G5 countries are at levels similar to the levels they recorded in the period between 2008 and 2013. It is noticeable that Serbia was constantly ahead in terms of inward FDI in relation to other countries taken into consideration in the observed period.

According to the outward FDI stock for the member countries of the G5 group, it can be seen that Serbia did not stand out in terms of outward FDI stock in relation to other countries in the G5 group, in the period between 2008 and 2012. These values were less than 0.01%. Starting in 2013, Serbia became the leader in the G5 group, with values over 0.05%.

Observing the changes in the share of exports of the economies of the individual G5 countries in relation to the total exports of the G5 group of countries, the following results were obtained. It should be noted that Serbia constantly had the largest share of exports compared to other G5 countries, and it amounted to about 50% for the period between 2008 and

2017. Serbia had the largest share of exports in 2013, followed by Bosnia and Herzegovina, Macedonia, Albania, and Montenegro.

At the level of the country, there is a significant positive correlation between the competitiveness of the economy of Serbia and inward/outward FDI stock ($r = 0.97$, $p < 0.0001$). A negative correlation is observed between the outward FDI stock and the competitiveness of the economy of Bosnia and Herzegovina ($r = -0.84$, $p = 0.0020$). In addition, a moderate correlation was observed between input and output FDI flows in Montenegro, while a negative correlation was observed between inward and outward FDI stocks and the competitiveness of the Albanian economy. In addition, based on the results, we conclude that there is a statistically significant positive correlation between foreign direct investment and economic competitiveness for Serbia and for Montenegro, while this correlation is negative for Albania and Bosnia and Herzegovina. Almost identical results were obtained using Spearman's rank correlation coefficient. The only difference is in the level of significance for FDI Outflow in Montenegro, which is at Spearman's level of 0.05.

The results of the paper can be useful to the economic policy-makers of the observed countries in terms of better understanding and exploiting the potential of foreign direct investment to improve the competitiveness of their economies. In addition, the obtained results can be used for some future analyses that would cover the period between 2018 and the present, as certain changes have taken place in the field of methodology for assessing global competitiveness and the COVID-19 crisis.

It is important to emphasise that economic policy-makers must give priority to improving the essential factors of competitiveness in the coming period. In order to improve the competitiveness of an economy, it is necessary to determine the priority directions of the activities of competent state bodies. One way to improve the level of competitiveness is to improve the innovation of enterprises and entrepreneurship through more intensive technological development and the improvement of the overall level of knowledge. Parallel to the realisation of these goals, it is necessary to work on improving the general factors of competitiveness such as the macroeconomic environment, the quality of legislation, the quality of economic policy, and the rule of law in order to create an adequate business environment.

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КАКО СТРАНЕ ДИРЕКТНЕ ИНВЕСТИЦИЈЕ УТИЧУ НА НАЦИОНАЛНУ КОНКУРЕНТНОСТ: СЛУЧАЈ ЗЕМАЉА ЗАПАДНОГ БАЛКАНА

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Резиме

Проблематика утврђивања односа између страних директних инвестиција и националне конкурентности постаје све значајнија у савременим условима услед чињенице да је са јачањем процеса глобализације светске привреде национална конкурентности постала главна тема у академским и ширим, јавним круговима, али и због тога што стране директне инвестиције с правом данас носе епитет развојног фактора савремене глобализоване економије. Подизање нивоа националне конкурентности не представља само изазов, већ и сложен задатак са којим се суочавају креатори економске политике свих земаља. Предузимањем страних директних инвестиција, инострани инвеститори доносе пакет ресурса који могу значајно допринети унапређењу конкурентских перформанси земље домаћина, што се посебно односи на земље у развоју и земље у транзицији.

Извршено истраживање утицаја страних директних инвестиција на конкурентност привреда земаља Западног Балкана (Албанија, Босна и Херцеговина, Македонија, Црна Гора, и Србија) у периоду између 2008. и 2017. године пружа

основу за доношење следећих закључака: применом метода корелационе анализе утврђена је позитивна веза у погледу статистичке значајности између директних страних инвестиција и конкурентности привреда Србије и Црне Горе, док је негативна веза установљена у случају Албаније и Босне и Херцеговине; и СДИ излазни токови, СДИ улазни стокови и СДИ излазни стокови остварују значајан утицај на конкурентност привреда Црне Горе и Србије мерено учешћем у њиховом укупном извозу.

Имајући у виду добијене резултате истраживања, и узимајући у обзир чињеницу да веза између страних директних инвестиција и конкурентности привреда земаља региона Западног Балкана још увек није довољно испитана, ово истраживање је покушај да се елиминише тај недостатак у расположивој емпиријској литератури, али и покушај да се укаже на значај који правилно конципирана политика према страним директним инвестицијама може имати у усмеравању њиховог потенцијала у сврхе подизања нивоа националне конкурентности и убрзаног развоја привреда земаља региона.

THE CONCEPTUAL FRAMEWORK FOR RESEARCH ON SERVITIZATION STRATEGY IN MANUFACTURING COMPANIES

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Abstract

As a strategic commitment of manufacturers to enrich their offer by including services, servitization is becoming an increasingly important phenomenon both in practice and in the research community. Considering that this is a young research field spanning different research communities, the aim of this paper is to systematise the existing research results and knowledge and, thus, to offer a unique conceptual framework to cover the phenomenon of servitization. The paper is of a theoretical nature and its main audience are researchers for whom the offered framework should facilitate the identification of research questions and the positioning of their own research within this complex, multidisciplinary phenomenon.

Key words: strategy, production, services, research framework.

КОНЦЕПТУАЛНИ ОКВИР ЗА ИСТРАЖИВАЊЕ СТРАТЕГИЈЕ СЕРВИТИЗАЦИЈЕ У ПРОИЗВОДНИМ ПРЕДУЗЕЋИМА

Апстракт

Сврха ове студије је да испита однос између директних страних инвестиција и конкурентности привреда земаља Западног Балкана (Албаније, Босне и Херцеговине, Македоније, Црне Горе и Србије) у периоду између 2008. и 2017. године. Земље региона Западног Балкана су узете у анализу јер је у последње две деценије приметан тренд пораста интересовања иностраних инвеститора за улагања у земље региона, како због њиховог доброг географског положаја, тако и због предности које пружају у смислу остваривања основне, профитне мотивације страних инвеститора. Истраживање је спроведено коришћењем базе података УНСТАД-а, која представља међународну упоредиву базу података. Најпре је извршена анализа динамике токова страних директних инвестиција у земљама региона Западног Балкана. Да би се

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испитао однос између страних директних инвестиција и националне конкурентности примењени су Пирсонов коефицијент линеарне корелације и Спирманов коефицијент корелације ранга. За процену степена утицаја директних страних инвестиција на конкурентност привреда посматраних земаља коришћен је Грејндеров тест узрочности. Добијени резултати истраживања не само да доприносе развоју постојеће литературе о страним директним инвестицијама и националној конкурентности, већ и дају драгоцену сазнања креаторима економске политике о могућностима коришћења потенцијала страних директних инвестиција за унапређење конкурентских и развојних перформанси националне економије.

Кључне речи: стране директне инвестиције, национална конкурентност, земље Западног Балкана, Република Србија.

INTRODUCTION

Services are gaining more and more importance in national economies, as well as in the offers of manufacturing companies (Kowalkowski, Gebauer, & Oliva, 2017a; Kharlamov & Parry, 2020; Martín-Peña, Pinillos, & Reyes, 2017; Mičić, Savić, & Bošković, 2020; Raddats, Baines, Burton, Story, & Zolkiewski, 2016). When consumers look for a bundle of products and services as a unique solution to their needs, the company's response is to take a holistic view of customers' needs and their own offering through servitization. Servitization blurs the line between producers and service providers, and it changes competitive dynamics (Vandermerwe & Rada, 1988). It is an innovation of producers' capabilities and processes which leads to a shift from the sale of products to the sale of an integrated product-service offering that delivers value (Martinez, Bastl, Kingston, & Evans, 2010). Services generate more stable revenues, they have a longer life-cycle, and are less susceptible to commoditization, which makes it possible to maintain a competitive advantage in mature industries (Bustinza, Bigdeli, Baines, & Elliot, 2015; Oprešnik & Taisch, 2015; Vandermerwe et al., 1988). Also, some services are necessary for the efficient use of the product, which is why they are the basis for retaining consumers (Benedettini, Neely, & Swink, 2015).

There is a general agreement among both theorists and practitioners that services are essential for the growth and competitiveness of manufacturing firms (Kowalkowski, Windahl, Kindström, & Gebauer, 2015). Servitization strategy represents an important competitive tool for manufacturing companies, as it gives them the opportunity to create new values by introducing services into their offer and increase consumer loyalty on that basis (Kastalli & Van Looy, 2013; Kowalkowski, Gebauer, Kamp, & Parry, 2017b). As a result, the number of manufacturing companies which servitize their offer is increasing (Neely, 2008). In parallel with this increasing practical importance of servitization for manufacturers, the research interest in servitization strategy is growing. The servitization research field is developing by increasing the number of papers (in total,

and by year), the number of researchers involved, as well as the interest of scientific journals in publishing papers on the topic (Kohtamäki, Parida, Oghazi, Gebauer, & Baines 2019; Zhou & Song, 2021). Moreover, servitization is a complex phenomenon researched from different aspects, including business management, engineering, environmental science, and technology (Pinillos, Díaz-Garrido, & Martín-Peña, 2022; Rabetino, Harmsen, Kohtamäki, & Sihvonen, 2018). Moreover, the research field of servitization is a growing, but still immature field, as indicated by the terminological variety and the number of different definitions of the concept (Kowalkowski et al., 2017a; Pinillos et al., 2022; Rabetino et al., 2018). The existing empirical research efforts are still dominantly focused on the exploration of the phenomenon, which is based on qualitative, case study research (Kowalkowski et al., 2017b; Rabetino et al., 2018).

Bearing in mind the obvious importance of servitization on the one hand, and the fragmented nature of the research on this phenomenon on the other, the main aim of this paper is to define an integral conceptual framework for designing studies on servitization strategy in manufacturing companies. In doing so, the paper will contribute to theory by systematically connecting various aspects that have been investigated into a whole, thus defining a framework for researching the topic. Moreover, as the field is dominated by research from Western developed economies and China (Zhou et al., 2021), this paper will draw the attention of the domestic academic public to the importance and development of this research field, in order to provoke studies on the topic. The expansion of the geographical coverage of servitization research is necessary in order to understand the phenomenon in all its complexity.

The remainder of the paper is structured as follows. After presenting the background which has motivated this study, the paper offers the conceptual framework for researching servitization strategy by elaborating on each of its elements as they have so far been researched. The paper ends with conclusions, limitation of the study and directions for further research.

BACKGROUND

There is no doubt that servitization is important for the competitiveness of manufacturing companies (Feng, Jiang, Ma, & Bai, 2021; Opresnik et al., 2015). However, there is a terminological motley in the field itself. For example, although the term servitization is often used, there are other terms used to denote this specific business orientation of manufacturing companies, including terms such as: integrated solution, functional product, extended product, service infusion, service transition, service expansion, product service system, service-based manufacturing, and service dominant logic (Annarelli, Battistella, Costantino, Di Gravio, Nonino, & Patriarca, 2021; Feng et al., 2021; Rabetino et al., 2018).

Regardless of which term is used, this movement of manufacturing companies on the product-service continuum is initiated by different motives (Kowalkowski et al., 2015; Gebauer, Fleisch, & Friedli, 2005; Raddats et al., 2016), it results in different outcomes (Abou-Foul, Ruiz-Alba, & Soares, 2021; Feng et al., 2021; Opresnik et al., 2015; Kastalli et al., 2013; Koh-tamäki et al., 2019; Suarez, Cusumano, & Kahl, 2013), some of which are not desirable (Benedittini et al., 2015; Neely, 2008; Gebauer et al., 2005), and it causes changes of both the value chain and the servitizer's business model (Bustinza et al., 2015; Gölgeci, Gligor, Lacka, & Raja, 2021; Kindström & Kowalkowski, 2014), and in the structure and the dynamics of the supply chains and the respective industries (Vendrell-Herrero, Bustinza, Parry, & Georgantzis 2017; Wise & Baumgartner, 1999). Scientific papers dealing with the subject of servitization are partially focused, exploring some of the above-mentioned aspects. Nevertheless, this is expected and understandable, bearing in mind the complexity of the servitization phenomenon and the physical limitations for presenting research results in journals.

There is a growing number of both qualitative and quantitative review papers in this field. These papers systematise the generated knowledge by identifying certain thematic units and important periods in the development of the field. For example, bibliometric studies on servitization research (Annarelli et al., 2021; Díaz-Garrido, Pinillos, Soriano-Pinar, & García-Magro, 2018; Khanra, Dhir, Parida, & Kohtamäki, 2021; Martín-Peña et al., 2017; Rabetino et al., 2018) indicate that some of the key thematic clusters that make up the intellectual structure of the field refer to: the theoretical and conceptual basis of servitization; marketing perspective of servitization; servitization as a strategy and servitization business models; the role and importance of technology for designing services; and the environmental role of servitization. Because servitization affects business in different ways, the field is multidisciplinary with strategic management, operations management, and marketing perspectives and research communities *occupying* the largest part of the servitization research field (Díaz-Garrido et al., 2018; Martín-Peña et al., 2017; Pinillos et al., 2022; Rabetino et al., 2018).

Dynamically, the intellectual structure of the field was developed in certain stages, including: the preparatory stage (2000-2005), the development phase (2006-2014) and the fast-growing phase (since 2015) (Zhou et al., 2021). The first phase is characterised by a small volume of papers on an annual level (up to five papers), and its beginning is linked to the emergence of the concept of product-service systems. Within this phase, preparations were made for the development of this research field by defining the concept of servitization and determining its importance for the company, society and the environment. Within the development phase, servitization is investigated from different aspects, not exclusively as a strategic commitment of the manufacturer. The process of implementing the concept of product-service systems and its impact on the ser-

vitizer's performance is explored in more detail. The fast-growing phase is characterised by the largest number of papers on an annual basis. During this phase, the knowledge on servitization is enriched by researching the process of integration of digitalisation and servitization (digital servitization), the paradox of servitization, and different nature of relationships between servitization and firm performance.

Nevertheless, despite the evident effort to systematise the knowledge generated so far, a unique framework for researching servitization strategy has not yet been offered. Therefore, through an extensive content analysis of the relevant research in the field, this paper will meaningfully connect the researched pieces of the servitization puzzle and offer an integral conceptual framework in which researchers can place themselves and position their research.

A FRAMEWORK FOR DESIGNING STUDIES ON SERVITIZATION STRATEGY IN MANUFACTURING COMPANIES

After analysing the content of the relevant research in the field, we offer a conceptual framework for researching servitization strategy, which is shown in Figure 1. The elements of the proposed framework will be elaborated in the following text.

Foundations of the Research

Since the term servitization first appeared (Vandermerwe et al., 1988), there have been a number of approaches to describe and to investigate the phenomenon in different business domains (Pinillos et al., 2022). Generally, it is seen as a business strategy, that is, as a way to achieve the profitability, economic stability and growth of a company (Vandermerwe et al., 1988; Feng et al., 2021). Servitization is a term which marks a firm's behaviour that changes its business orientation, leading it to a transition from the sale of only products to the sale of production-service systems. In a word, servitization is a synonym for the growth of services in manufacturing companies' offering (Annarelli et al., 2021; Rabetino et al., 2018). Researchers from different research communities adopt different perspectives to define the concept of servitization. Despite the obvious proliferation of terms and definitions, a bibliometric analysis of words used to describe servitization shows that it should be understood as a strategic orientation of manufacturing companies toward offering an integrated offer of both products and services in an attempt to improve their competitive position (Pinillos et al., 2022).

Most of the previous research on servitization is not based on any relevant management or organisation theory. In an attempt to change this, Feng et al. (2021) propose certain theoretical perspectives for researching servitization, including: the Resource-based view, Contingency theory, Innovation theory, Dynamic Capabilities theory, and Marketing Service theory. Moreo-

ver, it is recommended to use well-established theories from complementary and close (mature) fields, to borrow ideas from other fields in order to accumulate knowledge, reduce the level of description and increase the volume of quantitative and longitudinal research.

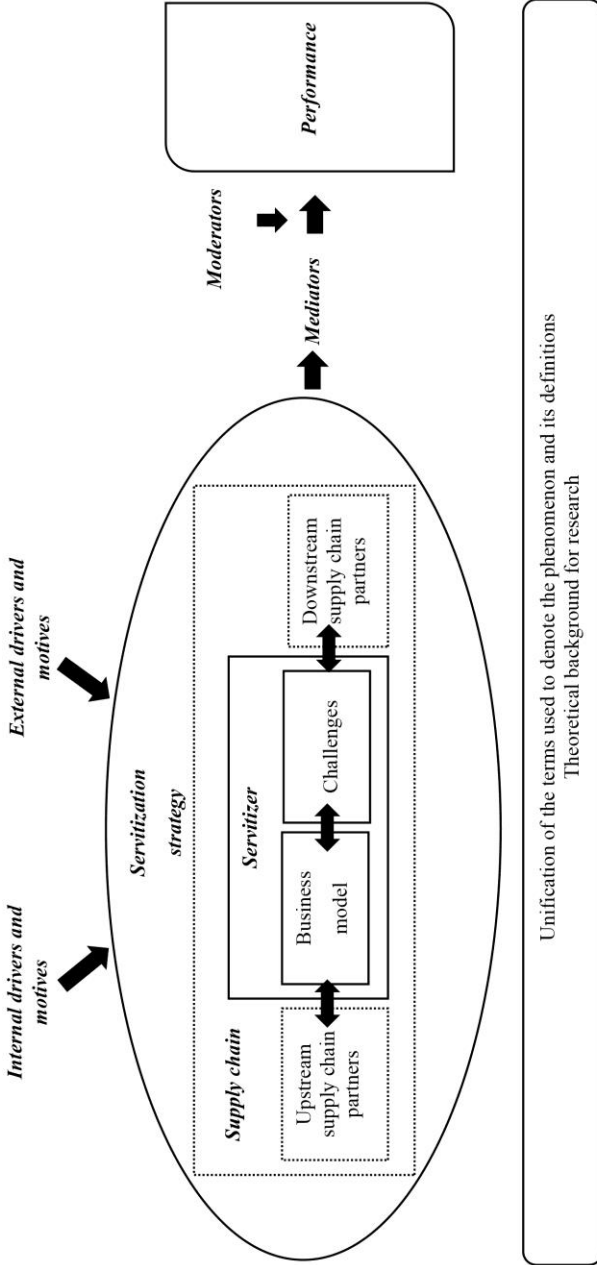


Figure 1. Conceptual framework for researching the servitization strategy
Source: Authors

Table 1.

| Qualitative research | | |
|-------------------------------|--|---|
| Author(s) | Research method | Research focus |
| Annarelli et al., 2021 | Bibliometric analysis | Academic significance of servitization |
| Abou-Foul et al., 2021 | Multiple case study | Servitization and performance |
| Baines et al., 2009 | Single case study | Challenges during the servitization implementation |
| Baines & Lightfoot, 2014 | Multiple case study | Challenges during the servitization implementation |
| Ciasullo et al., 2021 | Multiple case study, cross-case analysis | Servitization and digitalization |
| Coreynen et al., 2017 | Multiple case study | Business model's change |
| Cusumano et al., 2015 | Conceptual paper | Servitization and performance |
| Díaz-Garrido et al., 2018 | Bibliometric analysis | Academic significance of servitization |
| Gebauer et al., 2005 | Multiple case study | Challenges during the servitization implementation |
| Gölgeci et al., 2021 | Conceptual paper | Servitization and global value chains |
| Gomes et al., 2021 | Conceptual paper | Servitization and de-servitization |
| Khanra et al., 2021 | Bibliometric analysis | Conceptual foundations of servitization |
| Kindström & Kowalkowski, 2014 | Multiple case study | Servitization and business models |
| Kohtamäki et al., 2019b | Conceptual paper | Servitization and digitalization |
| Kowalkowski et al., 2017b | Conceptual paper | Challenges during the servitization and de-servitization implementation |
| Kowalkowski et al., 2015 | Multiple case study | Servitization and business models |
| Martinez et al., 2010 | Single case study | Challenges during the servitization implementation |
| Martín-Peña et al., 2017 | Bibliometric analysis | Conceptual foundations of servitization |
| Oliva & Kallenberg, 2003 | Multiple case study | Defining the conditions for the adoption of servitization |
| Opresnik & Taisch, 2015 | Conceptual simulation | Challenges during the servitization implementation |
| Pinillos et al., 2022 | Content analysis and consensus analysis | Conceptual foundations of servitization |
| Rabetino et al., 2018 | Bibliometric analysis | Structure of servitization research and future development |
| Raddats et al., 2016 | Multiple case study | Motivations for servitization |
| Sklyar et al., 2019 | Multiple case study | Servitization and digitalization |
| Tao & Qi, 2019 | Conceptual paper | Servitization and information technologies |
| Teece, 1986 | Multiple case study | The success of innovative firms |
| Ulage & Reinartz, 2011 | Multiple case study | Defining the conditions for the adoption of servitization |
| Vandermerwe & Rada, 1988 | Multiple case study | Conceptual foundations of servitization |
| Vendrell-Herrero et al., 2017 | Single case study | Servitization and digitalization |
| Wise et al., 1999 | Multiple case study | Production and information technology |
| Zhou et al., 2021 | Bibliometric analysis | Conceptual foundations of servitization |

| Quantitative empirical research | | |
|---------------------------------|--|---|
| Author(s) | Research method | Research focus |
| Benedettini et al., 2015 | Empirical study using various statistical techniques | Servitization and bankruptcy risk |
| Bustinza et al., 2015 | Regression analysis | Impact of servitization on performance and organizational structure |
| Fang et al., 2008 | Regression analysis | Servitization and firm value |
| Feng et al., 2021 | Bibliometric analysis | Servitization and performance |
| Karatzas et al., 2020 | Descriptive statistics and Data Panel Regression | Servitization, business practices and operational decisions |
| Kastalli & Van Looy, 2013 | Longitudinal econometric study | Challenges during the servitization implementation |
| Kharlamov & Parry, 2020 | Econometric analysis | Servitization and digitalisation |
| Kohtamäki et al., 2020 | Regression analysis | Servitization and digitalisation |
| Kohtamäki et al., 2013 | Correlation analysis | Servitization and financial performance |
| Kowalkowski et al., 2017a | Meta-analysis and descriptive statistics | Conceptual foundations of servitization |
| Mićić et al., 2020 | Shift-share analysis (Comparative method) | Structural and technological changes in the processing industry |
| Neely 2008 | Descriptive statistics and regression analysis | Servitization and financial performance |
| Simonsson & Agarwal, 2021 | Linear regression | Servitization and digitalisation |
| Suarez et al., 2013 | Dynamic panel estimation | Servitization and financial performance |

Source: Authors

This lack of an adequate theoretical grounding can be justified by the fact that servitization is still a young research domain, as indicated by the absence of a single definition and a theoretical framework for research, inconsistent terminology, and an insufficient volume of quantitative empirical research and data (Zhou et al., 2021). Table 1 systematises the main focus of the studies upon which the proposed conceptual framework is developed, classifying them into groups of qualitative and quantitative research.

Drivers and Motives for Servitization

Servitization can be triggered by various drivers and motives. Generally, the motives for servitization are investigated as internal and external motives. Internally, servitization can be initiated in order to improve

operational performance and revenues, to achieve higher profit margins and to stabilise business growth (Gebauer et al., 2005; Kowalkowski et al., 2015). In the short run, the motive can be to increase productivity based on improved cost structure and increased utilisation of resources by realising synergies between products and services. In the long run, servitization should contribute to business growth by exploiting new growth opportunities and by increasing the value offered to consumers (Rabetino et al., 2018). By introducing services to their offer, manufacturing companies generate new revenue streams from the service market, which is often worth many times more than the product market (Gebauer et al., 2005; Raddats et al., 2016). The previous is all related to the motive to improve the competitive position of a company. Servitization can improve competitiveness by setting barriers for competitors, creating dependencies (by offering an integrated package of products and services in a more efficient way), developing closer relationships with partners, differentiating the offer, and creating added value for consumers (Feng et al., 2021; Gebauer et al., 2005; Kowalkowski et al., 2015; Vandermerwe et al., 1988).

Making the decision to introduce services is a rational process, although it is sometimes reactive to the external changes such as digitalisation, consumer demands, or environmental changes (Kindström et al., 2014; Neely, 2008; Vendrell-Herrero et al., 2017). Digitalisation facilitates the process of servitization in manufacturing companies by creating new opportunities for providing services, smart products and new business models (Kohtamäki et al., 2019). The dematerialisation of physical products combines trends such as digitalisation and servitization, and influences the creation of new offers in manufacturing companies (Simonsson & Agarwal, 2021; Vendrell-Herrero et al., 2017). Impulses for servitization also come from consumers. Consumers are becoming more informed, more demanding and have greater bargaining power. Also, they use technology to a greater extent, which opens up space for new services to be offered (Raddats et al., 2016; Vandermerwe et al., 1988). From the environmental point of view, it is argued that environmental pollution can be reduced if the manufacturing firms change their business models by introducing services, and if customers revise their concepts of ownership (Neely, 2008). Anticipating and following digital trends and customers' demands can bring a manufacturing company to a new level of competitiveness. By adequately responding to external changes, manufacturers create greater opportunities to design, produce and deliver new, smart, and integrated offerings, and improve their competitiveness by doing so.

Researchers generally agree with the statement that the importance of services increases as the industry matures (Teece, 1986; Suarez et al., 2013). This strategy often arises in response to a product (or industry) entering the mature stage of its life-cycle, when revenue growth is declin-

ing. Adequate implementation of servitization enables an increase in revenues and profit from the sale of services, customer satisfaction and loyalty, and thus supports the growth of the company (Kowalkowski et al., 2017b; Oliva & Kallenberg, 2003; Tao & Qi, 2019). On the other hand, there are researchers who believe that this may not be the case, that is, that different types of services have different importance in relation to the stages of the product life-cycle (Cusumano, Kahl, & Suarez, 2015; Rabetino et al., 2018; Ulaga & Reinartz, 2011). Servitization can also be seen as a way to differentiate the offer from the offer of competitors (Kowalkowski et al., 2015; Martinez et al., 2010; Opresnik et al., 2015). In this sense, it strengthens the competitive advantage and raises barriers for new competitors to enter the market.

The Business Model of the Servitizer

Enriching the offer with services and implementing a servitization strategy requires certain changes in the manufacturing business models (Baines, Lightfoot, & Kay, 2009; Rabetino et al., 2018; Vendrell-Herrero et al., 2017). Research results show that in order to successfully implement a servitization strategy, a manufacturing firm more often than not has to change its business model (Benedittini et al., 2015; Khanra et al., 2021; Kindström et al., 2014). Servitization strategy often requires a manufacturer to change its resource and competence bases. Although there are some general resources and capabilities important for the success of servitization (Ulaga et al., 2011), there is no one complete generic solution as different servitization pathways require additional specific resource and capabilities support (Coreynen, Matthyssens, & Van Bockhaven, 2017).

Then, the entire process underlining the manufacturer's business model and referring to the creation, delivery, and appropriation of the value is a promising field of research on servitization. For example, Baines and Lightfoot (2014) show: that successful servitization asks for personnel who are flexible, oriented toward relationship-building, service-centric, and technically adept; that servitizers' business processes should be designed in a way that they are integrated into their customer's operations, and supported by the ICT; and that servitization triggers the changes of the performance measurement system by introducing new indicators aimed at measuring product performance, specifically for each customer. Service markets are consumer-centric and require the service design process to follow this (Benedittini et al., 2015). On the other hand, manufacturing companies develop services based on their existing manufacturing mind-set, which is oriented toward efficiency, economies of scale, and standardisation, rather than flexibility, variety, and customisation. Also, service innovation in manufacturing companies is often driven by technology rather than market demands, which is another difference pointing towards the need to modify the servitization business model's processes.

The Challenges of Servitization Strategy

Despite examples of the successful implementation of servitization strategy, it is also evident that this process is far from simply achieving business goals by introducing services to the offer, and that it is burdened with many challenges (Kowalkowski et al., 2015). Therefore, it is not surprising that a significant number of researchers are engaged in researching the challenges of servitization strategy and possible ways to address them.

Although they may be complementary, services are still different from products. Therefore, one of the key challenges for the implementation of this strategy is the lack of adequate resource and competence bases to support the processes of creation, communication, delivery, and appropriation of value through services (Khanra et al., 2021). Because servitization happens in a certain organisational context, the challenges imposed by both the organisational structure and the organisational culture are worth researching. An inadequate organisational structure, and an organisational mind-set that is focused on material outputs may be a challenge for the implementation of servitization or for realising its full potential (Benedittini et al., 2015; Gebauer et al., 2005; Khanra et al., 2021; Kohtamäki et al., 2019; Kowalkowski et al., 2015; Kowalkowski et al., 2017a; Martinez et al., 2010; Oliva et al., 2003). For example, one subject of discussion is whether servitization requires a formation of a new organisational unit which will be devoted only to the services part of a manufacturer's offer (Benedittini et al., 2015; Bustinza et al., 2015; Gebauer et al., 2005; Kindström et al., 2014; Oliva et al., 2003). Gebauer et al. (2005) argue that there is a need for the formation of a decentralised organisational unit in a manufacturing firm that will be focused only on services. On the other hand, Baines et al. (2009) indicate that the primary and fundamental organisational changes are those referring to the changes of the language, values, design and delivery of products and services, and not those related to the formation of a new organisational unit. Sklyar, Kowalkowski, Tronvoll, and Sörhammar (2019) argue that the company's ability to organise its organisational structure and operations in accordance with the requirements of the servitization strategy depends on the history of its operations and available capacity, as well as on the level of the development of relations in the internal and external environment.

Resistance to servitization can occur among servitizers' employees (Khanra et al., 2021). There are researchers investigating to what extent employees agree with the implementation of servitization strategy, how they react to changes, and whether they are sufficiently familiar with the potential benefits of servitization (Gebauer et al., 2005). This resistance may be caused by the lack of employee competencies to establish the more intensive relationships with consumers that servitization requires (Baines et al., 2014; Karatzas, Papadopoulos, & Godsell, 2020). Also, the dominant material mind-set of employees makes it impossible to see the

full importance and potential of services in a manufacturing company (Annarelli et al., 2021; Ciasullo, Polese, Montera, & Carrubbo, 2021; Gebauer et al., 2005). Sometimes, manufacturers view services as a necessary evil, as something that is of secondary importance, and as something that must be offered to customers only in order to sell a product (Kindström et al., 2014; Wise et al., 1999). Therefore, it is argued that this mind-set should be changed by 180 degrees in order to look at the sale of products as creating the basis (opening the door) to offering services in the future. Moreover, there are studies showing that sometimes an adequate motivation for services on the management side can be a challenge. Thus, for example, Gebauer et al. (2005) argue that managers often emphasise the importance of tangible products and prefer to invest in them, and that they do not believe in the potential of services to generate significant income (especially those selling expensive manufactured goods). Additionally, investing in products is seen as less risky, because investing in services requires new capabilities and it changes the nature of the relationship with customers. All of the aforementioned points lower the managers' motivation to invest in the service part of the business, and this needs to be resolved in order for servitization to be successfully implemented.

Supply Chain Relationships

Servitization may cause a misalignment of the interests between stakeholders in the supply chain, which raises the need for greater coordination (Baines et al., 2014; Benedittini et al., 2015; Bustinza et al., 2015; Khanra et al., 2021; Martinez et al., 2010; Vendrell-Herrero et al., 2017). Researchers are focused on changes which occur in relation to the traditional supply chain's structure and relationships, which are triggered by servitization. In the currently available literature on servitization, researchers have investigated various changes that happen in supply chains both upstream and downstream. Looking upstream, research is focused on the direction in which relations should change, how intensive and close communication should be, and what changes have taken place when it comes to the resources and values that suppliers deliver in order to back up the servitization strategy of a manufacturer (Martinez et al., 2010). The downstream of the supply chain is even more explored through the lens of servitization. It is shown that intensifying relations with consumers through richer and more intensive communication, and involving consumers in value creation are the most prominent changes with downstream partners in a servitizer's supply chain (Benedittini et al., 2015; Khanra et al., 2021).

In addition to the cooperative relations, the potential changes in power relations between supply chain participants are also researched. For example, Vendrell-Herrero et al. (2017) investigated how digital servitization changes the supply chain's power structure by increasing the

power of the downstream partners. Nevertheless, they also conclude that the upstream participants can turn this to their own advantage if they manage to obtain unique resources that are important for their customers.

The Relationship between Servitization and Performance

This is probably the most complex aspect of servitization research, but then again, it will probably be the main stream of future research on servitization strategy. Previous research has not provided unique results on the impact of servitization on the performance of manufacturing companies. The studies differ methodologically from each other, and research is partial and does not include all factors that can influence this relationship. According to Feng et al. (2021), the early stage in researching servitization's effects on performance is characterised by promoting servitization strategy as a way to improve performance, the impact being recognised as positive and linear. Then came the turnaround stage, when the so-called service paradox phenomenon was identified. During this stage, authors started to question the unquestionable positive influence of servitization on firms' performances by revealing the potential for increased risk, and the negative impact of servitization on revenues and profit. The empirical phase started with empirical proof that servitization leads to a decrease in income and profits of the servitizer.

Most of the research is focused on assessing the impact of servitization on sales revenue and the overall profit of the servitizer (Cusumano et al., 2015; Kohtamäki, Partanen, Parida, & Wincent, 2013; Kohtamäki et al., 2019; Kowalkowski et al., 2017b; Suarez et al., 2013). Generally, the results show that the nature of this relationship can be linear (positive or negative), non-linear or non-existent. For example, Abou-Foul et al. (2021), Kastalli et al. (2013) and Kohtamäki, Parida, Patel, and Gebauer (2020) argue that there is a positive and direct impact of servitization on financial performance (income and profit growth). Others find that servitization can have a negative impact on the performance of manufacturing companies (Fang, Palmatier, & Steenkamp, 2008; Neely, 2008). There is also evidence that the relationship is not linear, but rather convex or U-shaped (Gomes, Lehman, Vendrell-Herrero, & Bustinza, 2021; Khanra et al., 2021; Kohtamäki et al., 2013; Kohtamäki et al., 2020). Apart from the methodological differences, the inconsistency in the results regarding the relationship between servitization strategy and servitizers' performance is the result of the fact that this relationship is influenced by numerous mediators and moderators, which are not fully acknowledged and which, for example, can include variables such as environmental changes, organisational features, specific management practices, and the like (Feng et al., 2021). Therefore, despite numerous studies on the relationship between servitization and performance, this relationship is still not clearly and fully understood.

CONCLUSIONS

Servitization represents a form of innovating the capabilities and processes of producers in order to enrich their offer with services, and it is seen as one of the ways to face the modern challenges of competitiveness. Empirical data shows that the number of manufacturers applying servitization strategy is increasing. Along with the rising importance of this strategy in practice, the interest of the academic public in researching this phenomenon is increasing as well.

The outcome of these trends is the growth of the servitization research field. Nevertheless, despite the fact that it is growing, this field is still young, which is primarily indicated by the terminological inconsistency, the methodological focus on qualitative explorative research, and the fragmented research practice. Therefore, the main contribution of this paper is of a theoretical nature, and refers to the systematisation of the previous research results and knowledge in the form of a proposed conceptual framework for further research in this field. As with other review studies, the key limitation of the paper is the possibility that certain important papers and research results in this field have been overlooked.

After the review of literature relevant for the research field of servitization, the conclusion is that the focus of researchers in the future should be, first of all, on unifying servitization-related terminology. Also, studies in this area should be designed with respect to the certain management and organisational theories. Then, because the qualitative research of the phenomenon of servitization, primarily through case studies, dominates the field, quantitative research on larger samples of companies should be intensified. As for the research questions, they can be positioned in any part of the offered research framework. However, it seems that the research with the most perspective is research into the impact of servitization on company performance, with the inclusion of all the relevant variables (moderators and mediators), and with respect to the organisational and wider business context of the servitizer. In other words, the evolution of the research interest in servitization implies that future research effort will be directed towards uncovering the relationship between servitization strategy and the firm's performance, taking all the other factors mentioned as part of the context in which said relationship is realised. Nevertheless, the aim of the paper is not to single out variables related to servitization as more or less important. Instead, based on an extensive literature review, this paper aims to group together all those variables that were investigated in a so far predominantly fragmented approach. In this way, the paper should help future researchers on this topic in setting up their study design by directing their attention to the possible variables and relationships that can be investigated.

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КОНЦЕПТУАЛНИ ОКВИР ЗА ИСТРАЖИВАЊЕ СТРАТЕГИЈЕ СЕРВИТИЗАЦИЈЕ У ПРОИЗВОДНИМ ПРЕДУЗЕЋИМА

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Резиме

Сервитизација представља стратегијско опредељење производних предузећа ка употпуњавању сопствене понуде и испоруци интегрисаног производно-услугног пакета решења потрошачима. Међу теоретичарима и практичарима постоји општа сагласност да услуге добијају на значају за раст и конкурентност производних фирми. Стратегија сервитизације представља важан конкурентски алат за производне компаније, будући да им омогућава стварање нове вредности увођењем услуга у своју понуду и повећава лојалност потрошача. Као резултат, повећава се број производних компанија које укључују услуге у своју понуду.

Паралелно са овим све већим практичним значајем сервитизације за произвођаче расте и истраживачки интерес за стратегију сервитизације. Област истраживања сервитизације се развија повећањем броја радова (укупно и по годинама) и броја укључених истраживача, као и све већим интересовањем научних часописа за објављивање радова на тему сервитизације. Штавише, сервитизација је комплексан феномен који се истражује са различитих аспеката, укључујући области као што су пословни менаџмент, инжењеринг, животна средина и технологија. Истраживачка област сервитизације је растућа, али још увек незрела, на шта, пре свега, указује термилошка неконзистентност области. Такође, постојећи истраживачки напори су и даље доминантно усмерени на описивање феномена, које се заснива на квалитативном истраживању путем студија случаја, а не на идентификовању узрочно-последичних односа у њему.

Имајући у виду очигледан значај сервитизације с једне стране, и фрагментацију истраживања овог феномена с друге стране, основни циљ овог рада је дефинисање интегралног концептуалног оквира за дизајнирање студија о стратегији сервитизације у производним предузећима. Систематском анализом садржаја релевантне литературе у овој области, идентификоване су тематске целине које чине компоненте понуђеног концептуалног оквира, а које се односе на теоријске основе истраживачке области, покретаче и мотиве за сервитизацију, пословне моделе и изазове за имплементацију стратегије сервитизације, односе у ланцима снабдевања и утицај стратегије сервитизације на перформансе.

Испуњењем постављеног циља, рад доприноси теорији систематским повећањем различитих истражених аспеката у целину дефинисањем оквира за истраживање стратегије сервитизације. Након прегледа литературе релевантне за област истраживања сервитизације, намеће се закључак да будући напор истраживача треба да буде, пре свега, усмерен ка унифицирању коришћене терминологије. Такође, студије у овој области треба дизајнирати полазећи од одређених менаџмент теорија и теорија организације. Затим, имајући у виду чињеницу да област доминира квалитативно истраживање феномена сервитизације, један од закључака је да треба интензивирати квантитативна истраживања на већим узорцима предузећа. Што се тиче истраживачких питања, она се могу позиционирати у било ком делу понуђеног истраживачког оквира. Ипак, чини се да је најперспективније истраживање утицаја сервитизације на перформансе предузећа, уз укључивање свих релевантних варијабли (модератора и медијатора) и уважавање организационог и ширег пословног контекста предузећа које имплементира стратегију сервитизације. Као и код других студија овог типа, кључно ограничење овог рада је могућност да поједини важни радови и резултати истраживања у овој области нису обухваћени анализом.

THE MORALITY OF U.S. POLITICS IN THE AGGRESSION AGAINST THE FEDERAL REPUBLIC OF YUGOSLAVIA IN 1999

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Abstract

The author examines the morality of U.S. policy in the aggression against the Federal Republic of Yugoslavia (FRY) in 1999, using criteria for evaluating the morality of the U.S. president's policy proposed by Joseph Nye (Joseph S. Nye Jr.). The aggression against FRY is controversial, particularly its a priori determined moral character and the designation of humanitarian intervention. Our main goal is to demonstrate the unsustainability of the assessment of the moral justification of the aggression precisely according to his criteria. Therefore, our hypothetical starting point is that if morality is present in the foreign policy of the U.S. president, the criteria by which Joseph Nye evaluates each president will also show whether the policy that is directly related to the aggression against FRY is also moral. After explaining the theoretical-methodological approach, and presenting the attitudes towards morality of the most important theories of international relations, the paper presents an analysis of the morality of aggression conducted on the basis of intentions, means, and consequences. In relation to this, we examined the deontological and consequentialist sustainability of the morality of aggression according to the proposed criteria and questions. It was concluded that there is no ethical justification for aggression, unless achieving political interests is valued as morally acceptable in the spirit of consequentialist ethics.

Key words: NATO aggression, Federal Republic of Yugoslavia, U.S. policy, moral perspective.

МОРАЛНОСТ ПОЛИТИКЕ САД У АГРЕСИЈИ НА САВЕЗНУ РЕПУБЛИКУ ЈУГОСЛАВИЈУ 1999. ГОДИНЕ

Апстракт

Аутор разматра моралност политике САД у агресји на Савезну Републику Југославију (СРЈ) 1999. године према критеријумима за оцену моралности политике председника САД које је предложио Џозеф Нај (Joseph S. Nye Jr.). Агресија је кон-

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троверзна по више основа, а посебно по њеном *a priori* одређеном моралном карактеру и називу хуманитарне интервенције. Наш основни циљ је да укажемо на неодрживост оцене о моралној оправданости агресије управо према његовим критеријумима. Зато је наше хипотетичко полазиште претпоставка да ће, ако је у спољној политици председника САД моралност присутна, и критеријуми по којима Џозеф Нај оцењује сваког председника показати да ли је и политика која је непосредна повезана са агресијом на СРЈ такође морална. У раду је након објашњења теоријско методолошког приступа и приказа односа према моралу најважнијих теорија међународних односа извршена анализа моралности агресије према намерама, средствима и последицама. У оквиру њих је према предложеним критеријумима и питањима разматрана деонтолошка и консеквенцијалистичка одрживост моралности агресије. Закључено је да нема етичке оправданости за агресију, осим ако се остварење политичких интереса не вреднује као морално у духу консеквенцијалистичке етике.

Кључне речи: НАТО агресија, Савезна Република Југославија, политика САД, морална перспектива.

INTRODUCTION

Although international relations cannot be explained and understood solely from the perspective of leadership, the importance of their virtues or flaws is as great as that of important decision-making subjects. The argument that the role of individuals must be respected lies in the fact that states or other subjects of international relations cannot be attributed with consciousness, emotions, or morality, but those who make decisions can.

Our subject of interest is the morality of U.S. policy towards FR Yugoslavia, which led to the NATO aggression in 1999. Although it is clear to every citizen of Serbia that there were no humanitarian or moral reasons behind the aggression, our intention is to point this out from a different theoretical perspective.

The aim is to assess the morality of the policy that the U.S. pursued immediately before and during the aggression against FR Yugoslavia according to the criteria for evaluating the morality of U.S. presidential policy proposed by Joseph Nye (Joseph S. Nye Jr). In the book and essay in which he presents a methodological approach to assessing morality, he stated that morality has been present to a greater or lesser extent in all US presidents from the end of World War II to the present day. Therefore, our hypothetical starting point is that if morality is present in the foreign policy of the US president, the criteria by which Joseph Nye evaluates each president will also show whether the policy directly related to the aggression against FRY is also moral.

The paper employs hypothetical-deductive, descriptive, comparative, and analytical-synthetic methods.

The aggression against Yugoslavia in 1999 opened up many topics of discussion in international relations, including the morality of politics. The war in Ukraine, through the same criteria, intentions, means, and

goals, has a different moral assessment only because one power has replaced another. In addition to the culture of memory, this is another reason to address this topic.

TEORETICAL-METHODOLOGICAL APPROACH

Joseph Nye¹ does not question the importance of morality in international relations. He believes that its role depends on the contextual situation and the contextual intelligence of the decision-maker. According to his opinion and the opinion of other authors, morality has always played an important role in U.S. politics, especially after World War II. Amstutz states that “our government has consistently sought to base its foreign policy initiatives on both material interests and moral values” (Amstutz, 2019), without delving into the proportion of interests versus morals.

Given that there is a strong personal component in the definition of morality which identifies morality “as doing things because you feel you ought to” (Nye, 2020, pp. 29-30), it is necessary to establish criteria for its evaluation that would reduce subjectivity and make the morality of the policies of different presidents comparable.

Nye’s method of assessing morality takes impartiality as the starting point, which denotes the same criteria for assessing all interests. After that, “good moral reasoning should be three-dimensional: weighing and balancing the intentions, means, and consequences” (Nye, 2019/2020, p. 98). These dimensions are, in fact, the exponent of three ethical perspectives: virtue ethics, deontological ethics, and consequentialist ethics. In doing so, presidents use “three common mental maps of world politics - realism, cosmopolitanism, and liberalism” (Nye, 2019/2020, p. 98). The way they use them is by combining their relationship to morality, i.e., to intentions, means, and consequences. Combining them is a good and pragmatic way of using morality in foreign policy, and we would say it is efficient in explaining it, but it also provides broad opportunities for justification, manipulation, and the application of double standards.

Realists dispute the importance of morality in international relations. One reason is that the structure of the international system is anar-

¹ Joseph Nye is one of the most well-known international relations theorists, an emeritus professor, a member of the academies of sciences in both the United States and Great Britain, the creator of the theory of soft power, one of the most influential scholars of American foreign policy, and one of the top 100 global thinkers. He served as the chairman of the National Intelligence Council, which coordinates intelligence assessments for the President of the United States, and in the Clinton administration between 1994 and 1995 as the Assistant Secretary of Defense for International Security Affairs (Profile Joseph S. Nye Jr., 2023.);

chic and there is no supreme authority, which forces states to use all means necessary to survive.

Nye believes that realists oversimplify and generalise their approach to morality. There are few situations in which the survival of a state is threatened, which means that in most cases of political decision-making, moral values can be taken into account without harming the vital interests of the state.

Cosmopolitanism holds that all people in the world are equal and have the same rights, and that moral values are universal in nature and application. Therefore, the politics of implementing those values are universally acceptable and highly moral. Cosmopolitans ignore the fact that the boundaries of moral altruism are relative and that they change with the level of cohesion within a community. Since the international community is of a very weak cohesive nature, the values that arise from the family, group, society, or state will surely take precedence over those of cosmopolitanism. This hierarchy of values in foreign policy leads to moral inconsistency, which also relativises morality.

Liberals believe that various forms of liberalism, ranging from individual, economic, social, and institutional, create a certain level of cohesion in the international community, despite its anarchic nature. This is why certain moral norms arise, and lead to moral choices and condition certain moral behaviours in international relations. The mechanisms of norm influence are “the conscience of decision makers, domestic public opinion, international reputational pressures” (McElroy, 1992, p. 30). Moreover, they go even further, where institutionally defined moral values for liberals are placed above states and sovereignty, thereby opening the way for ‘humanitarian interventions’.

In the essay titled “What Is a Moral Foreign Policy?”, Nye provides more specific criteria for the moral evaluation of policy, based on which the role of morality in the foreign policy of individual U.S. presidents could be compared and assessed. Within each dimension of intention, means, and consequences, he identified several criteria, totalling seven. Based on these criteria, he formulated certain questions whose answers should evaluate their fulfilment, i.e. the moral impact of the U.S. president’s foreign policy. We will not focus on scoring, but we will analyse the morality of the policy implemented directly and during the aggression on Yugoslavia led by the U.S. and its president based on the criteria and questions given in the aforementioned essay (Nye, 2019/2020, p. 106).

THE MORALITY OF U.S. POLICY IN THE AGGRESSION AGAINST FR YUGOSLAVIA

Intentions: Motives and Goals

Intentions are usually what is publicly proclaimed as the goal of a certain policy. Two criteria – *moral vision* and *prudence* – are mentioned in relation to the analysis of intentions, which includes motives and goals. Declaratively, the intentions in the aggression would be the need to act humanely and justly, with the motives being the protection of human rights, the prevention of a humanitarian catastrophe, and the protection of the human rights of Albanians in Kosovo and Metohija.

1. Moral vision

The evaluation of the moral vision of the president is determined by the following questions:

- Did the president express attractive values, and did those values determine his motives?
- Did he have the ‘emotional IQ’ to avoid contradicting those values because of his personal needs?

The U.S., with its President Clinton and his associates, played a decisive role in gaining the support of other countries and in deciding to carry out the aggression against Yugoslavia. It can be said that the U.S. president, along with other NATO leaders, emphasised attractive values, such as preventing a humanitarian catastrophe and ethnic cleansing in Kosovo, and protecting the human rights of Albanians. This is why the nature of the intervention was defined as humanitarian. In all his speeches, especially since 23 March 1999, he emphasised humanitarian reasons first, which, along with appropriate rhetorical skills, had a favourable effect both domestically and internationally.

On the eve of the war, he sought the support of the American people “to oppose ethnic cleansing” (CNN, Transcript: 23 March 1999). The next day, in his address to the nation, he emphasised that “Ending this tragedy is a moral imperative” (CNN, Transcript: 24 March 1999,) and that there is a “humanitarian catastrophe” (CNN, Transcript: 5 April 1999) that must be prevented. Accordingly, on 31 May 1999, he said: “Our objectives in Kosovo are clear and consistent with both the moral imperative of reversing ethnic cleansing” (Washington Post, 1 June 1999). Therefore, according to Nye, “President Clinton made the difficult decision to use military force to resolve the conflict in Kosovo, but he did so with a clear vision of protecting human rights and preventing further ethnic violence. This was an example of applying moral principles to foreign policy” (Nye, 2020, p. 215). These are intentions that are supposed to confirm his moral credibility. Clinton claims that, through the humanitarian intervention, “we are upholding our values, protecting our interests,

and advancing the cause of peace” (CNN, Transcript: 24 March 1999). It is clear that American values and the values they fight for, as well as the values of the international community, are the same, and therefore indisputable; the same applies to the intervention. Their own interests come into play only after these values, which can be interpreted in two ways – first, as interests in preserving moral values, which no reasonable person can dispute, or second, which is much more likely, as the interests of a superpower and Western countries, which are not clearly proclaimed. Their own interests are masked by their contribution to world peace, humanism, and the vision of a free Europe.

“Considering that moral rules are not just a tool of usefulness, but also an expression and dictate of impartial public reason” (Pešić Z. R., 2014, p. 762), public opinion in NATO countries and the entire international community was manipulated and set against the Serbs, through references to events in Bosnia and the use of strong words such as genocide, Holocaust, ethnic cleansing, rape, and so on. The historical context was completely ignored, discarding the notion that “fundamentally, the conflict between Albanians and Serbs in Kosovo revolved around political control of that territory, rather than violations of human rights, political repression, or unjust, discriminatory policies” (Amstuc, 2008, p. 47).

At the international level, during the aggression against FR Yugoslavia and on the occasion of the 50th anniversary of the NATO alliance, it was claimed that the focus was on “building a global consensus on economic, social, and security policies” (Clinton, 2004, p. 790) in the name of the common good and after his term. The success of these efforts can be seen in the terrorism, new ‘humanitarian interventions’, militarism, and NATO expansion that followed his tenure, leading to a war in Europe and a ‘new Cold War’ in the world today.

Given that one should not rely solely on declarative values, but also on other motives, primarily personal ones when considering the intentions of individuals, it is necessary to identify them. The president of the United States at the time was under investigation and faced the possibility of impeachment throughout 1998, and until February 1999, due to his real estate dealings, affairs with intern Monica Lewinsky, and sexual harassment of other women. More precisely, President Clinton faced the possibility of impeachment for perjury and obstruction of Congress.

Our opinion is that this was not decisive in organising for the aggression against Yugoslavia to begin on 24 March 1999, just one month later, but the intervention and its moral justifications were a good way to divert attention from the president’s eroded moral credibility. On the other hand, can we trust a person who lied to the public, the legislative body of the U.S. government, investigative authorities, and his own family to advocate for lofty moral values and goals? Therefore, we are inclined to believe that personal interests determined his motives to protect Albani-

ans from a humanitarian catastrophe and ethnic cleansing, not only lofty moral values.

The answer to the second question is that there was clearly enough emotional intelligence to avoid contradictions arising from the moral values that he advocated and violated in his personal life, and in decision-making and responsibility assessment. The assessment is that the results indicate high emotional intelligence, which implies moral abilities, eloquence, and skills to deal with various situations. The unpleasant affair and morally unacceptable situation at all levels were overcome, so his approval rating in public opinion immediately before the aggression was 67%, and 65% at the end of his term in January 2001, which is the highest of all U.S. presidents in the last fifty years (BBC News in Serbian, December 20, 2019). However, during the NATO aggression on Serbia and Montenegro, confidence in his ability to solve the Kosovo problem had dropped to 57% by the end of March, with a further declining trend. At the same time, two months after the beginning of the aggression, the number of Americans who believed that the conflict should be resolved through peace negotiations increased to 47% (Gallup News Service, 26 May 1999). However, what he is remembered by are not his achievements in foreign or domestic policy, but the moral lapse of the 'Lewinsky affair'.

2. *Prudence*

- Did he have the contextual intelligence to wisely balance the values he pursued and the risks he imposed on others?

Prudence as a virtue refers to the ability to make rational and logical assessments and decisions based on careful consideration of the situation and facts, rather than emotions or impulsive urges. In the context of intelligence, it refers to "the ability to understand an evolving environment and capitalize on trends" (Nye, 2019/2020, p. 107).

Initially, the U.S. was cautious. It was only when it was in the interest of the U.S. that all means were used, an unacceptable "unprecedented ultimatum" was issued (Kissinger A. H., 1999), facts were fabricated, and an immediate pretext for intervention was found (Račak).

Prudence requires being well-informed, and the ability to assess gains and risks, and make appropriate choices. From the perspective of one's own goals and desired outcomes, as consequentialist ethics implies, the actions taken were rational and prudent. However, it is unlikely that the president of such a powerful nation did not have access to accurate information – that there was no ethnic cleansing or humanitarian crisis, or that there were no other alternatives. This would also call into question his contextual intelligence. We believe that this is not the case, and that he acted prudently according to the interests of his own country, and his personal interests. This, then, raises questions about the moral correctness

of the policy and decision to use aggression, and about prudence as a moral virtue.

Through emphasising their universality, moral values, although inferior to political interests in foreign policy, were dominant and used in the right way to justify the aggression against Yugoslavia. The neoliberal trend of developing free markets and capital, through the development of democracy and human rights, has been used as a current trend that puts state sovereignty and non-interference in internal affairs in the background, and morally justifies the actions of the sole superpower.

In the aggression against FR Yugoslavia, the risks for their own forces were minimised by conducting the bombing from a distance, as the U.S. President promised in his address to the nation: "I do not intend to put our troops in Kosovo to fight a war" (CCN, Transcript, March 24, 1999). The intensity of the air war against Serbia and Kosovo raises serious ethical questions about its moral correctness due to the mismatch of goals and means (Amstuc, 2008, p. 49). As Todorov explained, "By avoiding endangering the lives of their own soldiers, NATO does not hesitate to sacrifice the lives of enemy civilians, thus introducing a previous hierarchy into the price of human life" (Todorov, 2001, p. 17). For Brian Orend, this constitutes "a violation of the warrior ethos itself" (Orend, 2006, p. 280), and for Ulrich Steinworth "lives are mainly counted and compared" and therefore, fewer victims on one's own side, and more on the opponent's side, innocent or not, represents success (Maißer, 2004, p. 1). Their own forces were protected by conducting the bombing from a distance, while ground attacks were carried out by the so-called Kosovo Liberation Army, and the adverse effects on the opponent and civilian casualties were collateral damage justified by high moral goals. Therefore, "Walter Pfannkuche displays scepticism when it comes to humanitarian interventions, primarily for practical reasons: How to evaluate the lives of those at risk, threats, non-combatants, and interveners?" (Maißer, 2004, p.1).

On the other hand, contextual intelligence refers to the ability to monitor situational changes and make decisions accordingly, and to apply appropriate means. All opportunities were exploited to carry out the aggression, the international power constellation was in favour of the U.S. and the Western countries, and Russia was weakened, burdened by China and Europe, with still undefined identities. During the aggression, faced with unexpected resistance from Yugoslavia and growing demands for a peaceful solution from their own public and the public opinion worldwide, psychological, propaganda and military means were adapted to the development of the situation. All of this indicates that contextual intelligence was at the necessary level, that is, that a good assessment and understanding of the situation and the application of adequate means were present. When it became obvious that the goal could not be easily and

quickly achieved, when the attempt to enter Kosovo from Albania was thwarted, and the Yugoslav army was not significantly damaged, more drastic means were resorted to, such as systematic destruction of infrastructure and increasing the suffering of the people in every way. Morality was also set aside in this case. Preparations for a ground operation began as a form of psychological pressure, with “bringing Russia into the coalition to put more pressure on Milosevic was a characteristic achievement of the Clinton administration” (Ash, 2000). All of this had the effect of eventually resulting in a peace agreement, which the aggressor perceived as their victory in every sense - military, political, and moral.

Means

According to Nye, the use of means is determined by two criteria, where one evaluates the use of force, and the other evaluates the respect for liberal values.

3. Use of force

- Did he use force while paying attention to necessity, discrimination in the treatment of civilians, and the proportionality of benefits and harm?

The effectiveness of means in politics often depends on how much they contribute to achieving goals. How leaders treat their own people and opponents, and how they choose means of coercion is evaluated for the morality of their actions. From the perspective of consequentialist ethics, all means are allowed if they contribute to achieving goals, including the use of force and the means that manifest it. “The rules in bello can be summarized in the principle of proportionality between the means of war and the goals of war” (Steinworth, 2004, p.21), which justifies the use of all means against the Serbs because of serious crimes: denial of human rights, expulsion, rape, murder, etc. Of course, this does not apply to the other side – the persecution of Serbs, especially in the year when this text was written. The second question is who determines proportionality and in what manner. Does this responsibility fall to politicians, Great Powers, soldiers, media, the public, or philosophers? According to statements, it was necessary to use military force because all other means of solving the problem in Kosovo and Metohija were exhausted, which is absolutely untrue. There was no willingness to solve the problem peacefully, as evidenced by the fact that all conditions were accepted by the Serbian side, except for the condition that Yugoslavia “be occupied by NATO”, which no country would agree to (Badiou, 2011, p. 68). H. Kissinger believes that this part of the Rambouillet Agreement text “was a provocation and

an excuse for the commencement of bombing” (Bancroft, 1999), as can also be seen from the agreement itself². On the other hand, the acceptance of the agreement, as it later turned out, posed fewer security risks for Serbs in Kosovo, which cannot be said for the country as a whole, according to Krstic (2016, p. 117).

Military force was used without sparing civilians, as evidenced by data on the casualties of civilians, including women and children. In addition, the bombing of petrochemical complexes and transformer stations caused an environmental catastrophe – depleted uranium and banned cluster bombs were used and dropped even on cities. This means that from the perspective of the aggressor, the use of all means is possible if they serve the desired outcome. However, that does not mean that they are *a priori* moral.

Considering the proportionality of benefits and harm, it seems that it was well established. The intervention was legitimised as humanitarian, the public was sufficiently indoctrinated, the opponent was militarily inferior and dehumanised, so excessive use of force, civilian casualties, indiscriminate bombardment, the duration of the aggression, and some verbal condemnation from international organisations could not seriously harm the aggressors.

We can rightfully conclude that force was not necessary in resolving the Kosovo issue, and that civilian casualties were not taken into account, which is not in line with moral values. However, from the perspective of benefit or consequentialist ethics, it was fully justified for the aggressor.

4. Liberal concerns

- Did he try to respect and use institutions at home and abroad?
To what extent did he consider the rights of other peoples?

The “humanitarian intervention” was approved by the U.S. Congress. (See Clinton, 2004, p.787). Predictions were publicly made that the war, euphemistically referred to as an intervention, would last for a ‘relatively’ short period. Congress, and even the military were not presented with the real possibilities that the ‘intervention’ could last longer and that the use of ground forces might be necessary, which neither Congress nor allies of the U.S. would have approved. As Ash concludes, “Politics means being economical with the truth. But what are we to conclude if they didn't even tell their own military?” (Ash, 2000).

² More about Annex B of the Rambouillet Agreement in: Dušan Proroković, The Process in Rambouillet – Political Pretext or the Nato Aggression on the Federal Republic of Yugoslavia, page 48, National Security Policy, Year X, vol. 16, issue 1/2019, pages 237-252 DOI: <https://doi.org/10.22182/pnb.1612019.11>;

On the level of foreign policy, there was no support from Russia or the wider international community, meaning that no decision was obtained from the UN Security Council. Disrespecting the authority of international institutions, their rules, and international law is inherently an immoral act. Therefore, “neoliberal hegemony with its aggression against Yugoslavia and later interventions in other countries exposed all the hypocrisy of Western politics, morals, and relationships with others” (Pešić, 2021, p. 419).

The question of considering the rights of other peoples can be interpreted in different ways: through respect for the right of a national minority to secede and form its own state; through the endangerment of human rights as a pretext for intervention; but also as the denial of the rights of some in favour of others, and support for the ethnic cleansing of Serbs after the arrival of peacekeeping forces. The West and NATO produced a secondary effect through intervention “because they support the policy of ethnic cleansing [of Serbs] and the constitution of ethnically pure states (Kosovo, Croatia - remarks of Z.P.)” (Todorov, 2001, p. 13). Of course, interventions to protect human rights towards friendly countries or great powers is unacceptable and not in the interests of the United States. In any case, ethical norms – the deontological requirement that it is a duty to respect rules and their universal importance and application without selection, in all situations and towards all nations and people – are not respected.

What Nye calls ‘liberal concerns’ is indeed a good reason for concern, as the fundamental theoretical and moral postulates of liberal ideology and theory, that is, international institutions, international law, and moral values are not respected.

Consequences

Nye provides three criteria for evaluating the morality of a policy based on its consequences: trusteeship, cosmopolitanism, and educational effects of the policy. Trusteeship refers to acting in the best interest of one’s constituents and all citizens of the United States. Cosmopolitanism refers to understanding and respecting the interests of others, and being impartial in judgment and conclusion. The educational effects criterion has several questions, but fundamentally relates to what is left behind as a legacy of the policy. The questions provide a more detailed explanation of the criteria.

5. Fiduciary

- Was he a good trustee of America’s long-term interests?

Based on real interests such as preserving NATO unity and purpose, geopolitical reasons in the Balkans, confirming American leadership and neoliberal hegemony disguised as humanitarianism, and sending

a message to the international community, other superpowers, Islamic countries, and their own allies, it seems that long-term American interests were taken into account. This was followed by new interventions under similar humanitarian pretexts, which alarmed many countries and sobered up two major powers – Russia and China. The result was a slow transformation of the international order from unipolar to multipolar, which increased distrust in the good intentions of the U.S. and Western countries, something they certainly did not intend. Over time, it has also become clear that the precedent of intervention has turned into a rule invoked by some states, while it was denied to others, which speaks to legal and moral inconsistency. Here we limit ourselves only to interests related to the aggression against FR Yugoslavia, because the assessment of success in both mandates of President Clinton is very high. It seems that the aggression served the short-term interests of the U.S., but it has been shown that it did more harm than good to the international reputation and interests of the U.S. in the long run.

6. *Cosmopolitan*

- Did he consider the interests of other peoples and minimise causing them unnecessary harm?

When considering the interests of others, aside from the interests of the allies of the U.S., the most important interests for us are those of Albanians and Serbs.

Every consideration of interests requires impartiality, which is the ability to make objective judgments without giving preference to any side in the conflict. If “human rights and freedoms are the most sensitive area and the ultimate measure of democracy in a state and society” (Dimovski, 2021, p. 1057), how is it that highly valued democratic countries like the U.S. and Western countries do not have an understanding of the negation of the rights of Serbs during and after the aggression? The answer is simple: because it is not in their interest, because the Serbs deserved it, and because universality is selective, and therefore the aggressor’s responsibility.

The U.S. and Western countries immediately sided with the Albanians as victims, and all other facts that spoke to the contrary, or in favour of the Serbs were ignored. Even after the intervention, it was established that “there is no genocide or anything similar” (Todorov, 2001, p. 12), but this did not change the opinion about the exclusive guilt of the Serbs.

For a good ethical assessment, it is necessary to consider all relevant facts, including the historical context. Theoretical debate revolves around the question of “Just how far back into the ethical history of a conflict does... There clearly needs to be some point at which past wrongs are allowed to fall into obscurity” (Frost, 2009, p. 66). The author argues that for Serbs, mentioning the 14th century is excessive, with which we can agree. But what about the following centuries, and the last fifty

years? He concludes that “ignoring relevant history is an obvious mistake and that balance needs to be established” (*ibid.*). The problem with balance is that it has been on the side of the aggressor’s interests and the nation they advocate for due to double standards. In fact, balance exists only to the extent to which the interests of one of the parties coincide with the interests of the United States.

There is no talk of cosmopolitanism here, which hides aggression through humanism and the protection of human rights, simply because it is selective justice and morality, as Albanian rights are given precedence over Serbian rights.

With unnecessary material damage, the consequences of the excessive use of force indicate that “the main victim of NATO’s punitive expedition in Serbia was the civilian population” (Todorov, 2001, p. 15). The civilian population was, in fact, used as a means to force Serbia to accept the conditions imposed by the U.S. and NATO, which is contrary to the basic postulate of Kant’s deontological ethics that man should never be used as a means, but solely as an end. However, in the spirit of consequentialist ethics, Steinvorth believes that “it is not motivation that determines the legitimacy of wars, but the consequences” (Steinvorth, 2004, p.21?). This means that duty, humanism, human rights, interests, or other reasons for intervention are irrelevant if success is achieved – in this case, the protection of Kosovo Albanians. The negative consequences for the innocent, or Serbs who are a priori considered guilty, are not taken into account.

7. Educational

- Did he respect the truth and build credibility? Did he respect facts? Did he try to create and broaden moral discourse at home and abroad?

From the aggressor’s perspective, the truth about the humanitarian catastrophe and the protection of human rights was completely fabricated, and the participants, including the U.S. President, built their high moral credibility and the reason for aggression on these foundations. The facts were not only disregarded but also fabricated – the number of refugees, ethnic cleansing, rapes, and finally, the pretext for the aggression (Račak). Orend believes that a just cause is sufficient for humanitarian intervention, and that is when the state “turns savagely against its own people, deploying armed force in a series of massacres against large numbers of its own citizens” (2000, p. 4), taking the example of Kosovo in the 1989-1999 period. This intervention is morally justified, which is not difficult to agree with, provided that the assertion is accurate. According to the report of the German Ministry of Foreign Affairs to German Courts, a year before and at the beginning of the aggression, “there is no mention of alleged persecution of Kosovo Albanians, ethnic cleansing, genocide against the Albanian population, humanitarian catastrophe, ... and it is

noted that the measures taken by security forces in Kosovo were directed against terrorists, not against the Albanian population” (Krivokapić, 2014, p. 360). Noam Chomsky also cites reports from the British government that indicate that the majority of killings in Kosovo before the aggression were committed by the KLA, with the aim of provoking an excessive Serbian response which would prompt a NATO intervention (Chomsky, 2018: 190). Heinz Loquai³, a member of the OSCE mission for the Balkans, claims that “none of the situation reports, whether from the Foreign Office, the Ministry of Defense, NATO in Brussels, or the OSCE in Vienna, before March 24th, mentioned the mass expulsion in a systematic or planned manner” (according to Moritz, 1999, p. 16). The Human Rights Watch (HRW) report attests to crimes, murders, rapes, and the displacement of the population by Serbian forces immediately before the aggression and during the NATO aggression, which cannot be a justification for the aggression. Before the intervention, there were concerns that it would lead to a humanitarian catastrophe and crimes on all sides, but these were ignored and considered an acceptable cost or collateral damage. In the same report, those same crimes committed by the so-called Kosovo Liberation Army are also mentioned, as is the fact that there is no evidence that NATO committed war crimes, and that it merely violated international humanitarian law.

The historian who provided the White House with the facts that were given to the press admitted, “Of course, I did not publish all the facts, only those that favored our portrayal of the war” (Moyn, 2020). After such a selective approach, all subsequent knowledge of truth and evidence were not respected, and facts were ignored and anathematised. And the most important argument – that humanitarian reasons are not the primary reason for the aggression – is revealed by the fact that plans for the aggression were made much earlier, and only a favourable situation and pretext were being searched for. Intelligence data, actions, analyses, and the opinions of many authors speak to this. It can be seen that the actual reasons of aggressors differ from each other. The main argument in defence of their moral credibility and unlawful aggression were biased judgments of the International Court of Justice in The Hague. However, there are different opinions. Steinvorth, in the German debate on the war in Kosovo and Metohija (Steinvorth, 2004, pp. 19-30), considers that NATO’s intervention in Kosovo and Metohija was legitimate, even if

³ Heinz Loquai has written a book on how the war could have been avoided by presenting facts and truth, which is why he was criticized by the German Minister of Defense Rudolf Scharping (Loquai, 2000). Together with the German Minister of Foreign Affairs Joschka Fischer, Scharping knowingly lied to the German public about the existence of the secret Serbian plan “Horseshoe” in 1998 for the expulsion of Albanians.

there was not a humanitarian catastrophe. He explains this through four arguments that he does not have to prove conclusively. They are based on the facts that there were crimes in the past, that they could have been prevented through interventions, and that crimes committed by Serbs that hypothetically might occur necessitate intervention even at the cost of violating the rules of war. The problem for defenders and critics is the availability of information, and the uncertainty over which information is credible. But an even greater problem, he believes, is the choice of which facts and values we consider important for legitimacy. We agree with that and, as for the argument about crimes that Serbs might hypothetically commit, the crimes might just as well not happen, hypothetically. The conclusion of the debate is that participating philosophers find it difficult to break out of established frameworks and have high expectations regarding facts, which is both logical and more moral. Authors of philosophical provenance constantly criticise the ‘poor accessibility of facts’ as an obstacle to relevant moral conclusions, without considering how truthful the facts about Kosovo presented to them by their governments and media really are. Not even the most renowned German philosopher, Jürgen Habermas, resisted the seduction of official information. Habermas referred to the NATO aggression in Kosovo for humanitarian reasons and human rights as an “authorized mission of peace” and noted that its “surgical precision in aerial bombardment and sparing civilians grants it high legitimacy” (Habermas, 1999: 1), placing it on the border between law and morality. Interestingly, after Russia’s aggression in Ukraine, he holds the opposite view – not about the aggression, but about the importance of human rights (Habermas, 2022). At the end of the debate on Kosovo and Metohija, “a self-critical question remains, what is the actual role of a moral philosopher when sitting at a table in Germany and writing about under which conditions it is right or wrong for other people somewhere in the world to wage war” (Stoecker, 2004, p. 178).

The aggression against FR Yugoslavia raised many questions related to the hegemony of one power in the international order, and political relations and respect for international law, but moral values were especially debatable in three ways: (1) how much are humanism and human rights a priority compared to sovereignty and non-interference in the internal affairs of others; (2) how acceptable are Western countries’ own values for others; and (3) how effective and morally correct is to impose them by force. NATO “has transformed the internal component of its identity” (Popović Mančević, 2021, p. 1420) by expressing it through solidarity as a highly moral value, but selectivity in its application has raised questions. This moral discourse promoted by Clinton and supported by NATO was increasingly questioned both internationally and domestically. This was predicted by Kissinger’s statement that “but to implement such a policy on a permanent basis will not be nearly so simple as the

self-congratulatory rhetoric implies” (Kissinger A. H., 1999). And nowadays, from a moral point of view, aggression is unacceptable.

In the end, even Nye himself relativizes his own criteria, stating that “even when there is broad agreement on the facts, different judges may weigh them differently” (Nye, 2020, p. 185) or that morality should be viewed in terms of “effectiveness of consequences” (Nye, 2020, p. 183), which is the basic credo of American foreign policy. He does not see obstacles to foreign policy in moral norms, double standards, or ignoring facts, but believes that “the future success of American foreign policy may be threatened more by the rise of nativist politics that narrow our moral vision at home than by the rise and decline of other powers abroad” (Nye, 2020, p. 218). There is some truth in this, although the assessment of the consequences of President Trump’s policies and attitudes towards them within the U.S. is debatable.

Our goal is not to evaluate the validity of the given criteria, but to assess whether the policy was moral or not based on the criteria, in relation to its intentions, means, and effects. If we separate them, we have good intentions, bad means, and good effects, but from the perspective of interests rather than the perspective of moral correctness, which is immoral in all aspects.

If we return to the beginning of Nye’s book, the introduction argues that the morality of U.S. foreign policy is based on American exceptionalism, Wilsonian liberalism, and the liberal order after 1945. Our opinion is that the crucial role in this, at that time and especially today, was played by American exceptionalism on the basis of which foreign policy was built. This means that the same criteria, including moral ones, do not apply to everyone. America is exceptional in many ways, but in this context exceptionalism implies the permissibility of everything that is in the interest of the U.S., determining the rules for others, and arbitrating. Such an understanding prevents the consideration of facts and objectivity. And in the 2022 Russian intervention in Ukraine, Nye does not see any similarity with the U.S. intervention in former Yugoslavia. The main cause of the Russian aggression lies in Putin’s personality, his animosity towards Western intentions and values, Russia’s weaknesses and great expectations for economic aid from the West, and the denial of the Ukrainian nation and state, while the expansion of NATO and the threat to Russia’s security is a much weaker cause (Nye, 2022). Therefore, the U.S. and Western countries are almost completely innocent in this conflict. Any comment here is unnecessary, except in the context of what we have already said, that exceptionalism blinds or justifies everything.

Kissinger analysed six exceptional world leaders who contributed to their country and its reputation by choosing appropriate strategies in his latest book. For each leader, he identified and named the following strategies: the strategy of Humility, Will, Equilibrium, Transcendence,

Excellence, and Conviction. There is no universal strategy for success or, we would add, failure. Thinking about how to name the strategy of U.S. foreign policy and its president in the aggression against a small country, we concluded that it would be the 'strategy of arrogance or haughtiness', which is closely related to hypocrisy.

CONCLUSION

Analyses of foreign policy are increasingly replacing ethical concepts with national interests, as they provide more space for justifying intentions, means, and consequences.

In the case of the aggression against the Federal Republic of Yugoslavia, the moral criteria are not fully met as determined by deontological and consequentialist ethics, just as the President of the United States cannot boast of virtues.

A deontological approach analysed through intentions, motives, goals, and means indicates that aggression cannot be justified from a deontological ethical perspective on any grounds. Invoking duty and obligation to act on humanitarian grounds or universal principles is unsustainable due to inconsistency.

A consequentialist approach, which involves adjusting the rules and the act itself to the expected outcome, achieved its goal to some extent – not in connection with humanism, but with the interests of those who intervene, and in the name of those for whom they intervene. The rules of non-interference in the internal affairs of states and the denial of sovereignty were side-lined in favour of a questionable form of humanism, and humanitarian reasons were directed towards denying the human rights and the ethnic cleansing of Serbs after the intervention. The ultimate outcomes – support for secession and the creation of a new state, are illegal and immoral, and cannot be justified even from a consequentialist ethical perspective, given the civilian casualties and extensive destruction. The immorality, and thus the responsibility, of those who decided on the aggression lies in the fact that they should have foreseen its negative effects.

Even if we were to find some deontological or consequentialist justification for the intervention, the problem lies in the violation of the sublime principle from which all others are derived, and that is truth. The starting point for the so-called humanitarian intervention was a humanitarian catastrophe and the protection of human rights, and they simply were not true, at least not to the extent that would warrant an intervention. In Kosovo and Metohija, it was about the legitimate right of a sovereign state to combat the continuous separatism and terrorism of a minority. Today, we see how the aggressor justifies Israel's legitimate right to combat terrorism, while others condemn it. Whose truth will prevail? Is

there any doubt? Considering the emotional and contextual intelligence of those who were the main promoters of the intervention in Serbia, we cannot be convinced that they were unaware of this. There is a much greater likelihood that they consciously, and thus morally impermissibly, denied facts in the name of other political interests rather than moral ones. And that fact, which can easily be proven today, denies any moral justification for the intervention.

In our opinion, the planning, implementation and effects of NATO's aggression against FR Yugoslavia are an expression of a realistic approach, which was focused on achieving the interests of the United States and its president, Western countries, and our neighbours who participated in everything.

In terms of mental maps, realism was used to justify the intervention (as a reason that all other means had been exhausted), cosmopolitanism was used to provide reasons for the intervention (not only ethnic cleansing and the human rights of Albanians but also, retroactively, the rights of all those who had been threatened by Serbs in former Yugoslavia, and as a message to those with such intentions), and liberalism was used as a way to push sovereignty and non-interference in the name of humanism into the background. In moral terms, realism abused morality to apply force, cosmopolitanism morally justified aggression, and liberalism elevated aggression to the highest moral value. Thus, liberal tendencies and cosmopolitanism were transformed into neoliberal hegemony that only exploited humanism and human rights for realistically achieving the interests and benefits of the U.S. and Western countries. This established a new pattern of behaviour in international relations reserved only for one group of countries.

The use of different mental maps in analysis contributes to understanding the intervention and its unfolding, but it does not morally justify it in any way, because adapting morality to mental maps relativises it and makes it inconsistent. Moral norms, in order to be norms at all, must have a universal character and must be consistently applied.

Therefore, the answer to our hypothetical premise is negative, meaning that the policy of the U.S. and its president regarding the aggression against Serbia was not moral and cannot be justified, according to Joseph Nye's criteria, unless interests beyond humanitarian ones are subsumed under morality. And that is already a consequentialist (mis)use of morality for pragmatic purposes.

According to Nye's question in the title of his book *Is Morality Important?*, our answer is, in a dual sense, yes – as a motive for some foreign policy, but also as a reason for its prevention. In other words, if we paraphrase Kant again, morality cannot be used as a means but as an end in itself, because it is an end in itself.

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МОРАЛНОСТ ПОЛИТИКЕ САД У АГРЕСИЈИ НА САВЕЗНУ РЕПУБЛИКУ ЈУГОСЛАВИЈУ 1999. ГОДИНЕ

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Резиме

Морал и улога појединаца у међународним односима су најчешће оспоравани концепти у међународним односима.

Аутор разматра моралност политике САД у агресији на Савезну Републику Југославију (СРЈ) 1999. године према критеријумима за оцену моралности политике председника САД које је предложио Џозеф Нај (Joseph S. Nye Jr.). Агресија је контроверзна по више основа, посебно према њеном а priori одређеном моралном карактеру и називу хуманитарне интервенције. Наш основни циљ је да је укажемо на неодрживост оцене о моралној оправданости агресије управо према критеријумима Џозефа Наја.

Његов начин процене моралности се заснива на процени изражених намера, употребљених средства и последица. Нај сматра да се лидери у употреби морала ослањају на комбиновање схватања морала три доминантне менталне мапе светске политике, а то су реализам, космополитизам и либерализам.

Зато је наше хипотетичко полазиште да ако је у спољној политици председника САД моралност присутна, онда ће и критеријуми по којима он оцењује сваког председника показати да ли је и политика која је непосредна повезана са агресијом на СРЈ такође морална.

У раду је након теоријскометодолошког приступа и приказа односа према моралу најважнијих теорија извршена анализа моралности агресије према намерама, средствима и последицама. У оквиру њих је према предложеним критеријумима разматрана деонтолошка и консеквенцијалистичка одрживост моралности агресије.

Закључено је да се агресија из деонтолошке етичке перспективе не може оправдати ни по једној основи услед недоследности. Консеквенцијалистички приступ који подразумева прилагођавање правила и самог чина очекиваном исходу је донекле остварио свој циљ, али не у вези са хуманизмом, већ са оствареним интересима оних који интервенишу и у име оних за које се интервенише. Обе перспективе се заснивају на лажним и конструисаним чињеницама, због чега се и њихова валидност у моралном просуђивању доводи у питање.

Зато је одговор на наше хипотетичко полазиште негативан, односно да политика САД и њеног председника поводом агресије на СРЈ и према критеријумима Џозефа Наја није била морална и не може се оправдати, осим ако се интереси изван хуманитарних не подведу под морал. А то је већ консеквенцијалистичка (зло)употреба морала у прагматичне сврхе.

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POST PANDEMIC TRAVEL INTENTIONS: THE POWER OF FEARS AND CHANGES IN TRAVELLER BEHAVIOUR

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Abstract

The post-pandemic period has seen large financial losses in the economy of the entire world, but particularly in the tourism industry. Covid-19 significantly influenced changes in the behaviour of tourists, including the increasing level of health risk perception. The aim of this research is to examine the impact of health risk perception on the intentions and travel decisions of Serbian tourists after the Covid-19 pandemic. The importance of the research lies in the intention to determine whether there is a difference in the perception of health risks based on demographic and economic variables. The results of the empirical research conducted on the territory of the Republic of Serbia indicate that age and the level of income are two significant predictors of fears and intentions to travel after the Covid-19 pandemic. Based on the results, it will be possible to predict future tourist movements in Serbia and abroad, taking into account the changes in the behaviour of tourists in the post-pandemic period.

Key words: pandemic, tourism, health risk, fears, travel intentions, Serbia.

НАМЕРЕ ПУТОВАЊА НАКОН ПАНДЕМИЈЕ: МОЋ СТРАХОВА И ПРОМЕНЕ У ПОНАШАЊУ ТУРИСТА

Апстракт

Период после пандемије бележи велике финансијске губитке у свим регионима света, у целокупној светској економији, а посебно у туристичкој индустрији. Ковид-19 је значајно утицао на промене у понашању туриста на перцепције здравствених ризика. Циљ овог рада је да истражи утицај перцепције здравствених ризика на одлуке о путовању српских туриста након пандемије Ковид-19. Важност истраживања је у намери да се утврди да ли постоји разлика у перцепцији здравствених ризика на основу демографских и економских варијабли. Резултати емпиријског истраживања спроведеног на територији Републике Србије показали су да су старост и ниво примања два значајна предиктора страхова и намера да се путује након пандемије Ковид-19. На основу резултата биће могуће предвидети будућа туристичка кретања

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у Србији и иностранству, имајући у виду промене у понашању туриста у периоду након пандемије.

Кључне речи: пандемија, туризам, здравствени ризик, страхови, намере путовања, Србија.

INTRODUCTION

In the last two years, the whole world has experienced a transformation in all areas of business, communication, and the macro and micro environment as a result of the Covid-19 virus pandemic. Tourism is marked as a complex activity, which includes a certain level of risk and a high degree of vulnerability to non-systematic risks (Huang, et al., 2020). In the last decade alone, the tourism industry has been hit by various security incidents, such as terrorist attacks, health crises (MERS, SAES, Ebola) and natural disasters (tsunamis, earthquakes, volcanic eruptions, etc.) (Chebli, 2020), which caused serious consequences and economic losses.

According to the report of the World Health Organization (WHO) , as of the 28th of June, 2020, over 9 million cases of infection and 495,000 deaths have been reported worldwide (WHO, 2020). As a result of the rapid spread of the pandemic and the paralysis of the entire world, Covid-19 has been labelled as the worst pandemic to hit the world since the Second World War, the devastating effects of which exceeded some previous epidemics (SARS, MERS) (Matiza, 2020; Zhu & Deng, 2020). According to the WTO, considering other crises periods, this will be the most challenging period with greater negative consequences, especially compared with the economic crisis of 2008 (international tourist arrivals declined by 4%), or the 2003 health crisis (SARS, 2003), which caused a 0.4% decline in tourist arrivals (Gligorijević, Kostadinović, 2022). In order to prevent and suppress the spread of the Covid-19 virus, many countries have introduced measures and restrictions such as quarantine, social distancing, bans on domestic and international travel, and border closures. (Gössling et al., 2020), which have had a negative impact on tourism and led to enormous borrowing by a large number of countries (Chan et al., 2021; Milovanović et al., 2021).

Thousands of hotels and tourism businesses have gone bankrupt, unemployment has increased, and there has been a significant drop in tourism demand (cancellation of arrangements, hotel reservations, flights) due to travel restrictions and concerns about the corona virus, which has led to huge financial losses in the tourism sector, as well as the airlines industry (Hao et al., 2020; Jian et al., 2020; Matiza, 2020; Stanojević et al., 2022). As for Serbia, the Covid-19 pandemic had a greater negative impact on service companies than on manufacturing companies (Paunović & Aničić, 2021) i.e. the biggest losses and consequences of the pandemic were felt by hotels, travel agencies, and restaurants (Gicić et al., 2021).

Depending on the nature and the severity of the crisis or disaster, the response and recovery may differ. Novella and colleagues stated that terrorist attacks are an example of an event with a quick end and a short recovery period, while in other crisis situations, such as pandemics, recovery can be very slow (Novelli et al., 2018), as long as the occupancy and income within the tourism sector return to the levels recorded before the pandemic (Quan et al., 2022).

The subject of this paper is the impact of health risk perception on the travel decisions of Serbian tourists after the Covid-19 pandemic. *The aim of the paper* is to examine and empirically test the impact of the Covid-19 pandemic on the trajectory and intentions of future tourist movements. Additionally, the paper aims to determine whether there is a difference in the perception of health risk based on demographic and economic variables.

Understanding consumer (tourist) behaviour in response to traumatic events is one of the biggest issues the tourism sector faces after severe disasters (Chebli, 2020; Mair et al., 2016). In order for business entities in the tourism industry to survive after the crisis and be ready to adapt to new circumstances and the needs of target groups, it is crucial to monitor changes in the behaviour of tourists (Jian et al., 2020). In this regard, the impact of the current public health crisis caused by the Covid-19 virus on tourists' perception of the risk of travel, as well as how the perception of risk can affect the behaviour of tourists after the pandemic, is particularly significant both for hotels and for other tourism companies (travel agencies, tour operators, airline companies, etc.) in order to gain new knowledge about the decisions and travel intentions of tourists after an event that left great consequences for the tourism industry and the entire world.

LITERATURE REVIEW

The concept of perceived risk within behavioural studies was first introduced by Bauer in 1960, and has since been used as one of the important parameters for explaining consumer behaviour (Cui et al., 2016; Zhu & Deng, 2020). Bauer states that "consumer behaviour involves risk in the sense that every consumer action will produce consequences that he cannot foresee, some of which are likely to be unpleasant" (Lin & Chen, 2009, p. 36). Some authors state that risk is the probability of an undesirable event that may expose consumers to danger (Mansfeld, 2006), and has negative consequences on consumer behaviour (Laws & Prideaux, 2006).

Hasan and colleagues (Hasan et al., 2017) indicate that perceived tourism risk is a multidimensional concept, which includes uncertainty and possible negative consequences (Quintal et al., 2010) such as worry, anxiety and fear (Karl & Schmude, 2017; Yang & Nair, 2014). In the tourism literature, various authors identify four to nine dimensions of perceived risk, such as financial, health, and physical risk, political instabil-

ity, psychological risk, satisfaction risk, social risk, terrorism, and the weather risk. (Reisinger & Mavondo, 2005; Sönmez & Graefe, 1998).

In the last decade, the tourism industry has been hit by various crises and security incidents such as terrorist attacks, health crises (Mers, Sars, ebola) and natural disasters (tsunamis, earthquakes, volcanic eruptions, etc.) (Chebli, 2020) which caused changes in tourists' risk perception (Mansfeld & Pizam, 2006). The concept of perceived risk and its influence on the choice of destination has been widely analysed in literature (Karl & Schmude, 2017; Lepp & Gibson, 2003; Sönmez & Graefe, 1998), as has the image of the destination (Chew & Jahari, 2014; Qi et al. 2009), and the travel decision-making process and behavioural intentions (An et al., 2010; Floyd et al., 2004; Yüksel & Yüksel, 2007). According to research, risk perception among tourists can differ depending on a number of variables, such as gender, age, education, country of origin, cultural differences and previous experience (Godovykh et al. 2021; Lepp & Gibson, 2003; Rittichainuwat & Chakraborty, 2009). The focus of this research is on health risk, as a dimension of perceived risk, in the tourism industry.

As the situation with the Corona virus is a completely new risk factor, a new reality with unpredictable behaviour and appearance in the future, it is certainly important to analyse the behaviour and tendencies of travellers in such new circumstances. Given that a certain period has passed since the end, or at least relaxation of the movement ban, it is the right time to analyse the use of tourist services within this new reality. The main goal of this paper is an attempt to model the future behaviour of travellers, and adapt tourist services accordingly.

HEALTH RISK AS A DIMENSION OF PERCEIVED RISK IN TOURISM

Numerous health crises have attracted the attention of academics from various fields, such as psychology, sociology, culture, management, economics, and public health (Chiu et al., 2019; Zhan et al., 2022). After a number of crises, travellers became more careful and aware of avoiding health risks when travelling (Perčić, Spasić, 2022), especially in this post-pandemic period. The focus of research was on the impact and effects of health crises on domestic and international tourism (Cahyanto et al., 2016; Glaesser, 2004; Gössling et al., 2020; Mair et al., 2016; McKercher & Chon, 2004; Novelli et al., 2018; Ritchie & Jiang, 2019). For example, research on the impact of the SARS virus on Guan Dong was carried out by Pine and McKercher (Pine & McKercher, 2004), and the impact of the virus was researched in Taiwan (Mao et al., 2010) and in Thailand (Rittichainuwat & Chakraborty, 2009); the impact of Ebola was researched in Gambia (Novelli et al., 2018); and the impact of the Swine flu virus was researched in Brunei (Haque & Haque, 2018). According to Kozak, the biggest concern that most tourists have when visiting a tourist destination

is the danger to their health, which affects their travel plans (Kozak et al., 2007). Health risks adversely affect travel (Chiu et al, 2019), because tourists are unlikely to visit a destination when they feel that there is some danger to their health (Shin & Kang, 2020; Williams & Baláž, 2015), and in some cases they will apply protective measures and avoid travel (Brewer et al., 2007). Quintal and Huang emphasise the importance of health risk management in order to reduce travellers' concerns and improve their travel experience (Huang et al, 2020; Quintal et al., 2010). In this paper, after an extensive review of the available literature, fear, worry and safety were selected as determinants of health risk perception (Jonas et al, 2011; Karl & Schmude, 2017; Mura, 2010; J. Wen et al, 2020; Yang & Nair, 2014).

When a health crisis is the reason for fear among tourists, it can result in avoiding travel as a direct response aimed at reducing risk (Cahyanto, et al., 2016). Elemo suggests that fear is an adaptive response that alerts people to the existence of a threat or danger (Elemo et al. 2020). Jian and colleagues define the fear of the Covid-19 pandemic as “a negative emotional state that includes anxiety and depression due to the awareness of the possible consequences of the Covid 19 pandemic such as being infected with the virus” (Jian et al., 2020, p. 3). According to Strong, the epidemic causes a high level of fear and panic among the population, because it is a highly contagious disease that is easily transmitted and can spread quickly among people (Strong, 1990, p. 251). People all over the world are feeling fear, as a result of the Covid-19 pandemic and its consequences (Ahorsu et al. 2020). In a recent study on the impact of Covid-19 on the behaviour of Chinese tourists conducted by Wen and Kozak, it was found that tourists' travel habits have changed under the influence of Covid-19, and that the fear associated with Covid-19 among Chinese tourists makes them avoid destinations which are crowded, giving preference to locations with natural landscapes (J. Wen et al. 2020). Mura states that fear can reveal important details about a person's motivations, preferences, and behaviour patterns (Mura, 2010), especially in the process of choosing a tourist destination (Kang et al. 2012).

The safety and security of tourists can be compromised due to health risks, which are an integral part of travel (Jonas et al., 2011). As the perception of risk increases, security concerns increase (Sönmez & Graefe, 1998), and as a result, most tourists will look for locations where they feel safe and secure, while avoiding those where they are exposed to some danger during their stay (Chebli, 2020; Mansfeld & Pizam, 2006). In their study, authors Fuchs and Pizam marked safety and security as key factors when choosing a destination (Fuchs & Pizam, 2011), while Ivanova and colleagues researched the behaviour of tourists after the corona virus pandemic and found that women have higher expectations in terms of safety than men (Ivanova, et al. 2021).

Given that health problems are related to tourists' concerns and have an impact on their travel decisions (Huan, et al., 2020), most tourists will be reluctant to travel after the pandemic due to health concerns (Shin & Kang, 2020). Tourists' evaluations and choices are significantly influenced by concern for their personal and physical safety (Novelli, et al., 2018), because, as Pearce states, concern for one's own safety is a key issue when tourists decide whether to travel or not (Pearce, 2011). In their psychological study on health risk perception and protective behaviour, authors Chien et al. state that worry is an important antecedent of health risk perception (Chien et al., 2017). Epidemics can have a direct impact on people's travel behaviour as tourists become more concerned about threats to safety and health (Mao et al., 2010).

Understanding the risks and how they are perceived by tourists is crucial in predicting travel intentions (Chiu et al., 2019) and changes in attitudes (Godovykh et al., 2021). According to Kozak, the biggest concern that most tourists have when visiting a tourist destination is the danger to their health, which affects their travel plans (Kozak et al., 2007). Chew and Jahari investigated the travel intentions of Japanese tourists after a crisis event, and found that older tourists may not intend to visit their destination if the degree of risk is high, while young tourists believe they are not at risk if there is an absence of negative health reports in the media (Chew & Jahari, 2014)

In their empirical research on the behaviour of tourists regarding travel planning during the Covid-19 pandemic, authors Perčić and Spasić came to the result that a significant percentage of the members of generations Y and Z travelled during the pandemic, until May 2021 (25% abroad, and 56% on the territory of Serbia) (Perčić & Spasić, 2023). In their study on risk perception in the Dash region, Neuburger and Egger indicate that the pandemic had a positive impact on tourists' intention to postpone or abandon travel to areas where cases of infection were reported (Neuburger & Egger, 2021). Ivanova investigated the travel intentions of Bulgarian tourists after Covid-19, and the findings of the study indicate that the majority of Bulgarian tourists intended to travel two months after the pandemic, that they would travel in their own country for that first trip, and that they would go by their own car and with their family (Ivanova et al., 2021). Zhong states that Chinese tourists will prefer hotels closer to nature, such as rustic luxury hotels, after the Covid-19 pandemic (Zhong, et al., 2021), and Quan and colleagues point out the importance of protective measures implemented by Chinese hotels (Quan et al., 2022).

METHODOLOGY

Survey research was conducted online with the validated online questionnaire that was designed using *Google form* specifically for the purpose of this research. The questionnaire was distributed online via Facebook, targeting tourism and travel groups (ages 18 through 65+) in the period between the 21st of October and the 21st of November, 2022, including all regions of Serbia. The aim was to examine the intentions of Serbian tourists in relation to travel plans after the pandemic. The questionnaire was based on previous research, and it consists of two sets of questions. The first set pertains to demographics and economic variables (gender, age, education, income), and the second set includes 17 statements in relation to the travel intentions (Ahorsu et al., 2020; Ivanova et al., 2021; Quan et al., 2022; Van Nguyen et al., 2020; Z. Wen et al., 2005; Zhan et al., 2022).

The results are presented as count (%), means \pm standard deviation, or median (25th-75th Percentile), depending on data type and distribution. Factor analysis was used to assess the construct validity of the questionnaire, while reliability analysis was used to assess the internal consistency of the scores (subsets). Groups were compared using a non-parametric (Mann-Whitney U test) test. Spearman correlation was used to assess the correlation between variables. Linear regression was performed to evaluate the relationship between the dependent variables and the independent variables. All p values less than 0.05 were considered significant. All data was analysed using SPSS 29.0 (IBM Corp. Released 2023. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp.) and R 3.4.2. (R Core Team (2017); R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL <https://www.R-project.org/>).

Considering the serious consequences and harmful effects of the Covid-19 pandemic on the tourism industry and the travel plans of contemporary tourists, the following hypotheses were defined after reviewing the relevant literature on this topic (Perčić, Spasić, 2022; Zhong, et al., 2021; Ivanova, et al. 2021; Neuburger & Egger, 2021; Huan, et al., 2020; Shin & Kang, 2020; Novelli, et al., 2018): (H1) socio-demographic characteristics have a significant impact on fear and intentions of Serbian tourists when making decisions about travel after the Covid-19 pandemic; and (H2) there is a statistically significant difference in the respondents' answers in relation to income – as income increases, anxiety levels decrease and travel plans increase.

RESEARCH RESULTS

The sample consists of 644 respondents. The respondents within the sample differed by gender (male - 40,5%, female - 59,5%), age (18 – 25 years - 9,6%; 25 - 35 – 34,6%; 35 - 45– 25,9%; 45 - 55 – 14,8%; 55 - 65 – 9,9%; over 65 – 5,1%), education (elementary school – 3,9%, secondary school – 23%, college – 16,6%, faculty – 42,1%,MBA/PhD – 14,4%), and monthly income (less than 35.000 RSD – 12,4%; 35.000 - 55.000 RSD – 17,2%, 55.000 - 75.000 RSD – 25,5%, 75.000 - 95.000 RSD – 18%, over 95.000 RSD - 26,9%).

After the statistical analysis of the data, the survey questionnaire was validated and it was shown that the measuring instrument used in this research is adequate for examining the impact of fears and concerns on the travel plans of modern Serbian tourists after the Covid-19 pandemic.

The average results of items were higher for the last seven questions, compared to the first set of questions. Factor analysis revealed similar factor loadings. The Kaiser-Meyer-Olkin Measure of sampling is adequate – 0.915 ($\chi^2=8723.4$; $p<0.001$). The two component solution has a 66.2% (first component 46.3%) explained variability. The first component is focused on fears and the degree of worry, while the second is focused on intentions and planning. Using reliability analysis, Cronbach's alpha was revealed to have a high value, and if the item is deleted, the internal consistency is not improved (Table 1).

The derived scores from these components are the sum of each item. The correlations among gender, age, education and income, with scores (fears, planning), are presented in Table 2.

Median values are similar for both genders, but they are one unit lower in relation to fears, and one unit higher in relation to intentions for women. A positive significant correlation is observed between age group and fears, while a negative correlation is observed with intentions. Conversely, a negative correlation is observed between education and fears, while a positive correlation is observed with intentions. Similar to education, a negative correlation is observed between income and fears, while a positive correlation is observed with intentions. Obviously, fears increase with age, while they decrease with education and income. Conversely, intentions decrease with age, but increase with education and income.

Finally, multivariable regression modelling was performed in order to assess significant predictors of fears and intentions. Several transformation conventional techniques were performed to obtain normal distribution, but none were revealed to be adequate, and similar results were obtained with original and transformed data. For that reason, the original data results are presented (Table 3). As shown in Table 3, age and income are two significant predictors of fears and intentions. Age has a positive influence on fears, while income has the opposite effect. Conversely, age has a negative influence on intentions, while income has a positive influence.

Table 1. Descriptive statistics, results of factor analysis

| | De- scriptive | | Factor analysis | | Reliability | | |
|---|------------------|------|-----------------|-------------|------------------------------|-------|------|
| | Mean | SD | Extrac. 1 | Comp. 2 | Alpha ... if item del. | | |
| I am afraid of infection after the pandemic. | 2.20 | 1.28 | .725 | <u>.820</u> | -.230 | 0.946 | .939 |
| I get nervous and scared when I watch or listen to the news about Corona... | 2.16 | 1.28 | .603 | <u>.754</u> | -.184 | | .943 |
| I am afraid that I can get infected with the Corona virus when I stay in the hotel ... | 2.14 | 1.25 | .786 | <u>.860</u> | -.213 | | .937 |
| It scares me when there is no limit to the number of people using fun ... | 2.12 | 1.26 | .797 | <u>.868</u> | -.210 | | .937 |
| I am worried that I will get sick from the Corona virus during the trip. | 2.19 | 1.25 | .764 | <u>.852</u> | -.195 | | .938 |
| I worry that I won't get timely treatment if I get sick from... | 2.41 | 1.29 | .604 | <u>.774</u> | -.073 | | .942 |
| I am worried that in the accommodation facilities they do not carry out sanitary and ... | 2.41 | 1.30 | .707 | <u>.830</u> | -.130 | | .939 |
| I will be more concerned about the hygiene and safety of accommodation after the Covid-19 pandemic. | 2.74 | 1.40 | .643 | <u>.800</u> | .057 | | .942 |
| I will worry more about hygiene and safety (of buses, planes, trains) ... | 2.79 | 1.40 | .607 | <u>.778</u> | .046 | | .943 |
| Safety and security are more important to me after the Covid-19 pandemic... | 2.39 | 1.41 | .624 | <u>.772</u> | -.168 | | .942 |
| I think it is safe to travel around Serbia after the Covid-19 pandemic. | 3.91 | 1.15 | .682 | -.220 | <u>.796</u> | 0.890 | .867 |
| I think it is safe to travel abroad after the Covid-19 pandemic. | 3.71 | 1.24 | .685 | -.339 | <u>.755</u> | | .870 |
| After the Covid-19 pandemic, I intend to travel around Serbia. | 3.71 | 1.37 | .581 | -.052 | <u>.760</u> | | .877 |
| After the Covid-19 pandemic, I intend to travel abroad. | 3.89 | 1.27 | .669 | -.235 | <u>.783</u> | | .868 |
| After the Covid-19 pandemic, I will travel with my family. | 3.82 | 1.26 | .547 | .076 | <u>.736</u> | | .884 |
| After the Covid-19 pandemic, I will travel by bus, plane, or train. | 3.84 | 1.24 | .665 | -.300 | <u>.758</u> | | .870 |
| After the Covid-19 pandemic, I will travel in my car. | 3.94 | 1.23 | .563 | .061 | <u>.748</u> | | .881 |

According to the results of the t-test (Table 1), there is a statistically significant difference in the responses

Table 2. Fears and Intention scores with gender, age, education and income

| | Fears | | Intentions | |
|-----------|-----------|------------------------------------|------------|------------------------------------|
| | Med (IQR) | Test result | Med (IQR) | Test result |
| Gender | | | | |
| Male | 22 (21) | p=0.003 ^a | 27 (12) | p=0.022 ^a |
| Female | 21 (14) | | 28 (9) | |
| Age | | | | |
| 18-25 | 21 (16) | Rho=0.188 ^b p<0.001 | 26.5 (11) | Rho=-0.132 ^b p<0.001 |
| 26-35 | 20 (14) | | 28 (9) | |
| 36-45 | 21 (14) | | 28 (9) | |
| 46-55 | 23 (15) | | 27 (11) | |
| 56-65 | 25 (24.5) | | 26 (10) | |
| >65 | 34 (26) | | 22 (14) | |
| Education | | | | |
| OS | 25 (25) | Rho=-0.071 ^b p=0.072 | 22 (12) | Rho=0.105 ^b p=0.008 |
| SS | 21 (17) | | 27 (11) | |
| VS | 22 (19) | | 27 (11) | |
| VSS | 22 (15) | | 28 (10) | |
| Postdip | 20 (13) | | 29 (8) | |
| Income | | | | |
| <35 | 22 (20) | Rho=-0.092 ^b p=0.020 | 26 (11) | Rho=0.114 ^b p=0.004 |
| 35-54 | 25 (18) | | 27 (12) | |
| 55-74 | 20 (14) | | 27.5 (10) | |
| 75-94 | 23 (20) | | 28 (10.5) | |
| 95+ | 20 (14.5) | | 29 (9) | |

Mann-Whitney U test ^bSpearman rank correlation
p values less than 0.05 were considered significant

Table 3. Multivariable regression model

| | Fears | | Intentions | |
|-----------|-----------|---------|------------|---------|
| | Std. Beta | P value | Std. Beta | P value |
| Gender | -0.030 | 0.519 | -0.002 | 0.968 |
| Age | 0.223 | <0.001 | -0.180 | <0.001 |
| Education | -0.028 | 0.551 | 0.053 | 0.266 |
| Income | -0.108 | 0.016 | 0.126 | 0.005 |

Source: Authors calculation (p values less than 0.05 were considered significant)

DISCUSSION

There is a statistically significant difference in socio-demographic variables, and they have a great impact on fear and intentions when respondents are making decisions about travel after the pandemic. The respondents' responses vary in relation to their gender and income, which are the most important factors that determine travel intentions. With increasing age, the level of concern and fears of travelling increase, and the desire to travel decreases. This fact is supported by the results of the re-

search shown in Table 2, which show us that anxiety and fear increase as the median age increases (the median is 21 for respondents ages 18 through 25, while the median is 34 for people over 65). As a result, this has an impact on reducing the desire for travel among older respondents, where the median decreases with increasing age (the median is 26.5 between the ages of 18 and 25; the median is 27 between the ages of 46 and 55; the median is 26 between the ages of 56 and 65; and the median is 22 over the age of 65). In their research conducted in Italy, the authors Peluso and Pichierri found that older respondents with worse health conditions feel a lower level of control and security, which affects the avoidance of uncertain situations related to the Covid-19 pandemic, and therefore reduces their plans and travel intentions after the end of the pandemic (Peluso & Pichierri, 2021). Zambianchi (2020) indicates that older people experience a higher level of fear when it comes to travel decisions, and believe that the Covid-19 pandemic has affected the ways and patterns of travel (Zambianchi, 2020).

Based on the research, it is interesting to see that the influence of the level of education is not distinctive, and there are not many differences in terms of the level of fear, i.e. those with a higher and those with a lower level of education feel a similar level of fear. On the one hand, this is understandable, considering the fact that everyone has the same possibility of getting infected.

Precisely for these reasons, neither level of education nor service can significantly affect the reduction of the aspect of fear. Therefore, this aspect and the results of this research cannot significantly change the prediction model, that is, they can be considered a constant influence. Only a period of time without a pandemic can lower the impact of the fear factor on future travel habits. To some extent, this influence of fear can be reduced in the population with a high income, but it is still present as a factor that affects the reduction of the intention to travel. In their research, Garg (2015) and Zheng (2022) indicate that tourists with high incomes tend to avoid travelling when they believe there is a danger or threat (Garg, 2015; Zheng et al., 2022).

Hypothesis H1 was confirmed – there is a statistically significant influence of socio-demographic characteristics on the fear and decision-making intentions of Serbian tourists after the Covid-19 pandemic. More specifically, there is a statistically significant difference in the responses of the respondents in relation to age and level of income in terms of travel intentions after Covid-19; there is a statistically significant correlation of the influence of age on the level of concern and the desire to travel, which indicates that the level of concern increases with increasing age, and the desire to travel decreases. Hypothesis H2 was confirmed – there is a statistically significant influence of the level of income on reducing the level of anxiety and increasing the desire to travel, i.e. the level of fear decreases, and plans for travel increase with an increase in the level of income.

Regarding future trips after the pandemic, Serbian tourists plan to travel abroad, followed by plans to travel within Serbia, with their families, and their cars. From these results, the conclusions in the confirmed hypotheses can be clearly seen where the influence of fear prevailed in the sense of choosing, first of all, the mode of transportation and the companion – there is an urge for travellers to be in a family environment and on the road.

Also, compared to previous years, there is an evident increase in trips around Serbia, as well as the preference to be at a relatively short distance from home, and the certainty that one can return to a safe environment by car. The situation is similar in other countries in the area, and that is how Ivanova came to know that Bulgarian tourists will be more inclined towards domestic tourism after the Covid-19 pandemic, i.e. traveling in their own country, with their own transport and with their family (Ivanova et al., 2021). Regarding the choice of the means of transport and the environment of the trip (family trips/group trips), the findings of our research indicate that a significant percentage of Serbian tourists intend to travel by car (70%), which some authors confirmed in their studies (Corbisiero & Monaco, 2021; Li et al., 2021), and that a larger percentage of Serbian respondents plan to travel with their family (66%), which is in line with the findings of previous studies that confirmed changes in the behaviour of tourists after the Covid-19 pandemic and the avoidance of group trips (Chebli, 2020; Corbisiero & Monaco, 2021).

CONCLUSION

The emergence of a global pandemic has caused serious economic losses to the world economy, and especially to the tourism industry. It is expected that the recovery following the pandemic will be slow and that the strategic recovery of the tourism industry will have to begin in 2023 in order to reach the growth it had before the pandemic. The tourism industry must adapt to the new business environment, as well as to the changes in the behaviour of tourists, which occurred as a result of Covid-19. Some predictions indicate that the tourism and hotel industry will need about five years to return to the level of business it enjoyed before Covid-19.

When analysing the data, it was concluded that the level of education has no effect on fear. As a factor of analysis, it is a constant and can only be affected by the passage of time without a pandemic. Among other data, the conclusions are interesting, and only confirm the hypotheses that the intention to travel, primarily outside the country and by using expensive transportation, decreases with age and decreasing returns. On the contrary, in the age groups below the age of 65, there is a clear intention to increase the desire to travel abroad, which is also understandable, as it represents a kind of relief after the pandemic period.

Based on the results of the analyses and the conclusions drawn from those results, as well as future models of services in the post-Covid era, the flexibility of the tourism sector must come to the fore, and the improvement of services should be continuous, with constant supervision of the changes in the behaviour of different categories and ages of tourists.

The adaptation of the service sector and improvement models represent a good basis for possible new aspects and challenges that may appear in the future. The perception of the new reality should be objective, because only on the basis of such an approach can future models of service offerings be developed in accordance with the changed behaviour of modern users, that is, travellers.

The limitation of this paper lies in the fact that the paper considers only the demographic and economic factors that affect travel intentions and planning after the pandemic. Therefore, future research on this topic could consider more factors, like psychographic and behavioural factors, but they should be compared with the results of research conducted in other countries as well.

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НАМЕРЕ ПУТОВАЊА НАКОН ПАНДЕМИЈЕ: МОЋ СТРАХОВА И ПРОМЕНЕ У ПОНАШАЊУ ТУРИСТА

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Резиме

Предмет рада је утицај перцепције здравствених ризика на намере и одлуке путовања српских туриста након пандемије Ковид-19. Циљеви рада су да се испита и емпиријски тестира утицај пандемије Ковид-19 на путовања и намере будућих туристичких кретања српских туриста, као и да се утврди да ли постоји разлика у перцепцији здравствених ризика на основу демографских и економских варијабли. Рад се темељи на резултатима досадашњих истраживања о утицају перцепције здравствених ризика на туристичку индустрију, те на намере и будуће планове путовања туриста након кризних догађаја. Рад испитује утицај брига и страхова на будуће намере и планове путовања српских туриста након пандемије Ковид-19. Емпиријско истраживање које је спроведено на територији Републике Србије показује да српски туристи након пандемије Ковид-19 планирају путовања у иностранство (69,3%), односно унутар Србије (62,9%) са породицом (66%) и са својим аутомобилом (70%). Досадашња истраживања о утицају пандемије Ковид-19 на обрасце путовања и намере туриста показују да су туристи из различитих земаља након пандемије Ковид-19 више окренути домаћем туризму, односно више намеравају да путују у својој земљи, својим аутомобилом и са својом породицом. Резултати овог емпиријског истраживања су указали да је пандемија Ковид-19 утицала на намере и планове путовања српских туриста. Постоји статистички значајна разлика у социо-демографским варијаблама и оне имају велики утицај на страх и намеру када се српски туристи одлучују о путовању након пандемије. Варијабле старост и приход су најважнији фактори који одређују намере путовања. Код старијих старосних група, ниво забринутости расте, а жеља за путовањем опада. Како се приход повећава, ниво анксиозности се смањује, а планови путовања се повећавају.

У периоду после пандемије, унапређење квалитета туристичке услуге у Србији би пре свега требало да се односи на повећању безбедност и хигијену како би се смањили страхови код циљне групе и како би се људи охрабрили у намерама да путују у будућности.

TENETS OF THE SLOW FOOD MOVEMENT AS MOTIVATION FOR TOURISTS TO VISIT RURAL TOURIST HOUSEHOLDS IN SERBIA

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Abstract

Local cuisine is one of the foundations for how Serbian rural communities are presented to tourists. The desire for regional cuisine has recently increased, which has created opportunities for the promotion of regional and, most importantly, traditional production. The changing behaviours of travellers, who are becoming more conscious of the value of authenticity and quality when travelling, offer opportunities for rural areas to thrive while also creating a new horizon for tourism centered on the discovery of traditional cuisine and rural communities. This kind of travel can be compared to slow travel, which was developed in conjunction with the Slow Food movement. The Slow Food movement is a political and cultural movement with the goal of opposing the industrialisation of food production, promoting locally made, high-quality, sustainable food, and making a significant contribution to rural areas. Three guiding principles – good, clean, and fair – define what food should be and form the foundation of this movement. The major objective of this paper is to present the driving elements that have the biggest impact on tourists' enthusiasm to visit rural tourist houses in Serbia. The research also seeks to determine how much the respondents' desire to return to Serbia's rural tourist households is influenced by motivating factors.

Key words: slow tourism, slow food, rural tourist households, motivation, Serbia.

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НАЧЕЛА СПОРЕ ХРАНЕ КАО МОТИВАЦИЈА ТУРИСТА ДА ПОСЕТЕ СЕОСКА ТУРИСТИЧКА ДОМАЋИНСТВА У СРБИЈИ

Апстракт

Локална гастрономија представља један од основа туристичке презентације руралних подручја у Србији. Потражња за локалном гастрономијом је последњих година у порасту, чиме се отвара простор за пласирање локалне и пре свега традиционалне производње. Нове навике туриста који су све више свесни важности аутентичности и квалитета током путовања стварају шансу за развој руралних предела, али и за дефинисање новог хоризонта за туризам који је заснован на откривању традиционалне хране и руралних заједница. Овај вид туризма може представљати спори (енг. *slow*) туризам који је настао у оквиру покрета споре хране (енг. *slow food*). Покрет *Slow food* представља културни и политички покрет који има за циљ да се супростави индустријализацији производње хране, да промовише мале занатске производе и квалитетну и одрживу храну, и да постане снажан допринос у подршци руралним заједницама. Овај покрет се темељи на три принципа која описују каква храна треба да буде, а то су: добра (енг. *Good*), чиста (енг. *Clean*) и поштена (енг. *Fair*). Стога, главни циљ овог рада је да испита који од фактора покрета у највећој мери утичу на мотивацију туриста да посеће сеоска туристичка домаћинства у Србији. Такође, циљ рада је испитати у којој мери су фактори мотивације повезани са жељом испитаника да понове посету сеоским туристичким домаћинствима у Србији.

Кључне речи: спори (*slow*) туризам, *slow food*, сеоска туристичка домаћинства, мотивација, Србија.

INTRODUCTION

One of the tourist goods that travellers are increasingly appreciating as a break from established and pre-planned vacations based on a fast-paced and modern lifestyle is rural tourism (Bratić et al., 2021). People tend to: choose shorter vacations and journeys, look for fresh experiences, get in touch with nature and original values again, and restore regional customs and culturally significant landmarks (Božović et al., 2022). The value of rural tourism is complex, and largely seen in the preservation of a region's natural environment and cultural heritage, as well as in the enhancement of the socioeconomic profile of that region (Demirović et al., 2020). According to Banjac et al. (2016), rural places may have the best-preserved gastronomic history and authenticity.

An increasing proportion of tourists is drawn to destinations because of the food available there (Mak et al., 2017). The knowledge that a country's cuisine and gastronomy are essential components that can help it establish a well-known brand is becoming more and more apparent in tourist destinations (Bratić et al., 2021). By promoting authentic foods and beverages, each region has the potential to develop into a major tourism destination. Various gourmet events may serve as one of the primary platforms for their presentation and marketing (Stojanović et al., 2018).

Gastronomy is becoming more and more important in contemporary culture. According to certain scholars, cuisine is a reflection of a location's culture (Pavlidis & Markantonatou, 2020).

Stanišić et al. (2018) feel that Serbia offers a sizeable gastronomic offer. Given the fundamental characteristics of gastronomic tourism as an increasingly popular form of travel, the villages and rural households where food is produced are the focus of interest, despite the diverse offerings of large cities (Baum, 2011; Kalenjuc et al., 2014; Vuksanović et al., 2016).

Previous studies in Serbia have largely focused on rural tourism and gastronomy as factors influencing travellers' decisions to travel there (Cvijanović, Gajić & Vukolić, 2022; Demirović Bajrami et al., 2020; Vukolić et al., 2023). Additionally, slow tourism has recently gained popularity in Serbia (Božović, Miljković & Mikulić, 2021; Božović, Pivac & Milojica, 2021; Božović et al., 2022; Lunić et al., 2020). Rural tourism and the Slow Food movement are both unified by the idea of slow tourism.

Given that the subject has not been thoroughly researched in Serbia, the objective is to familiarise the general public and small, local manufacturers with the advantages they could possibly gain from this movement. The subject has not been researched in this region, particularly in light of the potential link between the Slow Food movement and the growth of rural tourism in Serbian rural areas through the visitation of rural tourist households. Investigating which of the variables (principles of the Slow Food movement) has the biggest impact on tourists' enthusiasm to visit rural tourist houses in Serbia is the primary objective of this paper. This research also seeks to determine how much the respondents' desire to return to Serbia's rural tourist households is influenced by motivating factors.

LITERATURE REVIEW

Gastronomic experiences offer numerous possibilities. Currently available literature states the importance of: trying regional cuisines (Duarde, 2013), markets as a place where you can best get to know the traditional culture of a place (Castello-Canalejo et al., 2020), visiting a historically significant location in an area recognised for its goods (Guzel & Apaidin, 2016), and visits to local farms (Ammirato & Felicetti, 2014).

It is well known that gastronomy has a big impact on where visitors choose to travel based on studies done on tourists' culinary experiences so far (Chang et al., 2011). If visitors enjoy the cuisine, they will spread the word about the regional cuisine of that location (Janković, Ćirić & Vujasinović, 2020; Berbel-Pineda et al., 2019). Food may also serve as a symbol of a country's identity; therefore, it is important to use it properly while promoting a place. According to food producers, local governments, and other managers of tourism development, food is being used as a justification for holding various activities and events (Hall & Sharples,

2008). In addition to developing a new category of tourism based on the discovery of traditional foods and rural communities, a new market is opening up for traditional and local products (Garibaldi, 2018). Local foods are viewed as ‘authentic’ goods that represent the location and culture of a certain location, and local identity and local cuisine are believed to be intimately related (Frew & White, 2011). As a result, even if eating is a big part of traveling, it stands to reason that foods that are strongly linked to a place’s culture will be consumed more frequently there.

Slow Food Movement and Projects

The Slow Food movement was started with the initial intention of highlighting the importance of preserving heritage, local cuisine, and overall gastronomic enjoyment by adopting a slow pace of living (Lowry & Lee, 2016). The movement was created as a reaction to the globalisation of national cuisine and the growth of the fast food trend that began in the 1980s. The Slow Food Association, which works to restore the true worth of food in respect to the person who makes it, in relation to the land, and in reference to local tradition, is responsible for this culinary certification’s success on a global scale (Corvo, 2015; www.slowfood.it). Carlo Petrini (2013), the movement’s creator, outlined the fundamental ideas of the movement using three concepts – good, clean, and fair food, which addresses both social and political dimensions, as well as the aesthetic and sensuous component (Payandeh et al., 2020).

The Slow Food movement advocates for and supports small, artisanal food producers, emphasising the value of their close ties to the local environment and culture, increased production sustainability, and significant support for the growth of rural communities, particularly the most marginalised ones (West & Domingos, 2012). The movement is linked to slow tourism, a new alternative kind of travel. The broadest definition of slow tourism (Dickinson & Lumsdon, 2010; Corvo & Maticena, 2017) explains it as a conceptual framework that comprises travelers who travel more slowly and closer to their home destination, but attempt to remain longer at the chosen place.

Therefore, this research began with the following hypotheses: (H1) the Good factor is a strong driver of respondents’ visits to Serbian rural tourist households; (H2) the Clean factor is a strong driver of respondents’ visits to Serbian rural tourist households; (H3) the respondents’ strong desire to visit Serbian rural tourist households is significantly influenced by the Fair factor; (H4) the respondents’ willingness to return to Serbia’s rural tourist households is highly correlated with the Good factor; (H5) the respondents’ desire to return to Serbia’s rural tourist households is substantially correlated with the Clean factor; (H6) the respondents’ desire to return to Serbia’s rural tourist households is highly correlated with the Fair factor; and (H7) there is a strong correlation between the variables Good, Clean, and Fair

METODOLOGY

Sample and Procedure

The only requirement for participation in the study was that the respondents had visited one of the Serbian rural tourist households. A definition of a rural tourist household was provided at the start of the survey. The sample consisted of a total of 251 respondents. The study was carried out in February 2023. The primary method was an online survey (Google Docs), which was disseminated via Facebook, LinkedIn, and Instagram.

Instrument

Closed-ended questions make up the research questionnaire, and a list of 25 criteria was compiled for the study's aims using data from other studies (Payandeh et al., 2022). The assertions connected to why tourists choose to visit Serbian rural tourist households are evaluated in terms of the degree of agreement or disagreement with the statements. A five-point Likert scale (1 = entirely disagree, 2 = partially disagree, 3 = not sure, 4 = partially agree, and 5 = completely agree) was applied to this section. The IBM SPSS 23 programme was used to analyse the acquired data using exploratory factor analysis, descriptive statistical analysis, and correlation analysis.

RESULTS AND DISCUSSION

Exploratory Factor Analysis

The scale of motivation of the respondents showed high statistical significance ($\alpha=.842$). An exploratory principle components analysis (EFA) using Promax rotation was carried out to isolate the motivational elements. The Kaiser-Mayer-Olkin (KMO) data goodness-of-fit criteria, with a recommended value larger than 0.6 (Kaiser, 1974), and a statistically significant value of Bartlett's test of sphericity (Bartlett, 1954) were used to evaluate the suitability of data for exploratory factor analysis. As anticipated, the item analysis revealed a high KMO value of .949, and a statistically significant Bartlett's test value ($\chi^2=4330.98$; $df=300$; $p=.000$). Three significant factors were identified, accounting for a combined 61.57% of the variance. Three significant factors with a total of 61.57% of variance explained were singled out. Factor 2 (9 items) refers to motives that include features connected to food quality, factor 3 (5 items) relates to respect for food and its producers, and factor 1 (11 items) refers to motives that include characteristics associated to the sustainability of food and rural tourist households. All three factors meet adequate scale reliability (Nunnally & Bernstein, 1994): factor 1 - Clean (0.942), factor 2 - Good (0.894), and factor 3 - Fair (0.782). The aforementioned three factors are shown in Table 1.

*Table 1. Rotated matrix of components (motives)
and descriptive display of factors*

| Factors | F1 | F2 | F3 | Mean | Standard deviation |
|---|------------------------|-----------------------|-----------------------|------|--------------------|
| Motives | Clean $\alpha=.942$ | Good $\alpha=.894$ | Fair $\alpha=.782$ | | |
| The surrounding natural environs are the main factor in my decision to return to the rural tourist households there. | .872 | | | 4.3 | .9930 |
| The rich cultural heritage of the area serves as an inspiration for the rural tourist household's wish to return. | .869 | | | 4.1 | 1.1013 |
| During my visits, I enjoy exploring the area around the rural tourist house. | .846 | | | 4.3 | 1.0853 |
| Eating food that has been cooked traditionally is satisfying. | .823 | | | 4.4 | .9155 |
| For rural areas, environmental protection and the preservation of native foods are the most important challenges. | .819 | | | 4.3 | .9441 |
| Rural tourist households achieve greater financial profit when they use products from their own cultivation in their business | .816 | | | 4.2 | 1.0588 |
| The time spent in a rural tourist household improves my mood. | .745 | | | 4.3 | 1.0052 |
| The pleasant climate is one of the reasons why I visit rural tourist households. | .683 | | | 4.1 | 1.0448 |
| I like to eat fresh, locally produced food since I know that the leftovers will be properly utilised (as cattle feed or organic fertilizer, for example). | .601 | | | 4.1 | 1.1382 |
| Regarding the ambiance and service I experience in a rural tourist households I think the price to quality ratio is appropriate. | .398 | | | 4.0 | 1.0411 |
| Regardless of the expense of such a journey, the time I spend vacationing in a rural tourist home has a long-term favorable impact on my disposition. | .314 | | | 4.1 | 1.0745 |
| Eating local cuisine has an impact on my pleasure and contentment. | | .829 | | 4.1 | 1.0826 |

| | | | |
|--|------|-----|--------|
| I visit rural areas and rural tourist households for traditional local dishes. | .808 | 3.6 | 1.1464 |
| For me, the taste of local and traditional cuisine is the main motive for going to rural tourist households. | .716 | 3.9 | 1.1115 |
| I place more value on the standard of organic and healthful prepared foods than on the restaurant's look. | .692 | 4.3 | .9038 |
| For me, the quality of the ingredients from which the dishes are prepared is of great importance. | .675 | 4.4 | .9289 |
| During a visit to a rural tourist household, it is important to me who, when, how and where prepares the food that I consume. | .626 | 4.3 | 1.0208 |
| I travel to rural areas with my family to preserve my childhood memories and at the same time promote a healthy country and local culture. | .538 | 3.7 | 1.2946 |
| I believe that the food grown in rural areas is of good quality. | .510 | 4.2 | .9730 |
| My financial situation allows me to buy local products and visit rural tourist households. | .302 | 3.9 | 1.0952 |
| Consuming autotoni and local goods, in my opinion, is not financially advantageous for me. | .884 | 3.4 | 1.2204 |
| The simplicity of the packaging and the favorable price are the main motivations for buying local products. | .730 | 3.4 | 1.2840 |
| I want to visit rural areas in my country to increase their economic profit (earnings). | .574 | 3.7 | 1.3263 |
| When I visit rural tourist homes, I don't just consider my personal costs; I also consider the income (profit) of those homes. | .557 | 3.4 | 1.2204 |
| I believe that food in rural tourist households is cheaper than in city restaurants due to the accessibility of domestic products. | .410 | 3.8 | 1.2261 |

As in the study from which the scale was derived (Payandeh et al., 2022), three factors were highlighted. When compared to the first investigation, the results showed a small variation. While the Fair factor differs from the Good factor and the Clean factor in this study in a number of aspects, they both perfectly match the same components from the original research. In particular, while eight variables were included in the original research, only five variables are included in our study's Fair factor. In our study, the variable "My financial situation allows me to buy local products and visit rural tourist households" is categorised under the Good component. The variables "I believe that the ratio of price and quality is correct in relation to the atmosphere and service I receive in a rural tourist household" and "The vacation I spend in a rural tourist household has a long-term positive effect on my mood, regardless of the costs of such a trip" are grouped together with the Clean factor. In contrast to the original research from which the scale was taken, factor analysis determined that the above mentioned variables in this research sample show a higher correlation with the variables from the Clean and Good factor. The results of factor analysis serve precisely to show groups of variables with highly correlated variables within a specific sample (Pallant, 2011). The three specified essential factors include the key terms 'Good', 'Clean', and 'Fair', which identify categories helpful for further study and categorising various visitor motivations. The objective of the study was to identify the elements that most strongly influenced the respondents' desire to visit rural tourist houses in Serbia.

All concerns relating to environmental sustainability and biodiversity preservation fall under the Clean factor. According to the findings in Table 1, which demonstrate the significance of this aspect as a motivation for respondents to keep dogs in rural tourist households in Serbia, all stated justifications have high mean values. The most significant motivating factors are the importance of the natural environment in which the rural tourist household is located ($M=4.3$; $SD=.9930$), the preservation and diversity of traditional food ($M=4.3$; $SD=.9441$), the value provided by consuming food prepared in a traditional manner ($M=4.4$, $SD=.9155$), and concern for environmental protection. However, despite having a high mean score, the respondents' evaluation of the purpose connected to the relationship between price and quality in regard to the ambiance and service offered in rural tourist houses is the lowest ($M=4.0$; $SD=1.0411$). From the aforementioned, it can be inferred that the respondents place the least value on money and are more concerned with the safe, hygienic, and natural surroundings that a rural tourist households is located in.

All factors relating to quality, taste, health, and social distinctions are covered under the motivation factor Good. This aspect also takes into account the reasons why respondents travel for food – notably, its quality and flavour. The importance of the ingredients used in food preparation

($M=4.4$; $SD=.9289$) and the respondents' preference for natural and healthy food products over the facility's aesthetics ($M=4.3$; $SD=.9038$) are among the main drivers of the survey (Table 1). Additionally, the majority of respondents ($M=4.2$; $SD=.9730$) agree that food produced in rural areas is of high quality. The aforementioned findings support the idea that motivation may be broken down into its component parts and explain the significant role that meal quality plays in driving travel motivation ($M=4.1$; $SD=.78638$).

Factor 3 – Fair – addresses both fair conditions for producers and prices for consumers in order to ensure the sociocultural sustainability of production. The economic components of factor 3 were generally scored somewhat lower than the previous two categories, as seen in Table 1 ($M=3.4$; $SD=.94494$). Respondents gave the highest rating ($M=3.8$; $SD=1.2261$) to the claim that the availability of local items makes food in rural tourist residences less expensive than in metropolitan eateries. In contrast, the respondents claimed that the ease of the packaging and the affordable price of purchasing local goods were the factors that least inspired them ($M=3.4$; $SD=1.2840$). The purpose of this study was to determine, using descriptive analysis, if three separate criteria are connected to the respondents' intention to return to Serbia's rural tourist households. Consequently, a study of statistical correlations was carried out. The Pearson product-moment correlation coefficient (r) was used to express the relationship between the chosen factors (F1-3) and the desire for a follow-up visit. The relationship between the parameters (F1–F3) and the respondents' recurring desire to visit one of the rural tourist houses in Serbia was examined using correlation analysis.

Table 2. Average correlation values according to Pearson, at the level of the F1-3 ratio and the desire to revisit rural tourist households in Serbia

| | A return visit | Factor 1 (Clean) | Factor 2 (Good) | Factor 3 (Fair) |
|------------------|----------------|---------------------|--------------------|--------------------|
| A return visit | 1 | | | |
| Factor 1 (Clean) | -.222** | 1 | | |
| Factor 2 (Good) | -.205** | .793** | 1 | |
| Factor 3 (Fair) | -.166** | .643** | .676** | 1 |

No element is positively associated with the respondents' desire to visit a rural tourist household again, according to the findings and the exhibited correlation values. This can be understood to mean that the elements are what drive respondents to visit rural tourist households, but they are not what drive respondents to want to return. However, it is clear from the correlation matrix that all three of the previously indicated components exhibit a very high positive correlation at a significance level less than 0.01 (F1 and F2 equal to 0.793; F1 and F3 equal to 0.643; F2 and F3

equal to 0.676) (Table 2). According to how this can be read, respondents who have a more positive image of any of the three factors will have a more positive image of the other two factors, and this relationship will be extremely strong. Whether the research hypotheses were fully confirmed, somewhat confirmed, or rejected can be concluded from the aforementioned findings. The research hypotheses are provided in Table 3.

Table 3. Response to research hypotheses

| Hypotheses | (+); (+/-); (-) | Explanation |
|---|---------------------------|--|
| H1 A significant driver of respondents' visits to Serbian rural tourist households is the <i>Good</i> factor. | Confirmed (+) | The factor's mean value is an extraordinarily high 4.0527. |
| H2 The <i>Clean</i> factor is a significant driver of respondents' visits to Serbian rural tourist households. | Confirmed (+) | The factor's mean value is an extraordinarily high 4.0527. |
| H3 The <i>Fair</i> factor is a significant driver of respondents' visits to Serbian rural tourist households. | Partially confirmed (+/-) | The mean value of the factor is slightly above the average and is 3.3857. |
| H4 The respondents' desire to return to Serbia's rural tourist households is highly correlated with the <i>Good</i> factor | Rejected (-) | The correlation's statistical value is negative. |
| H5 The respondents' desire to return to Serbia's rural tourist households is highly correlated with the <i>Clean</i> factor | Rejected (-) | The correlation's statistical value is negative. |
| H6 The respondents' desire to return to Serbia's rural tourist households is highly correlated with the <i>Fair</i> factor. | Rejected (-) | The correlation's statistical value is negative. |
| H7 The Good, Clean, and Fair standards are intimately related. | Confirmed (+) | All three of the above listed factors have very strong statistical correlation values. |

Factor 1 – Clean, which has the highest mean value among the isolated criteria, and consequently reflects the biggest motivation among the respondents to visit one of the rural tourist households, should also be emphasised. The component 2 – Good – came in second, and element 3 – Fair – had the lowest mean value and, thus, the least motivation among the responders.

CONCLUSION

Food is becoming a more important topic in the tourism industry, but even more crucial is the value placement of food within a larger tourist offer that will satiate the needs of cultural tourists, sports tourists, and green (responsible) tourists, or what is known as a slow tourist.

The Slow Food ideology promotes traditional lifestyles, local food, local producers, sustainability, and the pleasure of food in response to becoming accustomed to a fast-paced, modern way of life. If we consider the organisation's origins and evolution, as well as tourists' rising desire to travel to rural areas, experience local cuisine, and appreciate local products, food may be the primary draw for visiting rural tourist households in Serbia. It follows that food would immediately contribute to the growth of tourism and the overall development of rural areas in Serbia, where a great gourmet offer is given through rural tourist residences and neighborhood village markets. The most significant driving forces behind visiting a rural tourist household stand out as a concern for environmental protection, the preservation and diversity of traditional food, the consumption of food prepared in a traditional manner, as well as natural surroundings. It is clear that visitors place the least value on money and are more concerned with the rural tourism household's healthy, clean, and natural surroundings. Priority is also given to the quality of food produced in rural areas in comparison to the facility's look.

The authors can conclude that none of the three Slow Food movement criteria are directly related to the respondents' intention to return and visit a rural tourist household, based on the research and the main goal of the work. The examined factors are significant for the respondents' desire to visit rural tourist households, but they do not significantly impact their decision to return. The significance of this work is increased by the fact that there has not yet been any research in Serbia on the topic of a direct link between tourist motivation and the tenets of the Slow Food movement.

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НАЧЕЛА СПОРЕ ХРАНЕ КАО МОТИВАЦИЈА ТУРИСТА ДА ПОСЕТЕ СЕОСКА ТУРИСТИЧКА ДОМАЋИНСТВА У СРБИЈИ

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Резиме

У раду су приказани резултати истраживања којим је посебан вид туризма, спори (енг. *slow*) туризам, настао у оквиру покрета споре хране (енг. *slow food*), повезан са факторима који утичу на мотивацију туриста да посете сеоска туристичка домаћинства у Србији. Покрет *Slow food* настао је у Италији осамдесетих година као отпор индустријализацији производње хране и има за циљ да кроз промовисање аутентичних локалних производа пружи снажну подршку развоју руралних заједница. Заснива се на три принципа која описују каква храна треба да буде, а то су: добра (енг. *Good*), чиста (енг. *Clean*) и поштена (енг. *Fair*). Основни циљ рада је био да се испита у којој мери ови фактори утичу на жељу испитаника да посете или понове посету сеоском туристичком домаћинству. Локална гастрономија све више добија на значају и представља битан фактор за туристички развој руралних подручја Србије.

Туристи имају нове навике и све више су свесни значаја аутентичности и квалитета током путовања, и као такви стварају нову шансу за развој руралних предела, али и за дефинисање новог хоризонта за туризам који је заснован на откривању традиционалне хране и руралних заједница.

Емпиријско истраживање спроведено је током месеца фебруара 2023. године на узорку од 251 испитаника из Србије. Као главно средство коришћен је онлајн упитник (енглески *Google Docs*) дистрибуиран путем друштвених мрежа Фејсбук, Линкдин и Инстаграм (енг. *Facebook, LinkedIn, Instagram*). Упитник који је коришћен у истраживању састоји се од затворених питања, а за потребе истражи-

вања формирана је листа од 25 фактора који су преузети из ранијих истраживања (Rayandeh et al., 2022).



Резултати истраживања су показали да су најзначајнији фактори мотивације за посету сеоском туристичком домаћинству брига за заштиту животне средине и очување и разноликост традиционалне хране, конзумирање хране припремљене на традиционалан начин, као и природно окружење. Предност се даје квалитету прехранбених производа узгојених у руралним срединама у односу на сам изглед објекта, док посетиоци у најмањој мери придају важност новцу у односу на све остале бенефите посете (дугорочно позитивно расположење, оживљавање сећања на детињство, квалитет конзумиране хране итд.). Долази се до закључка да фактори *Slow Food* покрета у значајној мери утичу на мотивацију испитаника, али нису од пресудног значаја кад је у питању поновна посета сеоском туристичком домаћинству.

THE POSSIBILITIES AND LIMITATIONS OF PREVENTIVE ACTION AS A FORM OF OPPOSITION TO THE MOST SEVERE FORMS OF DOMESTIC VIOLENCE

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Abstract

The prevention of domestic violence, timely and effective protection and support for victims, and multi-sector cooperation have become an important strategic direction of the Republic of Serbia since the adoption of the Law on Prevention of Domestic Violence. The authors put forward a hypothesis according to which the change in strategic direction and the emphasis on prevention contribute to: increasing the trust of citizens in the competent state bodies; better protection of victims; and reducing the number of the most serious cases of domestic violence – those that result in death. Using the statistical method, content analysis, and comparative and formal-legal analysis, the paper analyses the data of the Ministry of Internal Affairs of the Republic of Serbia, the Public Prosecutor's Office and the Court related to domestic violence for the period between 2019 and 2021. The authors determine that: violence against women in partner relationships is the dominant type of domestic violence; that psychological violence is the most prevalent, occurring in 68% of the cases, followed by physical violence in 41% of the cases, and economic and sexual violence; that more than 1/3 of the possible perpetrators are repeat offenders, i.e. persons on whom emergency measures were previously imposed; that the victims do not participate in the adoption of individual protection plans; and that the death of the victim occurs despite the imposed emergency measures and the response of the competent state authorities. For these reasons, the authors emphasise the importance of protection on multiple tracks, and propose a series of measures and actions that should be taken by the competent state authorities.

Key words: domestic violence, police, victims, possible perpetrator.

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МОГУЋНОСТИ И ОГРАНИЧЕЊА ПРЕВЕНТИВНОГ ДЕЛОВАЊА КАО ЈЕДНОГ ВИДА СУПРОТСТАВЉАЊА НАЈТЕЖИМ ОБЛИЦИМА НАСИЉА У ПОРОДИЦИ

Апстракт

Спречавање насиља у породици, благовремена и делотворна заштита и подршка жртвама и мултисекторска сарадња постају важно стратешко усмерење државе Србије од доношења Закона о спречавању насиља у породици. Аутори постављају хипотезу по којој промена стратешког усмерења и стављање тежишта на превенцију доприноси: повећању поверења грађана у надлежне државне органе; бољој заштити жртва; и смањењу броја најтежих случајева насиља у породици – оних који су праћени последицом смрти. Применом статистичке методе, анализе садржаја, компаративне и формално-логичке анализе, у раду су анализирани подаци Министарства унутрашњих послова Републике Србије, јавног тужилаштва и суда који се одnose на насиље у породици за период између 2019. и 2021. године. Аутори утврђују: да је насиље према женама у партнерским односима доминантна врста насиља у породици, да је психичко насиље најзаступљеније јер се појављује у 68% случајева, а затим следи физичко, у 41% случајева, па економско и сексуално насиље; да више од 1/3 могућих учинилаца чине повратници, односно лица којима су раније изрицане хитне мере; да жртве не учествују у доношењу индивидуалних планова заштите; и да се дешава да дође до смрти жртве и поред изречених хитних мера и реакција надлежних државних органа. Из тих разлога, аутори истичу значај заштите на више колосека и предлажу низ мера и радњи које треба да предузму надлежни државни органи.

Кључне речи: насиље у породици, полиција, жртве, могући учинилац.

INTRODUCTION

The Law on Police (Official Gazette of RS, 6/2016) foresees a large number of measures and actions that police officers can use in order to prevent crime (Vuković, 2017, p. 219). The police are a state body that has a primarily repressive role. The preventive role, often emphasised in theory, and highlighted in legal and by-law regulations, has a secondary importance because there are no reliable parameters for measuring its success. The movement of criminality is a cyclical phenomenon that depends on numerous social factors, and the role of the police in these changes is limited (Kelling & Sousa, 2001, p. 9).

The basic criminal-strategic directions are prevention and repression (Marković, 2019a, p.162). The actions of the police cannot be politically neutral because the criminal strategy follows the guidelines of the criminal policy (Marković, 2023, p.22). Domestic violence, until the crime of the same name was criminalised in our penal legislation in 2002, used to be suppressed through classic incriminations, and through misdemeanours in the area of public order and peace. The focus of criminal policy is slowly shifting from repression to prevention with the adoption and implementation of the current Family Law (FL) (*Official Gazette of*

the RS, 18/2005). The definition of domestic violence given by FL is very broad because it includes all possible forms of violence, so each form of violence represents a valid legal basis for providing family law protection against domestic violence (Petrušić & Konstantinović-Vilić, 2010, p. 7).

With this law, the police did not get an adequate role in adopting family law protection measures for victims of domestic violence, and therefore could not develop an adequate criminal strategy. Competent authorities and institutions, the public prosecutor's office and the guardianship authority rarely filed lawsuits (Marković, 2019, p.1094). The public prosecutor's office, whose constitutional competence is "the prosecution of perpetrators of criminal and other punishable acts" (Constitution of the Republic of Serbia, Article 155), could not even be expected to make a sudden turn and assume a preventive role. The provisions of the FL allow for the possibility of filing a lawsuit, but this is not an obligation. Thus, in 2018, the public prosecution filed 297, or 12% of the total number of filed lawsuits (Marković, 2019, p. 1085). The problem increased with the adoption of the new Law on Public Order and Peace (*Official Gazette of the RS, No. 6/2016*), because the offense became "an illegal act that endangers or disturbs public order and peace in a public place". However, the largest number of incidents of domestic violence occur in places that are not public.

The conducted research determined that, in the period between 2018 and 2021, out of a total of 113,505 incidents of domestic violence handled by the police, 95,701, or 84% were committed in an apartment or house, 4,075 were committed in an unfenced yard, and 7,336, or 6.5% were committed on the street or in a restaurant (MUNE, 2022). Therefore, misdemeanour proceedings could be conducted for a very small number of events. The only option the police had was to warn the perpetrator and advise the victim of the possibility of criminal prosecution in a private lawsuit, or the possibility of filing a lawsuit in civil proceedings for the determination of protective measures, in those cases when there was domestic violence that did not have the characteristics of a criminal offense that could be prosecuted *ex officio* (for example, violence between partners) and that did not happen in a public place.

At the same time, the number of criminal acts of domestic violence grew year by year. The peak was reached in 2017, when the police filed the largest number of criminal reports for the criminal offense of domestic violence in our legal system – as many as 7,095, which is almost twice as much as in 2013, when 3,667 criminal reports were filed (Kolarić, Marković, 2021, p. 265), and almost three times more compared to 2007, when 2,553 criminal reports were submitted (Marković, 2018, p. 193). Between 2014 and 2017, 191 people lost their lives in domestic violence – 132 women and 59 men. The number of victims of domestic violence deprived of their lives on an annual basis was at the same, or at a similar level, which tells us that the then strategy of combating domestic violence

did not produce results when it came to the most serious consequences (Kolarić, Marković, 2021, p. 265). It was expected that the implementation of the Law on the Prevention of Domestic Violence (LPDV) (*Official Gazette of the RS, No. 94/2016*), which was adopted with the aim of harmonising Serbian legislation with the Council of Europe Convention on preventing and combating violence against women and domestic violence (*Official Gazette of the RS – International Agreements, No. 12/2013*), would reverse the negative trends in this area. Namely, restraining order measures, as well as protection measures (from Article 53 of the Istanbul Convention) are imposed for a certain period of time or until they are changed or abolished, and should be available to all victims of various forms and types of violence and without unnecessary financial or administrative burdens for the victim, whereby they are available independently of court proceedings, or in addition to other court proceedings conducted at the same time in connection with or on the occasion of the committed act of domestic violence. They are issued on an *ex parte* basis with immediate effect (Jovašević, 2018, p. 153). LPDV has prescribed such measures under the name of emergency measures; they last 48 hours and the court can extend them for another 30 days at the proposal of the competent public prosecutor.

THE AIM OF THE RESEARCH

The goal of the research is to determine whether the implementation of the Law on Prevention of Domestic Violence in Serbia has led to: better protection of women and particularly vulnerable groups of victims of domestic violence; reductions in the number of detected incidents of domestic violence; reductions in the number of family members killed by another family member; reductions in the number of criminal reports for the crime of domestic violence; and prevention of the most serious consequences in cases reported to the police.

METHODOLOGY

The research is based on the application of the normative method, content analysis, and comparative and formal-logical analysis. The results obtained from the research were processed with the appropriate selection of statistical methods.

Using the method of content analysis, the paper presents the judgments of the European Court of Human Rights and the legislation in Serbia related to the matter of combating domestic violence, as well as specific incidents of domestic violence recorded by the police in the period between 2019 and 2021. The data from the Ministry of Internal Affairs of

the Republic of Serbia, the Ministry of Justice and the Public Prosecutor's Office of the Republic of Serbia relating to the period between 2019 and 2021 was processed using the statistical method.

The main hypothesis from which the authors start is that the implementation of the Law on Prevention of Domestic Violence has led to a change in the criminal-strategic direction and a shift of focus on prevention, which has resulted in an increase in citizens' trust in the competent authorities and better protection of victims of violence. In the first auxiliary hypothesis, the starting point is the assertion that women are the most frequent victims of domestic violence, and that the perpetrators are men, particularly those in partner relationships. At the same time, an even greater percentage of men are those who are the perpetrators of the most serious criminal acts of domestic violence, that is, women are subject to the risk of death in partner relationships, with a high percentage of men committing suicide after murder.

The second auxiliary hypothesis is based on the claim that immediate, adequate and timely response to any knowledge of domestic violence and the obligation to assess the risk of violence leads to an increase in the efficiency and effectiveness of the competent authorities, and the elimination of the main causes that favour discrimination against women, as well as to the reduction of the number of the most serious cases of domestic violence – those that are accompanied by the loss of life of the victims of violence.

SOME DECISIONS OF THE EUROPEAN COURT OF HUMAN RIGHTS REGARDING DOMESTIC VIOLENCE

The *European Convention on the Protection of Human Rights and Fundamental Freedoms* does not expressly provide for the right to protection from domestic violence. The European Court of Human Rights assumes that states are responsible for not preventing activities that constitute domestic violence on their territory (Marković, 2018, p. 106). The Court recognises the special vulnerability of women/victims of domestic violence, and the need for more active participation of the state in their protection.

When it comes to the violation of the right to life, i.e. Article 2 of the Convention, the following cases are significant: *Branko Tomašić and Others v. Croatia*, where the ECtHR states that the inability of the state to prevent gender-based violence effectively is a form of discrimination against women (Marković, 2018, p. 107); *Opuz v. Turkey*, where it is pointed out that women are mostly victims of domestic violence, and that the general and discriminatory judicial passivity in Turkey created a climate that was conducive to this; *Talpis v. Italy*, where it is stated that by underestimating the severity of the violence in question, with their inertness, the Italian authorities essentially approved that violence; and *A and*

B v. Georgia where the ECtHR concludes that this case can be seen as another vivid example of how the general and discriminatory passivity of law enforcement authorities in relation to allegations of domestic violence can create a climate conducive to the further spread of violence against victims simply because they are women.

In the case of *Mudric v. the Republic of Moldova*, it was determined that Articles 3 and 14 were violated (prohibition of discrimination) in connection with Articles 3 (prohibition of torture) and 8 (right to respect for private and family life); the Court found that there were clear facts indicating that the actions of the authorities were not a simple failure or delay in action, because they repeatedly approved of such violence and reflected a discriminatory attitude towards her as a woman (Dimovski, 2021, p. 750). The case of *E. S. and Others v. Slovakia* indicates that domestic violence against women is often hidden from the public and that the truth is only found out later, in the divorce proceedings. In the case of *Volodina v. Russia*, the Court notes that violence on the Internet, or cyber-violence, is closely related to violence offline or in ‘real life’, and is considered another aspect of the complex phenomenon of domestic violence. Today, social media are a part of many people’s lives, and communication via internet platforms has made life easier (Vučković, Lučić, 2023, p. 202). However, such communication does not exclude acts of violence. States have a positive obligation to establish and effectively implement a system of punishment for all forms of domestic violence and to provide sufficient guarantees for victims. In the judgment of *Tunikova and Others v. Russia*, a violation of Article 3 and Article 14, in connection with Article 3 of the Convention, was found and it was pointed out that, in terms of protection against the risk of domestic violence, women in Russia are in a situation of *de facto* discrimination.

When considering the obligation of state authorities to assess the risk and take adequate measures in order to prevent the most serious consequences, we are of the opinion that *Kurt v. Austria* is significant (a violent father murdered the applicant’s son in the school the boy attended, which was preceded by reports of domestic violence against his wife, son and daughter, for which criminal proceedings were initiated and a restraining order was issued against him to protect the wife and the family home, but custody was not determined). This decision, as well as the decisions in the cases of *Osman v. United Kingdom* (a mentally ill teacher who developed inappropriate feelings for his student fired shots at that student and his father, and on this occasion the student was wounded and his father was killed), and *Bljakaj and Others v. Croatia* (an alcoholic took the life of a lawyer who represented his wife in a divorce case), which does not directly relate to domestic violence, the obligations of the state from Article 2 of the Convention are indicated to assess the level and nature of the risk, and to take preventive operational measures to pro-

tect an individual whose life is threatened by another individual, where there is a real and immediate danger to his life. In doing so, the Court stated that there was no violation of Article 2 of the Convention if the authorities did not know, or could not have known, that there was a real and immediate danger to the life of a third party, and therefore could not have taken adequate measures to prevent the occurrence of such a consequence (in the case *Kurt v. Austria* detention was not an adequate measure for the level of the assessed risk, because based on the available information, the competent authorities could not determine a real and immediate lethal risk for children, but only a certain level of non-lethal risk in the context of domestic violence, primarily aimed at their mother).

THE ANALYSIS OF INCIDENTS OF DOMESTIC VIOLENCE

Results

Table 1. The ratio of the number of possible perpetrators, the number of risk assessments where the risk of domestic violence was determined, the number of orders and the ratio of the number of proposals and decisions extending emergency measures (MUP, 2022)

| Period | Number of possible perpetrators | Number of persons who were assessed to be at risk | Number of persons to whom orders were issued | Number of persons for whom proposal was filed to extend emergency measures | Number of persons to whom emergency measures were extended |
|--------|---------------------------------|---|--|--|--|
| 2019 | 30,921 | 21,230 | 20,887 | 19,360 | 18,597 |
| 2020 | 29,201 | 20,803 | 20,511 | 18,949 | 18,245 |
| 2021 | 29,304 | 20,915 | 20,624 | 19,414 | 18,712 |
| Total | 89,426 | 62,948 | 62,022 | 57,723 | 55,554 |

The number of discovered possible perpetrators of domestic violence, as well as the number of persons against whom emergency measures were extended by the court is constant in the observed three-year period.

Table 2. The ratio of the number of victims of domestic violence at the time of learning about the event and victims when emergency measures were extended by the court (Ministry of Justice, 2022)

| Period | Number of the victims | Number of male victims | Number of female victims | Number of victims when emergency measures were extended | Number of male victims when emergency measures were extended | Number of female victims when emergency measures were extended |
|--------|-----------------------|------------------------|--------------------------|---|--|--|
| 2019 | 33,509 | 9,817 | 23,692 | 21,532 | 5,933 | 14,761 |
| 2020 | 31,939 | 9,813 | 22,162 | 21,535 | 5,929 | 15,606 |
| 2021 | 31,555 | 9,393 | 22,126 | 21,770 | 5,836 | 15,934 |
| Total | 97,003 | 29,023 | 67,980 | 64,837 | 17,698 | 46,301 |

The number of victims of domestic violence is also constant on an annual basis, with women being the victims in about 70% of the cases.

Table 3. The ratio of the number of victims of domestic violence with regard to the gender of the perpetrator when emergency measures are extended by the court (MUNE, 2022; Ministry of Justice, 2022)

| Period | Number of female victims – male perpetrators | Number of male victims – male perpetrators | Number of female victims – female perpetrators | Number of male victims – female perpetrators | Number of female victims in partner relationships - male perpetrators | Number of male victims in partner relationships - female perpetrators |
|--------|--|--|--|--|---|---|
| 2019 | 14,761 | 4,090 | 1,071 | 1,436 | 11,085 | 1,020 |
| 2020 | 14,439 | 4,382 | 1,178 | 1,547 | 10,625 | 1,030 |
| 2021 | 14,674 | 4,213 | 1,260 | 1,623 | 11,151 | 1,059 |
| Total | 43,874 | 12,685 | 3,509 | 4,606 | 32,861 | 3,109 |

Women are most often the victims of domestic violence in cases where men are the perpetrators, and when they are in a partner relationship (marital, extra-marital, or partner relationship).

Table 4. Practice of the Group for Coordination and Cooperation (Republic Public Prosecutor's Office, 2022)

| Period | The total number of formed Coordination and Cooperation Groups | Number of meetings | Number of newly received cases reviewed | The number of victims who attended the meetings | Number of adopted individual plans |
|--------|--|--------------------|---|---|------------------------------------|
| 2019 | 63 | 2,818 | 25,906 | 194 | 18,646 |
| 2020 | 63 | 2,604 | 23,611 | 85 | 16,923 |
| 2021 | 63 | 2,670 | 23,577 | 151 | 17,424 |
| Total | 63 | 8,092 | 73,094 | 430 | 52,993 |

The number of meetings held by the Coordination and Cooperation Group and the number of adopted individual plans for the protection and support of victims is approximately uniform on an annual basis, with victims in a negligible number of cases (0.6%) attending the meetings and participating in the development of the plan that is adopted in order to protect them.

MURDERS AND SUICIDES IN DOMESTIC VIOLENCE

Attention is drawn to a worrying figure related to the number of persons deprived of their lives in cases of domestic violence. Namely, the number of those persons remained at a similar level even after the beginning of the implementation of the LPDV (Kolarić, Marković, 2022, p. 224).

In cases of a qualified threat, when we have all the elements of a criminal offense, the Coordination and Cooperation Group is of great im-

portance. The individual protection plan could also include the physical protection of the victim when the suspect is released. We have observed that victims rarely or never attend meetings where cases of domestic violence are discussed, their safety is assessed and protection measures are determined. Does the deputy public prosecutor chairing the Coordination and Cooperation Group give the victim the opportunity to decide whether to participate in the development of the plan? The provisions of the LPDV point out that “the victim also participates in the development of an individual plan of protection and support for the victim, if he/she wishes and if his/her emotional and physical condition allows it” (LPDV, Article 31; Kolarić, Marković, 2019, pp. 232-235). It is hardly acceptable that victims massively refuse to participate in the development of individual plans. It is about their safety, where their primary interest is to stop the existing violence and prevent the possibility of its repetition (Kolarić, Marković, 2021a, p. 345).

Table 5. Events in which a murder was committed (MUP, 2022)

| Period | The total number of incidents in which a homicide was committed | Number of victims | Female victims | Male victims |
|--------|---|-------------------|----------------|--------------|
| 2019 | 49 | 54 | 31 | 23 |
| 2020 | 42 | 48 | 28 | 20 |
| 2021 | 44 | 48 | 28 | 20 |
| Total | 135 | 150 | 87 | 63 |

In the analysed three-year period, the number of murder victims decreased in 2020 and remained at the same level in 2021, with the ratio of the number of women and men deprived of their lives due to domestic violence being even.

Table 6. Female victims deprived of life (MUP, 2022)

| Period | Female victims | Minor victims | Age 18-30 | Age 31 - 40 | Age 41-50 | Age 51-60 | Age 61-70 | Over 70 years of age |
|--------|----------------|---------------|-----------|-------------|-----------|-----------|-----------|----------------------|
| 2019 | 31 | 2 | 3 | 2 | 6 | 12 | 3 | 3 |
| 2020 | 28 | 2 | 4 | 2 | 6 | 4 | 3 | 7 |
| 2021 | 28 | 3 | 3 | 4 | 3 | 7 | 6 | 2 |
| Total | 87 | 7 | 10 | 8 | 15 | 23 | 12 | 12 |

The largest number of murdered women (44%) were between 41 and 60 years of age.

Table 7. Male victims deprived of their lives (MUP, 2022)

| Period | Male victims | Minor victims | Age 18-30 | Age 31 - 40 | Age 41-50 | Age 51-60 | Age 61-70 | Over 70 years of age |
|--------|--------------|---------------|-----------|-------------|-----------|-----------|-----------|----------------------|
| 2019 | 23 | 4 | 2 | 2 | 5 | 5 | 4 | 1 |
| 2020 | 20 | 2 | 0 | 2 | 3 | 5 | 3 | 5 |
| 2021 | 20 | 1 | 3 | 2 | 4 | 2 | 6 | 2 |
| Total | 63 | 7 | 5 | 6 | 12 | 12 | 13 | 8 |

The largest number of murdered men (71%) were older than 40 years of age.

Table 8. Male perpetrators of murder – age structure (MUP, 2022)

| Period | Male perpetrators | Minors | Age 18-30 | Age 31 - 40 | Age 41-50 | Age 51-60 | Age 61-70 | Over 70 years of age | Suicide |
|--------|-------------------|--------|-----------|-------------|-----------|-----------|-----------|----------------------|---------|
| 2019 | 41 | - | 10 | 6 | 2 | 14 | 7 | 2 | 12 |
| 2020 | 38 | 1 | 6 | 7 | 9 | 7 | 4 | 4 | 10 |
| 2021 | 33 | 2 | 7 | 6 | 8 | 5 | 5 | - | 9 |
| Total | 112 | 3 | 23 | 19 | 19 | 26 | 16 | 6 | 31 |

The number of male perpetrators of murder decreases year by year, they are most often between the ages of 51 and 60, and between the ages of 18 and 30, with 25% committing or attempting suicide after murder, which indicates the presence of strong emotions when committing a crime.

Table 9. Female homicide perpetrators – age structure (MUP, 2022)

| Period | Female perpetrators | Minors | Age 18-30 | Age 31 - 40 | Age 41-50 | Age 51-60 | Age 61-70 | Over 70 years of age | Suicide |
|--------|---------------------|--------|-----------|-------------|-----------|-----------|-----------|----------------------|---------|
| 2019 | 10 | - | 3 | 4 | 1 | 1 | - | 1 | 1 |
| 2020 | 7 | - | 3 | - | 1 | - | 2 | 1 | 1 |
| 2021 | 13 | 1 | 4 | 2 | 2 | 2 | 2 | - | 2 |
| Total | 30 | 1 | 10 | 6 | 4 | 3 | 4 | 2 | 4 |

Female perpetrators of murder are most often between the ages of 18 and 30, with 13% of the total number of perpetrators committing suicide after murder.

Table 10. The means of murder used by male perpetrators, the total number of victims and the number of female victims in a partner relationship (MUP, 2022)

| Period | Male perpetrators | Firearms | Physical force | Knife, axe or a sharp object | Another suitable object | Total number of victims/female victims | Female victims in marital, extramarital, partner or family relationship |
|--------|-------------------|----------|----------------|------------------------------|-------------------------|--|---|
| 2019 | 41 | 8 | 8 | 20 | 5 | 44 / 28 | 22 |
| 2020 | 38 | 12 | 6 | 16 | 4 | 41 / 27 | 21 |
| 2021 | 33 | 6 | 4 | 17 | 6 | 35 / 22 | 15 |
| Total | 112 | 26 | 18 | 53 | 15 | 120 / 77 | 58 |

Out of a total of 77 female victims who were killed by men, 58, or 75%, were in a partnership with the perpetrator. Male perpetrators most often used a knife, an axe or other sharp objects suitable for committing murder.

Table 11. Means of murder used by female perpetrators, total number of victims and victims of the opposite sex (MUP, 2022)

| Period | Female perpetrators | Firearms | Physical force | Knife or other sharp objects | Another suitable object | Total number of victims/male victims | Male victims in marital, extramarital, partner or family relationship |
|--------|---------------------|----------|----------------|------------------------------|-------------------------|--------------------------------------|---|
| 2019 | 10 | 1 | 9 | 3 | 1 | 10/ 7 | 3 |
| 2020 | 7 | 1 | 2 | 2 | 3 | 7 / 6 | 4 |
| 2021 | 13 | / | 5 | 6 | 1 | 13 / 7 | 6 |
| Total | 30 | 2 | 16 | 11 | 5 | 30/ 20 | 13 |

Female perpetrators most often used physical force when committing murder, and in 13, or 65%, of the examined cases men in a partner relationship were killed.

DISCUSSION

In the analysed period, the police determined the risk of imminent danger of domestic violence for 70% of the total number of possible perpetrators, and they imposed emergency measures. The Public Prosecutor's Office submitted a proposal to extend the emergency measures for 93% of persons, and the court extended the emergency measures in 96% of the cases.

The actions of competent authorities must meet the criteria of efficiency and effectiveness. Bearing in mind the number of reported incidents of domestic violence that decreased in 2020 and 2021 compared to 2019, we could conclude that the competent state authorities acted effectively.

However, the perception of citizens is different. A survey conducted at the request of the OSCE Mission in Serbia in November 2022 showed that 50% of Serbian citizens believed that the problem of violence had worsened, while only 6% believed that the situation improved. Furthermore, 25% believed that the police were effective in preventing domestic violence, compared to 42% who believed that they were ineffective (TMG Insights, 2022).

Women are the victims of domestic violence in 70% of the incidents that were dealt with by the police, that is, in 71% of the cases in which emergency measures were issued. Based on this, we conclude that there are no prejudices affecting the competent police officers when they assess the risk. They act in the same way whether the victims are women or men.

Analysing the events in which emergency measures were extended, we found that in 87% of the events, the violence was committed by a male person, and that women were the most frequent victims when the perpetrators were men, followed by men when the perpetrators were men. At the same time, of the total number of female victims against whom violence was perpetrated by men, as many as 75% suffered violence in partner relationships. If we analyse only the cases of violence in partner relationships, men were the perpetrators of violence against women in 95% of the cases. Our hypothesis is confirmed – domestic violence is gender-based, it most often occurs in partner relationships, and men are mostly perpetrators while women are mostly victims.

In 135 incidents of domestic violence, 150 people lost their lives, and there were 142 perpetrators of murder. Of the total number of victims, 58% were women. The majority of female victims are between the ages of 51 and 60, followed by women between the ages of 41 and 50.

Of the total number of perpetrators of family murders, 79% are male, and they are most often people ages 51 through 60, followed by men ages 18 through 30. In two-thirds of the cases, men take the life of family members of the opposite sex, and in 75% of the cases this happens in partner relationships due to broken family relationships. We have confirmed the hypothesis which states that women are more susceptible to the risk of death in domestic violence, and that the perpetrators of family murders are most often men.

As many as 31 male perpetrators, or 25% of the total number, committed or attempted suicide after the murder. Domestic violence related murders are often accompanied by a strong emotional charge. Suicide most often occurs after the murder of a partner. This happened in 27 of the 31 suicide cases. For this reason, we can conclude that partner murders are most often followed by the perpetrator's suicide. There were cases where female family members were multiple victims. Thus, in Sombor, on the 27th of December, 2021, a man (1962) murdered his ex-wife (1966) and two daughters (2002 and 2006) on the ground floor of their house, after which he deliberately caused a fire in the house, and then committed suicide by hanging in the attic of the house (MUP, 2022). There are cases where a partner activates a hand grenade and commits murder and suicide at the same time, but also cases where one of the partners kills their child and then commits suicide (MUP, 2022).

Male victims are older than 40 in 71% of the cases, and if we exclude the murders of children during childbirth (5 male babies), this amounts to 78%. There was a total of 7 male victims who were minors, so minors of both sexes were equally victims of family murders.

Women were perpetrators almost four times less than men. These are mostly women ages 18 through 30. It should be emphasised that out of a total of 30, as many as 6 women, or 20% took the life of their child at

childbirth (five male and one female). It is interesting that official police statistics include the victims of that crime as victims of domestic violence. According to the criminal legislation of the Republic of Serbia, a mother who takes the life of her child during or immediately after childbirth, while the disorder caused by childbirth persists, is privileged (Kolarić, 2008, p. 294). It is necessary to determine in particular whether it is a newborn, i.e. how much has passed since the birth in order to be able to determine the so-called “disorder caused by childbirth” (Kolarić, 2008, p. 296).

For criminal law, human life begins with the beginning of birth. This traditional approach which, in the case of crimes against life and body, leads to a significant distinction between protected objects is undoubtedly derived from the incrimination which privileges the killing of a child during childbirth. The destruction of the foetus in the mother’s womb, from which a living human being should develop, is not treated by criminal law as murder, but as a separate criminal offense of illegal termination of pregnancy (Kolarić, Marković, 2018, p. 150). We can conclude that women are recognised as perpetrators of family murders in fewer cases than men, but it happens if they take the life of a new-born during or immediately after childbirth.

Male perpetrators of murder most often use a knife or other sharp objects as a means of murder, in as many as 47% of the cases.

The second most frequent means of murder in domestic violence is a firearm, and it was used in 23% of the cases.

The victims are often wives and family members – either relatives or in-laws. In two-thirds of the cases, men took the lives of their partner’s family members. Out of a total of 120 victims, 77 were women, and as many as 75% were killed by men with whom they were in a partnership, marital, extra-marital or in-law relationship.

In several incidents of domestic violence, the victim is killed after the imposition of emergency measures¹. The question arises whether the competent state authorities could have taken more adequate and effective measures to prevent these tragedies. In its decisions, the ECtHR noted the positive obligation of the authorities to take preventive operational measures to protect an individual whose life is threatened by the criminal act of another individual (see: *Osman v. Great Britain*, paragraph 115; *Opuz v. Turkey*, paragraph 128).

Back in 2011, the Government of the Republic of Serbia adopted the *National Strategy for the Prevention and Suppression of Violence against Women in the Family and in Intimate Partner Relationship*, which pays special attention to groups of women who are exposed (or

¹ Thus, in Sombor, on February 5, 2018, after leaving prison where he had been for violating emergency measures, i.e. committing a misdemeanour under Article 36 of the Penal Code (MUP, 2022), a man (1994) killed his emotional partner (1977).

may potentially be exposed) to multiple discrimination. The strategy encourages the application of international and domestic legal norms and standards that protect human rights, promotes gender equality and prohibits all forms of violence against women in family and partner relationships, as the form of violence that affects women the most (Jovašević, 2020, p. 55). In the new *Strategy for the Prevention and Combating Gender-based Violence against Women and Domestic Violence for the period 2021-2025 (Official Gazette of the RS, No. 47/2021)*, almost ten years later, it is also stated that women are the dominant victims of violence in the family and in partner relationships, and that there is still discrimination against women, while the number of cases of femicide is not decreasing.

Female perpetrators of murder in the context of domestic violence most often use physical force to commit murder, followed by a knife or other sharp objects. Out of a total of 30 victims, female perpetrators took the lives of 20, or 67%, of male persons, 13 of whom were married, cohabiting, partnered or in-laws. However, physical force is most often used against infants or children, while a knife, an axe or some other solid object suitable for murder is used against men.

CONCLUSION

The individual plan for the protection and support of the victim is adopted in order to protect the victims and prevent the recurrence of violence, not only while the emergency measures last, but also after they are lifted. The coordination and cooperation group, i.e. the competent representatives of state bodies and institutions are obliged to take effective protection measures and to monitor the case as long as there is risk of violence. A victim of violence should have continuous support and protection. If the violence continues even after the imposition of emergency measures and the most serious consequences occur, the responsibility of the state is justified and opens the way for an assessment of the positive obligation of the state to provide protection to its citizens. Since the research shows us that even 30% of possible perpetrators are repeat offenders, this represents an additional obligation for a proactive way of dealing with this form of crime. One step has already been taken with the legal text, which by its nature is based on the *pre crime* concept, but it is now necessary to demand quality in terms of the effectiveness of the pronounced measures in addition to risk assessment, and measures that can be applied.

Proactivity means that the competent state authorities direct their activities to repeat offenders in terms of criminal legislation, but also to possible repeat offenders in terms of the LPDV, as well as repeat offenders who committed offenses. Determining activities and measures within the individual victim protection plan must be planned according to each

specific case, and the participation of the victim in the development of the plan is desirable. So far, victims have rarely been invited to the meetings of the Coordination and Cooperation Group (0.6% of the victims participated). The goal was probably to prevent secondary victimisation, but if the victims want it, they should be given the opportunity to express their views on the measures within the individual protection plan.

The victims of domestic violence are most often women in an intimate partner relationship. The judgments of the ECtHR that we analysed showed us that women are a vulnerable group of persons who are discriminated against in a large number of countries, and that their right to life is often violated. Does the case from Novi Sad, which happened on the 27th of May, 2019, when emergency measures were in place and after a qualified threat was reported, when the victim and her parents were deprived of their lives by the victim's husband (MUP, 2022), open new questions in terms of the assessment of positive obligations of the Serbian state related to the right of life? Here the police did impose emergency measures, the Public Prosecutor ordered that the suspect not be deprived of his liberty, but that a criminal complaint be filed in the regular procedure.

In such cases, it should be determined whether the competent state authorities failed to assess whether there was any danger to a person's life and, if they performed the risk assessment, whether they know or could have known that there was a risk of death. In each specific case of domestic violence with fatal consequences, we must take into account the special circumstances of that case, because the assessment of the fulfilment of the state's positive obligation arising from the various provisions of the ECHR largely depends on the specific circumstances of each situation.

The individual protection plan should meet the requirements of each individual case, the special circumstances in which the victim finds themselves in, as well as the individual circumstances related to the personality of the perpetrator. Furthermore, we should insist on multi-faceted protection against violence.

If a criminal offense has been committed, then the Criminal Code (CC) and the Criminal Procedure Law (CPL) come into play. The Criminal Code (*Official Gazette of the RS*, No. 85/2005) criminalises domestic violence. This criminal offense consists in endangering the tranquillity, physical integrity or mental state of a family member. It includes three alternatively prescribed forms of enforcement action: the use of violence, qualified threats, or brazen and reckless behaviour. The CC prescribes the security measure of prohibition of approaching and communicating with the injured party as a type of criminal sanction, by which the court can prohibit the perpetrator of the criminal act from approaching the injured party at a certain distance, prohibit access to the area around the place of residence or work of the injured party and prohibit further harassment of the injured party, i.e. further communication with the injured party, if it

can be reasonably proven that the further performance of such actions by the perpetrator of the criminal offense would be dangerous for the injured party. The security measure is imposed in the judgment. However, before the verdict is pronounced, it is possible to apply the provision of Article 197 of the CPL. It is a measure of prohibition of approaching, meeting or communicating with a certain person. It can last until the verdict becomes final at the most.

It is justified to ask the question of whether the competent institutions took efficient and effective measures to prevent violence and protect the victims, and whether they had knowledge that the perpetrator threatened to take the victim's life. It should not be forgotten that emergency measures are only one of a series of measures provided for by law. In cases where a criminal offense with elements of violence has been committed that is prosecuted *ex officio*, after the imposition of emergency measures, if the conditions for ordering detention are met, the police should arrest the suspect and bring them to the public prosecutor with a criminal report. This is especially true if the suspect sent a qualified threat to the victim. Police arrest is the power of the police, not of the public prosecutor. That is why the police have an obligation to apply it if the legal requirements are met. We cannot say with certainty that the murder would not have occurred if the police had arrested the suspect and if the court had ordered detention, but that the time and the work of the competent state authorities would have influenced the perpetrator, hopefully in a positive direction.

In the direction of multi-faceted protection, it is necessary to insist on the greater activity of the Public Prosecutor's Office in acting according to the provisions of the Family Law. In 2018, 297 lawsuits were filed and 105 were approved; in 2019, a total of 377 lawsuits were filed and 198 were approved; in 2020, 231 lawsuits were filed and 69 were approved, while in 2021, only 176 lawsuits were filed and 54 were approved by the court. In addition to this, including other persons authorised to file a lawsuit, in 2018, a total of 2,479 lawsuits were submitted to the court; in 2019, 2,191 lawsuits were submitted; in 2020, 1,660 lawsuits were submitted, and in 2021, a total of 1,778 lawsuits were filed (Ministry of Justice, 2022). We notice that in the course of 2020 and 2021, there was a sharp decrease in the number of lawsuits filed for the determination of family-law protection measures against domestic violence by the public prosecutor. It seems that victims, as well as others responsible for filing lawsuits, 'rely' more on LPDV and seek protection from violence through the imposition and extension of emergency measures.

However, bearing in mind that a third of the possible perpetrators are repeat offenders, and that emergency measures were already previously imposed on them, this kind of bad practice should be changed and parallel protection provided by legislative regulations should be approached.

Emergency measures adopted in a special, *sui generis* police-judicial court procedure should only be a short-term and quick solution that will promptly and urgently protect victims until more permanent measures are adopted in criminal or civil proceedings.

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МОГУЋНОСТИ И ОГРАНИЧЕЊА ПРЕВЕНТИВНОГ ДЕЛОВАЊА КАО ЈЕДНОГ ВИДА СУПРОТСТАВЉАЊА НАЈТЕЖИМ ОБЛИЦИМА НАСИЉА У ПОРОДИЦИ

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Резиме

Применом Закона о спречавању насиља у породици и додељивањем нове, доминантно превентивне, улоге полицији дошло је до промене државне стратегије у супростављању насиљу у породици. Полиција је добила обавезу да проценује ризик од насиља у непосредној будућности. Спречавање насиља у породици, благовремена и делотворна заштита и подршка жртвама, и мултисекторска сарадња постају главно стратешко усмерење државе. Европски суд за људска права је у неколико одлука утврдио да постоје *prima facie* докази да насиље у породици углавном погађа жене. Европска конвенција о заштити људских права и основних слобода не предвиђа изричито право на заштиту од насиља у породици. Европски суд за људска права полази од тога да су државе на својој територији одговорне за спречавање активности које представљају насиље у породици. Суд препознаје посебну рањивост жена/жртва насиља у породици и потребу за активнијим учешћем државе у њиховој заштити.



У овом истраживању аутори постављају хипотезу по којој промена стратешког усмерења и стављање тежишта на превенцију доприноси: повећању поверења грађана у надлежне државне органе; бољој заштити жртва; и смањењу броја најтежих случајева насиља у породици – оних који су праћени последицом смрти. Применом статистичке методе, анализе садржаја, компаративне и формално-логичке анализе, у раду су анализирани подаци из евиденција полиције, јавног тужилаштва и суда, који се односе на насиље у породици за период између 2019. и 2021. године. На крају, аутори утврђују: да је насиље према женама у партнерским односима доминантна врста насиља у породици; да је психичко насиље најзаступљеније јер се појављује у 68% случајева, праћено физичким, у 41% случајева, па економским и сексуалним насиљем; да више од 1/3 могућих учинилаца чине повратници, односно лица којима су раније изричане хитне мере; да жртве не учествују у доношењу индивидуалних планова заштите; и да се дешава да дође до смрти жртве и након изречених хитних мера и реаговања надлежних државних органа. Из тих разлога, аутори инсистирају на паралелној заштити коју пружају законодавни прописи. Хитне мере донете у посебном, *sui generis* полицијско-судском поступку треба да буду само краткотрајно и брзо решење које ће благовремено и хитно заштитити жртве док се не донесу трајније мере у кривичном или парничном поступку.

COMPARATIVE ANALYSIS OF FOOD QUALITY AND SERVICE QUALITY'S IMPACT ON THE OVERALL SATISFACTION OF GUESTS RATING RESTAURANTS ON TRIPADVISOR

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Abstract

This paper aims to present a comparative analysis of the impact of food quality and service quality on the overall satisfaction of guests who rate restaurants on the TripAdvisor website. Through the conducted research, we collected and analysed written comments and ratings of the guests of 3,163 restaurants in Belgrade, Zagreb, Ljubljana, Sarajevo, Skopje and Podgorica, made during a period of five years preceding the pandemic. After the analysis of 118,884 reviews, we presented the results of the impact of the ratings of various attributes of the restaurant service (atmosphere, food quality, service quality, price-quality ratio) on overall guest satisfaction, and a comparative analysis of the impact of food quality and service quality on the overall satisfaction of the guests who evaluated the observed restaurants. The results of the research showed that not all attributes have the same impact on overall guest satisfaction and that food quality, without exception, had a greater impact than service quality on the overall satisfaction of restaurant users on the TripAdvisor website during the observed period, in relation to the analysed restaurants.

Key words: restaurant ratings, guest satisfaction, food quality, service quality, TripAdvisor.

КОМПАРАТИВНА АНАЛИЗА УТИЦАЈА КВАЛИТЕТА ХРАНЕ И КВАЛИТЕТА УСЛУГЕ НА УКУПНО ЗАДОВОЉСТВО ГОСТИЈУ КОЈИ ОЦЕЊУЈУ РЕСТОРАНЕ НА САЈТУ *TRIPADVISOR*

Апстракт

Циљ истраживања у овом раду је компаративна анализа утицаја квалитета хране и квалитета услуге на укупно задовољство гостију који оцењују ресторране на сајту *TripAdvisor*. Спроведеним истраживањем прикупили смо и анализирали писане ко-

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ментаре и оцене гостију за 3.163 ресторана у Београду, Загребу, Љубљани, Сарајеву, Скопљу и Подгорици у петогодишњем периоду пре пандемије. Након анализе 118.884 рецензија, приказани су резултати утицаја оцена различитих атрибута ресторатерске услуге (атмосфера, квалитет хране, квалитет услуге, однос цене и квалитета) на укупно задовољство гостију, а затим и компаративна анализа утицаја квалитета хране и квалитета услуге на укупно задовољство гостију који су оцењивали посматране ресторане. Резултати истраживања показали су да у анализираним ресторанима немају сви атрибути једнак утицај на укупно задовољство гостију и да је квалитет хране, без изузетка, имао већи утицај од квалитета услуге на укупно задовољство корисника ресторана на сајту *TripAdvisor* током посматраног периода.

Кључне речи: оцене ресторана, задовољство гостију, квалитет хране, квалитет услуге, *TripAdvisor*.

INTRODUCTION

The quality of service and the quality of food in the restaurant industry are quite often considered in both expert literature and practice. One of the most frequent conclusions made upon revision is that these two – quality of service and quality of food are precisely the attributes that create a key difference in the positioning of restaurant companies (Brdar, 2023). Following this, we have decided to measure and compare the influence of these two attributes on the overall satisfaction of guests rating restaurants on the *TripAdvisor* website. Throughout the conducted research, we collected and analysed the written comments and ratings of the guests, and the results that we will present herein should indicate the difference in the influence of the ratings of various attributes of the restaurant service (atmosphere, food quality, service quality, price-quality ratio) on the overall satisfaction of the guests. Based on the obtained results, our key goal is to determine whether and to what extent food quality had a greater impact than service quality on the overall satisfaction of restaurant users on the *TripAdvisor* website during the observed period, in relation to the analysed restaurants. With the intention of comparing these two attributes to determine the differences in their influence and indicate which of them requires special attention, as well as everything that can affect the improvement of the quality of the described attribute, we present an overview of previous research on this topic, along with the results of our research in which we processed written comments and ratings of the guests for 3,163 restaurants in Belgrade, Zagreb, Ljubljana, Sarajevo, Skopje and Podgorica made during the period of five years preceding the pandemic.

LITERATURE REVIEW

In the 21st century, food in restaurants has become a new topic for the World Tourism Organization, and a very important element of diversification and image. Additionally, food and wine as parts of modern life

have become an integral part of the development of tourism, as a special niche of tourism (Meneguel et al., 2019; Brdar, 2021). It is believed that catering establishments use food to convey the identity of the destination to tourists and bring them closer to the lifestyle of the local community (Lai et al., 2018). Food quality is always an important element when it comes to the hospitality and tourism offer, both for the overall satisfaction of guests visiting a destination (Živadinović, 2020) and for attracting guests to restaurants and, thus, generating significant income (Jia, 2020). Accordingly, one of the most frequently mentioned attributes of restaurant service today, when it comes to consumer satisfaction, is food quality. A large volume of research in the previous period dealt with food quality (Mehr-bakhsh, et al., 2021), and its positive impact on overall guest satisfaction (Gu et al., 2021). Along with the quality of the food and the attractiveness of the menu, the positioning of the restaurant on the market largely depends on the quality of the service (Carvache-Franco et al., 2021). Muhammad Shoaib Farooq et al. (2017) point out that the relationship between perceived service quality and customer satisfaction is strong. Therefore, in modern business, the priority is the satisfaction of guests and their loyalty (Stanković & Đukić 2009). A satisfied guest remains loyal, and service quality is a precursor to customer satisfaction (Knezevic et al. 2017). The quality of service is directly related to the satisfaction of employees, who should be motivated to work, because the interaction of employees with guests greatly contributes to consumer satisfaction (Kordić & Milićević, 2019). Based on quality staff that will provide high-quality service and achieve guest satisfaction (Živković & Brdar, 2018), restaurants maintain their competitive position (Kim & Jang, 2020). One of the biggest challenges in restaurants today is pairing food with atmosphere and service in order to jointly achieve the desired results (Jia, 2020). The prerequisite for this is adequate communication, which is an indispensable part of the service provision process and, as such, greatly affects the perception of quality and the satisfaction of guests in restaurants (Kim et al., 2022), and the overall quality of service is primary when it comes to guest satisfaction (Đukić et al., 2018). Guests feel that their expectations have been exceeded only if they feel that they got more than what they paid for (Radić & Popesku, 2018).

In response to new requirements, restaurant employees will have to include a larger assortment of food and drinks in their offer in the future, which will have to be constantly changed (Zrnić et al., 2021). Dealing with the assessment of critical points for the satisfaction and/or dissatisfaction of guests in luxury hospitality facilities, Padma and Ahn (2020) came to the conclusion that inadequate service results in negative comments on social networks. Posting comments on social networks and specialised websites enabled a very quick exchange of experiences among consumers (Knežević et al., 2017). This state of affairs allows managers to monitor guest satisfaction. Precisely because of this, a significant number of authors

decide to analyse the ratings and comments posted by guests on social networks and specialised websites in their research (Knežević et al., 2014). Thus, Mehrbakhsh (2021) analyses data from the TripAdvisor website in a study of the impact of food quality on the overall satisfaction of guests.

TripAdvisor has proven to be a valuable source of data, and based on the data from this site, the attributes of the hospitality service can be ranked in order of importance. It is characterised by a high level of interaction. As such, it is useful for both consumers and management (Tepavčević et al., 2018). The public display of real images by guests (reviewers) provides potential consumers with a true picture of the observed object, in which the consumer is interested. The site helps those who are already users of a certain catering facility to find the nearest content that would be interesting to them, using the 'near me' option.

This site offers access to millions of comments and allows users to write and rate their impressions and advise other tourists based on their experience. In addition, it is possible to compare the prices of restaurants and other catering facilities on this site, as well as to reserve catering products. The site has over 860 million comments and numerical ratings for 8.7 million catering establishments worldwide (Zlatanov, 2022). The number of online views on the site was one million in 2005, and it was more than 570 million in 2017 (Sánchez-Franco et al. 2019). During 2018, it had an average of more than 490 million visitors per month (Taecharungroj & Mathayomchan, 2019).

The latest research shows that the latest software tools are resorted to in order to make the right decision about choosing a restaurant, and these tools combine data and information posted on social networks (Aguero-Torales, 2019). The site is popular among both managers and consumers because the services on it are free and, additionally, a large amount of information can be collected from it. So far, over 800 million comments have been published on the site, and the greatest growth in the number of comments was achieved in the period between 2014 and 2020 (Abeyasinghe & Bandara, 2022). Four attributes of the restaurant service can be evaluated (service quality, food quality, atmosphere, price-quality ratio) on the TripAdvisor website, and they represent the most important elements in determining guest satisfaction (Tepavčević et al., 2021). These attributes are interdependent, the guests rate them on a scale of 1 to 5, and each of them affects the overall rating of the quality of the restaurant (Zhang et al., 2017). This site also increases the probability of booking (Taecharungroj & Mathayomchan, 2019).

Precisely because of the aforementioned attributes of the restaurant service, and the way in which guests submit ratings on Tripadvisor, we decided to analyse and compare the ratings of food quality and service quality, as well as their impact on overall guest satisfaction in this paper. We conducted research in which we collected and analysed written com-

ments and ratings of guests in restaurants in Belgrade and the capitals of several countries in our area: Zagreb, Ljubljana, Sarajevo, Skopje and Podgorica. We present the methodology we used and the analysis of the obtained results in the following sections of the paper.

METHODOLOGY

Methods and Data Collection

The data used in the work was compiled (as part of the research for the preparation of a doctoral dissertation) into a database consisting of comments and ratings (called reviews in the following sections of the paper) of consumers from the TripAdvisor website (www.Tripadvisor.com) related to restaurants in the following cities: Belgrade, Sarajevo, Zagreb, Ljubljana, Skopje, Podgorica. The sample includes all restaurants that were present on the TripAdvisor website in January 2020, and the research included the reviews available for these restaurants in the period between 2015 and 2019. This period is adequate because there was no pandemic during that time interval, and the negative impact of the corona virus pandemic on the restaurant business can be ruled out. The research included both foreign and domestic restaurant patrons, as well as local patrons. A summary of the distribution of reviews is given in the table below.

Table 1. The number of restaurants and the total number of user reviews by city in the 2015-2019 period on the TripAdvisor website

| City | No of restaurants | No of reviews |
|-----------|-------------------|---------------|
| Belgrade | 1204 | 34323 |
| Ljubljana | 509 | 30908 |
| Podgorica | 150 | 2843 |
| Sarajevo | 336 | 11568 |
| Skopje | 286 | 6473 |
| Zagreb | 678 | 32769 |
| Total | 3163 | 118884 |

(Authors' analyses)

The research process included the collection of all available reviews for restaurant service attributes and their analysis, the comparison of their impact on user satisfaction, the extraction of the ratings for food quality and service quality, and finally a comparative analysis of these two attributes with the aim of determining the impact on overall guest satisfaction.

As mentioned earlier, it is possible to write free-form comments related to how the restaurant service was experienced on the TripAdvisor website, and the following attributes of the restaurant service can be evaluated: food quality, service quality, atmosphere, and price-quality ratio.

The attributes of restaurant services on the TripAdvisor website can be rated on a scale from 1 to 5. This type of assessment is a Likert-type scale. As the Likert-type scale is common for comparing restaurant service attributes and customer satisfaction, it is appropriate to use Spearman's correlations (Spearman, 1961) because they are appropriate in cases in which one of the following conditions is met: the variables do not have a normal distribution; the variables were measured using an ordinal scale; the sample is small; and the relationship between two variables is not linear. Taking into account that the Likert-type scale represents an ordinal and not a nominal variable in this case, Spearman's correlations were used. Spearman's correlations are used to examine the existence or type of relationship/influence between restaurant service attributes as one variable and another variable representing customer satisfaction. The higher the correlation, the stronger the connection between the two variables. However, on the other hand, it is necessary to compare the differences between the Spearman correlations. The significance of the differences in the obtained correlations depends on the number of comments. To compare statistically significant differences between correlations, the method formulated by Dunn and Clark (1969) was used, employing the *cocor* R package (Diedenhofen & Musch 2015). This method was chosen because it is adequate for comparing the intensity of correlations when the correlations are dependent, i.e., are based on the same comments, and when the correlations are overlapping, i.e., when, as in this case, we have one common variable. In the correlations 'satisfaction-service quality', 'satisfaction-food quality', 'satisfaction-atmosphere quality', and 'satisfaction-price-quality ratio', the common variable is satisfaction. The intensity of the correlations is shown on heat maps, and our initial hypotheses are as follows: (H1) the attributes of the restaurant's service do not have the same impact on the overall satisfaction of the guests of the observed restaurants on the TripAdvisor website during the analysed period; and (H2) the quality of the service has the same influence as the quality of the food on the overall satisfaction of the guests of the observed restaurants on the TripAdvisor website during the analysed period.

RESULTS AND DISCUSSION

At the very beginning of the analysis, we looked at the impact of all restaurant service attributes on the overall satisfaction of the guests of the observed restaurants on the TripAdvisor website. The intensity of the correlations is shown through the influence of various attributes (atmosphere quality - Atmosphere, price and quality ratio - Value, quality of service - Service, food quality- Food) on the overall satisfaction of guests (marked as Grade in the picture) in all observed restaurants, which are sorted according to the cities in which they are located and observed collectively (City summary). The results shown in Figure 1 clearly show that the relationship

between the ratings of restaurant service attributes and the ratings of overall guest satisfaction in the observed restaurants is different, i.e., that not all attributes have the same influence on the overall satisfaction of guests in the observed restaurants. With the exception of Skopje, in which the Quality of Atmosphere has the same influence as the Price-Quality Ratio, there are differences in the influence of the attributes on overall guest satisfaction in all other cities. When the evaluations of the influence of the attributes on overall guest satisfaction are looked at collectively for all restaurants in all of the observed cities, we come to the conclusion that each attribute has a different effect on the overall satisfaction of guests in the observed restaurants. Accordingly, we can conclude that the initial hypothesis (H1) is confirmed.

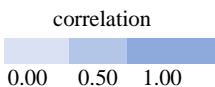
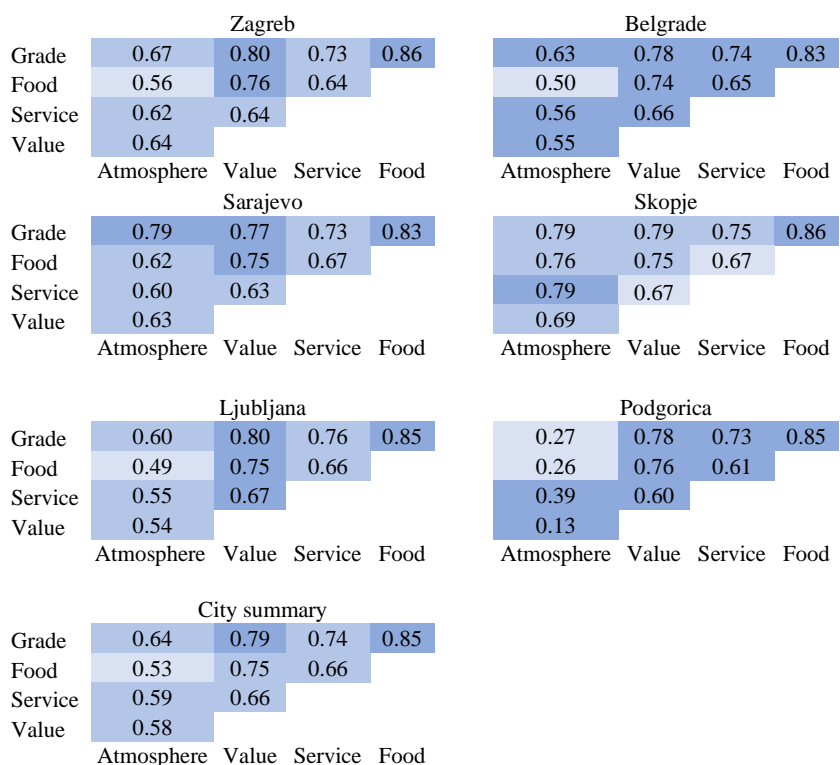


Figure 1. The intensity of the correlation between guest satisfaction and restaurant service attributes (Authors' analyses)

As in the previously mentioned research (Brdar, 2023), this research also shows that the attributes of restaurant service have a different influence on the overall satisfaction of the guests, but we must note that, in the ratings of the guests that we observed, not every attribute is commented on and rated the same number of times on the TripAdvisor website. For the purposes of this research, a total of 118,884 reviews were collected, and of that number, the quality of the atmosphere attribute was commented on and rated the least number of times. We will show below (Table 2) how many times each restaurant service attribute was evaluated in the total number of analysed reviews.

Table 2. The number of reviews on the TripAdvisor website classified according to the attributes of the restaurant service

| Assessed attribute | Number of reviews |
|---------------------|-------------------|
| Food Quality | 23839 |
| Service Quality | 24400 |
| Price-Quality ratio | 24145 |
| Atmosphere | 1155 |
| Total | 118884 |

(Authors' analyses)

Table 2 indicates that consumers rated atmosphere the least. Taking that into account, in order to use as much of the data as possible during further analysis, and to keep atmosphere as part of the research going forward, the complete comments were divided into two groups. The comments are divided as follows: (1) full reviews that had ratings for expressed satisfaction, food quality, service quality and price-quality ratio, amounting to a total of 23,619 reviews; and (2) full reviews that had ratings for expressed satisfaction, food quality, service quality, price-quality ratio and atmosphere quality, amounting to a total of 1,114 reviews.

All available data was used for each of these two groups. The differences of the Spearman correlations of restaurant service attributes with user satisfaction were compared, and these differences were shown on a heat map (Figure 2).

The heat map (Figure 2) gives us an overview of the intensity of Spearman's correlations for comments on restaurant service attributes in relation to expressed guest satisfaction. Each letter below the number indicating the intensity of correlations indicates statistical significance. If the letters below are identical – e.g., in Sarajevo (Figure 2B) 'a' for atmosphere and 'a' for food, there is no statistically significant difference between the influence of food quality and atmosphere on overall satisfaction. Accordingly, if these marks on the heat map differ, the correlation with a higher value has a greater impact on guest satisfaction. For example, in Zagreb, in Figure 2A, the intensity of food quality is 0.86 and has the mark 'a', the

quality of service has an intensity of 0.73 and the mark ‘b’, and the price-quality ratio has the mark ‘c’ and a value of 0.8. All three grades that show the intensity of the influence of restaurant service attributes on guest satisfaction in this example have statistically significant differences (the intensity of food quality has the strongest influence on satisfaction (0.86), followed by price-quality ratio (0.8) and quality of service (0.73)), which has the least influence. In cases in which one of the intensities is marked with two letters on the heat map – e.g., Ljubljana with ‘ab’ for service quality in Figure 2B, the intensity of service quality on guest satisfaction does not statistically differ from the intensity of the price-quality relationship with guest satisfaction (label ‘a’), or from the intensity of food quality’s impact on guest satisfaction (label ‘b’). In accordance with the presented differences, and bearing in mind the conclusions (Hidayat et al., 2020), which show how important food quality and service quality are for guest satisfaction and loyalty, in the following text we shall deal with the analysis of the impact of these two attributes on the overall guest satisfaction in more detail.

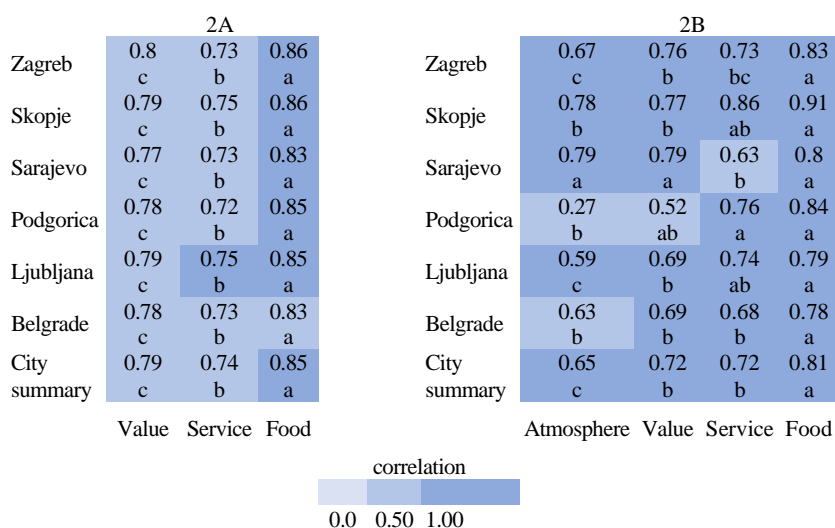


Figure 2. Intensity of Spearman correlations of restaurant service attributes with customer satisfaction (Authors’ analyses)

In accordance with the proposed hypothesis (H2), we will analyse the influence of ‘quality of service’ and ‘quality of food’ on the expressed satisfaction of guests in restaurants in each of the cities individually. Since ‘atmosphere’ as an attribute of the restaurant service was evaluated the least number of times, and it does not participate in the analysis of the impact of ‘service quality’ and ‘food quality’ on the expressed satisfaction of the guests, Figure 2A will be used for the further analysis and interpretation

of the data in this part. These values are more representative because they contain a larger number of reviews (23,619) to be compared. Based on the separate grades shown in Table 2, which show the impact of food quality and service quality on overall satisfaction, we can make a comparison and determine the difference in the impact of the mentioned attributes on the overall satisfaction of guests in the restaurants of the cities we observed. Also, in this way, we can determine the existence and significance of the differences in the influence of the two mentioned attributes on the overall satisfaction of guests in restaurants located in different cities (whether the restaurants in Belgrade and Skopje differ by this, for example, or whether the situation is identical regardless of the location of the restaurant). The obtained values for the attributes 'quality of service' and 'quality of food' are shown separately in Table 3 and Graph 1.

Table 3. The influence of service quality and food quality on the expressed satisfaction of guests in restaurants

| City | Restaurant service attribute | |
|-------------------------|------------------------------|----------------|
| | 'Service quality' | 'Food quality' |
| Belgrade | 0,73 | 0,83 |
| Zagreb | 0,73 | 0,86 |
| Ljubljana | 0,75 | 0,85 |
| Sarajevo | 0,73 | 0,83 |
| Skopje | 0,75 | 0,86 |
| Podgorica | 0,72 | 0,85 |
| All cities collectively | 0,74 | 0,85 |

(Authors' analyses)

Based on the data analysis, we come to the conclusion that at the restaurant level in Belgrade, the influence of the attribute 'quality of service' on the overall satisfaction of guests and the influence of the attribute 'quality of food' on the expressed satisfaction of guests are statistically different and this is shown by different lowercase letters ('b' for quality of service, and 'a' for quality of food), which are the result of Spearman's correlations according to the Dunn and Clark method (Figure 2A). The intensity of the attribute 'quality of service' on the expressed satisfaction of guests in restaurants in Belgrade is 0.73, and the intensity of the attribute 'quality of food' on the expressed satisfaction of guests in restaurants in Belgrade is 0.83. Based on the above, it can be concluded that the influence of the 'quality of service' attribute on the overall satisfaction of guests in restaurants in Belgrade is smaller or weaker than the influence of the attribute 'quality of food'.

Analysing the data of the restaurants in Zagreb, we can conclude that the influence of the attribute 'quality of service' on the overall satisfaction of guests and the influence of the attribute 'quality of food' on the

overall satisfaction of guests are statistically different, and this is shown by different lowercase letters on graphic A (Figure 2) ('b' for service quality, and 'a' for food quality), which are the result of Spearman's correlations according to the Dunn and Clark method. The intensity of the attribute 'quality of service' on the overall satisfaction of guests in restaurants in Zagreb is 0.73, and the intensity of the attribute 'quality of food' on the overall satisfaction of guests in restaurants in Zagreb is 0.86. Based on all of the above, it can be concluded that the influence of the attribute 'quality of service' on the expressed satisfaction of guests in restaurants in Zagreb is less than the influence of the attribute 'quality of food'.

Looking at the data for restaurants in Ljubljana, it is noticeable that the influence of the attribute 'quality of service' on overall guest satisfaction and the influence of the attribute 'quality of food' on overall guest satisfaction are statistically different ('b' for service quality, and 'a' for food quality), which are the result of Spearman's correlations according to the Dunn and Clark method (Figure 2A). The intensity of the attribute 'quality of service' on the overall satisfaction of guests in restaurants in Ljubljana is 0.75, and the intensity of the attribute 'quality of food' on the overall satisfaction of guests in restaurants in Ljubljana is 0.85. Accordingly, it can be concluded that the influence of the attribute 'quality of service' on the expressed satisfaction of guests in restaurants in Ljubljana is less than the influence of the attribute 'quality of food'.

Further analysis of the ratings for restaurants in Sarajevo shows that the influence of the attribute 'quality of service' on overall guest satisfaction and the influence of the attribute 'quality of food' on the expressed satisfaction of guests are statistically different and this is shown by different lowercase letters ('b' for service quality, and 'a' for food quality) which are the result of Spearman's correlations according to the Dunn and Clark method (Figure 2A). The intensity of the attribute 'quality of service' on the overall satisfaction of guests in restaurants in Sarajevo is 0.73, and the intensity of the attribute 'quality of food' on the overall satisfaction of guests in restaurants in Sarajevo is 0.83. Based on the above, it can be concluded that the influence of the attribute 'quality of service' on the overall satisfaction of guests in restaurants in Sarajevo is not equal to the influence of the attribute 'quality of food'.

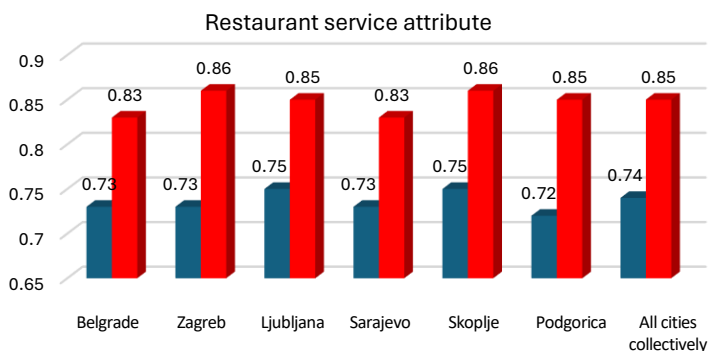
At the level of restaurants in Skopje, the influence of the attribute 'quality of service' on expressed guest satisfaction and the influence of the attribute 'quality of food' on expressed guest satisfaction are statistically different and this is shown by the different lowercase letters in graphic A (Figure 2) ('b' for service quality, and 'a' for food quality). The results on the graph are derived from Spearman correlations according to the Dunn and Clark method. If you look at the mentioned graph, you can see that the intensity of the attribute 'quality of service' on the expressed satisfaction of guests in restaurants in Skopje is 0.75, and the intensity of the attribute

‘quality of food’ on the expressed satisfaction of guests in restaurants in Skopje is 0.86. Based on this, it can be concluded that the influence of the attribute ‘quality of service’ on the overall satisfaction of guests in restaurants in Skopje is not equal (it is smaller) than the influence of the attribute ‘quality of food’.

Analysing the ratings for restaurants in Podgorica, we conclude that the influence of the attribute ‘quality of service’ on the expressed satisfaction of guests and the influence of the attribute ‘quality of food’ on the expressed satisfaction of guests are statistically different. This is supported by the different lowercase letters (‘b’ for service quality, and ‘a’ for food quality) which are the result of Spearman’s correlations according to the Dunn and Clark method (Figure 2A). The intensity of the attribute ‘quality of service’ on the overall satisfaction of guests in restaurants in Podgorica is 0.72, and the intensity of the attribute ‘quality of food’ on the overall satisfaction of guests in restaurants in Podgorica is 0.85. Based on the above, it can be concluded that the influence of the attribute ‘quality of service’ on the overall satisfaction of guests in restaurants in Podgorica is not equal to the influence of the attribute ‘quality of food’ – it is smaller, as in all previous cases.

Based on the presented results, we can conclude that when we look at the impact of the analysed attributes according to the location (city) where the restaurants are located, there are differences, but they are not significant (the range of ratings for service quality is 0.72 - 0.75, and 0.83 - 0.86 for food quality). However, unlike other authors who investigated the influence of only one of the mentioned attributes (Panchapakesan, et al., 2022), our goal is to determine the differences between the influence of these two attributes on overall guest satisfaction. The results are presented in the following text.

In the end, in order to confirm or reject the initial hypothesis (H2), we collectively analysed the impact of the ‘service quality’ attribute on overall guest satisfaction and the impact of the ‘food quality’ attribute on overall guest satisfaction at the level of all restaurants. The obtained results are statistically different and this is shown by different lowercase letters (‘b’ for service quality, and ‘a’ for food quality), which are the result of Spearman’s correlations according to the Dunn and Clark method (Figure 2A). The intensity of the attribute ‘quality of service’ on the expressed satisfaction of guests in all restaurants is 0.74, and the intensity of the attribute ‘quality of food’ on the overall satisfaction of guests in all restaurants is 0.85. Accordingly, it can be concluded that the influence of the attribute ‘quality of service’ on the overall satisfaction of guests in all restaurants in the mentioned cities is not equal to the influence of the attribute ‘quality of food’.



Graph 1. The impact of service quality and food quality on the expressed satisfaction of guests in restaurants

Legend: blue color represents "quality of service"; red color represents "quality of food"

Based on the presented analysis and the results shown in Figure 2 and Graph 1, which unequivocally show that the total intensity of the attribute 'quality of food' (0.85) is greater than the total intensity of the attribute 'quality of service' (0.74), we can conclude that the *starting hypothesis (H2) is rejected*, because the impact of the attribute 'quality of food' on the overall satisfaction of guests in the observed restaurants during the analysed period is greater than the impact of the 'quality of service' attribute.

CONCLUSION

A large volume of research in the previous period dealt with the analysis of the contribution of food quality, in relation to other elements and attributes, to the overall satisfaction of guests in restaurants. The results of the research presented in this paper showed that not all attributes have an equal impact on overall guest satisfaction and that food quality, without exception, had a greater impact than service quality on the overall satisfaction of restaurant patrons on the TripAdvisor website during the observed period, and in relation to the analysed restaurants in Belgrade, Sarajevo, Zagreb, Ljubljana, Skopje and Podgorica. Accordingly, the recommendation for restaurant management is that special attention should be paid to the quality of the food in future activities, without neglecting the importance of the other attributes of restaurant service. Taking into account the presented results, and in accordance with the analysed data, one of the possibilities for future research can be an analysis of the influence of restaurant service attributes according to different market segments, starting from the assumption that not all restaurant service attributes are equally important to all types of guests.

At the very end, we must refer to the limitations of the research presented in this paper. Namely, this research covers a period of five years preceding the pandemic, and reviews left during and after the coronavirus pandemic were not included, which would certainly be a recommendation for future research, so as to compare ratings in the pre- and post-pandemic period and determine whether there were any changes in guest ratings and what these changes are reflected in. Also, this research covers only one platform, so an additional recommendation for future research would be to include other platforms in order to get a more comprehensive and objective insight into the satisfaction of guests in restaurants.

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КОМПАРАТИВНА АНАЛИЗА УТИЦАЈА КВАЛИТЕТА ХРАНЕ И КВАЛИТЕТА УСЛУГЕ НА УКУПНО ЗАДОВОЉСТВО ГОСТИЈУ КОЈИ ОЦЕЊУЈУ РЕСТОРАНЕ НА САЈТУ *TRIPADVISOR*

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Резиме

Квалитет хране и квалитет услуге се веома често посматрају, како у стручној литератури тако и у практичном раду, као атрибут који праве кључну разлику у позиционирању ресторатерских предузећа. У складу са тим, одлучили смо да у нашем истраживању измеримо и упоредимо утицај ова два атрибута на укупно задовољство гостију који оцењују ресторане на сајту TripAdvisor. Спроведеним истраживањем прикупили смо и анализирали писане коментаре и оцене гостију, а резултати су потврдили различитост утицаја оцена различитих атрибута ресторатерске услуге (атмосфера, квалитет хране, квалитет услуге, однос цене и квалитета) на укупно задовољство гостију. Резултати истраживања показали су да је

квалитет хране, без изузетка, имао већи утицај од квалитета услуге на укупно задовољство корисника ресторана на сајту TripAdvisor током посматраног периода у анализираним ресторанима. На основу тога можемо закључити да овај атрибут захтева посебну пажњу, заједно са свим што може утицати на унапређење квалитета описаног атрибута (нпр. квалитет намирница од којих се храна припрема и опрема и запослени који се тим пословима баве).

THE PREFERRED EXTERNALITIES-CORRECTING SYSTEM FOR PRACTICAL APPLICATION

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Abstract

This study sets two goals which are represented by the answers to the following two basic questions. What are the possibilities of national policy-makers in terms of the efficient correction of negative externalities? Since available externality correction systems give suboptimal ex post results, which system is preferable, and under what conditions? The possibilities of the policy-maker to ensure the social optimum are determined by 'enlightenment' ('knowledge') and 'commitment' to social goals. When the actual (ex post) marginal private costs for emission reduction are higher than the planned (ex ante) marginal private costs for emission reduction, and when the marginal social benefit is elastic, the Cap-and-Trade system is more undesirable than the price system. When the actual (ex post) marginal private costs for emission reduction are greater than the planned (ex ante) marginal private costs for emission reduction, and when the marginal social benefit is inelastic, the price system is more undesirable than Cap-and-Trade system.

Key words: externality, Pigouvian tax, Cap-and-Trade, efficiency, practical implementation.

ПРЕФЕРИРАНИ СИСТЕМ КОРЕКЦИЈЕ ЕКСТЕРНАЛИЈА ЗА ПРАКТИЧНУ ПРИМЕНУ

Апстракт

У овом раду су постављена два циља које представљају одговори на два основна питања. Које су могућности креатора националне политике у погледу ефикасне корекције негативних екстерналија? Пошто расположиви системи за корекцију екстерналија дају субоптималне ex post резултате, који систем је пожељнији, и под којим условима? Могућности креатора политике да обезбеди друштвени оптимум су детерминисане 'просвећеношћу' ('знањем') и 'посвећеношћу' друштвеним циљевима. Када су стварни гранични приватни трошкови за смањење емисије већи од планираних граничних приватних трошкова за смањење емисије, и када је еластична гранична друштвена корист, систем „ограничи и тргуј“ је непожељнији од 'ценовног система'. Када су стварни гранични приватни трошкови за смањење емисије већи од планираних граничних приватних трошкова за смањење емисије, и када је гранична друштвена корист нееластична, ценовни систем је непожељнији од система 'ограничи и тргуј'.

Кључне речи: екстерналија, Пигуовски порез, ограничи и тргуј, ефикасност, практична примена.

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INTRODUCTION

During a century of evolution, the attractiveness of the ‘economy of externalities’ oscillated from conspicuous favouritism, through occasional neglect, to interdisciplinary analysis and interpretation. This is an ‘old’ idea dating back at least to Pigou (1920), who developed the classical analysis of taxation of external effects in order to correct incentives, and then transferred it to Arrow, Coase and other professional ‘giants’.

Why has the economy of externalities been chosen as a research subject? The concept of externalities is an important idea in economics, a useful approach for exploring dynamic relationships within different socio-technical subsystems of a given social system, including respectable global implications.

This study is inspired by the idea of the achievement of two research objectives. The first objective of the study represents the answer to the question of what the possibilities of policy makers in terms of the efficient correction of negative externalities in the spheres of production and consumption are. The second objective of the study is guided by the question of which system is closer to the social optimum, and under what conditions, since the *ex post* results of the available systems for the correction of externalities, E_{TAX} and $E_{C\&T}$, are suboptimal.

The study has two starting ‘points’. The first assumption of the study is as follows: the policy-maker effectively balances the interactions between key actors in society – the individual, the economy and the environment, and ensures the optimum of public interests (allocative efficiency, i.e. maximisation of social well-being). The second assumption of the study is as follows: the (un)desirability of the available systems depends on the change in the marginal private (social) costs for emission reduction, $MPCRE$, and the (in)elasticity of the marginal social benefits from emission reduction – $MSB_{ELASTIC}$, $MSB_{INELASTIC}$.

The structure of the study comprises seven parts. The second part of the study covers the methods used in the research, the concepts meant to ensure the quality of the research, and concluding comments. The third part presents our thoughts on the essential standpoints of the leading authors during the century-long development of the economy of externalities. The fourth part of the study explicitly defines the goal of policy-makers. In the fifth part of the study, titled “Prices vs. Quantities”, we analyse the available instruments for achieving the explicitly defined goal of policy-makers – ‘Command and Control Regulation’ (‘C & C’), ‘Price System’ (‘Pigouvian tax’) and ‘Combined system’ (‘Cap and Trade’, ‘C & T’). In the sixth part of the study, we broaden the analytical vision by introducing uncertainty in terms of the practical application of focused systems. The (un)desirability of the ‘Price System’ (‘Pigouvian tax’) and ‘C & T system’ (including the quantitative system) is assessed in the context of the interaction

of MPCRE growth and MSB (in)elasticity. The seventh part of the study is dedicated to concluding remarks.

METHODS AND CONCEPTS

Methods

A strict comparative analysis was used to evaluate the conceptual-functional performance of focused systems for the correction of externalities.

Three models of partial equilibrium are mainly used in the literature to analyse the effects of negative externalities.

In this study, the demand (supply) curves were observed as a function of benefits (costs), according to Mas-Colell, Whinston, and Green (1995), Kreps (2013), and Nicholson and Snyder (2017).

Excess burden or dead-weight loss, DWL, is estimated according to the methodology initially established by Harberger (1964).

Concepts

The price system, ‘Pigouvian tax’, was used according to Eurostat (2013), the EC (European Commission, 2020), the UN (2021), the U.S. Department of the Treasury, Office of Tax Analysis (2017), and CE Delft (2020).

The combined system (Cap and Trade, ‘C & T’) was used according to CEEPR, MIT Center for Energy and Environmental Policy Research (2015), ‘C2ES’ (Center for Climate and Energy Solutions, US, 2020, 2022), the US EPA (United States Environmental Protection Agency, 2021, 2022, 2023), and IPCC (Intergovernmental Panel on Climate Change, 2022, 2023).

EXTERNALITIES:

A TIMELESS AND COMPREHENSIVE PHENOMEN

Externality is a consequence of industrial or commercial activity affecting entities that are not directly involved in transactions, without this being reflected in market prices – what economists call ‘externalities’ (Tax Foundation). Today, after more than a century of evolution (1920–2023), the economics of externalities has developed in several fundamental problem directions.

The initial idea and application of the theory of external effects arose in the framework of the debate on the quality of the environment. Arthur Cecil Pigou (1920), the originator of the concept, laid the ‘foundation’ that the following generations of ‘architects’ supported and/or criticised.

From the perspective of the originator of the concept, Arthur Cecil Pigou, the economy of externalities is synonymous with a problem that is within the competence of a 'benevolent' policymaker, who 'knows' and 'can' practically solve it in a 'dedicated' and 'efficient' way, through an 'ideal' tax.

Kenneth Joseph Arrow became 'famous' for 'Arrow's economy', Arrow's impossibility theorem and the market for externalities (Maskin, 2019).

From the perspective of Kenneth Joseph Arrow, the economy of externalities is synonymous with the ability to 'marketise' non-market interactions through the system of 'personalised prices'.

Ronald Harry Coase became 'famous' for a theoretical concept the focus of which is the privatisation of resources in public property (Foss, Kristen, & Foss, 2014).

From the perspective of the privatisation and management of resources in public ownership, the economy of externalities is synonymous with the economic (social) reality between two systems of solutions, private (market) and public, which are unable to operate effectively.

Based on established instruments, microeconomics scrutinises the effect of externality-correcting taxes on prices and the distribution of benefits.

When we look at externality-correcting taxes within different partial equilibrium models, for the purposes of this study, we have systematised all analyses into two categories: (1) 'usual' analysis, to which this study also belongs, and (2) 'new' analysis. These two types of analyses differ from each other in terms of the focal issue (Kotchen, 2021, 2022).

From the perspective of partial equilibrium, the economy of externalities is an ambiguous benchmark, a synonym for the inefficient behaviour of certain social actors, in the form of excessive or insufficient production or consumption, and a synonym for the WG ratio, welfare gain, and TR – tax revenue (change welfare per unit of collected tax/excise revenue).

As a complement to the classic works, 'today' the topic of externalities is explained from new aspects and from a comprehensive view. The new business philosophies of the companies are explained within the framework of the redefinition of corporate social responsibility, that is, within the framework of the redefinition of the concept of competitive advantages: the prosperity of the company is the result of catalysts of development that are 'shrouded in mystery' (Balland, P -A 2022). In order to avoid the problems that burden conventional theories, the path to the 'general theory of externalities' is mapped: externalities are an authoritative 'verifier' of social demand for management institutions. In the real world, where 'abundance' and 'scarcity' vary depending on resources, people, contexts and nations, externalities persist and point to social demand for a new design of management institutions. Nowadays, the presence of externalities is at an all-time high, and the social demand for 'management' is

not only unfulfilled, but also on the rise. The finding represents a real current and futuristic challenge, which is why the affirmation of the problem of externalities can be an important message of this study (Frichmann, M.B and Ramelo, B. G. 2023). When the concept of ‘economic’ externalities gives way to the concept of ‘social’ externalities, then the fact of the ‘universal’ nature (character) of social (economic) externalities is glorified – the concept of ‘economic’ externalities, based on the tradition of Pigou and Arrow, should be extended by the concept of ‘social’ externalities, through the idea of the general (ubiquitous) interdependence of people, the constituents of a given social system (Fleurbaey, M., et al, 2021; Manski, C.F. 2000).

The first objective of the study represents the answer to the question of what the possibilities of policy makers in terms of the effective correction of negative externalities in the spheres of production and consumption are. The purpose of the analysis is for people to fully and directly face the consequences of their own activities, as citizens, as workers, as businessmen, and as policy-makers. The first presumption of the study is as follows: the policy maker effectively balances the interactions between the key actors in society, the individual, the economy and the environment, and ensures the optimum of public interests (allocative efficiency, i.e. maximisation of social well-being). The first starting point was not confirmed in the study. In terms of planned goals, the achieved results and upcoming challenges for the economy of externalities, the situation in the third decade of the new century and the situation in the second decade of the last century are essentially equivalently determined systems. We live in the circumstances of the permanent hundred-year presence of essentially identical ‘open’ questions, although, the manifestations and character of certain problems are partially different.

From the perspective of the explicit message of the current part of the presentation, from the position of being able to summarise a hundred years of experience in dealing with externalities, the economy of externalities is synonymous with the lack of relevant ‘knowledge’ and the lack of ‘reciprocity’. In other words, the economy of externalities is synonymous with the ‘improvement of markets and management institutions’. Educational and personnel policy are leitmotifs. We have just noted a current and futuristic-oriented message that corresponds to the first objective of the study.

THE GOAL OF POLICY MAKERS

According to the tradition of Pigou and Arrow, economic externalities arise due to spill-over effects the market cannot valorise. Externalities can arise from the production of a product or from the consumption of a product, and can be negative or positive. The focus of this work are negative externalities, due to the production and consumption of products or services.

The correction of externalities is a significant issue for economic policy. By default, individuals (in their capacity as citizens, i.e. in the form of households) and companies do not internalise ‘indirect’ costs or ‘indirect’ benefits from their economic transactions. Who should act in the public interest, and who is the corrector of negative externalities?

What is the role of the individual? The position of ‘citizen’ is limited, determined, and dependent on the character and level of a given social community development. Social norms, in a formalised (laws or regulations) or informalised form (social conventions), are regulators of the social behaviour of people.

Standard financial reports of the company enable the analysis of financial performance and profitability, and ensure the transparency of entrepreneurial business. Standard financial reports do not provide information on the responsibility of the company’s business towards society, nor do they include any information on spill-over effects (on the amount of damage, MD, i.e. on the emission of MEC). As the impacts of companies on society get more and more attention, greater expectations are placed on accounting systems to take into account the internal and external effects of emissions on stakeholders. External damages (costs) should be recognised in financial reports: what is important are the ‘ways’ to expand traditional balance sheets and income statements/‘P & L’ with information about the environmental, and the social and economic impacts of the company on society (Lascol, B., 2021; Edward, X., et al, 2023).

Management institutions act in the public interest of a given country. The policy-maker defines the standards that enable the maintenance of balance between the environment (social cost) and economic activity (private cost), and tends to neutralise negative externalities. The ascertainment about the ‘state’ as the only, exclusive representative of public interest attracts three questions from the real world.

Is a change in the hierarchy of goals necessary? First of all, a factual affirmation of the issue of the effective correction of negative spill-over effects is necessary. The standpoint that only the state knows how to manage the balance of externalities between the individual, the economy and society, by determining the benchmark (zero) value that cancels the functions of externalities, that is, by determining the value intervals in which the functions become positive or negative, has advantages and disadvantages. However, leaving aside the “broad” elaboration, the central comment is that the state, as a unique ‘corrector’ (‘arbiter’), does not often have the regulation of externalities in its focus. The revenue bounty of the excise system is an unsurpassed ‘favourite’ in the hierarchy of goals, including final allocatively inefficient solutions and outcomes.

What is the critical factor for the effective action of policy-makers? The volatility of economic circumstances is a critical factor. In an idealised world i.e. in a perfect world of ‘universal knowledge’, ‘universal benevo-

lence' and 'complete certainty', in terms of the tendencies of basic economic variables, in principle, all systems for the correction of externalities are mutually equivalent. In the real world, however, multiple market failures are a 'complete certainty'. Since a policy-maker makes decisions based on 'planned' (ex ante) values of costs (benefits), that may differ from 'real' (ex post) values, incomplete knowledge, asymmetric information and an uncertain business environment are important determinants of the (un) desirability of certain systems (outcomes).

What is the policy makers' goal in terms of correcting the negative externalities that a company spills over to society? We respected the standard economic rule (theory of choice) – 'goods are desirable'. 'Desirable goods' is the provision of clean air, for example. A policy maker's goal is to 'plan' in advance (ex ante), to ensure the 'planned' ('expected', ex post) socially efficient amount (level) of 'reducing' the emission of marginal external costs (MEC). We will mark this with E^* , i.e. (complementary), to provide the socially efficient "amount" of MEC (MD) emission that is 'allowed' to be emitted in a given society. The policy-maker finds the state of social optimum, i.e. the planned (ex ante) socially efficient amount (level) of MEC/MD reduction, ' E^* ', according to the universal optimality condition – the equality of the planned marginal social (total) costs 'for reducing' MEC, ' MSC^* ', and the planned marginal social (total) benefits 'from reduction' MEC, ' MSB ' (' $MSC^* = MSB$ '). In principle, the policy-maker can achieve one planned goal, E^* , by means of two alternative, market-oriented, systems: 'price' ('Pigouvian tax') or 'quantity' (combined, 'C & T' system).

PRICES VS. QUANTITIES

A policy-maker has three basic ways to direct companies towards one goal, towards the realisation of the planned (ex ante) socially efficient amount of emission reduction, ' E^* '. (i) 'Command and Control Regulation' ('C & C') is a traditional non-market approach based on 'quantity' ('quantitative system'). The 'price system' ('Pigouvian tax') explicitly determines the ideal 'price', the tax per each unit of emission: $t = MEC$. The 'Combined system' ('Cap and Trade', 'C & T') explicitly determines the planned total 'quantity' of permitted emission ('cap') in society: a mix of explicitly determined 'quantity' and transferable permissions for emission. A strict evaluation of the performance of the three systems was performed according to four criteria, out of which the fourth criterion represents the following thematic unit: (1) efficiency, (2) conceptual focus, (3) administration procedure, (4) preferred system for practical implementation.

Efficiency. The quantitative system ('C & C') is ineffective. The price system is efficient, leading to an efficient outcome, E^* , since each company/emitter reduces emissions exactly to the 'point' of equality of the

planned price per unit of emission reduction, t^* , and individual MPCRE*s, $t^* = \text{MPCRE}^*s$. The combined system ('C & T') is also efficient, since each company reduces emissions exactly to the 'point' of equality of the planned price of the permission for emission and individual MPCRE*s, $p^* = \text{MPCRE}^*s$.

Conceptual focus. When implementing a price system, the policy-maker explicitly determines a 'price' for a unit of MEC emission. What does the conceptual focus on 'price' mean? The creator fixes the 'price' and, thus, explicitly guarantees that the company's cost per unit of MEC reduction is not higher than the defined 'ceiling', $t^* = \text{MEC}$. Then, each company individually reduces MEC emissions exactly to the point of equality $t^* = \text{MPCRE}^*$. In other words, at the level of the planned social optimum, 'E*', the equality applies: $t^* = \text{MEC} = \text{MPCRE}^*$ (i.e. $t^* = \text{MSB} = \text{MSC}^* = \text{MPCRE}^*$). What is the Quantity of emission of MEC? 'Quantity', i.e. the level of protection of society from negative spill-overs is residual, a true unknown.

When opting for a combined system ('C & T'), the policy maker explicitly determines the total 'quantity' of permitted emission of MEC ('emissions cap'). What does the conceptual focus on 'quantity' mean? The creator fixes the total 'quantity' and thus explicitly guarantees that the quantity of negative spill-overs is not greater than the quantitatively permitted 'ceiling' ('cap'). That is, the creator implicitly guarantees that the planned socially efficient quantity of emission reduction, 'E*', will be achieved. What is 'Price', i.e. the company's cost per unit of MEC? 'Price' is residual, a true unknown.

Systems administration. The policy-maker has two basic 'concerns' with regard to the management of the price system. The first is to practically determine the level of externality-correcting taxes, but in such a manner that they converge to the level of theoretically 'ideal' corrective taxes, $t = \text{MEC}$ ('emissions tax'). Second, since the focus is on 'price', the policy-maker has to identify economic situations for which 'price' is the preferred system for practical implementation.

Since the cost of emission reduction is determined by the market prices of permissions for emission, 'p', and permission prices may fluctuate or escalate, the policy-maker has five basic administrative 'concerns' over the 'C & T' system. The policy maker has to: (1) continuously monitor the social reality/adequacy of the 'emissions cap' and, if needed, (2) obtain the offer of additional permits ('cost containment reserve' policy); (3) determine the 'lowest prices' for permits ('price floors'); (4) determine the 'highest prices', the so-called 'safety valve' (allowed reserve that acts like a price ceiling); and (5) since the focus is on 'quantity', the policy-maker has to identify economic situations for which 'quantity' is the preferred system for practical implementation (USA, CEEPR, 2015; 'C2ES', 2020; US EPA, 2021, 2022, 2023; Bruce, N, 2001).

PREFERRED SYSTEM FOR PRACTICAL IMPLEMENTATION

The policy-maker's goal is to plan and provide a 'planned' socially efficient quantity of MEC emission reduction to society, 'E*'. The policy-maker knows the exact amounts of the key variables for decision-making and realises the planned social optimum, 'E*', according to the condition of equality $MSC^* = MSB$, where, at the same time, the externality tax represents the marginal cost for emission reduction and the marginal benefit from the emission reduction, $t^* = MSC^* = MSB$, i.e. $t^* = MPCRE^*$. Under conditions of 'full certainty', the policy-maker can achieve one planned goal, E*, by means of two alternative, market-oriented systems: "price" ('Pigouvian tax') or 'quantity' ('C & T' system). In other words, the result of the price system, 'E_{TAX}', is equal to the result of the combined system, 'E_{C & T}', i.e. both systems provide an identical result, an identical emission reduction:

$$E_{TAX} = E_{C \& T} = E^*$$

In general, the policy-maker makes decisions on the basis of three universal principles. First, the state of social optimum (state of allocative efficiency), 'E', is determined according to the equality of social costs for emission reduction and social benefits from emission reduction, 'MCS = MSB'. Second, when the quantity of emission reduction is less than the quantity of emission reduction at the social optimum, 'E', then the social benefit from emission reduction is greater than the social costs for emission reduction – a state of allocative inefficiency due to insufficient emission reduction; in the general case: 'MSB > MSC'. Third, when the quantity of emission reduction is greater than the quantity of emission reduction at the social optimum, 'E', then the social costs for emission reduction are greater than the social benefits from emission reduction – a state of allocative inefficiency due to excessive emission reduction; in the general case: 'MSC > MSB'. We have expressed the 'main' directions we will configure the upcoming analysis around.

In an uncertain real world, the mistakes of policy-makers are quite certain. Hypothetically, we have zoomed in on one representative company from the national group of 'MEC emitter companies', and there are ambiguities regarding the valuation of costs and benefits. We focused on a situation that faithfully approximates problems in the real world. We apostrophised a specific error in the form of inequality between 'planned' (ex ante) and 'real' (ex post) amounts of key variables. We assumed that, due to the changed business environment, an inequality appeared between the lower 'planned' marginal private costs for reduction of MEC emission on society, 'MPCRE*', and the higher "real" marginal private costs for reducing spill-over effects on society, which we marked 'MPCRE**' (MPCRE** > MPCRE*, i.e. MSC** > MSC*). In the changed parametric environment, the policy maker-determines the 'real' social optimum ('real'

socially effective quantity of MEC emission reduction), 'E**', according to the universal condition of equality of costs and benefits, $MPCRE^{**} = MSB$, i.e. $MSC^{**} = MSB$, which is why:

$$E^{**} < E^*$$

Under the changed circumstances, both systems give suboptimal ex post results, since 'E_{TAX}' (quantity of emission reduction under the price approach) and 'E_{C&T}' (quantity of emission reduction under the combined approach, 'C & T') are not equal to the quantity of emission reduction at the actual social optimum, 'E**'. When the policy maker opts for one approach, he 'closes' himself, at least temporarily, to the concrete systemic consequences of the chosen/applied approach. The analytical focus is on two determinants – MPCRE growth and MSB (in)elasticity, and their combined impact on the quantitative distance of 'E_{TAX}' and 'E_{C&T}' from the actual social optimum, 'E**'. We evaluate systemic consequences through two questions. The first question is the direction of influence. In what 'direction' does the increase in MPCRE and the (in)elasticity of MSB affect the quantitative deviation of 'E_{TAX}' and 'E_{C&T}' from the 'actual' social optimum, 'E**'? The second question revolves around the degree of influence. 'How much' does the increase in MPCRE and the (in)elasticity of MSB affect the quantitative deviation of 'E_{TAX}' and 'E_{C&T}' from the 'actual' social optimum, 'E**'?

*In what 'direction' does the increase in MPCRE and the (in)elasticity of MSB affect the quantitative deviation of 'E_{TAX}' and 'E_{C&T}' from the "actual" social optimum, 'E**'?* In response to the growth of MPCRE, the price system will always lead to a smaller reduction of emission quantity ($E_{TAX} < E^{**}$), i.e. a combined system ('C & T') will always lead to a greater reduction of emission quantity ($E_{C\&T} > E^{**}$), in relation to the quantity of emission reduction at the 'actual' social optimum, 'E**'. Why? It is because of different key performance indicators. The price approach is refined by the essential logic of the microeconomic concept 'economies of scale'. How does company management react to the new combination of determinants, identical tax (t^*) and higher costs ($MPCRE^{**}$)? In conditions of hyper-competition, and based on predictive analytics and enterprise resource planning, management rationalises company costs, and always chooses a cheaper solution: the cost to the company is never higher than the tax imposed by the policy-maker. As long as the inequality $MPCRE^{**} < t^*$ is active, the company reduces the emission of MEC to society. In case $MPCRE^{**} > t^*$, business strategy adapts to the challenge, and corporate social responsibility 'disappears' (the company stops investing in 'green tech') and starts paying taxes. The practical consequence of this fact is: $E_{TAX} < E^{**}$. Due to the key performance indicator, 'C & T' system is in the 'shadow of the green economy'. With the price system, the tax per unit of emission is fixed. By choosing the 'C & T' system, the pol-

icy maker fixes the ‘emissions cap’ for a given period of time. The ceiling (‘cap’) for the total quantity of emissions that can be spilled over to society is ‘resistant’ to the increase in costs, from $MPCRE^*$ to $MPCRE^{**}$ ($E^* = E_{C\&T}$). The practical consequence of this fact is: $E_{C\&T} > E^{**}$. Finally, in the real world, there is a need for the policy-maker to intervene, to administratively determine the maximum/minimum price of permits, i.e. to ‘protect’ the company’s costs from the eventual escalation of the market price of the permit, as we precisely noted in the appropriate place.

*‘How much’ does the increase in MPCRE and the (in)elasticity of MSB affect the quantitative deviation of ‘ E_{TAX} ’ and ‘ $E_{C\&T}$ ’ from the ‘actual’ social optimum, ‘ E^{**} ’? E^{**} is a variable indicator. The quantitative variation E^{**} is the resultant of the interaction of two determinants, the elasticity (inelasticity) of social benefits from emission reduction, $MSB_{ELASTIC}$ and $MSB_{INELASTIC}$, and the growth of costs, from $MPCRE^*$ to $MPCRE^{**}$. When we use Harberger’s methodology (‘Harberge’s triangles’) in the context of two systems (the price system and the ‘C & T’ system), two extreme forms of MSB elasticity (elastic and inelastic social benefit from emission reduction, $MSB_{ELASTIC}$ and $MSB_{INELASTIC}$) and cost growth (growth from $MPCRE^*$ to $MPCRE^{**}$), then we define the excess burden, i.e. the deadweight loss for the society, ‘DWL’, on the bases of the area of four Harberger’s triangles: $\Delta DWL_{TAX-ELASTIC}$, $\Delta DWL_{TAX-INELASTIC}$, $\Delta DWL_{C\&T-ELASTIC}$, and $\Delta DWL_{C\&T-INELASTIC}$. The area of each of these four triangles is determined by the corresponding size (value) of the base, ‘B’, and height, ‘h’, $B_{TAX-ELASTIC}$ and $h_{TAX-ELASTIC}$; $B_{TAX-INELASTIC}$ and $h_{TAX-INELASTIC}$; $B_{C\&T-ELASTIC}$ and $h_{C\&T-ELASTIC}$; $B_{C\&T-INELASTIC}$ and $h_{C\&T-INELASTIC}$.*

The ‘Basis’ of Harberger’s triangles when the MSB is elastic or inelastic, ‘ $B_{C\&T-ELASTIC}$ vs. $B_{C\&T-INELASTIC}$ ’, and efficiency losses created by the ‘C & T’ system (‘ $\Delta DWL_{C\&T-ELASTIC}$ ’ and ‘ $\Delta DWL_{C\&T-INELASTIC}$ ’). When we analyse ‘C & T system’, the ‘basis’ $\Delta DWL_{C\&T}$ is the difference between social costs for emission reduction, ‘ $MPCRE^{**}$ ’ ($MPCRE^{**} = MSC^{**}$), and social benefits from emission reduction, ‘MSB’ ($MSB = MEC = MPCRE^* = t^*$) on the quantity of emission reduction ‘ E^* ’. ‘ E^* ’ is a fixed quantity of emission reduction: $E^* = E_{C\&T}$. ‘Basis’ $\Delta DWL_{C\&T-ELASTIC}$, ‘ $B_{C\&T-ELASTIC}$ ’, increases with the growth of the ‘elasticity’ of social benefits from emission reduction (‘ $MSB_{ELASTIC}$ ’) – the more horizontal the MSB curve, the greater the difference between social costs and benefits, i.e. the basis ‘ $B_{C\&T-ELASTIC}$ ’ is maximal. What does the statement that the base of the triangle is maximal (i.e. ‘ $B_{C\&T-ELASTIC}$ ’ is maximal) mean when the absolute value of the slope of the linear curve quite ‘slightly’ decreases (i.e. when it is $MSB_{ELASTIC}$)? This statement explicitly indicates that ‘C & T’ is not the preferred system for all public policies for which the marginal benefit of the next unit of emission reduction is approximately constant. When the marginal social benefit from emission reduction is ‘inelastic’ (‘ $MSB_{INELASTIC}$ ’), the opposite comment applies. ‘Basis’ $\Delta DWL_{C\&T-INELASTIC}$,

' $B_{C\&T-INELASTIC}$ ', decreases with decreasing 'elasticity' (i.e. with increasing 'inelasticity') of marginal social benefits from emission reduction (' $MSB_{INELASTIC}$ ') – the more vertical the MSB curve, the smaller the difference between social costs and benefits, i.e. ' $B_{C\&T-INELASTIC}$ ' base is minimal.

The 'Basis' of Harberger's triangles when MSB is elastic or inelastic, ' $B_{TAX-ELASTIC}$ vs. $B_{TAX-INELASTIC}$ ', and efficiency losses created by the 'price system' ($\Delta DWL_{TAX-ELASTIC}$ and $\Delta DWL_{TAX-INELASTIC}$). When we analyse the 'price system', 'basis' ΔDWL_{TAX} is the difference between the social benefits from emission reduction, 'MSB' ($MSB = MEC$), and social costs for emission reduction (' $t^* = MPCRE^{**}$ '), on the quantity of emission reduction ' E_{TAX} '. ' E_{TAX} ' is a variable quantity of emission reduction, since the quantity of emission reduction depends on the change in the elasticity of MSB and the growth of costs for emission reduction. 'Basis' $\Delta DWL_{TAX-ELASTIC}$, ' $B_{TAX-ELASTIC}$ ', decreases with the growth of the 'elasticity' of social benefits from emission reduction (' $MSB_{ELASTIC}$ ') – the more horizontal the MSB curve, the smaller the difference between social benefits and costs, i.e. the ' $B_{TAX-ELASTIC}$ ' basis is minimal. When the marginal social benefit from emission reduction is 'inelastic', $MSB_{INELASTIC}$, the opposite comment applies. 'Basis' $\Delta DWL_{TAX-INELASTIC}$, ' $B_{TAX-INELASTIC}$ ', increases with decreasing 'elasticity' (i.e. with increasing inelasticity) of social benefits from emission reduction (' $MSB_{INELASTIC}$ ') – the more vertical the MSB curve, the greater the difference between social benefits and costs, i.e. ' $B_{TAX-INELASTIC}$ ' basis is maximal. What does the statement that the base of the triangle is maximal (i.e. ' $B_{TAX-INELASTIC}$ ' is maximal) mean practically when the absolute value of the slope of the linear curve (i.e. when it is $MSB_{INELASTIC}$) is very 'dynamically' decreasing? This statement explicitly indicates that the 'price system' is not the preferred system for all public policies for which the marginal benefit of the next unit of emission reduction is 'dynamically' decreasing.

'Heights' of Harberger's triangles when MSB is inelastic (' $MSB_{INELASTIC}$ '), ' $h_{C\&T-INELASTIC}$ ' and ' $h_{TAX-INELASTIC}$ ', and efficiency losses created by two systems ($\Delta DWL_{C\&T-INELASTIC}$ and $\Delta DWL_{TAX-INELASTIC}$). Using two systems, the 'price system' and the 'C & T' system, under the influence of two determinants, the inelastic MSB (' $MSB_{INELASTIC}$ ') and the growth of MPCRE (from ' $MPCRE^*$ ' to ' $MPCRE^{**}$ '), we defined three different quantitative reactions, whose 'distances' represent two heights of two Harberger's triangles - ' $h_{C\&T-INELASTIC}$ ' and ' $h_{TAX-INELASTIC}$ ', for which the inequality applies:

$$E_{TAX} \ll E^{**} < E_{C\&T}$$

The focus is on the small 'distance' between $E_{C\&T}$ and E^{**} . What does this 'small' distance represent? 'Distance' is the height (' $h_{C\&T-INELASTIC}$ ') of Harberger's triangle $\Delta DWL_{C\&T-INELASTIC}$. The distance (' $E^{**} <$

$E_{C\&T}$) consists of a ‘small number’ of emission reduction units for which the social costs are greater than the social benefits. With the ‘C & T’ approach, the quantity of emission reduction is fixed ($E_{C\&T} = E^*$). A fixed quantity of emission reduction, $E_{C\&T}$, in combination with ‘inelastic’ social benefit ($MSB_{INELASTIC}$) and the growth of MPCRE (to $MPCRE^{**}$), results in a ‘small’ quantitative deviation, i.e. a ‘small distancing’ from the actual social optimum, E^{**} .

‘Heights’ of Harberger’s triangles when MSB is elastic ($MSB_{ELASTIC}$), $h_{C\&T-ELASTIC}$ and $h_{TAX-ELASTIC}$, and efficiency losses created by two systems ($\Delta DWL_{C\&T-ELASTIC}$ and $\Delta DWL_{TAX-ELASTIC}$). Similar to and fundamentally different from the above noted standpoint, under the influence of two determinants, the elastic MSB ($MSB_{ELASTIC}$) and the growth of MPCRE (to $MPCRE^{**}$), we defined three different quantitative reactions, whose ‘distances’ represent two ‘heights’ of two Harberger’s triangles, $h_{C\&T-ELASTIC}$ and $h_{TAX-ELASTIC}$, for which the inequality applies:

$$E_{TAX} < E^{**} \ll E_{C\&T}$$

The focus is on the large ‘distance’ between $E_{C\&T}$ i E^{**} . The determinant has changed - $MSB_{ELASTIC}$ is now a benchmark. The ‘distance’ is the height ($h_{C\&T-ELASTIC}$) of Harberger’s triangle $\Delta DWL_{C\&T-ELASTIC}$. The distance ($E^{**} \ll E_{C\&T}$) consists of a ‘large number’ of emission reduction units for which the social costs are greater than the social benefits. With the ‘C & T’ approach, the quantity of emission reduction is fixed ($E_{C\&T} = E^*$). A fixed quantity of emission reduction, $E_{C\&T}$, in combination with ‘elastic’ social benefit ($MSB_{ELASTIC}$) and the growth of ‘MPCRE’ (to $MPCRE^{**}$), results in a ‘large’ quantitative deviation, i.e. by ‘great distancing’ from the actual socially effective quantity of emission reduction on society, E^{**} .

The second goal of the study is represented by the following question. Given the suboptimal ex post results of the available systems for the correction of externalities, E_{TAX} and $E_{C\&T}$, which system is closer to the actual social optimum, E^{**} , and under what conditions? The second assumption of the study is as follows: the (un)desirability of the available systems depends on the change in the marginal private (social) costs for emission reduction, ‘MPCRE’, and the (in)elasticity of the marginal social benefits from emission reduction, $MSB_{ELASTIC}$, $MSB_{INELASTIC}$.

When MPCRE are increased, from $MPCRE^*$ to $MPCRE^{**}$, and when the marginal social benefit from emission reduction of MEC is ‘elastic’ - $MSB_{ELASTIC}$, the ‘C & T’ system is more undesirable, less efficient than the price system, because it generates a higher DWL for the society - $DWL_{C\&T-ELASTIC} > DWL_{TAX-ELASTIC}$. Explicitly, the price system initiates a smaller DWL compared to the greater loss of efficiency created by the ‘C & T’ system. National and global environmental policy and

strategies are paradigmatic examples for the favouring and practical application of the price system.

When MPCRE are increased, from MPCRE* to 'MPCRE**', and when the marginal social benefit from emission reduction of MEC is 'inelastic' – 'MSB_{INELASTIC}', the price system is more undesirable, less efficient than the 'C & T' system, because it generates a higher DWL for the society – $DWL_{TAX-INELASTIC} > DWL_{C\&T-INELASTIC}$. Explicitly, the 'C & T' system initiates a smaller DWL compared to the greater loss of efficiency created by the price system. Earthquakes, floods, and all forms of accidental situations with potentially fatal outcomes are paradigmatic examples for the favouring and practical application of the 'C & T' system. In order to recapitulate the current analysis, based on the works of the classics – Weitzman (1974), Baumol & Oates (1988), Bruce (2001), Cnossen (2005), Hindriks & Myles (2006), Hyman (2014), Gruber (2019), Cnossen & Jacobs (2021), we present Figure 1.

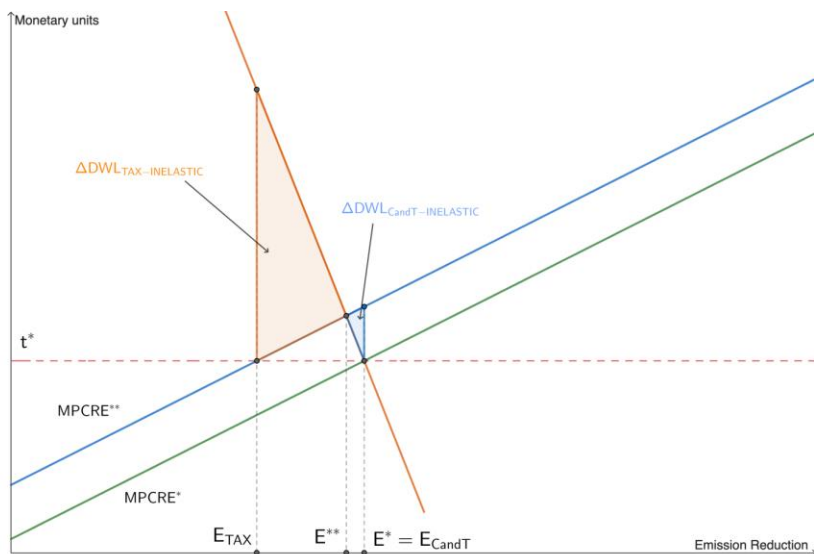


Figure 1. DWL_{TAX} vs. DWL_{CandT} , when MPCRE are increased, and when the inelastic marginal social benefit from emission reduction of MEC

Source: Processed by the author based on the works of the classics noted above

With this research, we have evaluated the performance of two market-oriented systems in the context of determinants that reflect practical events in the real world. What is the final decision of policy makers on the (un)desirability of the system in modern conditions of 'augmented reality'? The question of the factual desirability (applicability) of the system touches the very essence of a specific society, the synergistic effect of the private economy (including social entrepreneurship and corporate social responsi-

bility, CSR), and the public economy (including environmental engineering/management and social economy). The final decision depends on the social (institutional) consensus on a debatable and contradictory questions of whether a specific society practically needs a system that primarily “protects” the company’s costs, or whether the level of society’s protection is a decisive factor that decides on the preferred system for correcting externalities. The universal complexity of the answer to these questions is undoubtedly confirmed by the presence of a diverse mix of price and ‘C & T’ systems in the real world.

CONCLUSION

The economy of externalities implies relevant economic issues for the functioning of modern society and the shaping of public policies. This study sets two goals which are represented by the answers to two basic questions.

The first question is as follows. What are the possibilities of national policy makers in terms of the efficient correction of negative externalities in the spheres of production and consumption? The results of our research are as follows.

The possibilities of the policy maker to ensure the social optimum are determined by ‘enlightenment’ (‘knowledge’) and ‘commitment’ to social goals. In terms of ‘enlightenment’ and ‘commitment’, the capacities and orientation of policy-makers are either objectively (subjectively) limited, or they are inadequately oriented. Since the existence of externalities is equivalent to incomplete valorisation of effects, incomplete valorisation is a consequence of the lack of ‘knowledge’ and absence of ‘mutual concern’.

The tendency towards ‘social optimality’ is an unattainable ideal, and therefore cannot be the focus of the academic and professional public. It is necessary to zoom in on the possibilities for improving the ‘existentially’ important subsystems of the social system, improving the market and management institutions, above all. Educational and personnel policy are both essence and leitmotifs.

The second question is as follows. Since available externality correction systems give suboptimal ex post results, which system is preferable, and under what conditions? When evaluating the practical applicability of available externality - correcting systems in changing economic circumstances, three results of this study are important.

First, when MPCRE are increased, from MPCRE* to ‘MPCRE**’, and when the marginal social benefit from emission reduction of MEC is ‘elastic’ – ‘MSB_{ELASTIC}’, the ‘C & T’ system is more undesirable, less efficient than the price system, since it generates a higher DWL for the society – $DWL_{C\&T-ELASTIC} > DWL_{TAX-ELASTIC}$. Explicitly, the price system initiates a smaller DWL compared to the greater efficiency loss created by the

‘C & T’ system. National and global environmental policy are paradigmatic examples for the favouring and practical application of the price system.

Second, when MPCRE are increased, from MPCRE* to ‘MPCRE**’, and when the marginal social benefit from emission reduction of MEC is ‘inelastic’ - ‘MSB_{INELASTIC}’, the price system is more undesirable, less efficient than the ‘C & T’ system, since it generates a higher DWL for the society – $DWL_{TAX-INELASTIC} > DWL_{C\&T-INELASTIC}$. Explicitly, the ‘C & T’ system initiates a smaller DWL compared to the greater efficiency loss created by the price system. Earthquakes, floods, and all forms of accidental situations with potentially fatal outcomes are paradigmatic examples for the favouring and practical application of the ‘C & T’ system.

Third, the practical choice of a specific system depends on the social (institutional) consensus on the relative importance (necessity) of certain systems, that is, the specific choice depends on the hierarchy of goals in society – the balance between economic policy (profit-maximising mission) and environmental policy (corporate social responsibility mission).

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ПРЕФЕРИРАНИ СИСТЕМ КОРЕКЦИЈЕ ЕКСТЕРНАЛИЈА ЗА ПРАКТИЧНУ ПРИМЕНУ

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Резиме

Економију екстерналија чине релевантна економска питања за функционисање савременог друштва и обликовање јавних политика. У овом раду су постављена два циља које представљају одговори на два основна питања. Које су могућности креатора националне политике у погледу ефикасне корекције негативних екстерналија у сферама производње и потрошње? Пошто расположиви системи за корекцију екстерналија дају субоптималне *ex post* резултате, који систем је пожељнији, и под којим условима?

Данас, након више од једног века еволуције (1920 – 2023), економија екстерналија се развила у неколико основних проблемских праваца, укључујући дисонантна образложења значаја и ефеката екстерналија. Иницијална идеја и примена теорије екстерних ефеката настале су у оквиру расправе о квалитету животне средине (Артур Сесил Пигу). Кенет Ароу је постао ‘славан’ по тржишту за екстерналије. Роналд Коуз је постао „славан“ по теоријском концепту чији је фокус приватизација ресурса у јавној својини. Модел макроекономске стабилизације је занемарио макроекономске екстерналије, које су посебно значајне у стагнантном и/или кризном периоду, попут економске ситуације протеклих деценија новог века. На основу устаљеног инструментарија, микроекономија проучава ефекат пореза који коригују екстерне ефекте на цене и дистрибуцију користи. Тематика екстерналија се „данас“ објашњава са нових аспеката и из свеобухватне визуре. Прва претпоставка рада гласи: креатор политике ефикасно балансира интеракције између кључних актера у друштву, појединца, економије и животне средине. Прва полазна ‘тачка’ није потврђена у раду. У погледу планирних циљева, остварених резултата и предстојећих изазова за економију екстерналија, стање у трећој деценији новог века и стање у трећој деценији прошлог века су суштински еквивалентно детерминисани системи. Живимо у околностима перманентног стогодишњег присуства суштински идентичних ‘отворених’ питања, мада се манифестације и карактер појединих проблема делимично разликују.

Према традицији Пигуа и Ароуа, екстерналије настају због ефекта преливања које тржиште не може да валоризује. У фокусу овог рада су негативне екстерналије услед производње и потрошње производа или услуга. Циљ креатора политике је да обезбеди планирану (*ex ante*) друштвено ефикасну количину смањења емисије граничних екстерних трошкова (ГЕТ), E^* . У принципу, креатор политике може да оствари један планирани циљ, E^* , помоћу два алтернативна, тржишно оријентисана система: ‘цене’ (‘Пигуовски порез’) или ‘количине’ (комбиновани систем ‘ограничи и тргуј’).

У неизвесном реалном свету су извесне грешке креатора политике. Пажњу смо концентрисали на конкретну грешку у форми неједнакости између „планираних“ и „стварних“ износа кључних варијабли, $ГПТСЕ^* \neq ГПТСЕ^{**}$. У аналитичком фокусу су две детерминанте, раст $ГПТСЕ$, са $ГПТСЕ^*$ на $ГПТСЕ^{**}$, и (не)еластичност граничне друштвене користи, $ГДКЕЛАСТИЧНА$, $ГДКНЕЕЛАСТИЧНА$. ‘Колико’ повећање $ГПТСЕ$ и (не)еластичност $ГДК$ утичу на квантитативно одступање ценовног система, $ЕПОРЕЗ$, и система ограничи и тргуј, $ЕО-Т$, од количине смањења емисије на стварном друштвеном оптимуму, E^{**} ?

Друга претпоставка рада гласи: (не)пожељност расположивих система зависи од промене граничних приватних (друштвених) трошкова за смањење емисије, ГПТСЕ, и (не)еластичности граничних друштвених користи од смањења емисије. Када су повећани ГПТСЕ, на ГПТСЕ**, и када је ГДК еластична – ГДКЕЛАСТИЧНА, систем ограничи и тргује је непожељнији, зато што генерише већи чист губитак за друштво ('DWL'). Другим речима, ценовни систем је пожељнији. Национална и глобална климатска политика су парадигматски примери за фаворизовање и практичну примену ценовног система. Када су повећани ГПТСЕ, на ГПТСЕ**, и када је ГДК нееластична – ГДКНЕЕЛАСТИЧНА, ценовни систем је непожељнији, зато што генерира већи чист губитак за друштво ('DWL'). Другим речима, систем ограничи и тргуј је пожељнији. Земљотреси, поплаве, сви облици акцидентних ситуација са потенцијално фаталним исходима су парадигматски примери за фаворизовање и практичну примену система ограничи и тргуј.

Питање фактичке пожељности (апликабилности) система тангира саму есенцију конкретног друштва и хијерархију циљева. Да ли је конкретном друштву практично потребнији систем који „штити“ трошкове предузећа, или је ниво заштите друштва пресудан фактор који одлучује о преферираном систему за кориговање екстерналија?

Book Review


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NEW INSIGHTS INTO DIGITAL TECHNOLOGY IN CULTURE, ART, AND MEDIA

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The book *Digital Horizons of Culture, Art, and Media*¹ (2021) was edited by professors Milena Dragičević Šešić and Tatjana Nikolić, a research associate at the Institute for Theatre, Film, Radio, and Television at the Faculty of Dramatic Arts, University of Belgrade. The publication is the result of the Faculty of Dramatic Arts' involvement in multiple projects. A number of texts in the collection was presented at the international conference of the Faculty of Dramatic Arts "New Horizons of Culture, Art, and Media in the Digital Environment", which, with the support of the Ministry of Education, Science and Technological Development of the Republic of Serbia, was held in Belgrade between the 11th and 14th of September, 2019. Some of the works were created as part of other Faculty of Dramatic Arts projects, such as the scientific project 178012 "Identity and Memory: Trans-cultural Texts of Dramatic Arts and Media", project 16213 (COST ACTION 16213), titled "New Research Phase in the Study of Cultures of Dissent in Eastern Europe", and the project "Art and Research on Transformations of Individuals and Societies". The publication of the book was financed by the U.S. Embassy in Belgrade.

Digital Horizons of Culture, Art, and Media can be categorised as a collection of works. It contains a total of nineteen scientific articles, three of which are in English. The twentieth text includes a short bio-bibliography of the authors. The scientific articles contain abstracts in either English or Serbian, as well as lists of sources used in the writing process. Unlike other scientific anthologies, this collection also features photographs of the participants of the conference and specially designed covers which are actually part of the doctoral art project by Branko Sujčić, titled "A View into Infinity", realised in the FDU's Interactive Arts Laboratory.

Using the theoretical elements of drama, the editors titled their introductory text the "Prologue", while they named the concluding article by Milica Kočović de Santo the "Epilogue". In the introductory text, "Culture in the Digital Sphere" (pp. 15-30), Milena Dragičević Šešić and Tatjana Nikolić first point out the connection between the history of civilization and the basic means of communication, supporting the pivotal points of development with appropriate references. They then spec-

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¹ PhD Milena Dragičević Šešić, Tatjana Nikolić (editors), "Digital Horizons of Culture, Art, and Media", Belgrade: Institute for Theatre, Film, Radio and Television, Faculty of Dramatic Arts; Clio, 2021, p. 409.

ify that the aim of the collection is to illuminate “the impacts of technological development on the sphere of culture understood in the broadest sense of the word” (p. 18), i.e., to initiate “a discussion about the changes occurring in the spheres of culture, art, and media” (p. 19). The authors indicate the impact of changes in the content and distribution of cultural programmes, and in the way of shaping civic and artistic activism, on hybrid artistic production that does not abandon traditional materials while turning to digital possibilities, and on the necessity of digitizing performing arts under the influence of the Coronavirus. They then explain the concept of the collection and summarise the included works, emphasising new areas and disciplinary overlaps. Finally, they warn us that, although still in development, digital technology is becoming a necessary factor in the economy, science, culture, art, and other spheres, which is why they define trans-media literacy as an essential skill.

In the first part of the collection, titled “Cultural Policies and Practices”, there are five papers: “The Role of the Strategy for Connecting Cultural and Educational Policies for the Digital Age” by Vesna Đukić (pp. 33-48), “Digital Technologies and the Legal Framework of Cultural Policy in Serbia” by Ana Stojanović (pp. 49-75), “Local Cultural Policies in the Digital Environment” by Bojana Subašić and Bogdana Opačić (pp. 75-97), “Mobile Applications in the Culture Sector of Serbia” by Tatjana Nikolić and Milica Ilčić (pp. 97-121), and “Cultural Identity of Adolescents in Serbia in the Digital Environment” by Violeta Kecman (pp. 121-145). The second part of the collection, titled “New Media, Multimedia, and Transmedia Art Practices”, includes four papers: “3D Film: Challenges of a (New) Aesthetic” by Vesna Dinić Miljković (pp. 145-160), “Transmedia Narratology in the Study of Video Games” by Dunja Dušanić and Stefan Alidini (pp. 161-181), “Narrative and Rhetoric of Trailers” by Nikoleta Dojčinović (pp. 183-201), and “Transmedia Storytelling and Cognitive Metaphors” by Olivera Marković (pp. 203-222). The third part, titled “Traditional Media in the Digital Environment”, contains four papers: “Trust in Media in the Digital Environment” by Mirjana Nikolić (pp. 225-243), “The Digital Age and ‘Old’ Media - Time for New Challenges” by Goran Peković (pp. 245-270), “Reader Reactions and Communication Culture on Croatian News Portals” by Nada Zgrabljčić, Tamara Kunić, and Ljubica Josić (pp. 271-284), and “Bottom Text of ‘RuPaul’s Drag Race’: Reality TV Shows and Internet Memes” by Dunja Nešović (pp. 285-298). The fourth part, “Digital Humanities, Epistemology, and Ethics”, consists of four articles: “New Functions of Yugoslav Memorial Heritage in the Digital Environment” by Dragana Konstantinović and Aleksandra Terzić (pp. 301-321), “Is There a Potential of Reaching (Omni) Knowledge In the Digital Space?” by Milena Jakanović (pp. 323-343), “Artificial Intelligence vs. Natural Ignorance” by Nina Živančević (pp. 345-355), and “The Archive as a Place of Desubjectivization of Memory” by Marija Velinov (pp. 357-376).

The collection represents a pioneering endeavour, primarily resulting from research presented at the first scientific conference in Serbia dedicated to digital technology in culture, art, and media. Hence, the number of pioneering works (to name just a few, the works of Vesna Đukić, Ana Stojanović, Tatjana Nikolić, and Milica Ilčić), or those research efforts considered rare and few (for example, the research by Bojana Subašić and Bogdana Opačić) is understandable. The study of digital cultural participation in Serbia is still poorly represented. Thus, such research contributes to understanding contemporary issues (the neglect of digital

tools for audience animation and ignoring the needs and interests of the audience) and enables the assessment of content and the work of cultural institutions.

The collection compiles empirical and combined research. From the perspective of the scientific work technique, the articles have a well-established methodology, and adhere to basic scientific standards to a satisfactory extent. Many will find the bibliographies of works, which are abundant with contemporary research, useful. Let us not forget that this is a new research topic in Serbia, just beginning to attract attention. More importantly, the authors in this collection almost continuously examine the practical dimension of digital technology, and the results of their research often exceed the confines of utility and applicability within the scientific disciplines themselves. Therefore, the presented analyses can be very valuable, both for policy-makers and for those employed in culture, education, science, and media. Many papers critically address the problems of institutions, as well as issues with certain theories and artistic approaches. Moreover, solutions are proposed, and examples of good practice are cited. Most importantly, it was determined how new technology changes culture, language, literary and artistic genres, art, media, and behaviour from various research angles and disciplines.

The collection also showcases some other specificities. For example, this collective project demonstrates a dominance of female scholars as a gender identity (23 female authors versus 2 male authors), primarily in Serbia (one co-authored work is signed by three female scientists from Croatia). Unlike other scientific anthologies, this publication features a larger number of photographs from the conference, documenting the scope and dynamics of participation in the event, the diversity of approaches to the topic, and the complexity of programme organisation. Presently, during the pandemic, it is noticeable to what extent such photographs bring out the character of immediate and live (on-site) discussions. The visual material contributes to the album dimension of the collection (preserving the memory of the event) and suggests that the culture of conversation and exchange of opinions was emphasised for the memory of this pioneering conference (which is not always a standard respected in the Serbian scientific space).

The creative potential of the collection as a metonymy of intellectual workers is reflected in encouraging further research. Future studies could focus on local cultural policies after 2018 or on legislative research after 2019, so as to examine the relationship with new technologies before and after the pandemic. New analyses of digitalisation processes and procedures, as well as digital cultural participation, are shown to be necessary. Several papers indicate that audiences do not trust digital content, but value the way information is presented in the new medium, which implies the inclusion of visual content and hypertexts. Some psychologists see precisely this cognitive load of digital media with visual and hypertext content as problematic for learning and, especially, for creating long-term memory. Therefore, in the future, it would be useful to investigate the convergence of these models in practice and determine their psycho-physical impact on the youth. Other research, for example, could address the issue of digital textbooks, and their relation to textbook standards, ways of using textbooks, and views on traditional textbooks. The collection contains many new words and concepts that have emerged under the influence of digital technology but are not found in the most recent dictionaries of the internet and digital communication (see and compare with Dr. Dobrinka Kuzmanović's Dictionary for the Digital Age, 2019; Lazar Bošković's Dictionary

of the Internet and Digital Communication, 2021), so it could also inform the creation of a new dictionary of digital terms in culture, art, and media.

In summary, it can be concluded that the collection brings important discoveries that shed light on a range of new phenomena in culture, art, and media, and in society as a whole. It shows that discussions of positive and negative models of behaviour and management are useful and can enable the improvement of the current state. Through a series of well-connected research from different scientific fields, the editors of the collection have enabled a more comprehensive understanding of culture as a developmental aspect of society, and the assessment of the degree of importance and necessity of digital technologies in public administration. The editors have succeeded in showcasing the interconnection of digital technology with culture, art, and media in education, legal definition, and local cultural policies. Essentially, this scholarly work pushes the boundaries of knowledge, and it demonstrates how strong the link between criticism and creativity is at a time when criticism is evaporating from the scientific space.

Book Review

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PROBLEMATIC OPEN SCIENCE

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In 2022, the international publishing house Springer published the book *Open Science: the Very Idea*¹ (ISBN: 978-94-024-2114-9, <https://doi.org/10.1007/978-94-024-2115-6>). The author is Frank Miadema, Full Professor at UMC Utrecht. He is a Dutch biochemist and immunologist. The book was published under license Creative Commons CC-BY, it has 265 pages and is written in English. It consists of eight chapters, preceded by a Preface, tips for the readers, a Synopsis (brief summary of the contents of the chapters) and Acknowledgements. The author includes the Supplements after the last chapter. The chapters themselves include tables through which the author shares his experiences and examples from his scientific life.

In fact, this is a book about the project ‘Science in Transition’, but this project, as we can see on the site², has not been active since 2018. In this sense, the reviewed book has a historic character. In 2023, we can say that this project failed, and that Miadema’s plan did not work. “Indicator mania”, the ideology of “pointosis” (“scoreosis”) and “grantosis” are fine. F. Miadema is not the only one who drew attention to the pathology of the current science system – Morgan Meyer spoke about that in Luxembourg, Michał Kokowski spoke about it in Poland, and Jurjo Torres Santomé spoke about it in Spain. Miadema’s book is an aftermath of a failed bottom-up attempt to change the scientific system, this time in the Netherlands.

This book contains a lot of important proposals, but they look inconsistent and editorially disordered. One of the problems is the lack of an adequate number of paragraphs – often, the text is written in one line and it is hard to read. The structure of the text is disproportionate: the author mixes theoretical issues with summaries of the history of the philosophy of science, descriptions of his life experiences, comments aimed at promoting his concept “Science in Transition” and the critical analysis of the current financial model of science from many points of view. Therefore, the narration becomes chaotic. In addition, the book includes a lot of quotes which should be shortened. The photos, links and other additions to the text make the book appear not as a scientific monograph, but a collage.

F. Miadema wants to question the image of science and the “legendary narration” about science which is promoted by the scientist. He has been looking for an

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¹ Frank Miadema, “Open Science: the Very Idea”, Springer, 2022, p. 265.

² <https://scienceintransition.nl/>.

answer to the question of how science really works and produces knowledge. He wrote that “scientists have a moral obligation to engage with the major societal problems and challenges of their time” (p. viii), and he sees the idea of open science as a possibility for a change in this image. Open science is one of the element of the open society (like in Popper’s conception), and it should therefore be merged with the democratic political system. In the reviewed book, he shares his experiences in the field of the social role of science. He marks off four important points: the general concise view of science and society since 1945, the relationship between philosophy and sociology, and the critique of science, perspectives and transition to Open Science.

Unfortunately, this book lacks concrete solutions to the presented problem. F. Miadema does not give a ready recipe for the evaluation of the work of scientists, or for how we can remove “pointosis” and “grantosis”. The recommendations in the Supplement (‘The Metric Tide’) are only general guidelines. Therefore, it is sometimes hard to select important conclusions from the reviewed book. In this review, I tried to describe the most interesting fragments.

F. Miadema shows that science is influenced by political trends. Governments set the agenda for research, but scientists feel that science does not fulfil the promise of increasing life quality. This is a source of frustration for scientists. In his opinion, ideologies, as a uniqueness of science compared to any other societal activity, the ethical superiority of science, the vocational disinterested search for truth, autonomy, and moral and political neutrality, the dominance of internal epistemic values and the unpredictability of the results were accepted too mindlessly. He recognises the problem of too few interactions between science and society during agenda-setting and the actual process of knowledge production. The internal reward system steering academic careers is focused on positions on international ranking lists. This incentive and reward system drives a hyper-competitive social game in academia, which results in a widely felt lack of alignment and little shared value in the academic community. Finally, it insulates academies and science from society, and distorts the research agenda, and the societal and economic impact of science.

In the first chapter, F. Miadema thinks about the development phases after 1945. He focuses on selected internal aspects of USA politics. He describes the changes in the way of thinking of and understanding science. He summarises the opinions about the role of science and discussion in the 1960s (Michael Polanyi, John Maddox, Stephen Toulmin, Alvin Weinberg). He formulates several critical postulates, for example: science, “to be effective must be much more mission-oriented, inclusive, truly multidisciplinary” (p. 4).

In his opinion, academic research should aim to have an effect in the real world. He thinks that social sciences and humanities have to engage in social concerns, and that science should be defended against populism and nationalism. He recognises the lack of a simple translation between science and social effects. His thesis that „A paper in Nature does not cure patients” (p. 4) is brilliant. He writes that the relations and interactions between science and society are not clear. The problem lies in science agenda-setting, and in the dangers of the possibility of abuse of science via the immense powers of multinationals in our deregulated neoliberal economies. He sees the problem of free scholarships and research in non-democratic countries too.

He says that ideas and concepts about science and research are based on the achievements of philosophy and sociology before the Second World War. They form myths and ideology about science for the scientific community, and still determine the popular view of science. Therefore, young researchers are not taught

what truth is and how they can discover it, but they are taught the technical side of research. They think that they automatically create the truth in this way. In addition, people believe in the difference between natural science („hard sciences”) and the social sciences and humanities (“soft sciences”), and in the higher value of quantitative analyses over qualitative analyses.

The second chapter is a summary of the philosophy of science. The author describes the ideas of Popper and Merton, and puts forth a thesis that their vision of science does not exist in practice. He especially emphasises the contribution of John Dewey, Thomas Kuhn, Helen Logino, Charles Sanders Peirce, Hilary Putnam, Jerom Ravetz (from the Marxist perspective), Willard Van Orman Quine, Steven Shapin and John Ziman. He evokes the five thesis of Mary Hesse, which revolve around the differences between natural and human science in terms of experiences, theories, law-like relations, language and meanings. This old discussion, and Habermas' conception, took place in a very different public context. Cartesianism, foundationalism, analytic philosophy, positivism, popperism and the Wiener Kreis do not give an answer to the question of how science is really done.

This discussion is not oversaturated with algebra, as is the case in Adam Grobler's work (*Pl. Metodologia nauki*), and it is not too superficial like popular studies on the history of philosophy, but it is detailed enough to meet the needs of the reader. He does not express it directly, but his book is the critical review of positivism, a praise of pragmatism and an omission of postmodernism. He regularly uses the keyword 'legend', but he does not explain exactly what he means by it. Only on page 62 does the reader learn that the 'legend' is the positivist's ideal of the scientific method. In Polish literature, it was clearly described by Stanisław Kamiński (*Pl. Nauka i metoda. Pojęcie nauki i klasyfikacja nauk*).

In the third chapter, F. Miadema describes the idea of 'Science in Transition'. It was a Dutch citizen's initiative (movement) in which he was involved. He and his colleagues tried to create a new model of scientific management. He describes the long discussions in scientific institutions, the inability to change the system, the creation of a project group, and the organised meetings and workshops. Additionally, he portrays his associates.

In this book, F. Miadema alternates his life experiences and his criticism of bibliometric indicators. Rather than to improve the quality of the technical side of the scientific workshop, as they were originally conceived in bibliometrics, these indicators are used as a tool for the decision-making process of allocating financial resources for research. He describes – with reference to Bourdieu – the negative effects of indicators for scientists as a social group. At the same time, he criticizes the grant system, which has no sense from the perspective of long-term, forward-looking research. He blames the New Public Management and the economisation of science for the bibliometric character of contemporary science. He devotes a lot of space to a discussion of: the negative impact of bibliometrics and research evaluation methods for researcher behaviour; research agenda-setting; the depreciation of local and regional research important for local communities; progress on research careers; and the managing of universities. To replace the indicators, he suggests ten principles from the “Leiden Manifesto”, among which is, for example, the development of the regional studies.

The science policy, based on 'pointosis' and 'grantosis', determines which research is done and which research is not done. F. Miadema draws attention to the “knowledge that never was” (p. 110). This is a crushing argument, and he brings

to light how much knowledge we, as humanity, have lost because certain research was not undertaken at all as a result of science policy determinants. Grants and points make it so that researchers not only fail to finish their research but also never manage to undertake it (because, for example, their publication exceeds the limit of the characters imposed by highly scored journals, or the research effects cannot be described in the editorial template). The science system structures thinking and, thus, restricts freedom.

Looking for a doctrine that could help him break the system, the author of the reviewed book turns to pragmatism. Therefore, in the fourth chapter, he quotes John Dewey, Hilary Putnam, Richard Rorty and Philip Kitchner.

In the fifth chapter, he again refers to the history of the philosophy of science, especially new pragmatism. He was not afraid to speak about the ‘production of knowledge’. He emphasises the social responsibility of science. On the other hand, he stresses the independence of science from society, because people do not always use common sense. He refers to his own research on HIV and recalls Bruno Latour’s *Laboratory Life*.

He uses the achievements of other researchers to highlight criticisms of the science system, and raise questions about the incentive and reward system. In his opinion, scientists are afraid to openly confess to their fallibility and limitations, and are anxious of external influences and criticism. They do not find themselves in a multitude of non-synchronous interactions between various bureaucratic institutions. Science co-evolves with society, but science is more heterogeneous, diverse, local and disunited than society thinks. In my opinion, two conclusions can be drawn from this chapter: that ‘knowledge economy’ is utopia, and that the changing priorities of governmental science policy limit the developmental possibility of the school of thought.

In the sixth chapter, F. Miadema shares his experiences of working at University Medical Centre Utrecht, especially in the field of fundraising, collaboration between divisions, setting research programmes, creating rewards and the research evaluation system. Research programmes should better respond to societal needs with regard to public health, prevention, and clinical care.

He expresses the opinion that the “the reputational reward system is most likely the most critical process in academia” (p. 180) in the seventh chapter. F. Miadema writes that the reward system determines “almost every relevant aspect of scientific research” (*Ibid.*). In this context, he describes the progressive process of the implementation of Open Science, especially in the European Union. In the late 90s, it was conditioned by the rising cost of subscriptions to scientific journals. This situation led to a vicious circle: ‘better’ journals dropping subscriptions of the ‘lesser’ journal, and a smaller number of journals causing a higher demand for ‘better’ journals because researchers were addicted to them, so the international publishing corporations set higher subscription prizes. Libraries stopped the subscriptions and, finally, Open Access journals appeared on the publishing market. They are free to read, but they ask authors to pay for the processing costs of the article. The best choice is gold – open access without article processing charges.

Naturally, this view is simplified, because the situation for scientific journals in post-communist European countries, especially in Poland, was different. They needed to be visible and accessible for authors and readers. However, they were financed by public scientific institutions and universities, so they never charged authors. I saw another problem as well – the mentality of the conservative professorship. For them,

the free availability of scientific texts raises concerns about the fear of the theft of their achievements: if anyone can read, then anyone can appropriate. In 2023, this can seem strange, but it was a really common problem 20 years ago.

For F. Miadema, Open Science is the next step, following open data and open access. He describes attempts to change the evaluating criteria for scientific entities, and promotes the Open Science idea and his own experiences. He correctly writes that, from the economic perspective, research and innovation are the main drivers of economic growth and job creation, but that social sciences and humanities are important too, because they meet social needs and values, and reach beyond classical technocratic scientism (p. 207).

In the eighth chapter, which is the epilogue of the book, the author stresses the role of the European Union, the importance of the relationship between Open Science and democracy, and, furthermore, the importance of the relationship among science, scientists and society. He laments China's policy of closing itself off to the exchange of scientific knowledge. In his opinion, the COVID-19 pandemic influenced the opening of research, but he recognizes the threats to science posed by social media and the polarisation of society. He mentions the lack of trust in science in connection with vaccinations (anti-vaccination movement and Donald Trump). The sentence: "The time is long gone that the claims and views of science and experts were automatically accepted because of mythical «God given» authority or a «unique scientific method»" (p. 218) is the best recapitulation of the reviewed book.

Corrigendum

In the Journal Teme, XLVII, No 4, October - December, 2023, in the article:

Jelena Grubor, Jasmin Halitović

THE DEGREE OF NEGATIVITY OF MORPHOLOGICAL, SYNTACTIC AND LEXICAL NEGATION IN ENGLISH AS SEEN BY ENGLISH LANGUAGE AND LITERATURE STUDENTS

TEME, XLVII, No. 4, October - December 2023, pp. 841-856

<https://doi.org/10.22190/TEME221004052G>

in online pdf and printed version of article, in chapter References, reference:

Halitović, J. (2021). Negative forms in the English language. Unpublished master's thesis. State University of Novi Pazar, Serbia.

was omitted (page 854) and according to that the last paragraph on page 847 was corrected.

The Editor-in-Chief has decided to publish a corrigendum for this article, as well as corrected pages 847 and 854.

Link to the corrected article:

<http://teme2.junis.ni.ac.rs/index.php/TEME/article/view/1712>

<https://doi.org/10.22190/TEME221004052G>

Sample

The final sample included N=91 ELL students, aged from 18 to 28 (M=22.07, StD=2.17), unevenly distributed according to geographical distribution (Novi Pazar, N=70, and Kragujevac, N=21) due to the voluntary nature of the research, and the sex criterion (m=22; f=69), which is commonplace in language acquisition studies. The participants were enrolled in different years of study: Year 1 (N=14), Year 2 (N=31), Year 3 (N=12), Year 4 (N=20), and Year 5 (N=14). As regards the initial age, they started learning English formally approximately at the age of 9 (M=9.25, StD=4.31).

The reason behind choosing ELL students was the assumption that they have better knowledge of the linguistic phenomenon of negation, either theoretically or intuitively, and, above all, they are expected to have better overall mastery of English.

Instruments and Procedures

To collect data, we devised a sociodemographic questionnaire to determine the background data on the participants (age, sex, year of study, year of enrolment, initial age of learning English formally), as well as thirty-two out of seventy items of the *Polarity Scale* (Halitović, 2021) to determine the participants' perception of negativity degrees. The employed seven-point Likert-type scale has values ranging from 1 – *absolutely negative* to 7 – *absolutely positive*, and the selected items were categorised as to affixal negation (e.g. *Her attendance was irregular*), its syntactic counterpart with the particle *not* (e.g. *Her visits were not regular*), and lexical negation with negatively keyed words (e.g. *They seldom meet up with their cousins*). Regarding the last category, we assumed a certain scalarity (i.e. different degrees of negativity), similar to scalar implicature interpretation, by including the absolutely negative adverb (e.g. *She never smiles*), semi-negatives (e.g. *I hardly know you*), and negated frequency and quantity adverbs (e.g. *He doesn't come often, I didn't sleep much*)³. Finally, we included corresponding pairs (e.g. *not considerate* vs. *inconsiderate*) to check whether there is a difference between affixal and syntactic negation. The scale made use of ten pairs of affixal vs. syntactic negation of adjectives (Neg. prefix + Adj, not + Adj.), and twelve items with adverbs, with four items distributed to each of the following categories: the absolutely negative adverb, semi-negatives, and negated adverbs of frequency and quantity. The scale reliability test has shown good internal consistency (Cronbach's $\alpha=.878$).

³ In formal semantics, the assumption that *often* and *many* are corresponding pairs is taken *a priori*, without subjecting it to empirical testing. However, recent research provides evidence that patterns of quantificational force lexicalisation may indeed be similar for the two English adverbs (Alstott, & Jasbi, 2020);

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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).

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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**
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- **Paper title in Serbian**
- **Abstract in Serbian**, followed by 5 key words.
- 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.

Appendices. should be marked by *letters* (sequentially), e.g. Appendix A, Appendix B etc., and should contain a title describing the content of the appendix. When there is only one appendix, no letters are necessary in its title (only "Appendix").

➤ **Literature (References).** A complete list of references should be provided as a separate section at the end of the paper. The references should be listed in accordance with the **APA Style**. The references should be listed alphabetically, by the authors' last (family) names. For publication titles in Serbian, the English translation should also be

provided in brackets. The works by the same author should be listed chronologically (from the most to the least recent ones). Wherever possible, provide the DOI number, too, in addition to other reference data.

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Journal papers and articles – 1 author

In-text citation:

(Manouselis, 2008), i.e. (Manouselis, 2008, p. 55)

In ‘References’:

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.

Journal papers and articles – more than 6 authors

In-text citation:

(Cummings et al., 2010, p. 833)

In ‘References’:

Cummings, E., Schermerhorn, A., Merrilees, C., Goetze-Morey, M., Shirlow, P., & Cairns, E. (2010). Political violence and child adjustment in Northern Ireland: Testing pathways in a social-ecological model including single-and two-parent families. *Developmental Psychology*, 46, 827-841. doi: 10.1037/a0019668

Book – 1 author

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Heschl, A. (2001). *The intelligent genome: On the origin of the human mind by mutation and selection*. New York, NY: Springer-Verlag.

Book – edited volume

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Lenzenweger, M. F., & Hooley, J. M. (Eds.). (2002). *Principles of experimental psychopathology: Essays in honor of Brendan A. Maher*. Washington, DC: American Psychological Association.

Paper or chapter in an edited volume**In-text citation:**

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Papers in Conference Proceedings**In-text citation:**

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Bubanj, S., Milenković, S., Stanković, R., Bubanj, R., Atanasković, A., Živanović, P. et al. (2010). Correlation of explosive strength and frontal postural status. In: Stanković, R. (Ed.): *XIV International Scientific Congress FIS Communications 2010 in Sport, Physical Education and Recreation* (191-196). Niš: University of Niš, Faculty of Sport and Physical Education.

PhD Dissertations, MA Theses**In-text citation:**

(Gibson, 2007)

In ‘References’:

Gibson, L. S. (2007). *Considering critical thinking and History 12: One teacher’s story* (Master’s thesis). Retrieved from <https://circle.ubc.ca/>

Institutions as authors**In-text citation:**

(Републички завод за статистику, 2011)

In ‘References’:

Републички завод за статистику. *Месечни статистички билтен*. Бр. 11 (2011).

Laws**In-text citation:**

(Закон о основама система васпитања и образовања, 2004, чл. 5, ст. 2, тач. 3.)

In ‘References’:

Закон о основама система васпитања и образовања, Службени гласник РС. Бр. 62 (2004)

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| Legal and other documents |
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In-text citation:

(Legal Consequences for States of the Continued Presence of South Africa in Namibia (South West Africa) notwithstanding Security Council Resolution 276, 1971)

In ‘References’:

Legal Consequences for States of the Continued Presence of South Africa in Namibia (South West Africa) notwithstanding Security Council Resolution 276, (1970), ICJ Reports (1971) 12, at 14

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