

## Észak-magyarországi Stratégiai Füzetek Gazdaság-Régió-Társadalom

### *Strategic Issues of Northern Hungary Economy-Region-Society*

Térgazdaságtani és az üzleti kutatások lektorált tudományos folyóirata.  
*A peer-reviewed academic journal of spatial economics and business research.*

Megjelenik évente négyszer a Miskolci Egyetem Gazdaságtudományi Kara és a  
Nemzetstratégiai Kutatóintézet támogatásával.  
*It is published four times a year with the support of the Faculty of Economics of the University  
of Miskolc and the Research Institute for National Strategy.*

A folyóiratban megjelenő tanulmányokat két független szakértő lektorálta és ajánlotta közlésre.  
*The papers published in the journal have been edited and recommended for publication by two  
independent experts.*

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**Magyar Tudományos Akadémia IX. Gazdaság- és Jogtudományok Osztály,  
Regionális Tudományok Bizottsága: B**

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A folyóiratot indexeli: EBSCO, REPEC, Magyar Tudományos Művek Tára (MTMT)  
*The journal is indexed by: EBSCO, REPEC, MTMT*

**Kiadó / Publisher:**

Miskolci Egyetem Gazdaságtudományi Kar  
University of Miskolc, Faculty of Economics

**Szerkesztőség / Editorial Office:**

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MAXIMA CS-A Nyomdai és Kereskedelmi Szolgáltató Kft

ISSN 1786-1594 (Nyomtatott)

ISSN 2560-2926 (Online)

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## Editorial preface

The geopolitical and global economic realignment that has taken place in recent years has created a new situation in many respects. As a result, our previous perceptions of our environment and the world have changed and are changing. The process of transforming the space of power has only just begun and is far from complete. It is hardly wrong to say that positive and negative events will continue to transform the force field. There are a number of political and economic policy factors that hinder clarity. It is for the future to address these.

As the studies in this year's second English-language issue of our journal show, these changes will affect not only the positions, dependencies, economic, social and ecological sustainability of countries in the division of labour, but also the well-being and prosperity of those living in the centres and peripheries.

Sustainability, which is in the public interest, is a key condition for this. The studies in the current issue of our journal provide contributions to this process and its consequences (without claiming to be exhaustive).

Miskolc, June 2024

Prof. Dr. György Kocziszky

## TANULMÁNYOK / STUDIES

*Levente Horváth*<sup>1</sup>

### *BRI and the changing world order*

*China celebrating the 10 anniversary of the Belt and Road Initiative what was born as an economical cooperation, but after 10 years we can realize that the BRI is more than that. Capitalizing on their political and economic achievements in the 21st century, Asian countries are calling for a new world order. We are witnessing the emergence of a new multipolar and multicultural world order, but little has been said about the structure of this new system. China can offer many countries a new alternative for cooperation, thanks to the success of the Belt and Road Initiative, which can be seen as a framework for a new world order. In my study, through an analysis of China's vision of world order and a look beyond Western thinking, I examine whether the Belt and Road can indeed be the foundation of a new world order.*

*Keywords: China, Belt and Road Initiative, world order*

*JEL code: F02*

<https://doi.org/10.32976/stratfuz.2024.13>

### **1. Introduction**

In recent years, we have heard from Chinese and Russian leaders on many platforms that the world needs a harmonious, multipolar world order that should not be run by one country or a single small community. Asian countries reject hegemony and constantly promote peaceful dialogue and joint cooperation. Although it is only in the last few years that we have often read in Western media about Chinese and Russian leaders' statements to this effect, in fact, the discourse in Asian countries has covered this for decades; however, until now there has been no economically and politically strong country or community that could adequately represent this idea on international platforms. So why do we hear about it only in the recent years?

At the beginning of the 21st century, a new world order is emerging as Asian countries gain economic strength and rise. The last 500 years have been characterised by Western dominance, with the United States of America, after World War II, being the only country to emerge from the conflict unscathed in terms of territory, and at the time producing 60% of the world's GNP. It defined its leadership role on the basis of its own domestic political experience. After the Cold War, as the first and only global power, it was even more dominant when it came to shaping the new world order. The US was a leader in four crucial areas of global power: military, economic, technological and cultural. It was present in different parts of the world through its dominance of these four areas, extending its influence to parts of Asia that had hitherto been independent thereof. Part of the American system are global organisations such as the IMF or the World Bank, which represent global interests, and which were in fact created at the initiative of the United States following the Bretton Woods Conference in 1944, and which are - in reality - under American influence. So the world's affairs are decided in Washington, "and that is where the power game has to be played, and played according to America's domestic rules" (Brzeziński, 2017, p. 48). Today, however, "in the favourite phrases of historians, 'the expansion of the West' ended and 'the revolt against the West' began [...]" Western power declined relative to the power of other civilisations [...] the international system expanded beyond the West and became

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multicivilisational" (Huntington, 2019, p. 71). The 500-year Atlantic era of Western dominance is coming to an end, culminating in unipolar, hegemonic ruling following the Cold War.

In the 21st century, China's economic rise helped it become the second largest economy in the world, and it launched the Belt and Road Initiative in 2013, based on mutual benefits, peaceful coexistence and respect for each other. In the past 10 years, more than 151 countries and 32 international organisations have joined the Chinese initiative, bringing a new kind of connectivity and cooperation to international politics, which could even serve as the framework for the new world order that is currently taking shape.

In this study, I examine China's vision of world order, the emergence of the Belt and Road Initiative and its place and role in the new world order.

## 2. World order

In 1877, the notion of the Western world order was articulated eloquently by János Arany as below:

In the past the warring nations  
Did not follow any precept:  
The strong plundered what he could, and  
Everything he looted, he kept.

That has changed now, as the world has  
A more legalistic flavour:  
When the strong now do some mischief  
They confer and – vote in favour.

We can see, in the past 150 years there is no change in the world order, the superpowers are deciding about the world order. But what is world order exactly?

In international politics, and even today, the phrase world order is frequently used, with no general definition and with many different interpretations and uses, taking the meaning of world order as evidence. According to *The Encyclopaedia of Diplomacy* (Bába, 2018), world order is defined differently from different perspectives:

1. "world order is identified with norms that regulate relations between states on a global scale, norms that are largely absent or not respected";
2. "other approaches emphasise the subordination of global processes to physical, natural laws, spiritual and moral values, and the interests of power".
3. "The representatives of the legal-normative approach seek ways and means to create a just and regulated world order that does not yet exist,
4. according to the descriptive, pragmatic approach of economic and political science, world order is – at any given time – an interdependent set of world economic, political and ecological systems, ideas and cultures operating in a given period."

In addition to these approaches, the encyclopaedia also distinguishes between unipolar, bipolar and multipolar world orders, which give new meaning to the term.

There is no single definition of world order in international literature, but Henry Kissinger's *World Order*, in which he explores and discusses the ideas of world order over 430 pages, is certainly outstanding. According to Kissinger (2015), the world order we usually talk about is in fact the system established in the context of the Peace of Westphalia in 1648. Kissinger, however, could not provide an exact formulation of world order, and this paper does not attempt to do so either.

Defining world order is not easy, because looking at world history, it is only by the end of the 20th century and the beginning of the 21st century that we can say that the world has become fully globalised – in Marshall McLuhan's (2001, p. 45) words, a "global village". Throughout world history, some civilisations, or even continents, have built up separate systems independent of one another, and regional "world orders" have emerged. In fact, the Peace of Westphalia also became

the set of rules of the world's great powers at the time, and not all civilisations and regions across the globe took part in the 30-year war.

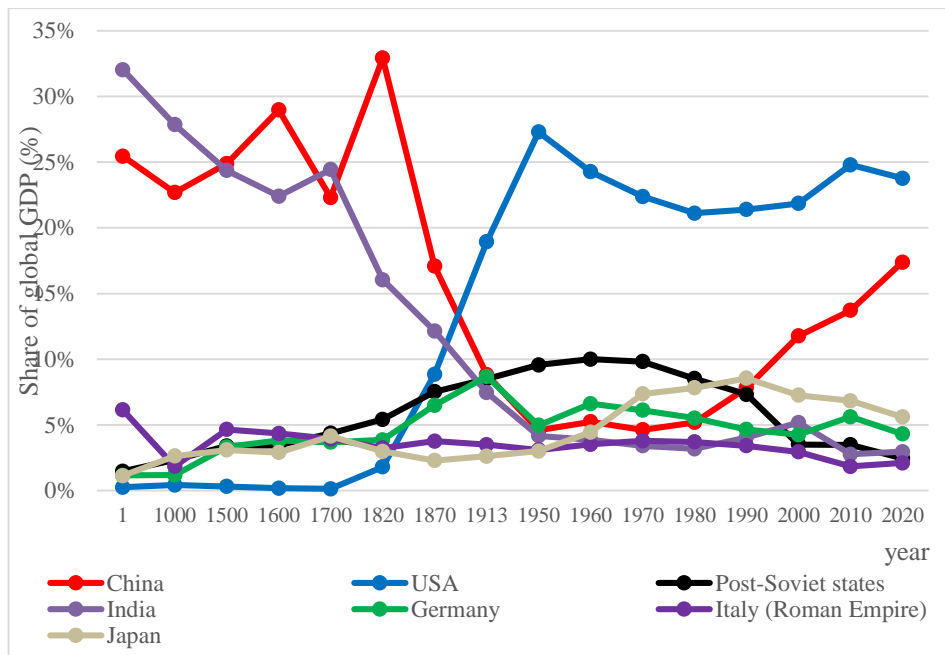
As I mentioned above, there is no single concept of world order, thus it is worth examining what notions of and ideas around world order have developed in other regions and civilisations, and how they view them. Given the relevance of the study – and the volume of constraints – I will present the Chinese definition of world order.

### **3. China and the world order**

In the course of world history, various civilisations were initially completely separated in space and time, then around 1500 BC, neighbouring civilisations began to “meet”, but even in the 10th century AD, it took hundreds of years for ideas and technology to move from civilisation to civilisation (Huntington, 2019, pp. 63-64). Throughout its 5,000-year history, China developed “far away” from other civilisations, isolated by natural borders. The Chinese Empire saw the people beyond its borders as “barbarians”, as it was economically, politically and socially more advanced and more organised. Unlike Western civilisation, China had no colonial intentions. Chinese naval fleets led by Chinese admiral Zheng He had already sailed across Southeast Asia in the early 1400s, reaching as far as Africa. But the Chinese ships did not sail the seas with colonial intentions, China did not make territorial claims on foreign countries, but proclaimed a China-centred world, and foreign people had to acknowledge the sovereignty of the Chinese emperor (Kissinger, 2017, p. 27). Throughout history, until its “encounter” with Western civilisation in the 19th century, China saw itself as the centre of the world. Its Chinese name (Zhong Guo - 中国 – Middle Country) is the origin of the name Middle Kingdom. China also expected the surrounding people and countries to regard China as the centre of the world and the emperor as the Son of Heaven (Ye, 1998, p. 4).

China’s 150 years of humiliation, which Brzeziński (2017) called a historical aberration in his book *The Grand Chessboard*, began after the violent emergence of the West. The blame for these 150 years of humiliation is borne by Great Britain because of the Opium War; Japan because of the predatory wars in the late 19th and mid-20th centuries; Russia because of protracted encroachment on Chinese territories in the North and the Soviet-Chinese estrangement; and, lastly, America because, through its Asian presence and support of Japan, it stood in the way of China's external aspirations (Brzeziński, 2017, p. 223). The four great powers showed China that there is another world order, one of global scale, beyond the China-centred world order, whose rules are based on Western culture (Horváth, 2022).

By the 1940s, China had achieved reunification with a strong central power, foreign powers had been ousted and, in 1949, the People's Republic of China was established, which then regained its rightful place in the world under the policies of the “Chinese Dream” and the “Chinese Renaissance”, since from 0 AD until the advent of the West, China accounted for 20-30% of the world economy (Figure 1).



**Figure 1** The development of the world economy from 0 AD to present day

Source: own editing based on Angus Maddison's *The World Economy - Historical Statistics* and the World Bank database

By the 21st century, as can be seen in Figure 1, China had become the second largest economy in the world. According to Justin Yifu Lin (林毅夫, 1952-), Chinese economist and former World Bank Vice President, China has an increasing role and responsibility in the world economy, but the rules of the game of the current US-dominated world order were laid down after World War II. From the perspective of Beijing, China is entitled to a much greater say in shaping the world order than it currently has, given its economic achievements and global economic responsibilities, which is why China has launched the One Belt, One Road initiative (Li et al., 2020, pp. 3-5). In addition, of course, there were and are a number of macroeconomic factors that have contributed to China's emergence as a globalisation leader.

As China's economic and political strength grows, its voice is also becoming more audible in the international political arena. Unlike in the past, Chinese diplomats are increasingly speaking out in defence of their country, but without interfering in the internal politics of other countries, and as a result they are often labelled "aggressive" or "war wolves" in Western media, even though this is a far cry from the Western diplomats' statements that we have become accustomed to in recent decades.

While China's vision for the world and a new multipolar world order has been increasingly heard on international platforms in recent years, it is not in fact a "recent" development. Looking at Chinese and Western archival footage and writings, we can see that since the founding of the People's Republic of China, there have been continuous proposals for a new world order, the framework for which has already been outlined. These are presented below.

#### 4. Chinese world order

In his book *The Religion of China: Confucianism and Taoism*, German sociologist Max Weber (1915) defined Confucian rationalism as a rational adaptation to the world – in contrast to the Western concept of rational control of the world.

Since the founding of the People's Republic of China, China's international relations have also been constantly changing, depending on the international situation. According to Wang (2019), it can be seen as going through four phases: initially, it moved from a policy of "leaning to one side" towards independence, then it gained a more serious role for itself by becoming a nuclear power, the third phase is when it returned to the UN, by which time it had become a political and military superpower, and finally, thanks to the success of the "reform and opening-up" policy, it became one of the leaders in economic terms, thus becoming a real superpower (Wang, 2019, p. 16). Throughout this time, however, the position of the People's Republic of China has remained unchanged: a new world order must be established. The framework for this had been set over the past 70 years.

#### ***4.1. "Five Principles of Peaceful Coexistence"***

In 1949, the foreign policy guidelines promulgated by Mao Zedong at the founding of the People's Republic already included peaceful coexistence, but it was on 31 December 1953 that Chinese Premier Zhou Enlai first elaborated on peaceful coexistence in the form of five principles at a reception for an Indian delegation, and then signed a joint declaration of agreement on the five principles with India on 28 June 1954 and with Myanmar on 29 June 1954 (MFA, 2023):

1. mutual respect for each other's territorial integrity and sovereignty;
2. mutual non-aggression;
3. mutual non-interference in each other's internal affairs;
4. equality and cooperation for mutual benefit; and
5. peaceful coexistence.

Peaceful coexistence actually originated in Chinese culture, and if we look at Chinese history, we can see that although these five principles were not stated at the time, they were also preached by ancient Chinese strategists and philosophers. The works of Laozi, Confucius, Mozi and many other Chinese sages have a strong anti-war and pro-peace stance. In his work *Tao Te Ching*, Laozi writes explicitly about peaceful coexistence, mutual respect and harmonious relations (Horváth, 2022).

Although the "Five Principles of Peaceful Coexistence" initially applied to Sino-Indian relations, China later extended these to its foreign relations with other countries, and in 1955 they were presented at the Afro-Asian Conference in Bandung.

On the 60th anniversary of the Five Principles of Peaceful Coexistence (28 June 2014), Chinese President Xi Jinping highlighted in his speech that having been tested by the evolution of international relations over the past six decades, "the Five Principles of Peaceful Coexistence", as open and inclusive principles of international law, embody the values of sovereignty, justice, democracy and rule of law (PRC, 2014).

#### ***4.2. The Bandung Conference***

On 18 April 1955, the Afro-Asian conference, co-convened by India, Indonesia, Myanmar, Sri Lanka and Pakistan, began in Bandung, Indonesia. The conference was attended by 29 Asian and African countries that were not part of either of the post-World War II Cold War or bipolar world order blocs and were fighting for their own independence. It was the first international Afro-Asian conference without the participation of a colonising country.

A year before the conference, China had separately proclaimed the "Five Principles of Peaceful Coexistence" with India and Myanmar, the two founding countries of the Bandung Conference, and China was, therefore, invited to the conference, represented by Premier Zhou Enlai. The Western bloc tried to prevent Chinese participation, with an unsuccessful bomb attack on the Chinese prime minister (Zhang, 2015).

A 10-point declaration was issued at the conference, in which the signatories reaffirmed the ideas contained in the UN Charter: respect for the sovereignty of nations, respect for the rules of international law, non-violent and peaceful resolution of conflicts, respect for human rights, the elimination of racial discrimination, cooperation based on mutual benefit, non-interference in each

other's internal affairs, etc., i.e. building on China's "Five Principles of Peaceful Coexistence", an expanded 10-point set of principles for international relations was established, thus proclaiming a framework for a new world order.

#### 4.3. "Three worlds" theory

Mao Zedong's "three worlds" theory was presented by Deng Xiaoping at the 1974 UN General Assembly, and divided the world into three parts, as follows (Deng, 1974):

- The "first world" comprises the two superpowers, the US and the Soviet Union, which want to gain hegemonic power, control the developing countries of Asia, South America and Africa and intimidate less developed countries.
- The "second world" means the developed countries.
- And the "third world" includes developing countries in Asia, South America and Africa.

In fact, with the "three worlds" theory, China hoped to establish a new system of relations in which it positioned itself as the leader of the third world. Deng also argued that the main threat to international peace and security is posed by the hegemonic ambitions of the great powers (Bartha-Rigó, 2018, p. 67).

#### 4.4. Policy of "reform and opening-up"

In the context of the "reform and opening-up" policy announced by Deng Xiaoping in 1978, Deng addressed the idea of a new world order in several speeches. On 4 March 1985, he told a gathering of foreign leaders that "the outstanding issue in the world today, the global strategic issue, is peace and development. The question of peace is an East-West issue, while the question of development is a North-South issue. This can all be summed up in the four words: East, West, North, South. The North-South problem is the central issue" (Deng, 1993, p. 105). Deng believed that the economic gap between the North and the South was the source of the unrest, and that it was all based on an "inadequate world order", and that a new world order must be established based on the "Five Principles of Peaceful Coexistence" (Deng, 1993, p. 93).

#### 4.5. "Harmonious world"

In April 2005, Chinese Head of State Hu Jintao announced the concept of a "harmonious world" in his speech at the Jakarta Afro-Asian Conference and in September 2005 at the UN Headquarters, where he said that countries should "promote peaceful coexistence, equal dialogue, development and prosperity among different cultures, and jointly build a harmonious world together".

On 1 July 2005, during Hu Jintao's visit to Russia, he and Putin issued a joint declaration on the international system for the 21st century, which already included the "harmonious world" that the two countries would work together with other countries to establish.

### 5. The Belt and Road Initiative

In 2013, China launched the One Belt, One Road (initially called One Belt, One Road (OBOR), later renamed BRI) initiative, which is based on a Chinese vision of a common, peaceful, win-win cooperation.

Prior to the announcement of the BRI, President Xi Jinping had already been advocating a new world order on various platforms: "One must not cling to the Cold War mentality or zero-sum<sup>2</sup> game thinking since the times have changed. We must keep pace with new trends in the 21st century" (Xi, 2017, p. 305).

In his speeches following his inauguration, President Xi Jinping spoke of peaceful development, mutually beneficial cooperation, harmony, close cooperation among nations, win-win situations, the equality and independence of nations and the new world order, laying the foundation for his speech entitled *"Promote Friendship between Our People and Work Together to Build a Bright Future"* (弘扬人民友谊 共创美好未来) given on 7 September 2013 at Nazarbayev University during his official visit to Kazakhstan. It was the first time that the Chinese head of state had spoken about the Silk Road Economic Belt concept: "To forge closer economic ties, deepen

<sup>2</sup> Zero-sum, meaning that as much as one wins, the other loses.

cooperation and expand development space in the Eurasian region, we should take an innovative approach and jointly build an ‘economic belt along the Silk Road’” (Xi, 2017, p. 324).

At the time, President Xi Jinping even outlined the five pillars of the future One Belt, One Road initiative:

- *"First, we need to step up policy communication.*  
Countries should have full discussions on development strategies and policy response, work out plans and measures for advancing regional cooperation through consultation in the spirit of seeking common ground while reserving differences, and give the policy and legal ‘green light’ to regional economic integration" (Xi, 2017, p. 324).
- *"Second, we need to improve road connectivity.*  
[...] We will actively discuss the best way to improve cross-border transportation infrastructure and work towards a transportation network connecting East Asia, West Asia and South Asia to facilitate economic development and travel in the region" (Xi, 2017, p. 324).
- *"Third, we need to promote unimpeded trade.*  
The proposed ‘economic belt along the Silk Road’ is inhabited by close to 3 billion people and represents the biggest market in the world with unparalleled potential. The potential for trade and investment cooperation between the relevant countries is enormous. We should discuss a proper arrangement for trade and investment facilitation, remove trade barriers, reduce trade and investment costs, increase the speed and quality of regional economic flows and achieve win--win progress in the region" (Xi, 2017, pp. 324-325).
- *"Fourth, we need to enhance monetary circulation.*  
If our region can realise local currency convertibility and settlement under current and capital accounts, it will significantly lower circulation costs, increase our ability to fend off financial risks and make our region more economically competitive throughout the world" (Xi, 2015, p. 325).
- *"Fifth, we need to increase understanding between our people"* (Xi, 2017, p. 324).  
"Amity between the people holds the key to good relations between states. To have productive cooperation in the above--mentioned areas, we need the support of our people. We should encourage more friendly exchanges between our people to enhance mutual understanding and traditional friendship and build strong public support and a solid social foundation for regional cooperation" (Xi, 2017, p. 325).

One month later, on 3 October 2013, President Xi Jinping paid an official visit to Indonesia to attend the Asia-Pacific Economic Cooperation (APEC) meeting. He also outlined the concept of the Maritime Silk Road in his speech to the People’s Representative Council of Indonesia on

*Building a China-ASEAN Shared Future Together* (携手建设中国-东盟命运共同体): "Southeast Asia has since ancient times been an important hub along the ancient Maritime Silk Road. China will strengthen maritime cooperation with ASEAN countries to make good use of the China-ASEAN Maritime Cooperation Fund set up by the Chinese government and vigorously develop maritime partnership in a joint effort to build the Maritime Silk Road of the 21st century." He also proposed the establishment of the Asian Infrastructure Bank (Xi, 2017, pp. 327-328).

In November 2013, the 3rd Plenary Session of the Central Committee of the Communist Party of China (CPC), elected at the 18th Congress of the CPC, adopted the *Decision of the Central Committee of the Communist Party of China on Some Major Issues Concerning Comprehensively Deepening the Reform*, which, among many other important decisions, stated that it would support and strengthen the construction of the Silk Road Economic Belt and the Maritime Silk Roadinfrastructure. At the annual Central Economic Work Conference in December, Premier Xi Jinping again called for support for the two concepts and urged the preparation of strategic plans. In March 2014, Prime Minister Li Keqiang highlighted in his summary of the government's annual work that one of the government's most important tasks is to plan silk road programmes (CICIR, 2018, p. 4).

## 6. Belt and Road Initiative and a new world order

The Belt and Road Initiative, also known as the New Silk Road, was based on the ancient Silk Road, which in fact also changed the world order of the time. At that time, civilisations lived in isolation, but with the advent of silk roads, trade between countries began, and cultural and religious ideas and beliefs were “on the move”. Thus, the interconnection of the separate “world islands”, their merging into one world, began.

The launch of the Belt and Road Initiative has also had a major impact in connecting the Eurasian countries. Eurasian connectivity has been initiated by other countries in the past, and the idea of building an infrastructure system is not far removed from the ideas of European countries, as the Trans-Asian Railway, a single freight rail network linking Europe and Asia over 14,000 kilometres, was established in 1960. The EU then launched the TRACECA (Transport Corridor Europe, Caucasus, Asia) project in 1995, which serves to link the EU with China by bypassing Russia. TRACECA is a multilateral programme with 12 countries in addition to the EU Member States, and has five working groups dealing with maritime transport, air transport, road and rail, transport security and transport infrastructure.

However, as China has embarked on the largest economic multilateral cooperation of the 21st century with the One Belt, One Road initiative, it is seen in Western eyes as a very serious, aggressive geopolitical aspiration, because in Western geopolitical thinking – as the “father” of geopolitics, Mackinder, put it in his 1904 lecture – the political consolidation of the Eurasian continent (*continental consolidation*), i.e. the unification of the “core area” under the control of one power and the acquisition of control over the world's resources, is a threat (Gaddis, 2018). The BRI, in the eyes of the West, is precisely the kind of “continental consolidation” that could challenge the Atlantic era, dominated by the maritime powers of the past 500 years.

The United States does not support or participate in the Chinese initiative for geopolitical reasons, as Eurasia is the main geopolitical space for the US, and its global primacy directly depends on how it can maintain its dominance in Eurasia as a whole (Brzeziński, 2017, p. 51). The concern of the United States is that China, by building its infrastructure network abroad, could gain geopolitical power in Eurasia similar to that held by the United States in North America vis-à-vis Canada and Mexico. China's geopolitical isolation from the mainland is disappearing. Moreover, in the second half of the 20th century, the motivation for US infrastructure investments was the construction of military bases, meaning that the US believes that China is preparing to gain geopolitical power and build military bases (Péti, 2017, pp. 23-24). Viktor Orbán, Prime Minister of Hungary, described this attitude in his 2023 Tüszvényos speech, as follows: “Experience shows that the dominant great power tends to see itself as more benevolent and better-intentioned than it really is, and attributes malice to its challenger more often than is – or should be – justified. Consequently, the starting point for each opposing party is not the intentions of the counterpart, but its capabilities: not what the counterpart wants to do, but what it is capable of doing.”

By the 21st century, China has become the second strongest economy in the world, and as a result, it has established economic ties with almost every country in the world, and Chinese capital and trade are everywhere, similar to other major economic powers. However, with the Belt and Road Initiative, China has introduced a new *win-win* mentality into international politics, instead of the Western zero-sum mentality.

In addition, the Belt and Road Initiative contains the ideas of former leaders of the People's Republic of China on world order, such as the “Five Principles of Peaceful Coexistence”, “harmonious world”, etc. The five pillars of the Chinese initiative also present a framework for the development of a new international order, different from the current Western-dominated world order:

- **Political relations.** With the Belt and Road Initiative, the Chinese state did not create a unilateral Chinese policy, but a common platform where participating states can discuss and negotiate as equals on the future development of countries, regions and the world. To make this even more clear, a BRI Forum has also been held every two years since

2017, welcoming heads of state from participating countries to discuss opportunities together. China is also engaged in a number of multilateral and bilateral negotiations on cooperation with different countries and regions.

According to official Chinese rhetoric, China does not want to impose a world order of its own devising and design on other countries, but rather a system based on common discussion, *win-win* cooperation and common development.

- **Infrastructural connectivity.** Throughout world history, we have often seen that building adequate infrastructure is the basis of trade and other economic cooperation. Ancient cities flourished with the development of trade routes, and likewise disappeared with the decline thereof. The railways and ports built during the industrial revolution also gave a big boost to globalisation. In today's globalised world, it is even more striking that developed cities are located along trade routes. However, these routes were created at sea, and 90% of trade is still carried by sea. The Chinese initiative also involves the mainland countries of the Eurasian region in trade through new rail, highway and other infrastructure investments, thus supporting and assisting in their economic strengthening and development.
- **Trade relations.** Free trade is one of the foundations of globalisation, with trade and investment being two of the most important elements of economic growth for countries. Free trade removes barriers to trade. In addition, investment in foreign countries also supports job creation for local populations, and trade also serves to raise living standards for people. Throughout history, there are many Western examples of free-trade cooperation, the usefulness of which David Ricardo wrote about in his book *On the Principles of Political Economy and Taxation* as early as the beginning of the 19th century. Thus, the Western world is already familiar with and supports the idea.
- **Financial integrity.** Strong financial cooperation between countries is needed to create a stable financial environment, to support international trade by reducing costs and to deal with emerging economic crises. History has seen many examples of financial cooperation and the creation of international financial institutions, including the IMF, World Bank, EBRD, Asian Development Bank, among others, reflecting the importance of financial cooperation between countries. The European Union reached the highest level of financial integration in 1999 when it created a monetary union with a single currency, the euro. The Belt and Road Initiative has also created a new international financial institution, the Asian Infrastructure Investment Bank (AIIB), to support infrastructure investment and connectivity under the Chinese initiative.
- **Cultural connectivity.** The basis of good international cooperation is that the countries involved in cooperation understand each other's culture, way of thinking and value system. Without these, the parties cannot be expected to agree or compromise on certain issues. In diplomacy, too, more emphasis must be placed on cultural events and cultural diplomacy, through which international relations and international trade can be strengthened. Furthermore, the idea of a "harmonious world", which is about cooperation and mutual respect between civilisations, is also reflected in the pillar of "cultural connectivity".

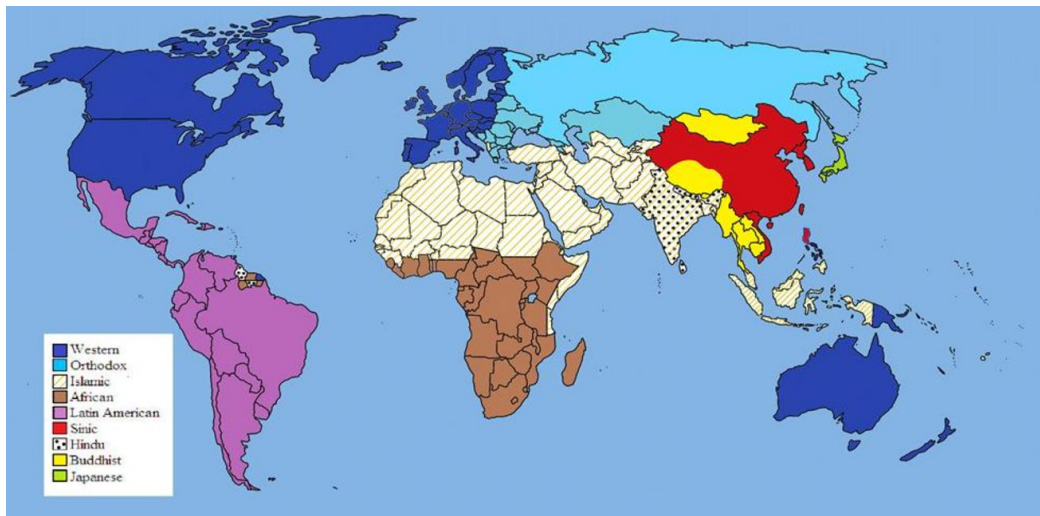
## 7. Summary

Although at the end of the 20th century the Western world urged China to accept and adapt to the rules of the international order, today, with China's rise to power, China's rise is viewed differently, the Belt and Road Initiative is perceived as a colonialist military operation and China's other multilateral relationships are seen as a threat.

China as the Middle Kingdom in Western thinking is understood as China's desire to be the hegemonic ruler of the world. Moreover, the Western mindset is that Chinese foreign economic and foreign policy actions are very similar to the instruments of past Western colonialism. Moreover, in Western tradition, especially in its left-wing, post-Marxist tendency, hierarchy is in

itself an immoral and harmful feature. According to the radical egalitarian view, which is often a feature of critical disciplines, hierarchies of all kinds are sharply opposed to equality, which has a positive and absolute value. In other words, in this view, hierarchical international relations, whether stable, peaceful, harmonious or beneficial to many, are inherently illegitimate because of their hierarchical nature. By contrast, international relations based on equality, whatever their flaws in practice, are inherently legitimate because of their egalitarian underpinnings. The West judges Chinese thinking based on its own historical, social and political development. However, this is not necessarily the right approach, as the Asian country has developed in a completely different environment over the past 5,000 years, and Western terminology cannot be applied to Chinese thinking one-to-one. To understand Chinese geopolitical thinking, we also need to understand China's historical, cultural and social development.

If we abandon the mindset of the past 500 years of the Atlantic era and look at the relations between civilisations from "above, from a distance", if we look at the foreign and domestic policies of different regions in perspective, if we leave the "Western glasses" through which we look at international politics, we can see, that, in addition to Western civilisation, there are at least seven and, according to some researchers, as many as 13 other civilisations in the world, each with a history, social and cultural development and religion completely different to that of the West, and each with a different vision of international relations, ideologies and world order. The West, as the current leading civilisation, naturally insists on its autocracy; it cannot and will not give up its primacy. Other civilisations, however, have become economically empowered, have, in Huntington's words, "rebelled" and are calling for a new multipolar world order. The knowledge and study of civilisations is also important because, if we look at which countries could be the dominant players in the new multipolar world order (China, Russia, India, Iran, Brazil, etc.), we can see that each has a different civilisation (Figure 2).



**Figure 2** Civilisations of the world

Source: Huntington (2019)

So far, we have only read about proposals from different countries for a new world order, but not about the framework for a new world order itself. This is where China took a step forward by launching the Belt and Road Initiative 10 years ago in 2013, which could be the framework for a new world order. As we have seen in the study, it introduced alternative foreign-policy thinking to that of the West, based on the "Five Principles of Peaceful Coexistence". In addition, Western zero-sum cooperation has been replaced by cooperation based on mutual benefits. Demonstrating long-term Chinese thinking, a lengthy strategy has been used to build China's international relations, consolidated in the current Belt and Road Initiative. Although the Chinese initiative does

not have specific targets – how many investments, of what amount, how much trade, etc. should be achieved within the programme – it can provide a framework alternative for an appropriate world order for the world, but especially for non-Western civilisations or non-aligned countries. In international politics, we see with increasing frequency that the Chinese initiative, unlike the Western one, is better received by the various countries: an increasing number of nations are joining the BRICS cooperation, the Belt and Road Initiative, and an increasing number of countries are saying that they do not want to take sides, they want to have good relations with both Western and Chinese countries. This thinking is supported by the Chinese initiative, but rejected by the West, which is pushing for blocks.

This year marks the 10th anniversary of the Belt and Road Initiative, which is being established against a strong Western headwind – US-China trade war, sanctions, etc. It has already made great strides in the past 10 years, but it will take many years or decades to determine whether or not it will actually be the framework for a new world order, because the transformation of the world order requires more than a year or two. In any case, it can be concluded that the Belt and Road Initiative can offer a suitable alternative to the framework of a new multipolar world order.

## References

- Bartha-Rigó M. (2018). *A „Csungkuó” idea biztonsági megközelítése – Értekezés a kínai biztonság és az ENSZ kapcsolatáról*. Doctoral thesis. Corvinus University of Budapest. [http://phd.lib.uni-corvinus.hu/996/1/Bartha\\_Rigo\\_Marta\\_dhu.pdf](http://phd.lib.uni-corvinus.hu/996/1/Bartha_Rigo_Marta_dhu.pdf).
- Bába I. (ed.) (2018). *Diplomáciai Lexikon – A nemzetközi kapcsolatok kézikönyve*. Budapest: Éghajlat Könyvkiadó.
- Brzeziński, Z. (2017). *A Nagy Sakktábla*. Budapest: Antall József Tudásközpont.
- China Institutes of Contemporary International Relations – CICIR [中国现代国际关系研究院] (2018). “一带一路” 读本 [“Understanding the One Belt, One Road” initiative]. 时事出版社[Beijing: Current Affairs Press].
- Gaddis, J. L. (2018). *On Grand Strategy*. New York – London: Penguin Press.
- Horváth L. (2022). *A kínai geopolitikai gondolkodás*. Budapest: Pallas Athéné Könyvkiadó.
- Huntington S. P. (2019). *A civilizációk összecsapása és a világrend átalakulása*. Budapest: Európa Kiadó.
- Kissinger, H. (2015). *Világrend*. Budapest: Antall Tudásközpont.
- Kissinger, H. (2017). *Kínáról*. Budapest: Antall Tudásközpont.
- Li, Y. – Lin Y. – Zheng Y. [厉以宁, 林毅夫, 郑永年] (2020). 读懂一带一路 [Understanding One Belt, One Road]. 中信出版集团 [Beijing: China CITIC Press].
- McLuhan M. (2001). *A Gutenberg-galaxis. A tipográfiai ember létrejötte*. Budapest: Trezor Kiadó.
- MFA – Ministry of Foreign Affairs of the People’s Republic of China (2023). 中国倡导和平共处五项原则 [https://www.mfa.gov.cn/web/ziliao\\_674904/wjs\\_674919/2159\\_674923/200011/t20001107\\_7950050.shtml](https://www.mfa.gov.cn/web/ziliao_674904/wjs_674919/2159_674923/200011/t20001107_7950050.shtml)
- Péti M. (ed.) (2017). *Az Új Selyemút Gazdasági Övezet geostratégiai és földrajzi dimenziói*. Budapest: Corvinus University of Budapest, Institute of Economic Geography, Geoconomy and Sustainable Development.
- PRC – People’s Republic of China Government (2014). 近平在和平共处五项原则发表60周年纪念大会上的讲话 (全文) [Xi Jinping’s speech commemorating the 60th anniversary

- of the proclamation of the "Five Principles of Peaceful Coexistence" (full speech)]. [https://www.gov.cn/xinwen/2014-06/29/content\\_2709613.htm](https://www.gov.cn/xinwen/2014-06/29/content_2709613.htm).
- Teng H. (1974). 邓小平在联大第六届特别会议上的发言 [Deng Xiaoping's presentation at the 6th Special Session of the UN]. 人民出版社 [People's Publishing House].
- Deng X. (1993). 邓小平文选 (3) [Selected speeches of Deng Xiaoping (3)]. 人民出版社 [People's Publishing House].
- Zhang X. (ed.) (2015). *Selected Essays on the History of Contemporary China*. Brill Academic Publication. (pp. 234–248). Hong Li: The Truth Behind the “Kashmir Princess” Incident.
- Xi J. (2017). *Kína kormányzásáról*. Budapest: Antall József Tudásközpont.
- Ye, Z. (叶自成) (1998). 地缘政治与中国外交 [Geopolitics and China's foreign policy]. Beijing: Beijing Press [北京出版社].
- Wang F. (2019). 大国外交 [China's diplomacy]. 北京联合出版公司 [Beijing United Publishing].

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### ***Beijing Forest Carbon Storage Potential Capacity***

*Forests serve as a crucial carbon reservoir. Therefore, optimizing forest carbon storage is a pathway towards achieving carbon neutrality. In this study, the Forest Simulation Optimization System (FSOS) was used to simulate the carbon storage in Beijing forests over 250 years (2018-2268). It was found that under the no management scenario, carbon storage fluctuates with the natural growth and death of trees, with peaks of more than 90 million tons. It proves that forests have a strong capacity of carbon storage. In the management scenario, harvest trees and make them into furniture, total carbon storage is high and maintains a stable level of 108 million tons. This is almost 1.6 times higher than in the no management scenario on average. In addition, the growth rate of carbon storage is fastest in the middle-aged forest and the near-mature forest. Therefore, in order to optimize the carbon sequestration benefits of forests, the forestry sector must pay attention to the age structure of forests in the future. Based on the results of this study, recommendations were made to optimize carbon storage in Beijing forests and to integrate forest managements of Beijing forests into regional economic and environmental planning.*

**Keywords:** carbon storage; forest management; FSOS model.

**JEL code:** Q54

<https://doi.org/10.32976/stratfuz.2024.14>

## **1. INTRODUCTION**

Rising levels of atmospheric carbon dioxide (CO<sub>2</sub>) and the resulting greenhouse effect have caused global climate change. As one of the four major carbon reservoirs, the terrestrial ecosystem plays a major role in regulating the concentration of atmospheric CO<sub>2</sub> (Liu et al. 2012). Forests are the main body of the terrestrial ecosystem, and a crucial part of the global carbon cycle (Daigneault and Favero 2021). Approximately 80% of above-ground carbon storage, and 40% of underground biological carbon storage are in the forests (Wang et al. 2015). Effective use of forest carbon sinks can significantly mitigate climate change (Liu and Wu 2017) and bring economic benefits under good forest governance (Lin and Ge 2019).

To combat climate change, China has proposed to become carbon neutral by 2060. In order to increase forest carbon storage and achieve carbon neutrality on schedule, Beijing has carried out afforestation activities to promote the growth of forest resources reserves (Ren et al. 2023). In this context, it is of great significance to evaluate and optimize forest carbon storage in Beijing for forest management and urban development.

## **2. LITERATURE REVIEW**

Scholars around the world have evaluated and analyzed forest carbon storage, which reflects the important role of forest carbon sequestration (Tu et al. 2023). Jiang et al. evaluated and analyzed the carbon storage of forest ecosystems in Beijing mountain area, and compared the total carbon storage performance of different stand types (Jiang et al. 2019). Chen et al. measured the forest

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carbon storage in the Greater Khingan Mountains and assessed the forest carbon sequestration potential (Chen et al. 2022). Jo et al. and Nowak et al. investigated the forests of Seoul city Park and American city respectively, quantified the carbon storage and sequestration capacity of forests, and confirmed the importance of urban forests in climate change (Jo et al. 2019; Nowak et al. 2013). The results of these studies reflect the strong carbon sequestration capacity of forests. However, their discussions and studies on practical forest management plans are still insufficient. Studies have shown that sustainable forest management leads to enhanced carbon storage, for example, effective management, and diversified tree species (Robert et al. 2022). Bishnu et al. showed that regular management effectively protects ecologically significant tree species in Nepal's subtropical forest when compared with other management approaches (Bishnu et al. 2019). Roth et al. pointed out that potential for future carbon accumulation in the soil was higher in uncut forests and retention-cuts than in clear-cuts in boreal Scots pine (Roth et al. 2023). Composition of tree species has direct and indirect impact on carbon storage (Jia et al. 2022). The direct impact is that different tree species have different carbon storage capacity through their growth rates, wood density and mortality rates (Sugiyama et al. 2024). Tree species diversity also has a direct impact on carbon storage, for example, it has a positive impact on above-ground carbon storage (Rius et al. 2023; Wei et al. 2023). The indirect impact is that tree species diversity can increase carbon storage through multiple factors such as stem density, functional diversity and functional dominance of species (Rius et al. 2023; Wondimu et al. 2021). As for Beijing, the tree species with the largest carbon storage and the largest carbon density is poplar (Ren et al. 2023). It is well known that the carbon storage level of a forest is related to its area, timber volume, tree species, and age classes. However, optimization of forests' carbon storage in Beijing remains challenging.

To optimize forest carbon storage and establish a scientific forest management model, it is essential to consider tree species characteristics and optimize the age structure of the forest through timely and rational harvesting (Zheng et al. 2019). Traditional methods for calculating timber harvest volume include area-based harvesting, maturity-based methods, and second age formula methods (Wu et al. 2022). However, these methods have certain limitations when applied to the complex environment of forests. For example, formula-based methods may struggle to deal with mixed forests, and different methods may yield significantly different results (Dai et al. 2020). Forest simulation optimization system (FSOS) (SFSCCP 2022; Liu 2000) fully considers the age structure, tree species composition, and evolution of forests. It has been applied in the province of British Columbia in Canada and in the Changbai Mountain region of China, achieving good results (Liu et al. 2012; Liu and Han 2009; Liu et al. 2000). FSOS can effectively address forest carbon storage optimization issues, such as determination of forest cutting volume (Wu et al. 2022; Dai et al. 2020).

This research focuses on the optimization of the carbon storage capacity in Beijing. Different management scenarios were analyzed, and the carbon storage was estimated using FSOS. The results can be used by the Forestry and Grassland Administration for management practices and forest management in Beijing, optimizing its carbon storage capacity and contributing to broader goals of carbon neutrality and sustainable development, and mitigating the impacts of climate change.

### 3.METHODOLOGY AND DATA

#### 3.1 FSOS model

FSOS (Liu et al. 2000) was used in this study to simulate carbon storage over 250 years. Simulation was designed for 250 years, considering the lifespan of *platycladus orientalis* is 140 years, the start year is 2018.

The input information include: (1) Tree species, area distributions of tree species in Beijing forests. (2) Tree species growth parameters. (3) Parameters require to calculate carbon storage. All data are described in Section 3.2. Forest stands were generated according to this information. Two different management scenarios were set.

FSOS utilizes these parameters as initial values to generate timber volume and carbon storage over 250 years of each forest stand under the two scenarios with the simulated annealing algorithm (Liu et al. 2000). Output information include: (1) Timber volume of each and all forest stand in each year in the 250-year study period. (2) Carbon storage of each and all forest stand in each year in the 250-year study period.

For scenario two, to optimize forest carbon storage, FSOS was used to simulate multiple times. The objective function is carbon storage of each stand. Control variables are harvest time and harvest percentage.

### 3.2 Data sources and data processing

#### 3.2.1 Tree species parameters

According to the Twelfth Five-Year Plan Survey Statistical Report of Beijing Forest Resource Planning and Design Survey (BFSDI 2016), nine dominant tree species in Beijing forests were selected. They are platycladus orientalis, larch, Chinese pine, toothed oak, birch, populus davidiana, black locust, poplar, and broad-leaf tree. However, other tree species in terms of market value or carbon storage capacity were not considered. The growth parameters of these species are from Biomass and Its Allocation of Forest Ecosystems in China (Luo et al. 2013), shown in (Table 1). The carbon storage parameters of tree species are from Forest Management Carbon Storage Project Methodology (SFAC 2014), shown in (Table 2).

Table 1 Growth parameters of the nine dominant tree species

Tree species	MAI	TMax	MValue
platycladus orientalis	0.4735	80	3
larch	2.3992	60	3
Chinese pine	1.1166	30	3
toothed oak	0.8384	60	3
birch	1.6637	40	3
populus davidiana	1.4959	30	3
black locust	1.8010	18	3
poplar	1.4959	30	3
broad-leaf tree	1.3643	60	3

Source: Biomass and Its Allocation of Forest Ecosystems in China (Luo et al. 2013).

MAI: Maximum Mean Annual Increment ( $\text{m}^3/\text{year}$ ).

TMax: The age when a stand reaches the maximum Mean Annual Increment (years).

MValue: A constant for timber volume, usually equaling 3.

Table 2 Carbon storage parameters of tree species

Tree species	Biomass carbon content	Litter carbon content	Underground/above-ground biomass ratio	Dead wood/forest biomass carbon storage ratio	Trunk density
platycladus orientalis	0.510	0.37	0.220	0.021	0.478
larch	0.521	0.37	0.212	0.021	0.490
Chinese pine	0.521	0.37	0.251	0.021	0.360
toothed oak	0.5	0.37	0.292	0.021	0.676
birch	0.491	0.37	0.248	0.021	0.541
populus davidiana	0.496	0.37	0.227	0.021	0.378
black locust	0.497	0.37	0.261	0.021	0.598

poplar	0.496	0.37	0.227	0.021	0.378
broad-leaf tree	0.490	0.37	0.370	0.021	0.482
Tree species	Equation of above-ground biomass (B <sub>AB</sub> ) and accumulation (V) $B_{AB}=a*V^b$		Equation of percentage of litter biomass to above-ground biomass (LI%) and above-ground biomass (B <sub>TREE_AGB</sub> ) $LI\% = c*e^{d*B_{TREE\_AGB}}$		
	Parameter a	Parameter b	Parameter c	Parameter d	
platycladus orientalis	1.985	0.794	3.76	-0.005	
larch	1.642	0.802	67.413	-0.014	
Chinese pine	2.632	0.697	24.827	-0.023	
toothed oak	1.341	0.896	7.732	-0.005	
birch	1.076	0.902	6.978	-0.004	
populus davidiana	0.943	0.871	12.311	-0.007	
black locust	3.322	0.687	6.978	-0.004	
poplar	0.943	0.871	12.311	-0.007	
broad-leaf tree	3.322	0.687	6.978	-0.004	

Source: Forest Management Carbon Storage Project Methodology (SFAC 2014).

### 3.2.2 Establishing forest stands

Each forest stand has the same tree species and age group. Five age groups were considered, young, middle-aged, near-mature, mature and over-mature. The Five age groups for the nine tree species (Table 1) were obtained from the Regulations for age-class and age-group division of main tree-species and were shown in (Table 3) (SFAC 2017). Each stand's age was then set. With nine tree species and five age groups, there are 45 forest stands.

Table 3 Classification of five age groups of the nine tree species

Tree species	Young stand	Middle-aged stand	Near-mature stand	Mature stand	Over-mature stand
platycladus orientalis	≤60	61-100	101-120	121-160	≥161
larch	≤40	41-60	61-80	81-120	≥121
Chinese pine	≤30	31-50	51-60	61-80	≥81
toothed oak	≤40	41-60	61-80	81-120	≥121
birch	≤30	31-50	51-60	61-80	≥81
populus davidiana	≤20	21-30	31-40	41-60	≥61
black locust	≤10	11-15	16-20	21-30	≥31
poplar	≤20	21-30	31-40	41-60	≥61
broad-leaf tree	≤40	41-60	61-80	81-120	≥121

Source: the Regulations for age-class and age-group division of main tree-species (SFAC 2017).

### 3.2.3 Polygon generation

The area of each forest stand is different. According to the Twelfth Five-Year Plan Survey Statistical Report of Beijing Forest Resource Planning and Design Survey (BFSDI 2016), the area of each forest stand in 2018 was obtained and was shown in (Table 4). Thus, virtual polygons for each forest stand were created, the area of each polygon is 10 hectares. The smaller polygon size will result more accurate analysis and longer calculation time. Areas less than 10 hectares are also

considered as one polygon. For example, the area of young birch (Stand 1) is 87009.48 hectares, consisting of 8,701 polygons.

Table 4 Area distributions of dominant tree species in Beijing forests (hm<sup>2</sup>).

Tree species	Young stand	Middle-aged stand	Near-mature stand	Mature stand	Over-mature stand
platycladus orientalis	87009.48	35012.38	13111.02	10578.21	3277.75
larch	9899.83	3983.66	1491.76	1203.58	372.94
Chinese pine	78426.60	31558.65	11817.71	9534.741	2954.43
toothed oak	118797.9	47803.95	17901.05	14442.90	4475.26
1 birch	12715.37	5116.63	1916.02	1545.88	479.00
populus davidiana	13532.79	5445.56	2039.19	1645.25	509.80
black locust	17710.70	7126.74	2668.74	2153.18	667.18
poplar	63531.45	25564.88	9573.23	7723.86	2393.31
broad-leaf tree	52496.32	21124.38	7910.41	6382.26	1977.60

Source: Beijing Forest Survey and Design Institute, Twelfth Five-Year Plan Survey Statistical Report of Beijing Forest Resource Planning and Design Survey (BFSDI 2016).

### 3.2.4 Setting management scenarios

To optimize forest carbon storage, two management scenarios were devised. Scenario 1 is the no management scenario. When trees grow to over-maturity, they will die, at which point the stored carbon will be reduced. At the same time the same tree species will be planted. Scenario 2 is the management scenario. Trees are harvested when they are going to natural succession, and new trees are planted at the same time. The harvested trees will be used for wood products and every wood product has its own lifespan. The carbon will be stored in the wood product and will be released after the lifespan. Furniture is the only wood product considered in this research, and its lifespan is 30 years. Based on Regulations for age-class and age-group division of main tree-species (SFAC 2017), the succession ages of the nine tree species are shown in (Table 5).

Table 5 The succession ages of the nine tree species (year)

Tree species	Natural age of death	Harvest age	Wood product	Lifespan
platycladus orientalis	140-165	140-165	furniture	30
larch	100-125	100-125	furniture	30
Chinese pine	70-85	70-85	furniture	30
toothed oak	100-125	100-125	furniture	30
birch	70-85	70-85	furniture	30
populus davidiana	50-65	50-65	furniture	30
black locust	25-35	25-35	furniture	30
poplar	50-65	50-65	furniture	30
broad-leaf tree	100-125	100-125	furniture	30

Source: Regulations for age-class and age-group division of main tree-species (SFAC 2017).

## 3.RESULTS AND DISCUSSION

### 3.1 Comparison of timber volume of two scenarios

(Figure 1) illustrates timber volume over 250 years. In the no management scenario, at the beginning (2018), the timber volume was 33 million cubic meters. As trees naturally grow and mature, the timber volume increases and will reach 52 million cubic meters in 2068. From the year 2068, many trees will go to succession, and the timber volume will decline to 25 million cubic meters. Then, newly planted trees grow, allowing timber volume to continue to increase. The variation of timber volume is large.

In the management scenario, timber volume was similar to the no management scenario in the first 50 years (2018-2068), but significantly different over the next 200 years. Because some trees were harvested to make wood products before death, and the results of this study count not only the timber volume in the forests, but also the additional timber volume stored in harvested trees. After the wood products reach their life, their own accumulation will be reduced, so the timber volume will not grow indefinitely. The amount of a single harvest is 25% of the trees that have reached harvest age. Over the next 200 years (2068-2268), timber volume in the management scenario was higher than in the no management scenario because new trees of the same species were planted in time after deforestation. Since then, although the timber volume has fluctuated slightly, it has remained roughly at the same level, at about 56 million cubic meters. Because the forest is harvested in time, the timber volume in the management scenario is higher and more stable than that in the no management scenario, which is suitable for long-term management.

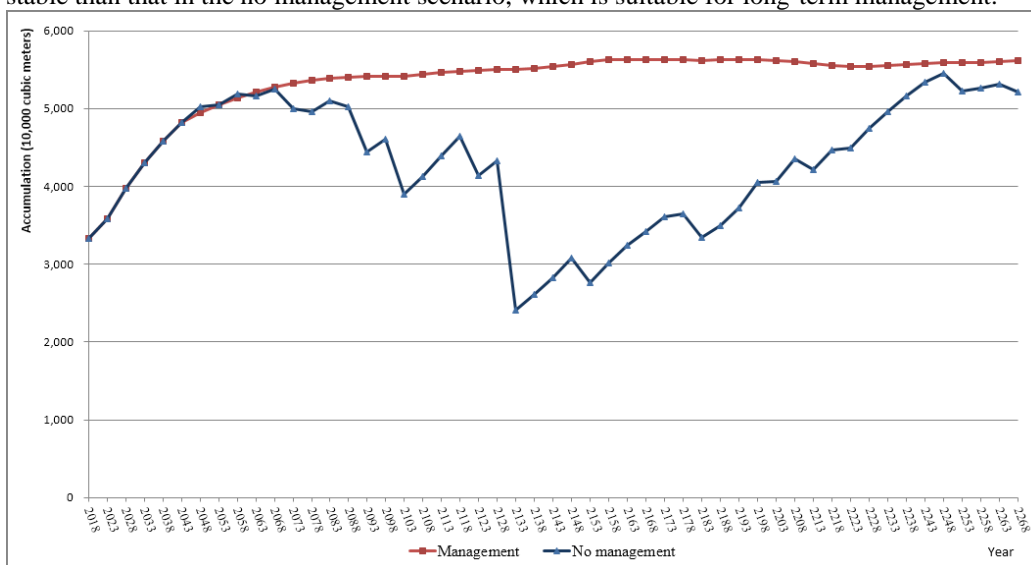


Figure 1 Comparison of timber volume of two scenarios from 2018 to 2268

Source: own work based on FSOS

### 3.2 Comparison of carbon storage of two scenarios

(Figure 2) illustrates carbon storage over 250 years. In the no management scenario, as trees naturally grow and mature, the carbon storage increases and exceeds 92 million tons. The trees will then succession, and carbon stocks will gradually decline, falling to a minimum of 44 million tons in 2133, and gradually rising to a peak of 94 million tons in 2248. The variation of carbon storage is large. Over the course of 115 years, the increase in carbon storage is about 50 million tons, with a growth rate of about 113.6%. It indicates that forests have a strong capacity for carbon sequestration, mainly through trees' growth.

In the management scenario, carbon storage was similar to the no management scenario in the first 50 years (2018-2068). However, over the next 200 years (2068-2268), carbon storage in the management scenario was higher than in the no management scenario because some trees were harvested and new trees of the same species were planted in time. As new trees and trees that have

not yet reached harvest age continue to grow, forest carbon storage continues to increase. At the same time, the harvested trees are made into furniture, and the carbon is stored in this furniture. If this additional carbon storage is added, the total carbon storage reaches and remains at 108 million tons. Therefore, over the long term, on average, the carbon storage in the management scenario is almost 1.6 times greater than that in the no management scenario. In the long term, in management scenario, forests create greater value in terms of carbon sequestration. The longer the period, the greater the value relative to the no management scenario. The management of forests is necessary for more and more stable carbon storage.

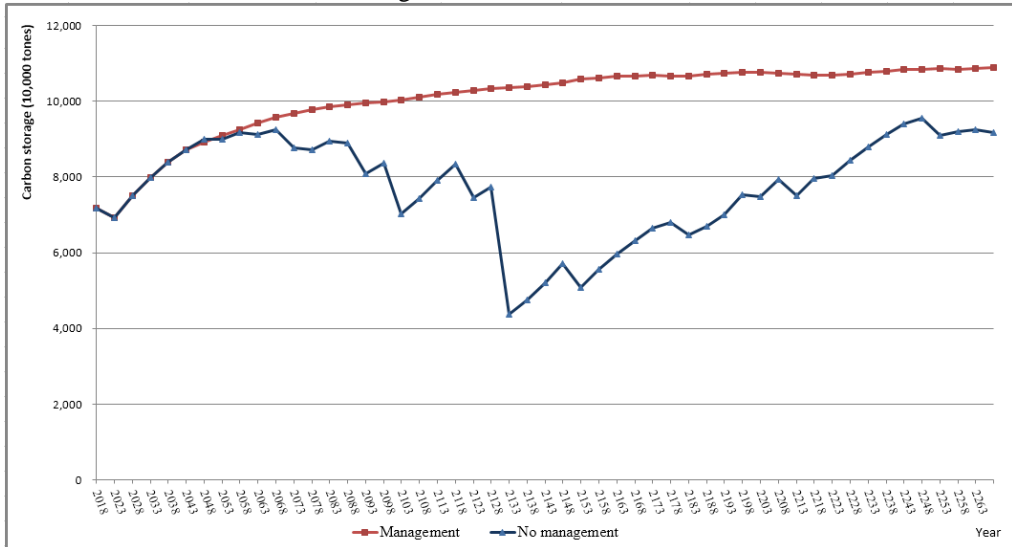


Figure 2 Comparison of carbon (CO<sub>2</sub>) storage of two scenarios from 2018 to 2268  
Source: own work based on FSOS

### 3.3 Carbon storage of *platycladus orientalis*

Taking young *platycladus orientalis* (Stand 1) as an example, under the management scenario, the timber volume and carbon storage of Stand 1 are shown in (Figure 3) and (Figure 4), respectively.

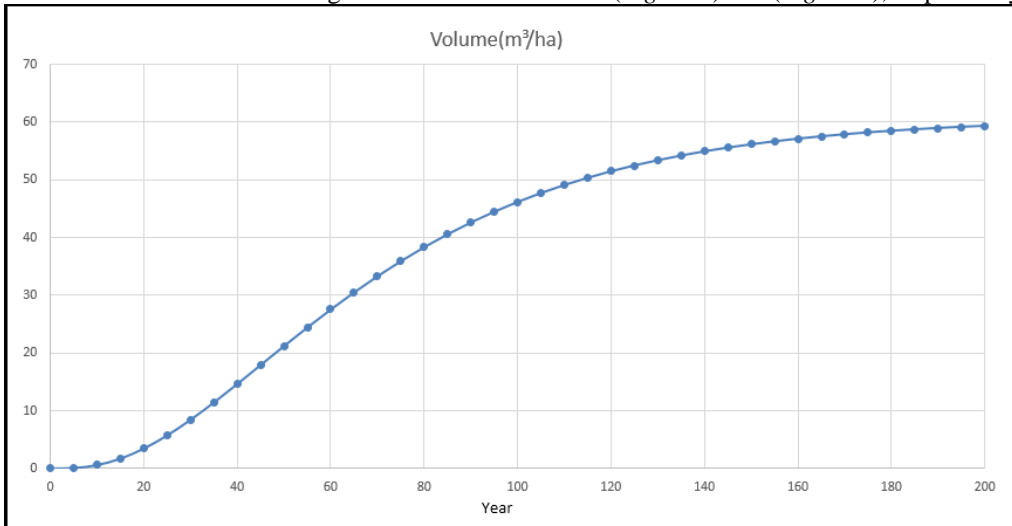


Figure 3 Young *platycladus orientalis* (Stand 1) timber volume in 200 years  
Source: own work based on FSOS

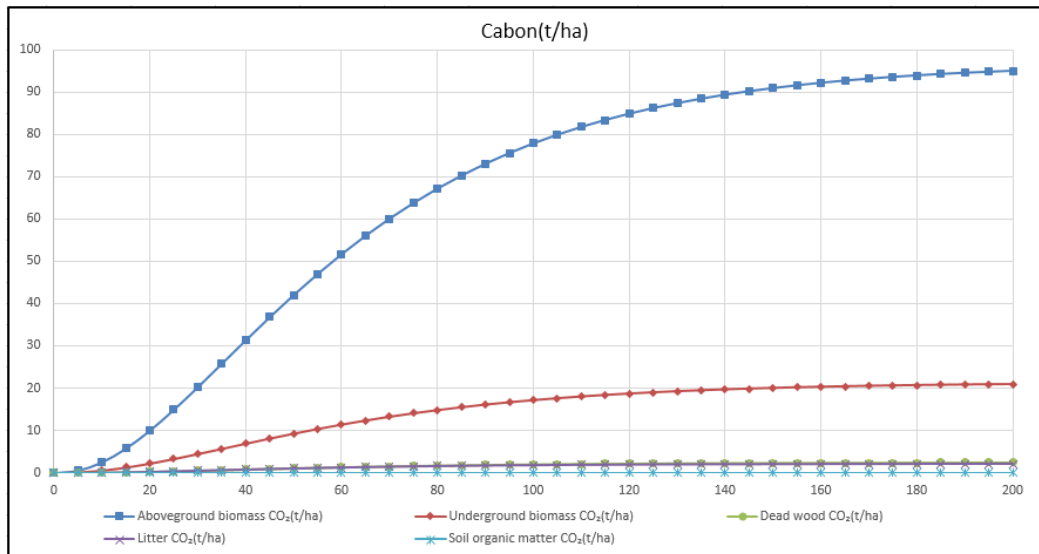


Figure 4 Young platycladus orientalis (Stand 1) carbon (CO<sub>2</sub>) storage in 200 years  
Source: own work based on FSOS

At the beginning, because Stand 1 is a young forest stand, its timber volume and carbon storage are both very low. Then, its timber volume and carbon storage continue to increase with increasing age till maturity (121-160 years). The timber volume and carbon storage continue to increase slowly, reaching their maximum values at the same time in 200 years, reaching 60 m<sup>3</sup> per hectare of timber volume which is equivalent to 120 tons per hectare of carbon storage.

Among the five carbon pools, the carbon storage of above-ground biomass is the largest, followed by litter, with much lower values in dead wood, soil organic matter, and underground biomass. All five pools exhibited the same trends of carbon storage, gradually increasing until the trees over-mature, and then leveling off.

For different growth stages, the growth rates of timber volume and carbon storage of forests are different. The growth rate is the fastest in the middle-aged forest and the near-mature forest, the slowest in the over-mature forest, followed by the mature forest. Therefore, in order to optimize the carbon sequestration benefits of forests, the forestry sector must pay attention to the age structure of forests in the future. Reasonable cutting can adjust the age group structure of forest well, which is helpful to optimize carbon storage.

For other stands, under the management scenario, timber volume and carbon storage also gradually increase and then remain stable. Due to the different tree species and different initial age of trees in each forest stand, the time to reach a stable timber volume and carbon storage is different.

The result of this study should be reasonable. On the one hand, the results show that Beijing forests can store more than 90 million tons of carbon at most, which proves that Beijing forests have a strong carbon sequestration capacity, which is consistent with the results of Jiang et al. and Ren et al. (Jiang et al. 2019; Ren et al. 2023), and other studies on forest carbon storage capacity have also reached similar conclusions (Jo et al. 2019; Nowak et al. 2013). On the other hand, the results obtained by the simulation show that harvesting is an influential factor that significantly affects forest carbon storage, which is consistent with the results of Štraus et al. and Roth et al. (Štraus et al. 2023; Roth et al. 2023). The results also show that age group influences carbon storage, and middle-aged forests make the greatest contribution to carbon storage, which is consistent with the conclusion of Li et al. (Li et al. 2023). Other studies using FSOS to analyze forest management have reached similar conclusions (Wu et al. 2022; Dai et al. 2020). In addition, in this study, the

strategy of harvesting forests and making wood products can achieve sustainable carbon storage and optimize forest carbon storage.

There are a few limitations in the results of this study. We only analyzed the carbon storage capacities in this study and believe that the management scenarios can produce a lot of wood and have greater socioeconomic capacities. Further studies are needed to explore more different management scenarios with socioeconomic capacities and other ecological capacities. For example, our research studies carbon storage in furniture made from harvested trees, but there are many wood products that can be made, and future studies could include the effects of more different wood products. In addition, Our study considers long-term management, with a study period of 250 years, which fails to think about the effect of climate change on the selected tree species during 250 years. Further study is needed to include the growth and yield changes caused by climate changes.

#### 4. CONCLUSIONS AND RECOMMENDATIONS

In this study, two different management scenarios were analyzed to predict forest carbon storage over 250 years based on the tree species composition and age groups of Beijing forests.

In the no management scenario, forest carbon storage reaches a peak of 94 million tons, and reaches a low of 44 million tons. In the management scenario, forest is harvested to make furniture, to maintain the total carbon storage at a stable level of 108 million tons throughout the rest of the study period of 250 years. Between the two scenarios, the management scenario yields a 60% higher and more stable forest carbon storage. Further, the management strategy will generate significant economic and environmental benefits to the region. The case study was carried out for Beijing forests. However, the approach could be applicable in other region in and out of China to optimize carbon storage thus to curb atmospheric CO<sub>2</sub> levels and climate change.

Based on the above research, the following recommendations are put forward:

Firstly, optimizing tree species. The results show that most tree species grow fastest when they are young and have high carbon sequestration rates. Therefore, it is suggested that Beijing plant more fast-growing valuable species to increase its carbon sequestration capacity, select proper silvicultural methods to maintain the healthy forests.

Secondly, adopting a proactive and dynamic forest management strategy. Forest carbon storage is related to the age of trees, as demonstrated in this study. When the forest ages, over-mature trees need to be replaced. Considering that natural events such as wildfires and extreme droughts are inevitable, cutting and replacing over-mature or dead trees should be scheduled based on the status of each forest, utilizing technological innovations such as remote sensing and other tools. Those proactive, dynamic, science-based, and data driven management approaches will lead to a higher level of carbon reserves while protecting the ecosystem and the environment.

Thirdly, developing a comprehensive approach of forest management, carbon storage, product utilization, and economical benefit. Forest products are a valuable resource. Products of some tree species could yield a high market price. This should be considered when selecting tree species in addition to carbon storage. Further, the forest product output should be incorporated into regional economic planning to promote effective utilization. Overall, active and effective forest management is a win-win-win situation for the ecosystem, the environment, and the economy.

Fourthly, managing forest with long-term strategies. Long-term strategic forest planning and carbon storage strategies are important for the national carbon-neutral strategies. The study was conducted over a period of 250 years, and the results show that forest carbon stocks under the management scenario are about 1.3 times greater and more stable over the long term than under the no management scenario. Therefore, forest management should be viewed in terms of long-term development.

**Funding:** This work was supported by the funds for First-class Discipline Construction (Grant numbers XK1802-5), the Beijing Social Science Foundation of China (Grant number 18GLB029),

the National Social Science Foundation of China (Grant number 22FGLB011 and G2022106001L).

**Acknowledgements:** The authors thank Gao Meng Meng from Nanjing Jialin System Engineering Technology Co., Ltd. for his help on the simulation model.

## References

- BFSDI (Beijing Forest Survey and Design Institute). (2016): Twelfth Five-Year Plan Survey Statistical Report of Beijing Forest Resource Planning and Design Survey. Beijing: BFSDI.
- Bishnu, H. P.; Tek, M.; Geoff C. (2019): Impacts of forest management on tree species richness and composition: Assessment of forest management regimes in Tarai landscape Nepal. *Applied Geography*, 111. 102078. <https://doi.org/10.1016/j.apgeog.2019.102078>
- Chen, K.Y., Wang, J.J., He, Y.J., et al. (2022): Estimations of forest carbon storage and carbon sequestration potential of key state-owned forest region in Daxing'anling, Heilongjiang Province. *Ecology and Environmental Sciences*, 31. 1725-1734.
- Daigneault, A., Favero, A. (2021): Global forest management, carbon sequestration and bioenergy supply under alternative shared socioeconomic pathways. *Land Use Policy*, 103. 105302. <https://doi.org/10.1016/j.landusepol.2021.105302>
- Dai, Q.L.; Zhang, C.; Shang, K.R.; et al. (2020): Rational annual cutting volume of forest management units based on FSOS. *Journal of Zhejiang A & F University*, 37. 833-840.
- Jia, B.; Guo, W.W.; He, J.Y.; et al. (2022): Topography, Diversity, and Forest Structure Attributes Drive Aboveground Carbon Storage in Different Forest Types in Northeast China. *Forests*, 13. 455. <https://doi.org/10.3390/f13030455>
- Jiang, J.H., Qi, S., Hu, J., et al. (2019): Carbon storage assessment and analysis of forest ecosystem in Beijing mountainous area based on InVEST model. *Earth Environ*, 47. 326-335. <https://doi.org/10.14050/j.cnki.1672-9250.2019.47.049>
- Jo, H., Kim J., Park H. (2019): Carbon reduction and planning strategies for urban parks in Seoul. *Urban For Urban Gree*, 41. 48-54. <https://doi.org/10.1016/j.ufug.2019.03.009>
- Li, Q.; Xia, X.; Kou, X.; et al. (2023): Forest Carbon Storage and Carbon Sequestration Potential in Shaanxi Province, China. *Forests*, 14. 2021. <https://doi.org/10.3390/f14102021>
- Lin, B.Q., Ge, J.M. (2019): Valued forest carbon sinks: How much emissions abatement costs could be reduced in China. *Journal of Cleaner Production*, 224. 455-464. <https://doi.org/10.1016/j.jclepro.2019.03.221>
- Liu, G.L. (2000): A simulated annealing method for target-oriented forest landscape blocking and scheduling. doctoral thesis, the University of British Columbia, Canada.
- Liu, G.L.; Han, Shijie. (2009): Long-term forest management and timely transfer of carbon into wood products help reduce atmospheric carbon. *Ecological Modelling*, 220. 1719-1723. <https://doi.org/10.1016/j.ecolmodel.2009.04.005>
- Liu, G.L., Nelson, J., Wardman, C. (2000): A target-oriented approach to forest ecosystem design—changing the rule of forest planning. *Ecological Modelling*, 127. 269. [https://doi.org/10.1016/S0304-3800\(99\)00217-3](https://doi.org/10.1016/S0304-3800(99)00217-3)
- Liu, J.H., Wu, F.P. (2017): Forest Carbon Sequestration Subsidy and Carbon Tax as Part of China's Forestry Policies. *Forests*, 8. 58. <https://doi.org/10.3390/f8030058>
- Liu, J., Liu, Y.M., Liu, G.L., et al. (2012): Multi-objective Sustainable Business Planning Study—A Case Study of Baihe Forest Bureau. *Forestry Economics*, 7. 105-108. <https://doi.org/10.13843/j.cnki.lyjj.2012.07.017>
- Luo, Y.J.; Wang, X.K.; Zhang, X.Q.; et al. (2013): Biomass and Its Allocation of Forest Ecosystems in China, 1st ed. Beijing: China Forestry Publishing House.
- Nowak, D.J., Greenfield, E.J., Hoehn, R.E., et al. (2013): Carbon storage and sequestration by trees in urban and community areas of the United States. *Environ Pollut*, 178. 229-236. <https://doi.org/10.1016/j.envpol.2013.03.019>

- Ren, Y.M.; Wen, Z.Y.; Wang, M.N.; et al. (2023): Evaluation of forest carbon sequestration capacity in Beijing. *Journal of Beijing Forestry University*, 45. 108-119. <https://doi.org/10.12171/j.1000-1522.20220436>
- Robert, A. G.; Colleen M. R.; Ethan P. B.; et al. (2022): Storing More Carbon by Improving Forest Management in the Acadian Forest of New England, USA. *Forests*, 13. 2031. <https://doi.org/10.3390/f13122031>
- Roth, E.-M.; Karhu, K.; Koivula, M. et al. (2023): How do harvesting methods applied in continuous-cover forestry and rotation forest management impact soil carbon storage and degradability in boreal Scots pine forests?. *Forest Ecology and Management*, 544. 121144. <https://doi.org/10.1016/j.foreco.2023.121144>
- SFAC (State Forestry Administration of China). (2014): Forest Management Carbon Storage Project Methodology. Beijing: SFAC.
- SFAC (State Forestry Administration of China). (2017): Regulations for age-class and age-group division of main tree-species (LY/T2908-2017). Beijing: SFAC.
- SFSCCP (Smart Forest Simulation model-Cloud Computing Platform). Available online: <http://forestcloud.cn> (accessed on 25 January 2022).
- Štraus, H.; Podvinšek, S.; Klopčič, M. et al. (2023): Identifying Optimal Forest Management Maximizing Carbon Sequestration in Mountain Forests Impacted by Natural Disturbances: A Case Study in the Alps. *Forests*, 14. 947. <https://doi.org/10.3390/f14050947>
- Sugiyama, A.; Game, E. T.; Wright, S. J. (2024): Planting exceptional tropical tree species to increase long-term carbon storage in assisted secondary succession. *Journal of Applied Ecology*, 61. 7-12. <https://doi.org/10.1111/1365-2664.14533>
- Tu, H.T., Zhou, H.B., Ma, G.Q., et al. (2023): Characteristics of Forest Carbon Storage in Yunnan Based on the Ninth Forest Inventory Data. *Journal of Northwest Forestry University*, 38. 185-193.
- Wei, Y.; Jim, C.-Y.; Gao, J.; Zhao, M. (2023): Determinants of Aboveground Carbon Storage of Woody Vegetation in an Urban–Rural Transect in Shanghai, China. *Sustainability*, 15. 8574. <https://doi.org/10.3390/su15118574>
- Wondimu, M. T.; Nigussie, Z. A.; Yusuf, M. M. (2021): Tree species diversity predicts aboveground carbon storage through functional diversity and functional dominance in the dry evergreen Afromontane forest of Hararghe highland, Southeast Ethiopia. *Ecological Processes*, 10. 1-15. <https://doi.org/10.1186/s13717-021-00322-4>
- Wu, L.Q.; Sun, Y.B.; Sun, H.; et al. (2022): Determination of annual full cycle cutting volume of main forest types in Saihanba Mechanized Forestry Farm based on Forest Simulation Optimization System (FSOS). *Forestry and Ecological Sciences*, 37. 134-141. <https://doi.org/10.13320/j.cnki.hjfor.2022.0019>
- Zheng, Q.Y.; Wei, H.H.; Chen, J.; et al. (2019): Study on Carbon Sink Value Evaluation of Three-north Shelterbelt Program in the Past 40 Years. *Forestry Economics*, 41. 67-73+112. <https://doi.org/10.13843/j.cnki.lyjj.2019.02.012>

**Levente Kovács<sup>9</sup> – János Müller<sup>10</sup>**

### ***Chinese and Hungarian Financial Relations***

*Banking and financial relations sometimes precede, sometimes follow, but in all cases reinforce economic and political cooperation. This is also the case between China and Hungary. China, which is increasingly assuming its role as a world power, is - for obvious pragmatic reasons - open towards the Central and Eastern European countries wedged between Asia and Western Europe. It is doing so along traditional Chinese trade routes, as part of the 'One Belt, One Road' programme. In this programme, Hungary can build on its known Eastern origins, its deeper understanding of different political systems, and its multifaceted personal relationships to establish successful economic and political cooperation with the financial sector playing its part.*

*Keywords: financial relations, China, Hungary*

*JEL code: Q54*

<https://doi.org/10.32976/stratfuz.2024.15>

As the Chinese saying goes, 'a journey of a thousand miles begins with a single step'. It is fair to say that today these relations are excellent and unique in the Central and Eastern European region. The question is where did this development start, what was the 'first step' and what milestones have brought us here.

#### **Prior signs of financial relations in the socialist era**

In modern history, there have been three prominent factors in the development of bilateral relations. Although it is not the subject of our analysis, it is worth mentioning that political relations between the two countries were unproblematic and good even during the time when Hungary was part of the Soviet bloc. Against this background, geopolitical interests have evolved in such a way that the two countries have become mutually interested in developing economic and financial ties, which started to develop at an accelerating pace in the early years of the previous decade.

The first factor was the experience gained during the preparation and implementation of economic reforms in the late 1970s and early 1980s. Hungary was at the forefront among the former socialist countries in this respect. The decade-long achievements, experiences, benefits and pitfalls of the reforms launched in 1968 were instrumental for China in planning the reforms it embarked on in the early 1980s.

#### **Prior signs of financial relations over the past decades**

The following is a brief overview of the cornerstones of relationship building over the past two decades, its background and the stages of development that have facilitated it. China experienced years of dynamic, double-digit economic growth as a result of the steady implementation of the economic reform introduced in 1984, with a large inflow of foreign working capital to a lesser extent and of modern technology to a greater extent. However, the sources of this extensive economic growth were exhausted during the global financial crisis of 2007-2009.

Ensuring sustainable economic growth became a central goal of Chinese economic policy. A key objective was to redirect the substantial industrial surplus capacity accumulated over decades of

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working capital and technology inflows abroad. To this end, the Chinese government announced a major opening to external markets. The economic, commercial and financial conditions to achieve this target were established. The programme of the "One Belt, One Road" strategy was drawn up and announced. This provided the contractual and infrastructural conditions that allowed and continue to allow Chinese goods to flow westwards. Land transport of goods was ensured through Central Asia and Central-Eastern Europe to Western Europe, i.e. to the European Union's markets (Green Route), or by sea through South-East Asia and South Asia to Africa and again to Europe (Blue Route).

At the same time began the reinforcement and the dynamic expansion of international financial and economic relations. This included opening up business relations, increasing direct investment overseas, and reassessing global economic relations. In this development process, China naturally prioritised the expansion of economic and trade relations with Europe and the European Union. In this framework, the role of the Central and Eastern European region took on geopolitical importance given that it is ultimately the intersection of the two pillars of the One Belt, One Road strategy, i.e. the Silk Road and the Blue Road.

In parallel with China's growth, Hungary also entered a promising phase of economic development in the late 1990s and early 2000s (Pásztor 2020). Overcoming the negative impact of the political and economic transition of the 1990s, Hungary started to build favourable international economic and trade relations and consequently became eligible to join the European Union (Pénzest et al 2014). The Hungarian banking system also underwent significant changes during this period, with the privatisation of banks starting in the mid-1990s and major international banks, mainly from Western Europe, emerging as the most important players on the Hungarian banking market.

### **Recent financial and banking contacts**

Within the framework of events described above, the opening of a subsidiary bank by the Bank of China (BoC) in Hungary in 2003 was a significant milestone in the development of Sino-Hungarian financial relations. In that year, it was already known to China that Hungary would join the European Union in 2004.

The presence of the BoC in Hungary played a pioneering role in the development of Sino-Hungarian financial relations. As one of China's largest banks, it became acquainted with the operational conditions and business potential of a European bank. In its 2013 business objectives, the bank already emphasised that the Budapest-based bank could become a financial hub for the Central and Eastern European region through domestic and international business interactions. It has the potential to become part of the "going global" Chinese economic policy, which assists large and medium-sized enterprises in financing foreign investments and business partnerships.

This experience and insight led to the decision by the bank's headquarters in Beijing to establish the presence of the BoC in Central and Eastern Europe, on the basis of which the bank's regional strategy was developed. Accordingly, the Hungarian subsidiary bank was registered under two categories: Bank of China Limited Hungarian Branch and Bank of China (Hungary) Close Ltd. The regional headquarters is in charge of the supervision and management of the Czech, Austrian and Serbian banking interests. This classification, which covers two operational areas, was registered in April 2020.

In our review above, we have highlighted the presence of the BoC in Hungary because the BoC and the strategic decision of the Hungary-based bank to become a regional centre was indeed a milestone in the development of Sino-Hungarian financial relations. In view of these developments, it is not a mere coincidence that the first official visit of the Secretary General of the China Banking Association, Mr. Yang Zaiping, to Hungary took place in the same year, October 2013. During our meetings and discussions, we were mutually convinced that there are very concrete opportunities for cooperation between the two banking associations. We identified the first steps to be taken to benefit our banking communities.

Following that first meeting, our business contacts became regular. Based on the statement of our common goals and objectives, the two banking associations signed a Memorandum of Understanding in 2015. Under the Memorandum, the CBA and the MBSZ (Hungarian Banking Association) established strong communication links and exchanged expertise of mutual interest, which further strengthened mutual understanding between the two institutions and deepened financial cooperation. All these developments established a solid basis for intensified cooperation, with the CBA and the MBSZ agreeing to develop and expand bilateral cooperation. This enabled the two associations to build a common platform for communication and cooperation between financial institutions in China and Hungary.

Having mutually experienced the rapid and positive development of our business relationship, we renewed the Memorandum between the two banking associations in 2016. In it, we confirmed our mutual commitment to expand bilateral relations. Our common aim is to share best practices in the areas of financial regulation and supervision, digital and FinTech innovation and the development of green financing. Our new and mutually agreed core mission is to support and share economic expertise to improve financial awareness and financial education.

Hungary has traditionally been at the forefront of handling cashflow and payments as well as innovative digital solutions in the Central and Eastern European region (Füredi, 2021). Given the excellent economic, political and financial relations and Hungary's aforementioned leading role, the Chinese and Hungarian central banks reached significant agreements which turned Hungary into a regional renminbi clearing centre. The robust financial ties had a beneficial impact on real economic relations between China and the Central and Eastern European region, as well as on the significance of renminbi in international economic dynamics. Key milestones in this positive trend include:

- In 2013, Hungary signed a renminbi swap agreement with the People's Bank of China (PBOC) which helped further improve trade relations between the two countries and played an instrumental role in reducing financial stability risks.
- In addition to the signing of the swap agreement, in 2015 the Hungarian Central Bank announced the launch of the Renminbi Programme (JRP) and the Budapest Renminbi Initiative, which aims to expand Hungary's investment opportunities and resources.
- Hungary was the first country in the region to be granted stock exchange and interbank bond market investment opportunity on the Chinese market, with a country quota of RMB 50 billion.
- After Poland (2016), Hungary was the second country in the region to have sold one billion yuan worth of Panda bonds on the Chinese market. The Hungarian bond was the first bond made available to other Asian investors through Bond Connect.
- Another important development was the signing of a cooperation agreement between the Central Bank of Hungary and the China Banking and Insurance Regulatory Commission in 2024.

A further important factor in the above achievements is that Hungary also offers the Chinese financial market significant opportunities in terms of financial and financing infrastructure. The Central Bank of China and the Hungarian Central Bank formally announced on 2 October 2015 that the Bank of China Hungary will be authorised to open the RMB Clearing Centre in the country. As the Bank of China Hungary operates within a regional framework and mandate, the RMB Clearing Centre in Budapest can be accessed all across the Central European region. This is a significant move, as Hungary has now also been granted this authorisation, following Hong Kong, Taiwan, Paris, Frankfurt, Sydney and Kuala Lumpur.

In addition to the traditionally strong relations between our countries, the "One Belt, One Road Initiative", later known as the "Belt and Road Initiative" and Hungary's "Eastern Opening Strategy" have presented historic opportunities. This was largely motivated by the economic and financial challenges posed by the 2008 global financial crisis.

All of this proves that a number of positive factors helped the Hungarian Banking Association to become a founding member of the Asian Financial Cooperation Association. The Hungarian Banking Association was an active participant and contributor in the preparatory process of the establishment of the Association. It has been present at multiple meetings and conferences, such as the Boao Forum held in London and Hainan, at subsequent meetings in Beijing and Shanghai, and finally the Founding General Meeting that formally established the AFCA in July 2017. This occasion was an especially memorable event for the Hungarian Banking Association, as its Secretary General Levente Kovács was elected as a member and one of the Vice-Presidents of the Executive Board. The General Meeting approved the AFCA Statutes and the operational framework was established. The national and international network developed dynamically. Advisory cooperation committees were formed to support operations in which the Hungarian Banking Association is an active contributor. János Müller is Deputy Advisory Director of the Banking Association for the Cooperation Committee of Executive Economists and he is also Vice-Chairman of the Belt and Road Cooperation Committee.

The AFCA Statutes state that it is an open and not a political or governmental association, the purpose of which is to promote cooperation between financial institutions and to reinforce international financial relations. Since its inception, it has grown to become one of the world's foremost international financial organisations, with some 120 member banks, financial institutions and banking associations.

In line with our commitment to the successful development of the AFCA, we organised the first international conference "AFCA CEE Financial Summit Forum - New Chapter of Asia - Europe Financial Cooperation" in Budapest in November 2017. The event was a major success with participants from more than 20 countries and five continents. The timing was also convenient as the sixth China - CEE Premier Summit was taking place at the same time. At our meeting in November 2017, we signed a significant document as the first European banking association, entitled "Memorandum of Understanding on Strengthening the Asia-Europe Financial Cooperation", which marked another milestone for our future cooperation. "The signing of the memorandum is beneficial for the AFCA, with the support of the MBS, in order to pave the way for its economic ties with Central and Eastern Europe, create a platform to promote financial cooperation between Asia and Europe and effectively pursue the development of the Belt and Road strategy. The implementation of this objective will enable the achievement of the ultimate goal, i.e. the bridge-building role of the financial cooperation between Asia and Europe," states the document.

The objectives of this document were therefore to establish a regular networking mechanism for financial cooperation in Asia and Europe, to develop the conditions for joint representation of interests, and to support the Hungarian Banking Association in its role as a bridge for financial cooperation in Asia and Europe. It is however to be noted that the Memorandum, albeit concluded between the AFCA and the Hungarian Banking Association, goes far beyond that. Following the signing of the Memorandum, the Hungarian Banking Association praised the importance of the Summit in these terms:

"At this regional conference, the first to be held in Europe outside Asia, we have demonstrated that the AFCA principles of openness, connectivity, greater cooperation, collaboration and shared benefits can work well in practice. The two-day conference included a number of important events: a Board of Directors and Supervisory Board meeting, a plenary session, a high-level financial executives' forum. As previously mentioned, the importance of the special conference was that it was made an official part of the 16+1 Summit, with Hungary as the host country, with the participation of the Prime Ministers of sixteen Central and Eastern European countries and the Prime Ministers of China. This high-profile international event has in itself helped to create a platform to promote financial cooperation between Asia and Europe and better serve the development of the Belt and Road Initiative. It has also highlighted the recognition that we have a common interest in building financial relations between Asia and the Central and Eastern European region." (Kovács 2017)

Minister of Finance Mihály Varga welcomed the Finance Summit with the following words:

"As Hungary's Minister of Finance, it is a great honour to welcome the representatives of the countries that have joined the Asian Financial Cooperation Association, in Budapest. I am very pleased that today we have concluded a cooperation agreement between the AFCA and the Hungarian Banking Association. This indicates that the AFCA has decided to regard Hungary as a bridge to Europe. I hope and believe that, much like the Bank of China Clearing House, this initiative will be successful. The facts show that Sino-Hungarian financial and economic relations have been reinforced, driven by mutual trust. Optimally, the financial developments will contribute to the growth of the real economy. As Henry Ford once said, "The greatest use of capital is not to make more money, but to use money to do more to improve lives." (Varga 2017)

Following the remarkable year of 2017 discussed above, the expansion and the strengthening of banking relations between Hungary and China continued. The Hungarian Development Bank and the China Development Bank (CDB) signed a cooperation agreement in 2018. As a result of this cooperation, the China Development Bank opened an independent representative office in Budapest in 2022. Its significance was further enhanced by the fact that the "Austrian Operations Group" of the China Development Bank is a Budapest-based team, which coordinates the bank's Austrian and Hungarian interests.

Another important milestone in our bilateral banking and financial relations was the opening ceremony of a branch of the China Construction Bank (CCB) in Budapest in April 2023. It is ranked as the world's second largest financial institution by assets. Speaking at the opening ceremony, Mihály Patai, Deputy Governor of the Hungarian Central Bank, said, "The opening of a new branch is a result of the increasingly close interconnection between the Hungarian and Chinese financial systems. The Bank of China already established itself in Hungary in 2013. The Central Bank is playing an active role in strengthening financial relations between the two countries, and the CCB's representation in Hungary will further enhance the successful cooperation."

Undoubtedly, the new branch will contribute to the further expansion of Sino-Hungarian economic, financial and trade relations by opening up new development opportunities and helping Hungarian companies enter the Chinese market and attract Chinese investment. Another important step in the development of our banking relations was the opening of an OTP Bank Representative Office in China in 2014.

Finally, the international conference on the occasion of the 35th anniversary of the founding of the Hungarian Banking Association held on 10 May 2024 and attended by the President of the Chinese Banking Association provided an opportunity to further strengthen our bilateral relations. In his welcome speech, Mr Zhou Gengqiang praised our relationship: "Today we celebrate the HBA's unwavering commitment to promoting ethical practices, fostering collaboration, and enhancing the overall health of our banking sectors, just like the missions that CBA has. The strong partnership between our two Associations has been a testament to the shared values we uphold and the mutual benefits we derive from our collaboration. We are looking forward to our continued cooperation in the future."

## **Conclusion**

Promoting pragmatic, government-led cooperation and translating it into economic relations requires banking support (Kuttor, 2022). The banking sector of both countries have a role to play in this respect. The Hungarian banking sector, with the support of the Hungarian Banking Association, has assumed an active part in building bilateral economic relations. The emergence of Asian banks in Hungary and their becoming a regional hub is an exceptional achievement, which demanded the personal involvement, efforts and commitment of Chinese and Hungarian bankers, in addition to the political will.

## **References**

- Füredi-Fülöp, J. – Murányi, K. - Várkonyiné Juhász, M. (2021): Digital solutions in the world of accounting, In: Serpeninova, Y. et al (ed): Aspects of Financial Literacy, Press: Sumy State University, p. 417.
- Kovács, L. (2017): New Chapter of Asia-Europe Financial Cooperation, In: Yang, Zaiping (szerk.) AFCA CEE Financial Summit Fórum – New Chapter of Asia-Europe Financial Cooperation, November 28-29, 2017 Budapest, Hungary, Press: Asian Financial Cooperation Association (AFCA), Peking, Kína: (2018) pp. 235-239.
- Kuttor, D. (2022): New drivers of industrialization and novel aspects of Hungarian-Chinese bilateral cooperation. Chinese foreign investments in Hungary, *Tér és Társadalom* 36 : 3 pp. 99-121.
- Pásztor, Sz. (2020): Kelet-Közép Európa világgazdasági orientációja és felzárkózása. Kiadó: Nemzeti Közszerológati Egyetem Közigazgatási Továbbképzési Intézet, Budapest, ISBN: 9789634982166, 49 p.
- Pénzes, J. – Pálóczi, G. – Pásztor, Sz. (2014): Social frontiers in Hungary in the mirror of the centre-periphery dichotomy of incomes. *EUROLIMES* 17 pp. 11-23.
- Varga, M. (2017): Speech of the Minister for National Economy, In: Yang, Zaiping (szerk.) AFCA CEE Financial Summit Fórum – New Chapter of Asia-Europe Financial Cooperation, 2017. November 28-29. Budapest, Hungary, Press: Asian Financial Cooperation Association (AFCA) Peking, Kína, pp. 131-133.

Zoltán Bartha<sup>11</sup>

### *China's grand strategy within 21st-century megatrends*

*The main aim of this study is to identify possible components of China's grand strategy and check how they can influence global megatrends. Based on a literature review, four grand strategy components are identified: 1) building up military power, 2) consolidating power at the peripheries and pushing for more control over disputed territories, 3) expanding economic influence through the Belt and Road Initiative, and 4) establishing new standards in digital technologies and promoting cyber sovereignty. These strategic tools can directly affect the following megatrends that are commonly mentioned in the literature: shift of economic power, emerging markets, new economic order; digitalisation; globalisation; deglobalization, trade reduction; diversity of governance, trust in the political system; and scarce resources. Using data taken from Google Trends it is shown that in the 2004-2023 period the trends of Chinese grand strategy terms correlate most with terms that represent the following three megatrends: digitalisation, globalisation, and scarce resources.*

*Keywords: China, foresight, grand strategy, megatrends, narrative analysis*  
*JEL code: J11*

<https://doi.org/10.32976/stratfuz.2024.16>

### **Introduction**

Grand strategy was one of the terms used to describe the strategic actions of the great powers during the Cold War in the second half of the 20<sup>th</sup> century (Gaddis, 2005). Grand strategies have four constituent components: the articulation of national interests; the identification of threats to the country; the development of ways to address the threats; and the mobilisation of resources to achieve the goals (Goddard & Krebs, 2015). After 2010, more and more Western observers started seeing China as a threat (Bracken et al., 2021), and this shift in opinion has generated a lot of writing on the Chinese grand strategy.

It is not entirely clear whether China has a grand strategy and if yes, what it is (Doshi, 2021), but with the country's rising power and influence it is safe to assume that any Chinese strategic goal can have a global impact. This study focuses on these potential global impacts from a megatrends perspective. Megatrends represent high-impact, long-term shifts in social and environmental systems. The concept is used in foresight to establish the trends that gradually express themselves and over which the planner has little or no control (Ilbury & Sunter, 2001). If some components of the Chinese grand strategy can be foreseen, and they indeed have a global impact, these components can manifest themselves as potential megatrends. While the strategy itself is not a megatrend, since it is controlled and can be changed by decision makers, it can create global shifts, especially if it is sustained for a long period of time.

This study aims to answer the following two questions:

- Are there any megatrends in the literature that could be related to China's grand strategy?
- What impact the components of the Chinese grand strategy had on the global narrative, and what other trends do they coincide with?

In order to answer these question, a thorough literature review is conducted on two topics: China's grand strategy, to identify the potential strategic goals of the country and their characteristics; and megatrends, to uncover the trends that most experts regard as crucial. The review is followed by a narrative analysis using Google Trends as a tool. The analysis shows the narrative trends of the

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most important components associated with the Chinese strategic goals, and I also check how these trends are correlated to the narrative trends of crucial megatrends.

This study on the one hand, helps experts interested in China to learn about the embeddedness of Chinese grand strategic goals in global megatrends, and it also helps to identify components of this strategy that had the greatest impact on the global narrative. On the other hand, the study provides guidance to experts involved in foresight to better understand how China can potentially influence the current megatrends.

## **Literature review**

The review section focuses on two separate concepts. First, it introduces the concept of grand strategy and identifies possible components of the Chinese grand strategy. Second, it discusses the literature of megatrends with the intention of uncovering the ones that are most mentioned by experts.

### ***Grand strategy***

Blagden (2021) adopting a structural-realist approach notes that states exist in an anarchic international system, therefore the survival of the state and the maximisation of security is the number one goal that is necessary to fulfil any other interests of the citizens. Blagden calls this security-maximisation strategy *realpolitik*. As Goddard & Krebs (2015) show, the articulation of national interests and the identification of the threats to the country are the first two components of a grand strategy. According to Mokry (2023) national interests can be constructed from six elements: 1) defending the country's territory, political system, and citizens; 2) expanding the country's economic relations; 3) aiming at global governance; 4) offering global public goods; 5) controlling the region; and 6) promoting the country's values.

Grand strategy is a comprehensive, long-term plan that describes how a country wants to achieve its major objectives (Mastro, 2022). It is a set of objectives and the means to achieve them, where both the means and the objectives span from national security items to economic issues (Bracken et al., 2021). Bracken et al. (2021) also add that while most countries have short- and medium-term objectives (e.g., economic growth, building international relations), the design of a grand strategy requires a clear definition of long-term goals, and a linked set of measures that help to integrate efforts in many different fields. Doshi (2021) also emphasises the integrated nature of the grand strategy. According to him, the grand strategy is intentional, coordinated, and implemented over multiple means (statecraft, and military, economic and political).

The design of a grand strategy is therefore a complex task. Grand strategy goes beyond behaviour, and principles, it requires long-term objectives and a deliberate, detailed plan (Silove, 2018). Because of its complexity most countries, even most great powers usually don't have a grand strategy (Doshi, 2021). Does China have one? According to Doshi (2021), experts are divided over this question. One group (Doshi calls them "believers") is convinced that China already devised its grand strategy to become a hegemon power; the other group (the "sceptics") is still not convinced about it. While the United States has its own explicit grand strategy statement (US National Security Strategy Report), it is unknown whether China has such a document. But Bracken et al. (2021) show that China has elaborate sector strategies: detailed social goals, foreign policy objectives, a manufacturing strategy, an education modernisation plan, a cyber security strategy, and a rural revitalisation strategy. The assumption of a grand strategy would mean that these sector strategies were designed to serve the same long-term objectives.

What these long-term objectives could be? According to Mastro (2022), the starting point is the Chinese Communist Party (CCP) whose main objective is to perpetuate its rule over the country. The CCP's way to achieve legitimacy is to deliver on key promises (Mastro, 2022), and the sector strategies represent these promises and the means to achieve them. Doshi (2021) quotes Evan Osnos on what the believers see as the Chinese grand strategy: "China is preparing to shape the

twenty-first century, much as the U.S. shaped the twentieth” (Osnos, 2020). A country may choose different paths to revise the world order; it may opt for a strategy that is based on the already existing institutions, it could seek for a rules-based revolution, it can exit the already existing institutional world order, or it can opt for hegemonic violence (Goddard, 2018). Mastro (2022) suggests that China’s choice is the second one (rules-based revolution), which means that the country tries to maximise its influence over the existing institutional order, but it is also open to creating new institutions when the former strategy is not effective enough.

According to Doshi (2021), there are two main ways in which a rising state can peacefully displace the hegemon power: first, blunt the hegemon’s control, and then build forms of control over others. Until now, China executed this displacement strategy in three stages: first, blunt American power over China (1989-2008); second, build the foundation of regional hegemony in Asia (2008-2016); and third, the expansion of these two strategies to the global scene (Doshi, 2021). Bracken et al. (2021) also conclude that China’s strategy changed over the years. Between 1979 and 2008 China proceeded cautiously while trying to hide its capabilities. The financial crisis prompted the Chinese leaders that America is weaker, and so the country became more open about its aspirations.

Experts typically mention the same means by which China aims to achieve its long-term objectives:

- Building up military power, initially started as an asymmetric strategy (building on own strength and trying to exploit the weaknesses of the adversary) (Bracken et al., 2021).
- Consolidating power at the peripheries (like Tibet or Hong Kong) and pushing for more control over disputed territories in the South China Sea, and East China Sea (Mastro, 2022).
- Expanding economic influence through the Belt and Road Initiative (BRI) (Mandelbaum & Weiffen, 2023), a project that involves more than 130 countries and allocated more than 1 trillion USD worth of investments (Mastro, 2022).
- Establishing new standards especially in areas of technology where China is equal to or even ahead of the West (space exploration, cybersecurity, 5G communication) (Bracken et al., 2021; Mastro, 2022). The promotion of cyber sovereignty is seen by many as an attempt to promote autocracy around the world (Mandelbaum & Weiffen, 2023; Mastro, 2022).

### ***Megatrends***

The term ‘megatrend’ was coined by John Naisbitt. His 1990 book that he co-authored with Patricia Aburdene defines megatrends as large social, economic, political, and technological changes that are slow to form, and once in place, they influence us for some time (a decade or even longer) (J. Naisbitt & Aburdene, 1990). According to Batt (2018) “a megatrend is a significant long-term shift in environmental, economic and social conditions that defines our future world and the pace of change” (Batt, 2018, p. 1). “Megatrends are global changes in individual, social and technological structures which are thought to have a major impact on the futures markets” (Hessel, 2014, p. 99). They are “gradual yet powerful trajectories of change that will at some point express themselves with explosive force and throw companies, individuals and societies into freefall” (Hajkowicz, 2015, p. 1). Its course is similar to the product life curve, so we can distinguish introductory, growth, maturity and decline stages, and the “mega” nature of the trend is determined by the length, spectrum and depth of the impact (Malik & Janowska, 2018).

Some approaches define the term by setting the criteria for megatrends (Linthorst & De Waal, 2020; Vukanović, 2018). These criteria typically focus on four aspects: time span, geographic scope, scope of affected systems and certainty of occurrence. The time span of megatrends is long: 10-15 years (J. Naisbitt & Aburdene, 1990), 20 years (Utikal & Woth, 2015), or even 50 years (Galinska, 2018). Additionally, megatrends are gradual shifts that are slow to form (Hajkowicz, 2015; J. Naisbitt & Aburdene, 1990), and their impact is hard to assess because they often coincide

with short-term phenomena (Von Groddeck & Schwarz, 2013). The geographic scope of megatrends is very large, authors usually describe it as global (Jeflea et al., 2022; Vukanović, 2018). A megatrend affects social, economic and environmental systems at the same time, its impact is complex and consists of a mixture of different influences (Hajkowicz, 2015; Horvath et al., 2022; Malik & Janowska, 2018; Mittelstaedt et al., 2014). According to the majority of authors, the probability of the occurrence of a megatrend is high, so the examination of megatrends is sharply separated from the low-probability effects, e.g. from research on the black swan phenomenon (Taleb, 2007). Megatrends can help decision makers to better prepare for a seemingly unpredictable future (Hajdú, 2013).

Based on the four criteria, a megatrend represents social (determined by human interactions) or natural shifts, which exert their effects with relatively high certainty over a long period of time (decades), in a broad (global) geographic environment and on a broad spectrum (in a way that affects several systems). Certainty is weakened by the slow and gradual formation and also by the complexity of the trajectory.

To prepare my study, I reviewed the literature of the last 10 years. I included 19 works from the period 2014-23. Some of the selected works were meta-studies that summarize the results of many other authors (Retief et al., 2016 combine 6 reports; Linthorst & De Waal, 2020 162; Jeflea et al., 2022 840). These are the most important megatrends of the 21<sup>st</sup> century according to the reviewed studies:

- New globalisation - power shift; Environmental crisis; Individualisation and value pluralism; Digital age; Demographic change; Technological convergence (Vielmetter & Sell, 2014).
- Demographic change - ageing; Individualization - specialisation; Social and cultural disparities; Reorganization of healthcare systems; Changes to gender roles; New patterns of mobility (Hessel, 2014).
- Growing demand for scarce resources; Climate and biodiversity challenge; Accelerating technological change; Growing societal expectations for services, experiences; Emerging economies; Digitalisation; Ageing population (Hajkowicz, 2015).
- Emerging markets, consumption; Ageing population; New international economic order; Megacities; Emerging manufacturing hubs; Debt crisis; Trade dilemma (Biswas, 2016).
- Rapidly changing demographics; Rapid urbanization; Accelerating technological innovation; Power shifts; Resource scarcity; Climate change; Global health risks; Continuing economic growth; Ecosystem pressure; Increasing environmental pollution; Diversifying approaches to governance; Individualism; Economic interconnectedness; Public debt; Entrepreneurship rising; Technological convergence (Retief et al., 2016).
- Technology revolution; Biotechnology; Migration; Urbanisation; Social structures; Connected world; Shifting values; Transforming energy; Multi-polar worldview; Economic activity; Mobility; Global limits (Lustig & Ringland, 2018).
- Climate change; Health; Consumerism; Big data; Tech; Globalisation; Individualism; Wealth redistribution; Uncertainty and inequality (IPSOS, 2019).
- Digitalisation; Globalisation; Multi centric world; Democracy crisis (D. Naisbitt & Naisbitt, 2019).
- Globalisation; Digitalisation; Automation; Urbanisation; Migration; Ageing; Climate change; Resource scarcity (OECD, 2019).
- Individualism; Fluid gender identity; Instant knowledge vs. Wisdom; Revival of simpler experiences; Experience delivered by humans; Attention wealth; Purpose first in company operation; Big data access-ownership; Privacy vs tech (Bhargava, 2020).
- Climate change; Ageing; Globalisation; Financial capitalism; Technological change; De-globalisation (Boschetto Doorly, 2020).
- Speed of technological advancement; Flexible employment; Skills mismatch; Sustainable work; Globalisation; Ageing - workforce composition; Increasing inequality;

- Environment; Economic power shift; Urbanisation; Cross-border migration; Resource scarcity; Individualism (Linthorst & De Waal, 2020).
- Demographic trends and ageing; Urbanisation; Gender roles, women; Access to education; Health challenges; Household debt; Income inequality; Climate change; Environmental degradation; Eroding human security; Fragmenting trade; Environment; Public debt; Powerful firms; Internet of things; Automation; Artificial intelligence; New materials; Virtual reality (National Intelligence Council, 2021).
  - Globalisation - Interconnectedness; Digitisation; Open access learning; Millennial and Gen Z expectations; Individualisation; Mental Health; Environmental awareness (Hieker & Pringle, 2021).
  - Deglobalization and self-sufficiency; A New Cold War; Financial instability; End of easy money; Debt crisis; AI threat to work and consumption-based economy; Climate change; Demographic crisis (Roubini, 2022).
  - Communication technology; Inequity; Individualisation; Shared experiences; Faith in political system; New world order; Hate on the rise; Missing middle; Tribes vs. Nations; End of privacy; Polarised science; Population redistribution; AI in entertainment; Gender; Cashless economy & universal basic income; Climate; Shopping; New luxury (Salzman, 2022).
  - Digitalisation, internet of things, smart city; Artificial intelligence, automation; Urbanisation; Education, higher education; Big data; Globalisation; Climate change, sustainability; Autonomous vehicles (Jeflea et al., 2022).
  - Globalisation; Integration; Democratisation (Lebedeva & Kuznetsov, 2022).
  - Digitalisation; Urbanization; Globalisation; Climate change; Automation; Mobility; Global health; Ageing population; Emerging markets; Sustainability (Haluza & Jungwirth, 2023).

Many of these megatrends are not easily comparable. While different authors may use the same term to tag the megatrend, the description can be different (e.g., when writing about demographic changes, some authors emphasize the diverging paths of Africa and other continents, others primarily focus on ageing, and there are studies that mostly discuss urbanisation trends). Some studies discuss the same trends under one umbrella, others interpret them as separate megatrends (e.g., climate change, sustainability and the scarcity of resources). *Table 1* summarises the megatrends that were most frequently mentioned in the surveyed literature.

Table 1. The most frequently mentioned megatrends

Megatrend	No. of mentions
Shift of economic power, Emerging markets, New economic order	11
Digitalisation	11
Climate change	11
Demographic crisis	11
Globalisation	10
Accelerating technological innovation, Technological cohesion	8
Increasing individualism	8
Rapid urbanisation	7
Health challenge, Mental health	7
Socio-economic inequalities	6
Debt crisis, Indebtedness of households, Increase in public debt	5
Artificial Intelligence	5
Migration	5
Deglobalization, Trade reduction	4
Diversity of governance, Trust in the political system	4
Automation	4

New patterns of mobility	4
Scarce resources	4
Increasing environmental pollution, Reduction of biodiversity	4
Gender roles	4
Big data	3
Spread of consumerism	3
Environmental awareness	3
Change in education, Open access learning	3

Source: author's own work

### Data and methods

This study seeks to answer whether and how the elements of the Chinese grand strategy are connected to megatrends, and whether the grand strategy had any impact on global megatrends narratives. The first question is answered by comparing the literature review results on Chinese grand strategy and megatrends.

Answering the second question requires a trend analysis. I used the Google Trends database (<https://trends.google.com/trends/explore?date=all&hl=en>) to get quantifiable data on the frequency of terms whose narrative is connected to the two objects of analysis (grand strategy and megatrends). Google Trends provides aggregated data on the frequency of searches of any term that was entered to their search engine. Data is available from 2004 on a monthly basis, although the method was refined several times over the two-decade period. My calculations are based on the non-real time data, which means that the time period considered is 1 January 2004 and 12 November 2023. Google provides a monthly value for every search term; I used the mean of the 12 months (11 in case of 2023) to get a frequency figure for every year. Both country-level and worldwide data is available, this research uses the latter.

Google Trends normalises the data by calculating the search interest for a term as a proportion of all searches on all topics on Google. The normalised data are indexed to a 0-100 scale, where 100 represents the highest search interest for the period selected. The dataset I used therefore can only compare trends, the figures of different search terms are not comparable to each other (e.g., the frequency value of 'South China Sea' and 'climate change' is around 14 in 2023, but the actual search interest for climate change is magnitudes larger) (Rogers, 2016).

I collected and calculated yearly frequency data for 12 terms. The first three are meant to measure the narratives about China's grand strategy, the rest represent narratives about megatrends:

1. South China Sea
2. Belt and road initiative
3. Cyber sovereignty
4. Globalisation
5. Deglobalisation
6. Economic world order
7. Digitalisation
8. Climate change
9. Demographic crisis
10. Debt crisis
11. Forms of government
12. Scarce resources

To check the connection between terms describing the grand strategy and different megatrends, I compare the 12 time series. Several methods can be used to detect similarities between two time series. In this analysis, the important aspect of similarity is that two lines start to rise or fall at roughly the same time. When the detection of the combined rise and fall is an important goal (Bartha & Molnár, 2016), the use of the Pearson correlation coefficient is the most appropriate (Bader, 2021). The higher the value of the correlation coefficient, the more similar the two curves

are to each other, indicating that the narratives about the two phenomena coincide. A negative correlations indicates that when one of the terms is on the rise, the other begins to decline.

## Results and discussion

*Table 2* evaluates the most frequently mentioned megatrends from the Chinese grand strategy perspective. It splits megatrends into three categories: driver, influencer, and impacted. Megatrends in the driver category are strongly affected by the Chinese grand strategy. The megatrends with the influencer tag can be influenced by Chinese developments simply because China is a major player in fields that contribute to the trend (e.g., tackling climate change is typically not categorised as part of the grand strategy, but China still has influence over it as the world's largest polluter (Myllyvirta & Qin, 2023)). The impacted category refers to megatrends that have significant impact on China.

Table 2. The most common megatrends and their connection to China and the Chinese grand strategy (Driver column)

Megatrend	Driver	Influencer	Impacted
Shift of economic power, Emerging markets, New economic order	Y		
Digitalisation	Y		
Climate change		Y	
Demographic crisis			Y
Globalisation	Y		
Accelerating technological innovation, Technological cohesion		Y	
Increasing individualism			Y
Rapid urbanisation			Y
Health challenge, Mental health			Y
Socio-economic inequalities			Y
Debt crisis, Indebtedness of households, Increase in public debt			Y
Artificial Intelligence		Y	
Migration			Y
Deglobalization, Trade reduction	Y		
Diversity of governance, Trust in the political system	Y		
Automation		Y	
New patterns of mobility		Y	
Scarce resources	Y		
Increasing environmental pollution, Reduction of biodiversity		Y	
Gender roles			Y
Big data		Y	
Spread of consumerism			Y
Environmental awareness			Y
Change in education, Open access learning			Y

Source: author's own work

I will only focus on the Driver column of *Table 2*. If indeed it is China's ultimate goal to replace the USA as the hegemon power (Doshi, 2021), the country is a direct driver of the 'Shift of economic power, Emerging markets, New economic order' megatrend, and this aim is directly connected to the 'Globalisation' and 'Deglobalisation, Trade reduction' megatrends, too. China is

actively seeking to establish new standards in the areas connected to the digitalisation realm (Bracken et al., 2021; Mastro, 2022), while propagating the idea of digital sovereignty (Mandelbaum & Weiffen, 2023). These strategic moves make China an influencer of the ‘Digitalisation’ and the ‘Diversity of governance, Trust in the political system’ megatrends. China’s experience in controlling the cyberspace helps to increase the government’s control over the narrative, therefore the technology, if made available for other countries, can contribute to the strengthening of autocratic regimes. Finally, as Mastro (2022) highlights it, around half of China’s crude oil imports (the world’s largest energy importer) go through the Malacca straight, making the country vulnerable in the South China Sea and beyond. Access to scarce resources, such as crude oil (but rare earth elements, too (Zou et al., 2022) connects the ‘Scarce resources’ megatrend to the Chinese grand strategy.

I picked three terms that are meant to represent the most important components of the grand strategy in a narrative analysis: first, ‘South China Sea’ as this area seems to be a focus point in the Chinese national security strategy, and it is closely connected to the secure access to scarce resources, too; and the BRI and ‘cyber sovereignty’, because these are the most commonly mentioned grand tools of China’s grand strategy. Figure 1 shows the search interests of these terms. Both the ‘South China Sea’ and the BRI seem to have peaked in the second part of the 2010s, while ‘Cyber sovereignty’ has been rising steadily (the frequency values for this term are lower, because some large outliers were removed from the beginning of the period, 2004-2006).

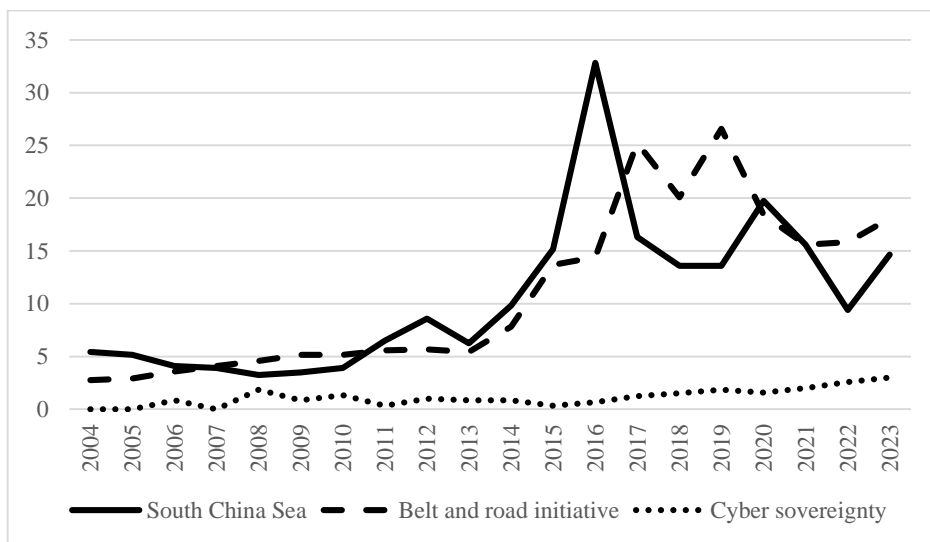


Figure 1. The narrative trends about the key elements of China’s grand strategy

Source: author’s own calculations based on Google Trends data

I also checked the Pearson correlation coefficients between the time series of these three grand strategy terms, and 9 other megatrends terms (Table 3). The table only includes coefficients if the correlation was significant at 5% level. ‘South China Sea’ is only correlated with ‘Globalisation’ and ‘Digitalisation’, which means that searches for these terms had a similar trend. ‘Belt and Road Initiative’ is correlated with ‘Digitalisation’ (strongest), ‘Scarce resources’, ‘Climate change’, and ‘Globalisation’ (weakest). Finally, ‘Cyber sovereignty’ is correlated to almost all investigated areas: ‘Digitalisation’ (strongest), ‘Climate change’, ‘Deglobalisation’, ‘Scarce resource’, ‘Economic world order’ (strong), ‘Demographic crisis’, and ‘Globalisation’ (weakest).

Table 3. The significant Pearson correlation coefficients of the three grand strategy terms

Megatrend	SCS	BRI	CS
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Globalisation	<i>-0,491</i>	<i>-0,574</i>	<i>-0,474</i>
Deglobalisation			<i>0,759</i>
Economic world order			<i>0,726</i>
Digitalisation	<i>0,494</i>	<i>0,768</i>	<i>0,785</i>
Climate change		<i>0,559</i>	<i>0,781</i>
Demographic crisis			<i>0,597</i>
Debt crisis			
Forms of governments			
Scarce resources		<i>0,607</i>	<i>0,734</i>

Note: SCS = South China Sea; BRI = Belt and Road Initiative; CS = cyber sovereignty

Source: author's own calculations based on Google Trends data

10 of the 13 significant correlations (these are shown in *italics* in *Table 3*) are detected with Driver category megatrends, which I earlier identified as ones that can be strongly affected by the Chinese grand strategy. This can be interpreted as a sign of China, and China's grand strategy having an impact on the global narrative.

## Conclusion

This study identifies four possible components of China's grand strategy: 1) building up military power, 2) consolidating power at the peripheries and pushing for more control over disputed territories, 3) expanding economic influence through the BRI, and 4) establishing new standards in digital technologies and promoting cyber sovereignty. I claim that these grand strategy components can act as drivers of the following megatrends: 1) Shift of economic power, Emerging markets, New economic order; 2) Digitalisation; 3) Globalisation; 4) Deglobalization, Trade reduction; 5) Diversity of governance, Trust in the political system; and 6) Scarce resources.

I pick the terms 'South China Sea', BRI, and 'Cyber sovereignty' as measures of the global narrative about the Chinese grand strategy. Using Google Trends data for the 2004-2023 period, I show that the narrative on the first two has peaked in the second part of the 2010s, while 'Cyber sovereignty' has been steadily rising. I also check whether these trends coincide with narratives about megatrends. I find that most of the significant correlations are with terms (namely: globalisation, deglobalisation, economic world order, digitalisation, and scarce resources) that represent megatrends which can be driven by decisions related to the grand strategy. This can be interpreted as a sign of China, and China's grand strategy having an impact on the global narrative. Two megatrend terms, globalisation and digitalisation are correlated with all three measures of Chinese grand strategy. Scarce resources are correlated with two of them (BRI and Cyber sovereignty). These represent the three megatrends whose narrative is most closely connected to narratives about China's grand strategy.

The quantitative part of this study is based on a trend analysis using Google Trends data. This quantitative part is speculative. It identifies some terms with the components of China's grand strategy, other terms with megatrends, and checks if the time series showing search interests for these terms are correlated or not. A significant correlation between two terms shows that the trends of two narratives (manifested in the form of search interest in Google's search engine) coincide.

## Funding acknowledgement

Project no. K 147241 has been implemented with the support provided by the Ministry of Culture and Innovation of Hungary from the National Research, Development and Innovation Fund, financed under the „OTKA” (K\_23) funding scheme.

## References

- Bader, A. (2021). *How can we quantify similarity between time series?* Medium. <https://tech.gorilla.co/how-can-we-quantify-similarity-between-time-series-ed1d0b633ca0>
- Bartha, Z., & Molnár, L. (2016). The SLEM Model as an Assessment Method for Local Goods' Competitiveness. *Theory, Methodology, Practice*, 12(Special Issue), 5–13. <https://doi.org/10.18096/TMP.2016.02.01>
- Batt, P. J. (2018). Responding to the challenges presented by global megatrends. *Acta Horticulturae*, 1205, 1–12. <https://doi.org/10.17660/ActaHortic.2018.1205.1>
- Bhargava, R. (2020). *Non-obvious megatrends: How to see what others miss and predict the future* ([Revised 10th anniversary edition]). Ideapress Publishing.
- Biswas, R. (2016). *Asian Megatrends*. Palgrave Macmillan UK. <https://doi.org/10.1057/9781137441898>
- Blagden, D. (2021). Roleplay, realpolitik and 'great powerness': The logical distinction between survival and social performance in grand strategy. *European Journal of International Relations*, 27(4), 1162–1192. <https://doi.org/10.1177/13540661211048776>
- Boschetto Doorly, V. (2020). *Megatrends Defining the Future of Tourism: A Journey Within the Journey in 12 Universal Truths* (Vol. 6). Springer International Publishing. <https://doi.org/10.1007/978-3-030-48626-6>
- Bracken, P. J., Li, H., Sutter, R. G., Cossa, R. A., Murphy, A. M., Sachdeva, G., Walker, J. W., Kuchins, A., & Zhu, Z. (2021). *China's grand strategy: A roadmap to global power?* (D. Denoon, Ed.). New York University Press.
- Doshi, R. (2021). *The Long Game: China's Grand Strategy to Displace American Order* (1st ed.). Oxford University Press New York. <https://doi.org/10.1093/oso/9780197527917.001.0001>
- Gaddis, J. L. (2005). *Strategies of containment: A critical appraisal of American national security policy during the Cold War* (Rev. and expanded ed). Oxford University Press.
- Galinska, B. (2018). *Logistics megatrends and their influence on supply chains*. 18 th international scientific conference Business Logistics in Modern Management, Osijek, Croatia.
- Goddard, S. E. (2018). Embedded Revisionism: Networks, Institutions, and Challenges to World Order. *International Organization*, 72(4), 763–797. <https://doi.org/10.1017/S0020818318000206>
- Goddard, S. E., & Krebs, R. R. (2015). Rhetoric, Legitimation, and Grand Strategy. *Security Studies*, 24(1), 5–36. <https://doi.org/10.1080/09636412.2014.1001198>
- Hajdú, N. (2013). Strategic and Operative Marketing Controlling. *Theory, Methodology, Practice*, 9(1), 23–31.
- Hajkowicz, S. (2015). *Global megatrends: Seven patterns of change shaping our future*. CSIRO Publishing.
- Haluza, D., & Jungwirth, D. (2023). Artificial Intelligence and Ten Societal Megatrends: An Exploratory Study Using GPT-3. *Systems*, 11(3), 120. <https://doi.org/10.3390/systems11030120>
- Hessel, V. (2014). Megatrends – megascience? *Green Processing and Synthesis*, 3(2), 99–100. <https://doi.org/10.1515/gps-2014-0021>
- Hieker, C., & Pringle, J. (2021). *The Future of Leadership Development: Disruption and the Impact of Megatrends*. Springer International Publishing. <https://doi.org/10.1007/978-3-030-53544-5>
- Horvath, A., Papp, A. T., Liptak, K., Molnar, L., Markovics, K. S., Manafi, I., & Musinszki, Z. (2022). Decarbonisation and financial performance of energy companies. *Amfiteatru Economic*, 24(61), 701–719. <https://doi.org/10.24818/EA/2022/61/701>
- Ilbury, C., & Sunter, C. (2001). *The mind of a fox* (1st ed). Human & Rousseau/Tafelberg.
- IPSOS. (2019). *Global Trends 2020*. IPSOS Mori. [https://www.ipsos.com/sites/default/files/ct/publication/documents/2020-02/ipsos-global-trends-2020-understanding-complexity\\_1.pdf](https://www.ipsos.com/sites/default/files/ct/publication/documents/2020-02/ipsos-global-trends-2020-understanding-complexity_1.pdf)

- Jeflea, F. V., Danciulescu, D., Sitnikov, C. S., Filipeanu, D., Park, J. O., & Tugui, A. (2022). Societal Technological Megatrends: A Bibliometric Analysis from 1982 to 2021. *Sustainability*, 14(3), 1543. <https://doi.org/10.3390/su14031543>
- Lebedeva, M. M., & Kuznetsov, D. A. (2022). *Megatrends of World Politics: Globalization, Integration and Democratization* (1st ed.). Routledge. <https://doi.org/10.4324/9781003320944>
- Linthorst, J., & De Waal, A. (2020). Megatrends and Disruptors and Their Postulated Impact on Organizations. *Sustainability*, 12(20), 8740. <https://doi.org/10.3390/su12208740>
- Lustig, P., & Ringland, G. (2018). *Megatrends and how to survive them: Preparing for 2032*. Cambridge Scholars Publishing.
- Malik, R., & Janowska, A. A. (2018). Megatrends and their use in economic analyses of contemporary challenges in the world economy. *Prace Naukowe Uniwersytetu Ekonomicznego We Wrocławiu*, 523, 209–220. <https://doi.org/10.15611/pn.2018.523.18>
- Mandelbaum, H. G., & Weiffen, B. (2023). The Belt and Road Initiative and Autocracy Promotion as Elements of China's Grand Strategy. In A. Mihr, P. Sorbello, & B. Weiffen (Eds.), *Securitization and Democracy in Eurasia* (pp. 361–374). Springer International Publishing. [https://doi.org/10.1007/978-3-031-16659-4\\_25](https://doi.org/10.1007/978-3-031-16659-4_25)
- Mastro, O. S. (2022). China's Grand Strategy. *Asia Policy*, 29(1), 161–172. <https://doi.org/10.1353/asp.2022.0011>
- Mittelstaedt, J. D., Shultz, C. J., Kilbourne, W. E., & Peterson, M. (2014). Sustainability as Megatrend: Two Schools of Macromarketing Thought. *Journal of Macromarketing*, 34(3), 253–264. <https://doi.org/10.1177/0276146713520551>
- Mokry, S. (2023). Grand strategy and the construction of the national interest: The underpinnings of Sino-US strategic competition. *International Politics*. <https://doi.org/10.1057/s41311-023-00452-w>
- Myllyvirta, L., & Qin, Q. (2023, August 10). Analysis: China's CO2 emissions in Q2 2023 rebound to 2021's record levels. *Carbon Brief*. <https://www.carbonbrief.org/analysis-chinas-co2-emissions-in-q2-2023-rebound-to-2021s-record-levels/>
- Naisbitt, D., & Naisbitt, J. (2019). *Mastering megatrends: Understanding and leveraging the evolving new world*.
- Naisbitt, J., & Aburdene, P. (1990). *Megatrends 2000: Ten new directions for the 1990's* (1st ed). Morrow.
- National Intelligence Council. (2021). *Global trends 2040: A more contested world*. [www.dni.gov/nic/globaltrends](http://www.dni.gov/nic/globaltrends)
- OECD. (2019). *OECD Regional Outlook 2019: Leveraging megatrends for cities and rural areas*. OECD Publishing.
- Osnos, E. (2020, January 6). The Future of America's Contest with China. *The New Yorker*. <https://www.newyorker.com/magazine/2020/01/13/the-future-of-americas-contest-with-china>
- Retief, F., Bond, A., Pope, J., Morrison-Saunders, A., & King, N. (2016). Global megatrends and their implications for environmental assessment practice. *Environmental Impact Assessment Review*, 61, 52–60. <https://doi.org/10.1016/j.eiar.2016.07.002>
- Rogers, S. (2016, July 1). What is Google Trends data—And what does it mean? *Google News Lab*. <https://medium.com/google-news-lab/what-is-google-trends-data-and-what-does-it-mean-b48f07342ee8>
- Roubini, N. (2022). *Megathreats: Ten dangerous trends that imperil our future, and how to survive them* (First edition). Little, Brown and Company.
- Salzman, M. L. (2022). *The new megatrends* (First edition). Currency.
- Silove, N. (2018). Beyond the Buzzword: The Three Meanings of “Grand Strategy”. *Security Studies*, 27(1), 27–57. <https://doi.org/10.1080/09636412.2017.1360073>
- Taleb, N. N. (2007). *The black swan: The impact of the highly improbable* (1st ed). Random House.

- Utikal, H., & Woth, J. (2015). From megatrends to business excellence: Managing change in the German chemical and pharmaceutical industry. *Journal of Business Chemistry*, 12(2), 41–47.
- Vielmetter, G., & Sell, Y. (2014). *Leadership 2030: The six megatrends you need to understand to lead your company into the future*. AMACOM, American Management Association.
- Von Groddeck, V., & Schwarz, J. O. (2013). Perceiving megatrends as empty signifiers: A discourse-theoretical interpretation of trend management. *Futures*, 47, 28–37. <https://doi.org/10.1016/j.futures.2013.01.004>
- Vukanović, Z. (2018). The influence of ICT megatrends on global megatrends. *Informatologia*, 51(1–2), 43–52. <https://doi.org/10.32914/i.51.1-2.5>
- Zou, B., Poncin, S., & Bertinelli, L. (2022). The U.S.-China Supply Competition for Rare Earth Elements: A Dynamic Game View. *Environmental Modeling & Assessment*, 27(5), 883–900. <https://doi.org/10.1007/s10666-022-09819-4>

**Dóra Gyarmati-Szijj<sup>12</sup> – Péter Rada<sup>13</sup>**

***Strategic autonomy of the EU in the light of CSDP and the changing world order***

*The development of the European Union's activity as a security actor is closely linked to the need for global capacity for action in this domain, with a clearly "softer" role definition than NATO, which is derived from a collective security concept. The aim of this study is to identify how and under what circumstances the European Union's self-definition in the field of security and defense policy has evolved, how it has attempted to make the EU be present in the changing world order as an independent actor asserting its strategic autonomy with a specific voice. The paper looks back not only on the development of the EU security and defense policy, but also highlights the two decades of Hungarian operational involvement in it. Our central assumption is that the strengthening of the EU's strategic autonomy, in which CSDP is one of the core instruments, cannot be avoided amid the challenges of the modern era if the EU wants to preserve its competitiveness and adaptive responsiveness.*

*Keywords: EU, CSDP, world order, strategic autonomy*

*JEL Classification: B00, B20, B27, F00, F50, F51*

<https://doi.org/10.32976/stratfuz.2024.17>

**Introduction**

The European Union's worldwide competitiveness is perceived as a mechanism for ensuring security, where a rapid transition towards digitalization and environmental sustainability will assume a pivotal position. The attainment of this objective through a "fair, equitable, and inclusive" approach is expected to contribute to the enhancement of the social aspect, so successfully tackling the demographic obstacles that Europe is currently confronting. This will have a particularly significant influence in the post-Covid era compared to previous periods.

Despite the prevalence of contradicting ideas about the world order like the end of history (Fukuyama 1993), the clash of civilizations (Huntington 2015), or the post-American world (Zakaria 2011), Russia's armed aggression against Ukraine ended the post-Cold War period. However, the current state of the international order and the necessary preparations and adaptations that the European Union, including Hungary, must undertake remain rather ambiguous.

The current strategy of the presidency trio places greater emphasis on strengthening the EU as a global and autonomous actor, where the EU aspires to be a proactive and resolute entity in the realm of security and defense policy. This entails implementing a well-balanced trade policy and enhancing all aspects of security. This strategic objective extends beyond safeguarding the EU's interests and implementing policy solutions (only) based on values.<sup>14</sup>

The incorporation of a comprehensive security approach as a prevailing strategy is not a novel aspect within a trio's agenda. The notion of Europe aiming to augment its global capabilities has long been ingrained in the European Union's shared position and mindset in matters pertaining to security and defense policy. The current security (self-)perception of security is influenced by decades of policy development, debate, external or internal crises. This perception has been further strengthened by the establishment of the EU's common security and defense policy, as well as the

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increasing impact of the migration crisis, the global Covid pandemic, and the war in Europe's neighborhood.

The main aim of this paper is to examine the security and defense strategy of the EU partly in relation to Hungary's two decades of membership, with a particular focus on Hungary's role within the broader framework of the Common Security and Defence strategy (CSDP). There is a longstanding necessity to enhance and strengthen the shared structure for collaboration in foreign and security policy; however, the concept of integrating a military strategy has already opened up questions related to sovereignty. This study is predicated on the premise that in order for the EU to sustain its competitiveness and adaptability within the evolving global landscape, it is imperative to enhance its strategic autonomy. The EU is a postmodern liberal political body, nonetheless, it appears imperative to enhance its ability to adhere to a pragmatic framework of power, which is the realm of realism. These skills are evidently present in the idea of creation of the CSDP and are a direct consequence of it.

### **Liberal World Order and the question of strategic autonomy**

Under the influence of external challenges, the history of European integration has plunged cyclical questions on the agenda, such as how one of the major beneficiaries of the liberal world order, the EU, can turn from a political dwarf of an economic giant to a real global power. This is not negligible in that the EU relied on the security shield provided by the United States during every external security crisis, and without Washington, it has not been able to act effectively even in conflicts in Europe or in its neighborhood. See for instance the war in Yugoslavia which eventually led to the birth of the European security policy. The subsequent security and defense policy attitude, and understandably the immediate inclusion of the "peace dividend" (Rockoff 1998) after the end of the Cold War and the use of the money instead of defense for economic and social developments, seemed logical from an internal policy point of view in a rules-based and predictable international order, eventually driven, maintained and protected by the liberal foreign policy interest of the United States.

Today, however, the "liberal world order" faces undeniably serious questions about its existence, its basic logic, its functioning. Russia and China have gradually challenged the limits in recent years, with critical voices growing in the United States and even in the EU, but a real alternative is not on the horizon and a liberal order based on rules that contain realist elements continues to determine international relations. Countries adjust to order because it is in their immediate interest (at least in the short term) or because there is no other way to adjust, and order itself reduces uncertainty so that the world of realistic uncontrolled anarchy does not become a reality.

This paper, as stated in the introduction, does not aim to comprehensively analyze all aspects of strategic autonomy. Instead, it specifically focuses on the military and defense dimensions of autonomy. In relation to strategic autonomy, significant quandaries emerge, including the question of how the EU can possess the capacity to autonomously make choices, particularly when its suitability for upholding a zone of peace and stability (Rada-Nyilas 2023) inside its own continent is subject to scrutiny. Subsequently, it would demonstrate the EU's credibility to make independent decisions on a global scale, which had implications for the global order.<sup>15</sup>

The history of European integration has raised recurring questions due to external constraints. These questions include how the EU, which has greatly benefited from the liberal international order, can transform from a politically insignificant economic powerhouse into a significant worldwide political player. The significance of this matter lies in the fact – as mentioned above – that the EU heavily depended on the security protection offered by the United States throughout any foreign political crises. Without the presence of Washington, the EU would be unable to adequately respond to military conflicts.

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<sup>15</sup> The compulsory force of the international system is one of the central elements of Kenneth Waltz's classical neo-structural realism theory (Waltz 2010).

The topic of the New World Order has garnered significant attention in the realm of international literature. However, it is imperative to establish a clear definition of global order within the framework of the international liberal order. This paper does not aim to elucidate the theoretical distinction between the concepts of global order and international order. When referring to the phrase liberal international order(s) in the current context, it is important to note that the theoretical definitions of international system by John Ikenberry (2020) or Robert Kagan (2022) might serve as a point of reference. The ideals of collaboration, free commerce, the universality of human rights, and peaceful cohabitation are considered to be the „pillars” of the liberal international order in this particular scenario. In our understanding, world order may be seen as a global regulatory concept that compels participants within the international system to behave accordingly, regardless of their lack of alignment with liberal values.<sup>16</sup> The conceptual foundation of the liberal world order, as well as all practical issues, lies in the inherent human inclination to reside within predictable limits. Immanuel Kant’s treatise on “Zum ewigen Frieden” (Kant 1998) is inherently idealistic and has implications for liberal international relations. Arthur Schopenhauer (2009), a proponent of Kantian philosophy, further developed this idea by embracing the theory of order, which is independent of human activity and assumes its all-determining logic. The obligatory framework is established by the policymakers of the liberal global order and the participants of the order are unable to disregard it. The manifestation of surrealism<sup>17</sup> is evident here: there is a paradigmatic framework established and managed by the „West,” of which the EU clearly constitutes a component, but for the perpetuation of this framework in alignment with liberal values, it is imperative that agenda-makers, particularly the EU, enhance its efficacy by the incorporation of classical power categories that may be understood in a pragmatic manner. That is to maintain a liberal order the agenda setter needs to be realist. Envisioning the latter is a challenging task that necessitates a genuine strategic autonomy, extending beyond mere philosophical deliberations.<sup>18</sup>

The world order refers to the structural framework that maintains equilibrium by facilitating the reorganization of foreign policy goals and motives of individual players via the process of compromise. In the event that the equilibrium is disturbed or perceived by the involved parties, a process of repositioning is undertaken with the objective of mitigating any adverse consequences that may arise from the alteration in the global arrangement for the respective actor. Nevertheless, any action that alters the equilibrium might exacerbate the participants’ feeling of insecurity, so generating a rapid detrimental cycle that will challenge the core principles of the system. The legitimacy of the world order is derived from the adherence of its players to its rules, despite their diverse intentions, perceptions, and interests. This adherence is rooted in the belief that the order’s laws are less detrimental to their safety and well-being compared to the uncertain post-liberal world. This assertion posits that the dynamics of change have become more pronounced among international actors. However, it raises the question of whether the equilibrium can be altered without substantial disruptions, such as a direct confrontation between China and the United States. The equilibrium was undeniably disrupted in 2022, and the conflict in Ukraine is more indicative than a result of this. Each actor in the sequence possesses pessimistic expectations that they endeavor to modify. The restoration of order by the United States is likely to elicit adverse reactions not only in China but also throughout the global South. Simultaneously, in the event that Washington maintains a state of inactivity, it also amplifies the level of uncertainty and concurrently undermines the credibility of the order. It is in the EU’s best interest to reinstate the equilibrium, while it would be advantageous to possess autonomous capabilities in the event that this outcome is not achieved.

<sup>16</sup> See a deeper argument related to this very question in: Pongrácz, Rada 2023.; or Rada, Varga 2023.

<sup>17</sup> See for more explanation and details: Rada 2023.; Rada-Stepper 2023.

<sup>18</sup> This is reflected in the study of the State of the Union speech by the President of the European Commission, Ursula von der Leyen. The term “strategic autonomy” appears much more often than before and is interestingly associated not with defense policy but with economic and technological challenges. See: European Commission 2023.

The existing body of research consistently demonstrates<sup>19</sup> that the Russian aggression has engendered a geopolitical landscape for the EU that is unprecedented in Europe since the Cold War, and in certain aspects, even comparable to the Second World War. Putin's endeavors to establish an empire and colonize Ukraine necessitate the EU to possess the capacity to engage in politically cohesive thinking on strategic matters. This would include expediting decision-making processes and perhaps reinforcing some federal, imperialistic traits, which critics argue are undesirable. Nevertheless, the presence of a strategically independent EU does not ensure that the EU will remain exempt from global wars, even if the imperative for enhanced security necessitates it. By increasing the degree of economic concentration and prosperity inside the EU would not be excluded from potential conflicts like as those between the United States and China. For instance, following a two-year period of conflict in Ukraine, the European Union is projected to incur expenses exceeding €200 billion. Furthermore, implementing a set of sanctions on China and addressing its worldwide economic repercussions would result in more severe outcomes (Sikorski 2023, 75).

From the EU's standpoint, there exists a scarcity of thorough studies that have been undertaken to examine the systemic changes associated with the conflict in Ukraine. In relation to the EU, the assertions pertaining to the United States concerning the alteration in the „liberal world order” and its ramifications are typically accurate. It is imperative to differentiate between the perspectives held by Europeans, namely the European liberal worldview, regarding the global landscape, the principles embodied by the EU, and the actualities that have emerged as a consequence of a conflict on the continent. The initiation of the Russian neocolonialist set of actions did not commence in the year 2022. As early as 2007, President Putin expressed his aspiration to reconstruct a more efficient and contemporary Soviet Union during his address at the Munich Security Forum<sup>20</sup>, even if many did not want to understand it. This ambitious foreign policy, characterized by territorial expansion, was exemplified by the military intervention in Georgia in 2008, the annexation of Crimea in 2014, and the occupation of eastern Ukrainian territories in the same year. The EU, in conjunction with the United States, did not offer a definitive „imperial” reaction, which, according to certain interpretations, might have been seen as a vulnerability from Putin's perspective and a concession that is acceptable from the standpoint of the Western world and the global order may be the new status quo. In order to mitigate any misinterpretations, it has become imperative for the EU to establish precise delineations of its „zone of influence”. This entails expediting the expansion efforts in the Western Balkans and Eastern Europe. The EU's credibility in strategic affairs is contingent upon its unity and its ability to effectively deepen alongside enlargement. In light of the growing competition between the United States and China, it is conceivable that Washington may exert greater pressure on the EU to enhance its defense capabilities. This could potentially manifest as an expectation, albeit not explicitly articulated, for the EU to address European security challenges, including those posed by Russia and the post-war reconstruction of Ukraine.

The interpretation of a world governed by power politics and self-help poses challenges within the framework of European liberal ideology, which is primarily characterized by a cooperative mindset. The act of aggression by Russia, in isolation, does not alter the existing global order. However, it does prompt inquiries on the strategic position that Russia would be deemed valuable in the context of a Sino-American struggle or conflict. Implementing a potential future embargo against China would result in a severe economic crisis inside the European Union, underscoring the need of avoiding the initiation of a new kind of Cold War. It is imperative to acknowledge inside the European Union that Russia will continue to exert influence beyond the conclusion of the conflict, and full isolation is unattainable due to several factors, such as the energy challenge. The protracted conflict and subsequent post-conflict rehabilitation are expected to have a greater impact on the European Union's economy compared to the United States. Therefore, it is

<sup>19</sup> See detailed description in: Rada 2023.

<sup>20</sup> See the full speech: URL: <https://www.youtube.com/watch?v=hQ58Yv6kP44>

imperative for the EU to expeditiously bring an end to the war. European integration has progressed with the support of U.S. security assurances. However, in a revised global arrangement, it may not be practical to solely depend on U.S. guarantees. Therefore, it is not surprising that the potential for strategic autonomy is a key focus in visions regarding the future of the EU. EU leaders face a challenging situation as they must navigate the perceived shifts in the global order, the pressing European interests, the indispensability of certain values, and the vulnerability of EU citizens to extreme challenges such as economic hardships, energy insecurity, and the psychological burden of the risk of war escalation.

The EU's growing focus on enhancing autonomous defense capabilities in the last ten years may be attributed to deliberate efforts, as evidenced by the Treaty of Lisbon (Koller 2012), which established the framework for differentiated integration. However, the EU's defense development and opportunity measures have not yet resulted in tangible capacity-building. The concept of EU combat groups has been in existence for over two decades, with the first planning of the first combat group beginning in 2007. However, no combat group has been deployed since.<sup>21</sup> The permanent structured cooperation, which is legally established under the Lisbon Treaty, was initiated in 2017 by the EU member states who expressed interest. Despite the adoption of the strategic compass in 2022<sup>22</sup>, which was already war-conscious, and the establishment of the European Peace Facility, the EU would face significant challenges in deterring a revisionist power due to the resurgence of Russian aggression and traditional warfare in Europe. The support of the United States is crucial in this regard. European unity must not only build institutional frameworks for defense capabilities, but also effectively implement them in order to enhance credibility, which is an essential prerequisite. Regarding crucial issues for the future global arrangement, such as post-war collaboration with Russia and China, there is a lack of a cohesive European stance. The EU Member States, as a whole, pursue their own foreign policy goals, which undermines the efficacy of the EU's foreign policy (Sikorski, 2023: 70).

The first comprehensive German national security strategy presented in June 2023 can be seen as a significant milestone from the standpoint of European strategic autonomous thinking. Although it may not be the document itself, critics argue that it effectively combines theoretical issue-specific security challenges with practical defense policy issues. One significant interpretation of the National Security Strategy is that Germany envisions a future wherein it assumes a significant role in promoting peace, security, and prosperity within a free yet multipolar international order. This vision is envisioned by Germany, both independently and through the enhancement of its autonomous capabilities. Germany envisions a scenario wherein it operates within the existing „liberal world order” and the institutional security framework established by NATO and the European Union. Furthermore, Germany envisions a close alliance with the United States and a partnership with China.

### **Milestones in the development of the European security and defence policy – a road to the Lisbon Treaty and its reforms**

The roots of a European defence identity that led to the formulation and institutionalization of a unified European defense vision originated from diverse efforts in the political, economic, and ideological wayfinding after WWII. A special focus on security-related issues and security policy as an important theme on the agenda has been presented even in the earliest stages of European integration, and so, security policy issues have been developing organically together with the processes of economic cooperation and political cohesion. These changes were often accompanied by fierce political debates, especially between Great Britain and France, peaked in the historical

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<sup>21</sup> See further information: EU Rapid Deployment Capacity. European Union External Action. URL: [https://www.eeas.europa.eu/eeas/eu-rapid-deployment-capacity-0\\_en](https://www.eeas.europa.eu/eeas/eu-rapid-deployment-capacity-0_en)

<sup>22</sup> See further information: Permanent Structured Cooperation (PESCO). URL: <https://www.pesco.europa.eu/about/>

speech in Zurich in the year 1946 about the necessity of a “United States of Europe”; but these debates also resulted in the construction of the common foreign and security policy (CFSP) pillar with the Treaty of Maastricht and afterward, the remarkable, innovative measures of the Treaty of Lisbon in 2009, the starting period of a new common security and defence policy (CSDP).

In 1952, the French proposal for the creation of the European Defense Community, widely known and referred as the Pleven Plan, was formulated following the idealism of NATO, which was established in 1949 with the Brussels Pact, as an organization that guarantees the security of the North Atlantic allied partners by traditional military means. The Pleven plan originally envisioned a supranational security policy cooperation forum and a military decision-making structure, as well as an executive council operating with unanimous decision-making procedures, which called for the coordination of the foreign and defense policies of the participating members and would have been provided opportunities to a strictly controlled re-armament of the German armed forces and its involvement in military decision-making. In parallel, Pleven also initiated the establishment of the European Political Cooperation, which was envisioned as a federative institution above its participating nations. Finally, all of these federation efforts have failed, neither the European Political Cooperation nor the European Defense Community worked in practice (Gálik, 2008). Nevertheless, forward-looking visions supported the birth of the Western European Union (WEU) in 1954 and this institutional – as a “complementary” of NATO – can be considered a practical and ideological “forerunner” of the EU CSDP frameworks we know these days.

However, WEU with its classic, intergovernmental decision-making process started to work in the shadow of NATO from its very beginning: both the concern about the duplication of defence policy tasks and skepticism due to its institutional weakness were echoed by critics. Nevertheless, the essence and spirituality represented by WEU were handed over due to the so-called Petersberg tasks which considered military tasks with the scope and nature of humanitarian actions, disarmament, and peacekeeping and peacemaking tasks. The Petersberg Declaration signed by the Council of Ministers of the Western European Union in 1992 stated that the main activities implemented by WEU shall focus primarily on humanitarian and evacuation tasks, conflict prevention and peacekeeping, crisis management operations, reconciliation, disarmament-related tasks, as well as reconstruction, military training tasks after armed conflicts, instead of traditional military means and activities. Undertaking these dedicated tasks not only narrowed the path of institutional self-definition but also fixed the attitude towards NATO. The nature and scope of the EU’s former and current civilian missions and military operations mirror these tenets of commitment.

Tasks of the WEU were incorporated into the agenda of the European Council summits held in Cologne and Helsinki in 1999 and this step forward promoted the issue and importance of a more coherent European defence community. The European Security and Defence Policy (ESDP) was named as a new framework and action toolkit, and it was also aimed in the strategic document of the Helsinki Headline Goal that by 2003, a rapid reaction force based on multinational contributions shall be established to be capable of intervening as a crisis management force even in the neighborhood of Europe, in line with the Petersberg tasks and this moment called to life the concept known today as the EU Battlegroups.

The strengthening and better visibility of the European defense identity were also enhanced by the fact that Javier Solana, formerly Secretary General of NATO, became the „face” of the Common Foreign and Security Policy (CFSP) and the ESDP in a dual-hatted role. On one hand, his appointment as High Representative for the CFSP tasks in 1999 strengthened the Common Foreign and Security Policy as an independent pillar of the EU. At the same time, in that year, he was also entrusted with the position of Secretary General of the WEU by the member states intending to gradually transfer WEU tasks into the framework of the ESDP. While the WEU technically functioned until 2011, its significance diminished rapidly due to the changes mentioned earlier.

The experience of the Balkan wars, the Kosovo crisis in 1999, and the following years of peacebuilding and restoration, also served as crucial incentives for the operational capabilities of the Hungarian Defence Forces, accompanied by the incorporation of WEU tasks into the working portfolio of Solana, referred to as the nickname of “Mr. CFSP”. Member states declared EU’s priorities for civilian crisis management in Santa Maria da Feira in 2000, summarized in the document of the Civilian Headline Goal. By the year 2003, EU’s first security strategy, the European Security Strategy was also published. Furthermore, the first crisis management operations were launched in the same year in Macedonia (Concordia, Proxima) and in the Democratic Republic of the Congo (Artemis). (Lindstrom, 2013)

Thus, the characteristic profile of the EU security and defence policy began to take shape by the mid-2000s, and in parallel, the participation of the Hungarian Defence Forces in military operations abroad started, primarily within NATO and later, after the accession to it, within the EU.

The Treaty of Lisbon (2009) is handled as the most significant and legally noteworthy development in the history of European defence identity. With this treaty, the European Union acquired an independent legal personality, consolidating the previous three pillars. The term European Security and Defence Policy was replaced by the Common Security and Defence Policy (CSDP), reflecting a greater solidarity among member states. Among several significant institutional changes, the position of High Representative/Vice President of the European Commission (HR/VP) was established as the permanent president of the Foreign Affairs Council. The first politician appointed to this position was H.E. Catherine Ashton from the U.K. Furthermore, a professional staff was created within the European External Action Service (EEAS), the EU’s diplomatic body, responsible for the policy planning and central monitoring of CSDP and CSDP-actions.

The Treaty of Lisbon significantly enhances member states’ commitment toward mutual assistance and defence. The so-called solidarity clause enables *“The Union and its Member States shall act jointly in a spirit of solidarity if a Member State is the object of a terrorist attack or the victim of a natural or man-made disaster. The Union shall mobilise all the instruments at its disposal, including the military resources made available by the Member States to [...] assist a Member State in its territory, at the request of its political authorities, in the event of a natural or man-made disaster.”* (Article 222 of the TFEU). On the other hand, the mutual defence clause (Article 42(7) TEU) imposes obligations to assist a potentially attacked member state. This clause provides that if a Member State is the victim of armed aggression on its territory, the other Member States must aid and assist it by all the means in their power, starting with diplomatic support to technical assistance and military and civilian crisis management tools. However, the clause stipulates that NATO remains the primary guarantor of collective defense. Last, but not least, the Treaty of Lisbon also provides a framework for enhancing the defence capabilities of member states, coordinating their procurements and their military operational and civilian mission participation, by establishing the Permanent Structured Cooperation (PESCO). Due to PESCO, member states can voluntarily initiate joint projects, research, and acquisitions and set joint capability development goals. National goals and strategies follow and reflect those common and coordinated directives articulated by all member states. PESCO is based on member states’ commitment to fulfilling their obligations.

### **After the Treaty of Lisbon and Hungarian contribution to common defense**

The development and practical implementation of the EU CSDP have always been permeated by and continue to be defined by the demand for a comprehensive (integrated) approach, which has a central impact on the EU’s consideration of crisis management: practically, it reflects that member states share their best practices both for prevention of a conflict and for a lessons-learned base. For example, member states share their situational awareness reports and security analyses

with each other (preventional intention), and they also adopt common political, strategic framework documents to apply coordinated efforts and follow integrated directives during the mission planning and implementation of tasks, or the allocation of different responsibilities in the field of a mission is also based on national commitments and capabilities; member states carry out operational tasks on their specific capabilities, equipment, and willingness. Essentially, we can summarize that this lofty, nice expression and message behind comprehensiveness encompasses a coordinated, strategic method of planning and implementation, derived from a common EU toolkit and the coordinated use of national crisis management resources and capabilities along EU strategic objectives.

Since the beginning of the first operations in 2003, a total of 40 CSDP military operations and civilian missions have been carried out, across three continents. These days, there are 9 ongoing military operations and 13 civilian missions under the auspices of the EU, with 4000 personnel serving in them. Military operations can be represented by training missions (-TM), advisory missions (-AM), and capacity-building missions (-CAP) aiming to develop and strengthen the autonomous defence capabilities, mechanisms and institutional background of the host nation. Ongoing military missions are the following: EUFOR Althea in Bosnia-Herzegovina; EUMPM Niger; EUNAVFOR MED Irini - maritime operation; EUNAVFOR Somalia; EUTM Mali; EUTM Mozambique; EUTM Somalia; EUTM RCA - Central African Republic; EUMAM Ukraine).

Civilian missions focus on advisory activities, capacity-building, and supporting those efforts which relate to the security sector reform (SSR) or rule of law (-LEX), including border assistance missions (-BAM). Recent civilian missions are the EUAM Iraq; EUAM RCA; EUAM Ukraine; EUBAM Libya; EUBAM Rafah; EUCAP Sahel Mali; EUCAP Somalia; EULEX Kosovo; EUM Armenia; EUMM Georgia; EUPOL COPPS - Palestine, rule of law and police mission; EU RACC Sahel; EUPM Moldova).

EU's integrated approach is particularly presented in the complex capacity-building goals in the Sahel region: the EUTM Somalia launched in 2013, the EUCAP Sahel Mali initiated in 2014, and the EU involvement in the Central African Republic started in 2016 are characterized by coordinated efforts of military, police, and civilian forces, as well as multidimensional capacity-building and advisory activities (supporting the host nation's background institutions at various levels in the military, civilian defense, education, and public administration sectors). The EEAS strives to implement these tasks in a way that the partial results and successes of each mission may complement and amplify the effects of the other mission.

According to the abovementioned details and approach, it is evident that EU's crisis management „credo” – the spectrum of the different crisis management tasks as well as the implementation – is characterized by a unique, „Security-Development Nexus”, which strongly relies on a coordinated work with national authorities and other international organizations acting in the mission field. This is particularly visible in correlation with the EU engagement and cooperation with the UN and the African Union, both in terms of high-level political engagement and practical joint work on the spot. The legal basis of CSDP missions' mandate, so the legitimacy of them is usually enabled by the decision of UN Security Council, and mutual operational support with individual regional organizations (e.g. collaboration of EUTM Mali and UN MINUSMA) can also be realized in specific tasks (Boguslawska, 2013). The EU's supportive action, including operational, financial, and development assistance - for example, the support provided to AMISOM under Operation Atalanta or the African Peace Facility financial instrument established to support the AU - complements traditional forms of military/civilian crisis management and regular political dialogues.

A well-known example of operational cooperation with NATO is represented by the joint participation in Bosnia and Herzegovina, via the EUFOR Althea mission. EUFOR Althea, in which the largest contingent of Hungarian troops with 400 soldiers serves and is commanded by a Hungarian chief, is operating according to the so-called Berlin Plus agreement. Concluded and signed in 2002, this agreement allows the EU to utilize and take advantage of NATO's planning

capabilities and intelligence assets for CSDP operations and missions, while it also provides a specific role for the Deputy Supreme Allied Commander Europe (DSACEUR) of NATO. The first practical example of launching a Berlin Plus operation was the Concordia in 2003, and in the year of 2004, after nine years of the NATO IFOR/SFOR commitment, NATO transferred all of its operational responsibilities to the newly launched EUFOR Althea. Upon the launch of EUFOR Althea, new parallel elements were introduced within NATO command structures: DSACEUR oversees the military execution of Althea, while the EU Operational Headquarters (OHQ) supports this work (Ujházy, 2014). The appointment of the Hungarian Major General Dr. László Sticz as operational commander includes high-level and continuous coordination between EU and NATO military cells.

As mentioned earlier, the initial and also current operational activities of the Hungarian Defence Forces are closely attached to the military involvement in the Western Balkan region. Furthermore, the current rotation of the Hungarian contingent within EUFOR is enriched with new responsibilities and tasks: air search and rescue capability, as well as air evacuation capabilities, have been involved as added responsibility areas. Additionally, there is a staff increase in the field of explosive ordnance disposal (EOD), military medical support, and logistics. The Arab Spring and the migration crisis of 2015 also had impacts on the directions of the Hungarian Defence Forces' deployment within the EU framework and on the tenets of political decision-making. With the operational ambition of the HDF - to offer 1000 soldiers serving abroad simultaneously - currently, close to 800 of our soldiers serve in 14 countries on 3 continents, across 9 different missions. As of the summer of 2023, 22% of the total foreign operational force served within the EU framework. Since the launch of the EUTM Somalia mission until their withdrawal in February 2019, Hungarian soldiers have been serving (on average, 4 personnel), and following their withdrawal, the Hungarian contingent gradually increased in size in EUTM Mali, from 7 to 21 personnel (Szász, 2019). (In addition, Hungary joined the Takuba combat force in Mali in 2022, which is a French-led operation.) Hungarian soldiers are also present in smaller numbers in the EUMM Georgia mission and the EUNAVFOR Irini operation. (The would-be military participation in Chad, which has received considerable media attention and harsh criticism, shall be initiated upon individual request of the host nation, and not launched within the EU framework; the first contingent would have been expected to be deployed in the spring of 2024.)

The framework of this study does not allow for a detailed presentation of the EU's civilian crisis management capabilities and Hungary's role in CSDP civilian missions, even though the formulation of the Civilian Headline Goal document closely followed the publication of the Helsinki Headline Goal, and EU civilian crisis management became institutionalized rapidly after the Kosovo crisis in 1999, with the launch of the EUPM mission in 2003. Currently, the review of the Civilian Headline Goal is ongoing, and the publication of the new framework strategy is expected this year. It is also worth emphasizing that the accession of Central European states to the EU in 2004 had a significant impact on the nature of EU civilian crisis management, as these countries became directly adjacent to regions deeply affected by organized crime, instability, and corruption (such as Bosnia and Herzegovina, Ukraine, Turkey, Belarus, and Russia). Naturally, this had an impact on the requirements and tasks of EU civilian crisis management, as evidenced by events such as the Euromaidan protests in 2014 and the mass migration events in 2015. According to Csaba Németh's assessment, the significance of Central and Eastern European member states in EU civilian crisis management is considerable; however, these countries have not yet fully utilized their potential. Therefore, it could be crucial for the future of civilian crisis management to what extent the member states that joined the EU after May 1, 2004, will participate in EU civilian crisis management activities. (Németh, 2017.)

### **Current global challenges and the Hungarian Presidency**

Hungary takes over the Presidency as of 1<sup>st</sup> of July 2024, and it is expected to be accompanied by tense political debates. However, this situation shall provide an opportunity for Hungary to improve its policy reputation within the EU with a pragmatic approach to certain EU policies

(„honest broker”). However, the working groups coordinated by the newly established Ministry for European Union Affairs generally face a challenging task, as Hungary takes over the presidency from its Belgian partners amidst preparations for the negotiations on the next seven-year, long-term budget, and right after the European Parliamentary elections in June. The Hungarian presidency will also be a little bit shorter and more concentrated (with the substantive part lasting 4.5 months), which may result in additional challenges. The intention for the Western Balkans enlargement will be a prominent topic again, but given the shadow of the Russian-Ukrainian war, improvement in the deadlock concerning the accession of Bosnia-Herzegovina, Ukraine, and Moldova is hardly expected.

The chapter „Promoting Europe’s Interests and Values in the World” (V.) enlists the necessity of comprehensive assistance to Ukraine, consistent promotion of EU enlargement, and the European Political Community as a global actor, particularly in terms of energy security and flexible resilience and responsiveness to any crisis, along with the Global Gateway strategy and its nine strategic orientations. The role of EU global partners is also discussed in this context. As a special focus on security and defence policy, the Trio defined the priorities of the EU-UN strategic partnership – in line with the overview of the experience of the Security-Development Nexus), and on the other hand, it is committed to the consistent implementation of the third joint declaration signed between the EU and NATO in January 2023. The preparation for the next strategic period, covering the years 2024-2029, and the formulation of substantive proposals for the development of the CSDP are also (tentative) goals, especially in the context of the post-Covid period and events in Ukraine. The trio shall cope with no less important policy tasks than the strategic review of PESCO and the midterm review of the European Defence Fund - which are expected to spark intense debates among member states. The presidency period may also involve a review of the Council decision on the establishment of the European Peace Facility (EPF). Regarding the development of EU defence capabilities, there is a focus on identifying and addressing capability shortfalls, strengthening the EU’s defense technological and industrial base. Defining the rules for joint defense procurement is aimed at enhancing the EU’s military capabilities, which actively includes cyber diplomacy and the application of hybrid warfare tools. The EEAS currently foresees the strengthening of the CSDP until the period ends in 2030, and so, the Strategic Compass focuses on four main areas to be developed within this timeframe (*act, invest, partner, secure*). As HR/VP Joseph Borrell expressed after the adoption of the strategic vision in 2022, the European Union must learn how to speak the language of power and effective advocacy, and there is a „quantum leap” both in the physical dimensions and practical implementation of capability development. Therefore, it shall be presumed that the general aim of the Hungarian presidency will be in correlation with an active assistance to the implementation of the strategy and the work of the EEAS with all possible means which might strengthen the (more) unified European defence cooperation as a central endeavor.

The renascent idea of establishing an EU Rapid Deployment Capacity (RDC) (*act*) refers to providing a 5000-strong rapid response force by 2025, as well as to developing the capability for the EU to get ready to launch a fully equipped CSDP mission with 200 personnel within 30 days. The improvement of the EPF financial framework to becoming as flexible as possible also aims to ensure a more coordinated, faster, and mutually reinforced, efficient planning, deployment, and implementation of operational tasks, especially in the Sahel region, in the Strait of Hormuz, and the Horn of Africa. It is hard not to notice that the active commitment of the Hungarian foreign- and defence policy in the Sahel region is prominently emphasized and it reflects the emphasis on addressing and solving problems at the local level – and this reflects the strategic directions of the EEAS. Therefore, the Hungarian presidency is expected to coordinate member states’ discussions on the readiness of the RDC and prioritize engagements in the Sahel region (and in the Western Balkans). Assigning financial support to these tasks will also remain an unavoidable topics.

The Strategic Compass emphasizes that the establishment of a Single Intelligence Analysis Capacity is essential in order to strengthen a strategic culture in the sectors of cyberspace and outer space (*secure*) - through the EU Hybrid Toolbox to coordinate member states’ military and

civilian cyber defense capabilities and the adoption of the new Cyber Resilience Act. The EU Satellite Centre is assigned to play a prominent role in this process, but the establishment of the European Infrastructure of Security Operations Centres is also formulated as a future goal, which would significantly contribute to enhancing the cyber capabilities of CSDP missions.

The work carried out by the European Defence Technological and Industrial Base (EDTIB) is also a key focus to cover and bridge strategic capability gaps and prioritize the reduction of technological and industrial dependencies. Promoting synergy in defense capabilities and supporting defense-industrial cooperation (*invest*) could also be topics for the Hungarian EU presidency. This is already assumed in connection with the PESCO review, and moreover, the prominent emergence of Hungarian defense industry investments alone implies that the issue could serve as a reference point in the presidency's action plan.

In terms of partnerships (*partner*), in addition to the importance of regional partners, cooperation with bilateral partners must also be considered, especially with like-minded countries such as the USA, Canada, Norway, the United Kingdom, or Japan. Within the framework of CSDP operations and missions, the EU seeks to encourage the targeted involvement of Western Balkan, African, Asian, and Latin American partners (tailored partnership) in crisis management tasks aimed at enhancing security in their regions. Regarding China, the strategic documents go beyond defining it as an economic competitor and recognize that the EU can only find solutions to many global challenges with China's involvement, especially in the areas of climate change and sustainable development.

Climate change and the „green”, sustainability-related factors of CSDP actions are much more prominently featured in EU communication compared to the previous decade. Promoting energy efficiency in CSDP operations and missions, minimizing the ecological footprint of EU operational forces, and prioritizing green technologies and sustainable digitalization solutions will increasingly come to the fore in crisis management. Therefore, further analysis of this thematic issue may worth, even in terms of the Hungarian Defense Forces' mission preparation for the era by 2030.

Generally, the EU continues to focus on complex crises and crisis management, and so, the improvement of comprehensive response capabilities. What we can see now is a significant shift in emphasis from the traditional physical domains (land, air, maritime) to a broader and more sophisticated space, incorporating hybrid methods that require special expertise and tools to manage/tame, if not control. Thus, the consistency of EU CSDP efforts must be ensured through the coordinated efforts of the HR/VP, the various CSDP actors, and member states' defence ministers.

## Conclusions

Given the challenges highlighted in the paper and the proposed methodologies, the issue remains unresolved: can a more robust, expansive, and effective EU be achieved simultaneously? What are the implications of this for Hungary and its defense policy?

The ongoing conflict in our neighbourhood is a significant obstacle but it has the potential to influence the allocation of resources, the timing of defense-industrial cooperation, and the level engagement from member states. The EU is intrinsically impractical, making it very challenging to respond to a crisis characterized by power dynamics and stringent security factors that necessitate a comprehensive and pragmatic political study. While there is general agreement among EU member states regarding the significance of the war in Ukraine and that Russia is the aggressor, and sanctions have been approved by all countries, it is important to note that realistic and pragmatic perspectives are not commonly heard. Instead, Brussels often expresses strong criticism within the framework of liberal and typical ideological perspectives. However, it is important to recognize that, based on our current perspective and liberal ideologies, we have effectively eliminated the potential for significant, conventional conflicts, such as hybrid and civil wars, to occur in Europe during the post-Soviet Union era.

The Scholzean shift in Russian relations on the EU level has occurred amid a changing international order that has changed the international equilibrium but is undergoing changes. The majority of the European public now perceives Russia as either an adversary or a menace. The EU-Russia ties may undergo a process of normalization, but they will not persist at the same level as they were before to 2022 or earlier.

From a European perspective, the optimal global arrangement entails the expansion of political and diplomatic spheres, ensuring that the United States maintains the distinctive and intimate alliance. In a context characterized by economic openness and mutual interdependence, which aligns with the liberal foundations of the EU, a significant concern arises regarding the preservation of the American alliance's credibility. This is particularly relevant if the EU does not possess the right to unconditionally endorse the geopolitical aspirations of the United States, even if such aspirations are partially directed towards maintaining a „liberal world order”<sup>23</sup> that is agreeable to the EU. Resolving the political conundrum of determining the duration and level of intimate relations with China becomes challenging when China poses a threat to the global order and the United States. Furthermore, it is important to note that the EU faces a predicament wherein it is unable to relinquish its relationship with Russia.

## References

- A magyar EU-elnökség prioritásai. URL: <https://2010-2014.kormany.hu/download/a/d1/10000/A%20magyar%20EU-eln%C3%B6ks%C3%A9g%20priorit%C3%A1sai.pdf>
- A Strategic Compass for Security and Defence. European Union External Action. URL: [https://www.eeas.europa.eu/eeas/strategic-compass-security-and-defence-1\\_en](https://www.eeas.europa.eu/eeas/strategic-compass-security-and-defence-1_en)
- A Tanács programja (10597/2023). URL: <https://data.consilium.europa.eu/doc/document/ST-10597-2023-INIT/hu/pdf>
- ATLANTIC COUNCIL, 2023. The hits and misses in Germany's new national security strategy. *Atlantic Council*. 2023. june 14. URL: <https://www.atlanticcouncil.org/blogs/new-atlanticist/experts-react/the-hits-and-misses-in-germanys-new-national-security-strategy/>
- BOGUSŁAWSKA, H. (2013): Co-operation with Third States and International Organisations. In.: REHRL, J. – WEISSERTH, H.B. (eds.): Handbook on CSDP – The Common Security and Defence Policy of the European Union.
- BUNDESREPUBLIK DEUTSCHLAND, 2023. *In einem vereinten Europa dem Frieden der Welt zu dienen*. URL: <https://www.nationalesicherheitsstrategie.de/Sicherheitsstrategie-DE.pdf>
- Capacity4dev. URL: [https://capacity4dev.europa.eu/groups/public-fragility/info/eus-comprehensive-approach-external-conflict-and-crises\\_en](https://capacity4dev.europa.eu/groups/public-fragility/info/eus-comprehensive-approach-external-conflict-and-crises_en)
- Elnökségi trió programja. URL: <https://data.consilium.europa.eu/doc/document/ST-10597-2023-INIT/hu/pdf>
- EU CSDP missions and operations. URL: [https://www.eeas.europa.eu/eeas/missions-and-operations\\_en](https://www.eeas.europa.eu/eeas/missions-and-operations_en)
- EU Rapid Deployment Capacity. European Union External Action. URL: [https://www.eeas.europa.eu/eeas/eu-rapid-deployment-capacity-0\\_en](https://www.eeas.europa.eu/eeas/eu-rapid-deployment-capacity-0_en)
- EURÓPAI BIZOTTSÁG, 2023. *State of the Union*. URL: [https://state-of-the-union.ec.europa.eu/document/download/2eb4f0c4-58f5-49c9-b0ae-be9ecffe2b19\\_hu?filename=2023%20SOTEU%20Achievements%20and%20Timeline\\_HU\\_0.pdf](https://state-of-the-union.ec.europa.eu/document/download/2eb4f0c4-58f5-49c9-b0ae-be9ecffe2b19_hu?filename=2023%20SOTEU%20Achievements%20and%20Timeline_HU_0.pdf)

<sup>23</sup> Former Indian Foreign Minister Shivshankar Menon expressed an interesting idea, saying that maintaining order is not even in the absolute interest of the United States (see Menon 2022). The EU is the only status quo power in the world.

- FUKUYAMA, F. (1993): *The End of History and the Last Man*. London: Harper Perennial
- GÁLIK, Z. (2010) A közös európai kül- és biztonságpolitika történelmi tapasztalatai és a Lisszaboni Szerződés. *Grotius*. URL: <http://www.grotius.hu/doc/pub/MVVYUP/73%20galik%20zoltan.pdf>
- Global Gateway, URL: [https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/stronger-europe-world/global-gateway\\_en](https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/stronger-europe-world/global-gateway_en)
- Hungary's EU Presidency: What can conceivably be achieved? <https://balkaninsight.com/2023/08/08/hungarys-eu-presidency-what-can-conceivably-be-achieved/>
- HUNTINGTON, S. P. (2015): *A civilizációk összecsapása és a világrend átalakulása*. Budapest: Európa Könyvkiadó
- IKENBERRY, J. G. (2020): *A World Safe for Democracy*, New Haven: Yale University Press
- KAGAN, R. (2022): *A dzsungel visszavág*, Budapest: AJTK
- KANT, I. (1998): *Zum Ewigen Frieden*, Berlin: Phillip Reclam
- KOLLER, B. (2012): A differenciált integráció gyakorlati és elméleti vonatkozásai. *Politikatudományi Szemle*. XXI. 2021/1 32-57.
- LINDSTROM, G. (2013): European Integration: Post World War II to CSDP. In.: REHRL, J. – WEISSERTH, H.B. (eds.): *Handbook on CSDP – The Common Security and Defence Policy of the European Union*.
- MEARSHEIMER, J. J. (2018): *The Great Delusion*, New Haven: Yale University Press
- MENON, S. (2022): Nobody Wants the Current World Order. *Foreign Affairs*. URL: <https://www.foreignaffairs.com/world/nobody-wants-current-world-order>
- NAGY, S. (2020): Az Európai Unió Szomáliai Kiképző Missziója 2010-2019 között. *Nemzet és Biztonság*, 2020/3. sz.
- NÉMETH, CS. (2018): Egy európai vívmányról: Az Európai Unió polgári válságkezelési tevékenysége, különös tekintettel Koszovóra. PTE ÁJK Doktori Iskola, tézis
- PESCO official website, URL: <https://www.pesco.europa.eu/about/>
- PONGRÁCZ A. – RADA, P. (2023): Az államépítés relevanciája a 21. század harmadik évtizedében. *Külgügyi Szemle*, 2023/2, 78-94. [https://doi.org/10.47707/Kulugyi\\_Szemle.2023.2.4](https://doi.org/10.47707/Kulugyi_Szemle.2023.2.4)
- RADA, P. (2023): Ukrajna és a világrend. *MKI Elemzés, KE-2023/24*. URL: [https://kki.hu/wp-content/uploads/2019/05/KE\\_2023\\_24\\_UA\\_Ukrajna\\_es\\_vilagrend\\_Rada.pdf](https://kki.hu/wp-content/uploads/2019/05/KE_2023_24_UA_Ukrajna_es_vilagrend_Rada.pdf)
- RADA, P. – STEPPER, P. (2023): A liberális rend szűrRealizmusa: amerikai belpolitikai trendek, választások és külpolitikai várakozások. *KKI Elemzések KE-2023/3*. 1-9. URL: [https://kki.hu/wp-content/uploads/2019/05/KE\\_2023\\_03\\_US\\_A\\_liberalis\\_rend\\_RBSP.pdf](https://kki.hu/wp-content/uploads/2019/05/KE_2023_03_US_A_liberalis_rend_RBSP.pdf)
- RADA, P. – VARGA, Á. M. (2023): Liberális világrend vagy új hidegháború? Az amerikai–kínai kapcsolatok alakulása. *Külgügyi Szemle* 22(3). 3-23. [https://doi.org/10.47707/Kulugyi\\_Szemle.2023.3.01](https://doi.org/10.47707/Kulugyi_Szemle.2023.3.01)
- RADA, P. – NYILAS, L. (2023): Europe Whole and Free and the Global Zeitenwende. *Európai Tükör*, (16) 2, pp. 73-88. <https://doi.org/10.32559/et.2023.2.5>
- ROCKOFF, H., 1998. The Peace Dividend in Historical Perspective. *The American Economic Review*, 88(2), 46–50. <http://www.jstor.org/stable/116890>
- SCHOLZ, O. (2023): The Global Zeitenwende. *Foreign Affairs*, (102) 1, 22–38.
- SCHOPPENHAUER, A. (2009). *Die Welt als Wille und Vorstellung*. München: Anakonda Verlag
- SIKORSKI, R. (2023): Europe's Real Test Is Yet to Come. *Foreign Affairs*. 102(4) 66-77.
- SZÁSZ, M. (2019): A Magyar Honvédség részvétele az Európai Unió által vezetett kiképzőmisszióban Maliban. *Honvédelmi Szemle*, 2019/6. sz.
- Történelmi pillanat a missziós szerepvállalásunkban, URL: <https://honvedelem.hu/hirek/tortenelmi-pillanat-a-misszi-os-szerepvallalasunkban.html>
- TÓTH, K. (2022): Líbia és az EUNAVFOR Med Irini – művelet a békéért. *Felderítő Szemle*, 2022/1.
- WALTZ, K. (2010): *Theory of International Politics*, Long Grove, IL: Waveland Press
- ZAKARIA, F. (2011): *The Post-American World*, New York: The New York Times



**Biljana Gutic-Bjelica<sup>24</sup>**

***A Unique European Governance Structure – Office of the High Representative  
in Bosnia and Herzegovina  
Basis of Its Legitimacy and Controversial Accountability***

*In order to assess the successes and failures of Bosnia and Herzegovina's (BiH) challenging road towards a fully functional democratic state aiming at membership in the European Union (EU), this paper examines the state-building process in BiH, and the transition from the post-Dayton political development, the work of the interim, ad-hoc political institution of the Office of the High Representative (OHR) in BiH, as well as the justification – if any - of its future existence and operation. Guided by the coordination dilemma, the research question of this paper is a reflection on the challenges of self-enforcing democratic institutions and how the OHR substitutes for it. This paper claims that the original purpose of the Dayton Peace Agreement (DPA) was to create a powerful yet limited institution of the OHR, one that is to be given sufficient power to institute behaviour, but is prevented from abusing its power. However, this purpose deviated in the years that followed the signing of the DPA, creating and institution which doings resemble liberal imperialism. The hypothesis of the paper is that the OHR has been abusing its power and that it is time to close it because it is no more a substitute for the self-enforcing democratic institutions. This paper claims that the problem of political officials' lack of respect for the political and economic rights of citizens they administer, as investigated by Weingast, is one of the central features of the operation of the OHR in BiH. The novelty of the paper lies in the attempt to test if OHR could be a case that could serve as a very good field to test Weingast's model (1997).*

*Keywords: Bosnia and Herzegovina, The Dayton Peace Agreement, Office of High Representative, Peace Implementation Council, the Constitution.*

*JEL Code: R59*

<https://doi.org/10.32976/stratfuz.2024.18>

## **Introduction**

In 1990s, with the start of the dissolution of the former Socialist Federal Republic of Yugoslavia (SFRY), Bosnia and Herzegovina (hereinafter referred to as: BiH), one of the six Yugoslav republics, embarked on a transition from socialism to democracy only to get embroiled into the most devastating of the wars (1992-1995) of the Yugoslav succession.

Following an internationally brokered peace settlement (the Dayton Peace Agreement) that put an end to the civil, inter-ethnic and inter-religious war, the country started its transition towards becoming a stable and viable state. The country was established as a confederal union (Sumatra, 2007), with majority of competences shared between its two sub-states (Tepšić, 2017) known as entities, the Republic of Srpska (RS), with majority of Serbs living there, and the Federation of Bosnia and Herzegovina (FBiH), with majority of Bosniaks (Bosnian Muslims) and Croats living there. The post-war political, cultural, economic society in BiH built itself on divisions that existed during the civil war 1992-1995, constituted 'around the fixed and unyielding social boundaries of ethnicity' (Sisk, 2008<sup>25</sup> as quoted in Tepšić et. Džuverović, 2018:28).

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<sup>25</sup> Sisk, T. D. (2008). Power sharing after civil wars: matching problems to solutions. In J. Darby & R. Mac Ginty (Eds), *Contemporary Peacemaking: Conflict, Peace Processes and Post-War Reconstruction* (pp. 195–209). Basingstoke, UK: Palgrave Macmillan.

Twenty-five years after the signing of the 1995 Dayton Peace Agreement (DPA), BiH is still under the extensive control of the Office of the High Representative (OHR), an international institution set up to support the country's peace implementation process (Lancaster, 2024).

Guided by the coordination dilemma, the research question of this paper is a reflection on the challenges of self-enforcing democratic institutions and how the OHR substitutes for it. This paper claims that the original purpose of the DPA was to create a powerful yet limited institution of the OHR, one that is to be given sufficient power to institute behaviour, but is prevented from abusing its power.

The hypothesis of the paper is that the OHR has been abusing its power and that it is time to close it because it is no more a substitute for the self-enforcing democratic institutions. Simultaneously, the OHR is undermining the establishment of democracy in BiH (Bochsler et al, 2020; Majstorović 2007<sup>26</sup> and Gilbert 2012<sup>27</sup> as quoted in Tepšić, 2024).

The OHR is an ad hoc international institution (Jovanović, 2013) responsible for overseeing the implementation of the civilian aspects of the Peace Agreement ending the war in Bosnia and Herzegovina. The function of the High Representative was established in accordance with the DPA (Annex 10 of the DPA)<sup>28</sup>.

The subject of the not only mere existence but also of the very dominance of the OHR in the political landscape of Bosnia and Herzegovina almost thirty years after the civil war that the country experienced, put the light on dangers of too deep and too wide foreign factor meddling into internal affairs of a country that is considered a sovereign one. For example, the position given by the European Commission for Democracy Through Law, so-called "Venice Commission", in its Opinion on the Constitutional Situation in Bosnia and Herzegovina and the Powers of the High Representative (issued in Venice on 11 March 2005) (Galić et Woelk, 2023), also stipulated that the OHR is incompatible with the sovereignty of the state, which status is a precondition for the state to be eligible candidate for the EU membership (paragraph 90, p. 22).

The current processes of the High Representative's (HR) law imposition completely bypassing the democratic institutions of Bosnia and Herzegovina, putting on trial some of its legally and lawfully elected leaders (e.g. Milorad Dodik, President of the Republic of Srpska - RS), not only stirred controversies but created an open opposition of leaders and parties – but also the public – of two out of three Constituent peoples in BiH, Serbs and Croats. On the other side, Bosniak leaders give their full support to the HR's actions, possibly finding the OHR's decisions a useful tool in reaching those goals that could not be reached by means of fair play and democratic processes and procedures ("continuation of war by other means", as Paddy Ashdown described it; see Chandler 2006<sup>29</sup>, as quoted in Tepšić, 2024:28).

BiH is a full member of the United Nations, Council of Europe, and as of 21 March 2024<sup>30</sup>, an official candidate for accession to the European Union, a member of all the regional initiatives and plenty of organisations in the global fora. And yet, the most powerful politician, who actually it is not since the shortcoming of his election, is a former German agriculture minister, Christian Schmidt<sup>31</sup>. This fact creates yet another source of instability on the BiH political scene, but also creates divisions among the Permanent Members of the UN Security Council, since two member

<sup>26</sup> Majstorović, D. (2007) "Construction of Europeanization in the High Representative's discourse in Bosnia and Herzegovina", *Discourse & Society*, 18(5): pp. 627–651.

<sup>27</sup> Gilbert, A. (2012) "Legitimacy Matters: Managing the Democratization Paradox of Foreign State-Building in Bosnia-Herzegovina", *Sudost-Europa: Zeitschrift für Politik und Gesellschaft*, 60 (4): pp. 483-496.

<sup>28</sup> Available at: <https://www.osce.org/files/f/documents/e/0/126173.pdf>

<sup>29</sup> Chandler, D. (2006) "State-Building in Bosnia: The Limits of 'Informal Trusteeship'", *International Journal of Peace Studies*, 11 (1): pp. 17-38.

<sup>30</sup> <https://europeanwesternbalkans.com/2024/03/22/eu-agrees-to-open-accession-talks-with-bosnia-and-herzegovina/>

<sup>31</sup> His predecessors were: Valentin Inzko (2009-2021); Miroslav Lajčák (2007-2009), Christian Schwarz Schilling (2006-2007), Paddy Ashdown (2002-2006), Wolfgang Petrisch (1999-2002), Carlos Westendorp (1997-1999), Carl Bildt (1995-1997).

states out of five, do not recognize Mr. Schmidt as the HR. This problem will be explained in more detail in the Conclusion of this paper.

Actuality of this subject have been presented to the academic public even before, in the works of Banning, Cox, Franić, Petrović, McCann, Zaum, Martin and others (as listed below), but still it seems to be not clear or present enough among the academicians, politicians or public opinion of Europe, let alone of the world. Therefore, the logic behind this paper is to put some light to it, and to also continue the string of authors who already critically wrote about the OHR, and to test if OHR could be a case that could serve as a very good field to test Weingast's model (1997).

In his paper titled „The Political Foundations of Democracy and the Rule of Law“ (1997), Barry R. Weingast investigated the problem of political officials' lack of respect for the political and economic rights of citizens. This paper claims that the problem investigated by Weingast is one of the central features of the operation of the OHR in BiH. Since the High Representative is not being elected by citizens of Bosnia and Herzegovina, for him/her, there is no incentive or motivation to serve them. Rather, motivation to serve is directed to those who elect and pay the person elected as the HR, and those are the PIC countries.

Furthermore, considering the fact that the last of alleged HR – Christian Schmidt – was not elected and approved by two out of five UN Security Council permanent members (Russia and China), and the PIC is ignoring the fact, this paper also claims that the OHR is a geopolitical tool in the hands of the West against the influence and presence of the East in Bosnia and Herzegovina. The dominance of the Western countries over the Eastern countries in BiH and the region of the Western Balkans in general – aimed at through all the decisions and measures taken by the OHR in accelerated pace, especially since July 2021<sup>32</sup> - show the goal of the West to diminish importance and Dayton competences of the Republic of Srpska, in order to pull in the remaining part of the Western Balkans (BiH and the Republic of Serbia) into the NATO, pulling out Russian presence and cut out the region from the China's Silk Belt and Road Initiative, known as BRI<sup>33</sup>.

Weingast was also guided by the coordination dilemma, searching for the Nash equilibrium where no party (in this case, the OHR) has interest to transgress the limits of its power and consequently, actors (citizens, and in case of BiH, domestic political officials) have no incentive to challenge the transgression.

In BiH, depending on the target and scope of transgression and challenging of the transgression by either side in BiH, the Nash equilibrium has not been acquired.

### **The Dayton Peace Agreement (DPA)**

The civil, inter-ethnic war lasted from 1992-1995 bringing loss of around 100.000 human lives (Zwierzchowski and Tabeau, 2010<sup>34</sup> as quoted in Karić et Mihić, 2020; Tepšić et Džuverović, 2018), economy devastation, inter-ethnic loss of trust and – among the political elites - quite opposite vision of the future of the country.

The DPA, initialled in Dayton on 21 November, 1995 and signed in Paris on 14 December, 1995, created BiH as we now know it - a decentralised union of two entities with a high level of independence, both with their own governments and a large number of responsibilities that were omitted at the level of joint institutions (Gilbert, 2017).

One of these entities came to be the *Republic of Srpska* (RS), extending over 49% of the territory of BiH. The other entity, *Federation of Bosnia Herzegovina* (FBiH) is extending through 51% of the territory of BiH.

<sup>32</sup> On 23 July 2021, just two weeks before he ended his mandate, former HR Valentin Inzko imposed the Law on Ban on Genocide Denial, which set jail terms for anyone who „publicly condones, denies, grossly trivialises or tries to justify war crimes committed in BiH, including Srebrenica.

<sup>33</sup> Both BiH and Serbia signed the MoU to become an official BRI country.

<sup>34</sup> [https://www.icty.org/x/file/About/OTP/War\\_Demographics/en/bih\\_casualty\\_undercount\\_conf\\_paper\\_100201.pdf](https://www.icty.org/x/file/About/OTP/War_Demographics/en/bih_casualty_undercount_conf_paper_100201.pdf)

The DPA as an international treaty (Gilbert, 2017), primarily ended the war in BiH, and then determined its constitutional arrangements. The Constitution of BiH is given in Annex 4 of the adopted DPA. The signing of the DPA was performed simultaneously by leaders of the main constitutive ethnic groups in BiH (Serbs, Croats and Bosniaks), representatives of the international community, and leaders of the Republic of Serbia and the Republic of Croatia (two neighbouring countries), in the capacity of guarantors of the DPA.

According to Milorad Dodik, president of the RS, the DPA allocated 11% of competences to the level of joint institutions of Bosnia and Herzegovina, 83% belong to the entities respectively, and the rest, around 6%, belong to the Brčko District.

Annex 10 of the Dayton Peace Agreement stipulates that the then Republic of Bosnia and Herzegovina (nowadays Bosnia and Herzegovina – BiH), the Republic of Croatia, the then Federal Republic of Yugoslavia (which later separated into the Republic of Serbia, and Montenegro), as well as the BiH entities, the Federation of Bosnia and Herzegovina and the Republic of Srpska, have the status of Parties.

The Parties agreed in Article I, paragraph 2, that *“Due to the complexity they face, the Parties request the appointment of a High Representative, who will be appointed in accordance with relevant United Nations Security Council resolutions, to facilitate the parties’ efforts and coordinate the activities of organisations and agencies engaged in the civilian aspect of the peace settlement by carrying out the tasks entrusted to it by the resolution of the United Nations Security Council, as set out below”*<sup>35</sup>.

The quoted provision of Annex 10 prescribes the procedure for how and which body appoints the High Representative. Also, the aforementioned states clearly and unequivocally that the Security Council of the UN is the only body authorised to issue a relevant resolution on High Representative possible nomination provided that the Parties referred to in Article I, paragraph 2 of Annex 10 to the DPA in BiH have submitted an agreed request to it (Baros, 2010).

It is of the highest importance to follow and respect all the stipulated provisions and procedures, and by doing so to avoid any possible questioning regarding integrity and authority of a person nominated for that position.

The aforementioned is very important because a German diplomat – Christian Schmidt - currently acting as the High Representative for Bosnia and Herzegovina did not undergo the prescribed procedure since he did not get approval of two out of five permanent Security Council Member States – Russia and China (Galić et Woelk, 2023).

The observance of the DPA military provisions was then to be supervised by a multinational Implementation Force (IFOR). In 1996, IFOR was replaced by the NATO-led Stabilisation Force (SFOR) which in turn was replaced in 2004 by the EU-led multidimensional stabilisation force (EUFOR ALTHEA) (Chandler, 2006; Belloni, 2007; Gilbert, 2012; Kappler, 2013, as quoted in Tepšić et Džuverović, 2018:30).

### **General Information about the OHR**

Under Annex 10 of the DPA, the OHR has the status of a diplomatic mission to Bosnia and Herzegovina. It is made up of diplomats seconded by the governments of the PIC countries, international staff hired directly, and national staff from Bosnia and Herzegovina.

It is important to add that the PIC – *Peace implementation Council*, was established at the London Conference held on December 8 and 9, 1995, after the negotiations between the Parties were

<sup>35</sup> Annex 10 to the DPA.

finalised. The PIC comprises 55 countries<sup>36</sup> and agencies that are supposed to support the peace process in BiH<sup>37</sup>.

However, Serb officials in BiH claim that the PIC is a “self-proclaimed body” which was not foreseen by the DPA (Chandler, 2007 as quoted in Baros, 2010:3) and whose decisions are therefore not binding anyone in BiH (statement of Milorad Dodik on 7 June 2022, while being a Serb Member of the BiH Presidency)<sup>38</sup>. The statement of Željka Cvijanović dated 14 November 2019, while being a President of the Republic of Srpska, “pointed out that the conclusions of the PIK have been stereotyped for a number of years, and always directed against what the Republic of Srpska is doing”<sup>39</sup>.

This paper also claims that the PIC, although retroactively approved by the UN Security Council Resolution 1031 of December 1995 (McCann, 2007), was the first of many deviations from the original DPA since this body took on the supreme role above the OHR, something the DPA did not stipulate (Zaum, 2006). Also, the use of the so-called “Bonn powers”, that would be explained in following chapters, challenged legitimacy of the OHR (Knaus et. Martin, 2003; Sumantra, 2005; Jovanović, 2013), while pointing to its lack of accountability (McCann, 2007; Zaum, 2006) as the main set-back of this body.

## Mandate

Article II.9 of Annex 10 of the Dayton Peace Agreement directs the High Representative to *monitor* the implementation of the peace agreement giving *guidance* to domestic political actors while respecting their autonomy (my emphasis) (Baros, 2010).

The main tasks conferred to the OHR by the DPA included the monitoring of the implementation of civil codes, coordination and mobilisation of the international actors involved in the implementation process, liaising with the international military forces in BiH, as well as reporting to the PIC, the UN, and other involved actors (Petrović, 2019; Knaus et. Martin, 2003).

However, the mandate evolved from the aforementioned role stated in the Article II.9 of Annex 10 of the DPA to the following:

‘The Order further confirms that any proceeding instituted before any Court... which challenges [my] decisions sanctioning individuals ...enacted by me, will be inadmissible, unless... I expressly give my prior consent.

<sup>36</sup> **PIC Members and Participants:** Albania, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Canada, China (resigned in May 2000), Croatia, Czech Republic, Denmark, Egypt, Federal Republic of Yugoslavia (now the republics of Serbia and Montenegro), Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Jordan, Luxembourg, Malaysia, Morocco, Netherlands, North Macedonia, Norway, Oman, Pakistan, Poland, Portugal, Romania, Russian Federation, Saudi Arabia, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom and United States of America; the High Representative, Brcko Arbitration Panel (dissolved in 1999 after the Final Award was issued), Council of Europe, European Bank for Reconstruction and Development (EBRD), European Commission, International Committee of the Red Cross (ICRC), International Criminal Tribunal for the former Yugoslavia (ICTY), International Monetary Fund (IMF), North Atlantic Treaty Organisation (NATO), Organisation for Security and Co-operation in Europe (OSCE), United Nations (UN), UN High Commissioner for Human Rights (UNHCHR), UN High Commissioner for Refugees (UNHCR), UN Transitional Administration of Eastern Slavonia (UNTAES; disbanded in January 1998) and the World Bank.

<sup>37</sup> The Russian Federation, in an official letter addressed to the High Representative on 28 July 2021, announced that it would no longer participate in the meetings of the PIC Steering Board under the chairmanship of the High Representative. In another official letter sent to the OHR on 17 February 2022, the Russian Federation announced that it had suspended its participation in the financing of the OHR. Available at: <https://www.ohr.int/international-community-in-bih/peace-implementation-council/>

<sup>38</sup> <https://lat.rtrs.tv/vijesti/vijest.php?id=476052>

<sup>39</sup> <https://lat.rtrs.tv/vijesti/vijest.php?id=358195>

The Decision of the Court does not affect [my] decisions...and individuals who have been banned from public life by such decisions.

Moreover, any step taken by any institution or authority... to establish any domestic mechanism to review... my decisions will be considered an attempt to undermine...me.

This Order comes into immediate effect'...

Order Concerning Implementation of Constitutional Court Decision AP-953/05 of 23/03/07 (Baros, 2010).

### **The “Bonn Powers” of the OHR – the most controversial feature of its functioning**

Although the governing principle of the OHR’s engagement in Bosnia and Herzegovina is the concept of domestic responsibility which calls on the officials and citizens of Bosnia and Herzegovina to take responsibility for the peace process and the problems that their country encounters (Gilbert, 2017), this concept was hugely abused after the Conference in Bonn, held in December 1997, when the PIC requested the High Representative to remove from office public officials democratically elected, and to impose laws as the HR sees fit if Bosnia and Herzegovina’s legislative bodies fail to do so (Peace Implementation Council 1997)<sup>40</sup>. Introduction of the “Bonn Powers” proved the OHR as the highest legislative and executive authority in the country (Knaus et. Martin, 2003; Galić et. Woelk, 2023).

However, the use of the Bonn Powers has not gone without criticism (Lancaster, 2024) coming from political scientists and academia and also from domestic politicians, mostly Serbs<sup>41</sup> and recently Croats as well<sup>42</sup>. On the other side, on many occasions, Bosniak politicians gave full support to the HR<sup>43</sup> decisions (Szewczyk, 2010) and even requested the use of the Bonn powers (Knaus et Martin, 2005; Beglerović, 2022; Tepšić, 2024; Pehar, 2012), or even to set-up BiH as a full protectorate, as requested by several Bosniak intellectuals (Gilbert, 2017:1).

In July 2003, the European Stability Initiative published Open Letter raising its voice against the so-called „Bonn Powers“ claiming that they „were hurting the country’s European future“ (Baros, 2010:3), claiming also that „the „Bonn powers“ are incompatible with international efforts to build democracy and the rule of law“ (Baros, 2010:4; Galić et. Woelk, 2023).

One of the most controversial of all the High Representatives was Paddy Ashdown (his mandate lasted from 2002-2006), whose performance of duty was described as the one of “raj” and “vigorous despot” (Jovanović, 2013:18; Knaus et. Martin, 2003:69). Pehar (2012:5) considers High Representative in BiH as a “premodern sovereign with unlimited rights and no responsibility, who practices tyranny in a subtle and sophisticated form” (as translated and quoted in Tepšić, 2024:29), while the director of the European Stability Initiative described his office as ‘imperial’ (Szewczyk, 2010:31).

<sup>40</sup> Available at <https://www.ohr.int/pic-bonn-conclusions/> under the title ‘Bosnia and Herzegovina 1998: Self-sustaining Structures, Conclusions’.

<sup>41</sup> <https://banjaluka.net/stevandic-kriza-u-bih-pocela-zbog-nepostovanja-rezolucija-savjeta-bezbjednosti/>  
<https://www.nezavisne.com/novosti/bih/Cvijanovic-BiH-na-ivici-propasti-OHR-instrument-za-generisanje-kriza/784388>  
[https://www.glassrpske.com/cir/novosti/vijesti\\_dana/smit-sprovodi-drzavni-udar/485643](https://www.glassrpske.com/cir/novosti/vijesti_dana/smit-sprovodi-drzavni-udar/485643)  
[https://www.glassrpske.com/cir/novosti/vijesti\\_dana/nesic-kristijan-smit-je-najveca-nesreca-koja-je-zadesila-bih/486354](https://www.glassrpske.com/cir/novosti/vijesti_dana/nesic-kristijan-smit-je-najveca-nesreca-koja-je-zadesila-bih/486354)

<sup>42</sup> <https://raport.ba/kristo-pred-varhelyijem-optuzila-ohr-nicim-izazvani-su-ugrozili-parlamentarnu-vecinu-na-nivou-bih/>

<sup>43</sup> <https://www.nezavisne.com/novosti/bih/Konakovic-o-odluci-Smita-Vezi-konja-gdje-ti-aga-aze/827111> , statement of the current minister of Foreign Affairs of BiH on the HR decision on the Law on Election.

## Criticism referring to the OHR operations

According to Cox (2001), the mandate of the High Representative needs to be limited, since it was not to be a direct authority over either civilian or military actors, and no authority within the domestic constitutional sphere. Another deficiency lies in the fact that the “Bonn Powers” are being understood as unlimited authority to impose laws at any constitutional level, and to dismiss elected representatives, political party officers and public officials (Cox, 2001; Knaus et. Martin, 2003; Sumantra, 2005).

As McCann (2007) points out, the OHR was established in BiH on the basis of the formal request and consent of all the Parties to the DPA (Baros, 2010). However, the same consent was not given to the use of the “Bonn powers” (Zaum, 2006).

Furthermore, McCann (2007) observes that international political administration bodies are more common after the Cold War (Heathershaw, 2012; Paris and Sisk, 2007; Toal and Dahlgren, 2011; Zaum, 2012, as all quoted in Gilbert, 2017:417; Tepšić et. Džuverović, 2018).

Hypothetically, those bodies may be understood as geopolitical tools of the unipolarity and supremacy of the West over the territories that used to be considered as the former USSR sphere of interest (the Western Balkans, Cambodia, East Timor, Afghanistan).

McCann (2007), as well as Pehar (2012), underlines the lack of accountability (both upward – e. g. toward some international agency, or downward – toward the citizens it administers) as the main deficiency of the OHR. It is also the main paradox since the purpose of its existence and operation is to implement democratic principles and procedures while the OHR itself is lacking the same (Gilbert, 2017).

Knaus and Martin (2003), as well as Majstorović (2007) question the lack of limits on the authority for the OHR, and also express their concern over the fact that the OHR is actually interpreting and determining its own mandate without being accountable to any of the official institutions of higher level. This is especially obvious in the context of the OHR’s decisions regarding dismissal of politicians and imposition of legislation and new institutions, and none of which is scrutinised or questioned by external authority. As in Galić et Woelk (2023) “former High Representative Carlos Westendorp explicitly stated: “I have the authority to interpret my own authority” (Galić et Woelk, 2023:452).

Apart from the policy of imposition of decisions based on the “Bonn Powers”, politicians from the RS entity often see the OHR as a supporter of Bosniak’s elite “continuation of war by other means”, as Paddy Ashdown described it. This statement of Paddy Ashdown actually reflects the controversy of the BiH political scene, and according to domestic Serb politicians, it is actually the main logic behind attempts of the Bosniak political leaders<sup>44</sup> and academia (Merdžanović, 2016 as quoted in Beglerović, 2022) to change the DPA and establish new governance system, BiH without entities. Those Bosniak attempts were underpinned by some of international agencies, such as ICG<sup>45</sup> with its ‘radical and subversive critique of the fundamentals of the Dayton’ (Sumatra, 2005:325). No sanctions of the OHR have ever been imposed towards them<sup>46</sup>.

<sup>44</sup> Haris Silajdžić, Party for BiH (SBiH) campaigned in Bosnian elections on the slogan ‘Bosnia Without Entities’. Also, one of leading Bosniak parties, the SDA (Party for Democratic Action), in its Program Declaration adopted on 14 October 2023 and available at [https://sda.ba/assets/docs/Programska\\_deklaracija\\_8\\_Kongres.pdf](https://sda.ba/assets/docs/Programska_deklaracija_8_Kongres.pdf) also foresees BiH without entities.

<sup>45</sup> ICG – International Crises Group – a policy advocacy group based in Brussels

<sup>46</sup> “While the segregationist Serb Radical Party (SRS) was banned in BiH at this time for its ‘anti-Dayton stance’ no sanctions were imposed on the SBiH. Just before the November 2000 elections Richard Holbrooke appeared in Bosnia and called for the proscription of the Serb Democratic Party (SDS), the largest party in the RS” (as given in Sumatra 2005:334).

## Decisions of the High Representative based on the “Bonn powers”

Previous HR, Valentin Inzko speaking before the UN Security Council in May 2019, informed that during the period of 1997 - 2019, High Representatives (HRs) had used the Bonn Powers 958 times to impose decisions upon BiH (Vrbetić, 2024).

By means of those OHR's impositions published mostly as press-releases on the OHR website (Majstorović, 2007), the DPA itself was changed by creation of a total of nine ministries in the Council of Ministers of BiH, whereas the original DPA had envisaged only three ministries (Vrbetić, 2024). There also were attempts of the BiH Constitution changes, as described and explained in the paper authored by Milorad Dodik, leading political figure in the Republic of Srpska<sup>47</sup>.

Besides imposing hundreds of laws and constitutional amendments, the HRs fired hundreds of democratically elected officials without due process. Obviously, a serious attempt has been made to change the legality of the main pillars of the statehood of Bosnia and Herzegovina but also an “attack” to competences of the entities and “correction” of the electoral body democratic will and election results. The true nature of the category of imposition of decisions has been best described by one of the HRs, Carlos Westendorp's (whose HR mandate lasted from (1997-1999), statement to *Wall Street Journal*: ‘Yes, this disregards the principles of sovereignty, but so what? This is not the moment for post-colonial sensitivity [. . .]. The problems of the region will only be solved when we have introduced a general respect for democracy and the rule of law’ (Westendorp, May 1999, quoted in Chandler, 2000:201 and re-quoted in Majstorović, 2007:629).

Even Paddy Ashdown, the fourth HR, who himself removed 60 Bosnian Serb politicians from office in 2003 only (Jovanović, 2013), described unlimited powers invested in the OHR as ‘near imperialism’ (Glover, 2002 as quoted in Tepšić et. Džuverović, 2019:36) and on 22 August 2012, that HR has “powers that ought to make any liberal blush.”<sup>48</sup>

## Weingast's problem of coordination in (the BiH) political context

As early as 1997, just two years after the end of the war and establishment of the Office of the High Representative to BiH, Barry Weingast, American political scientist and economist, political scientist, marks the main concerns of some societies, in which BiH fits as well, and that is how political officials should limit their behaviour for the sake of citizens and stability of democracy. In his paper “The Political Foundations of Democracy and the Rule of Law”, published in 1997, Weingast claims that the road to stable democracy is limitations put on government, where a citizen does feel that their leader/sovereign does not transgress the rights that citizens consider as their basic rights.

So, in a democracy, a sovereign will be careful on limiting his actions within the boundaries where they can be sure of the support of the citizenry, because being aware that any transgression can leave them without the necessary support. Absence of support can be displayed at the very next elections, and any sovereign will take care to govern their actions. But the question this paper deals with is what if the sovereign is not the one being elected by the citizenry of a state, they govern but by an external elite determined to fulfil its interests and values and not those of the citizenry? As put in Knaus et Martin (2003:61) „in BiH, outsiders actually *set* that agenda, *impose* it, and *punish with sanctions* those who refuse to implement it“ (italics given in the Knaus et Martin's original).

And this is the very problem with Bosnia and Herzegovina. Because, obviously, not democratically elected domestic leaders but external elites govern political, social and economic processes in Bosnia and Herzegovina (Galić et Woelk, 2023).

<sup>47</sup> European Stability Initiative: [https://www.esiweb.org/pdf/esi\\_worstinclass\\_reactions\\_id\\_3.pdf](https://www.esiweb.org/pdf/esi_worstinclass_reactions_id_3.pdf)

<sup>48</sup> <https://www.libdemvoice.org/paddy-ashdown-whats-wrong-with-the-world-and-what-we-need-to-do-about-it-29907.html>

As put in Hudson (2003), “while the west talks of its commitment to democracy, in fact actual power in Bosnia lies in the hands of non-elected, non-citizens acting in the interests of western creditors and investors” (Hudson, 2003:105). Following the Hudson's logic, western creditors and investors belong to the elite in BiH, and putting it into the Weingast model, this paper claims that this elite is seeking its values and interests satisfied, and ethnic division of the BiH society helps them keep resolution of the coordination dilemma about the appropriate role of the state unreachable in BiH.

Those who oppose this hypothesis would ask how it is then possible to have the same model of the society – consociationalism – successful in another society where ethnic divisions have also been present for a long time of history, but where their coordination problems have been resolved. Lijphart (1968)<sup>49</sup>, as quoted in Weingast (1997) is studying the case of Dutch consociationalism that fits the model.

But the response of this paper is that the Dutch did not have a bloody civil war in their recent history, and that their model did not have a sovereign outside their political landscape, no foreign official acting as a sovereign giving advantage to the interests of foreign elites before the domestic ones.

Weingast sees mutual dependence between the concepts of democratic stability and the rule of law. He claims that democracy is a form of limited government, where political officials observe limits on their behavior. These limits are abiding by election results and respect for political rights of citizens.

As this paper understands, limited government is what is also known as check and balances (distribution of power), stipulated with the DPA which foresaw three main types of power: judicial, legislative and executive, as distributed at the level of joint BiH institutions, entity level and municipal, i.e. cantonal level. However, presence and operation of the OHR, since disrespectful towards the DPA by monopolizing the power in BiH, creates instability of democracy in BiH.

### **Bosnia and Herzegovina as fitting the Model 2 of Weingast's**

As Weingast puts it: “Model 2 adds two political elements to the problem of transgressions. First, the sovereign need not transgress against all citizens simultaneously. Second, transgressions have distributional implications: When the sovereign transgresses against one group, he shares some of the benefits with the other group in exchange for their support. For example, violating one group's right of representation may allow the other a greater share of legislative benefits” (Weingast, 1997:248).

The previous statement of Weingast's is a good example of the BiH political scene functioning, and it will be explained in more detail in the next chapter. When HR transgresses against the rights of Serbs in BiH, Bosniaks usually applaud to those HR's imposed decisions, as could be seen from the examples given earlier in this paper. In that way, Bosniak elite gets the benefit through critics and measures addressed towards Serbs and offers their support to the operation of the OHR. The OHR also gets the benefit of silencing voices that are opposing the OHR's methods and operation. Since the OHR does not transgress what Bosniak elite believes to be their fundamental rights, they give the OHR sufficient support that help it remain in power.

This paper will allocate roles of the aforementioned Model 2 by Weingast as follows: the Sovereign (S) will be High Representative. Instead of citizenry divided into two ethnic/economic/social groups, as explained in the Weingast, in the case of Bosnia and Herzegovina we will study transgressions against 1) two entities that make the state union of BiH – the Republic of Srpska (with majority of Serbs living there) and the Federation of Bosnia and Herzegovina (with majority of Bosniaks (Bosnian Muslims) and Croats living there). Also, the Weingast model will be applied to explain relation 2) between the HR and Bosniaks and Croats in the entity of the Federation of Bosnia and Herzegovina.

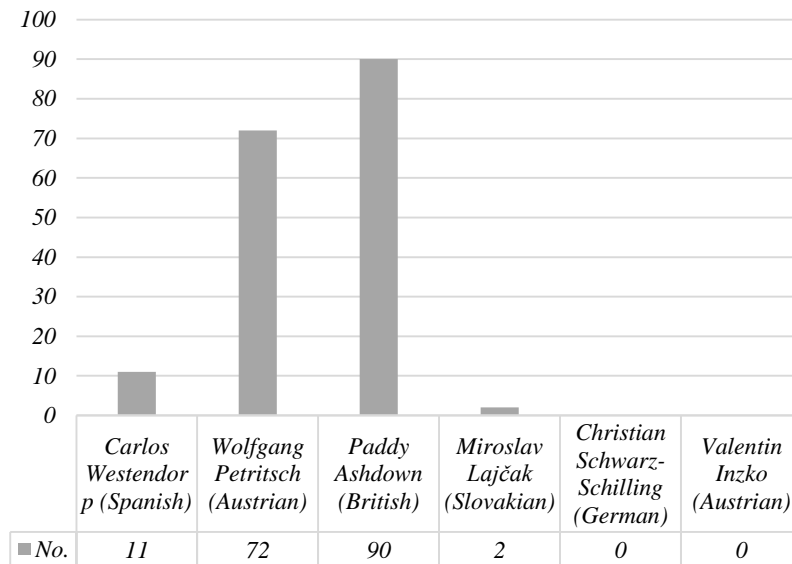
<sup>49</sup> Lijphart, A. (1968). *The Politics of Accommodation*. Published by Berkeley: University of California Press.

**1) Weingast Model 2 applied to transgression of the HR towards the Republic of Srpska**

The main focus of this part of the paper will be on the decision of the OHR made in accordance with the so-called “Bonn powers”, especially in the category referring to removals and suspensions from office. This category is of interest because it shows full disrespect for one of elementary democratic processes and manifestation of democracy – free and fair elections. If we rely on the work of Robert Dahl, as researched and explained in Elklit et. Svensson (1997), “freedom includes elements relating to voters’ opportunity to participate in the election without coercion or restrictions of any kind” (Elklit et. Svensson, 1997:35), and “fairness is equal treatment of all” (Elklit et. Svensson, 1997:35).

Therefore, the OHR is depriving citizens of the Republic of Srpska of their freedom to choose one politician over another by the very motion of removing elected officials coming from the RS from their functions and even suspending them from taking any future offices. Following the logic of Elklit et. Svensson’s (1997), by the coercion on display in this example of the OHR mode of operation, the absence of choice that citizens of the RS are subjected to, “will have negative consequences for their own and their families’ safety, welfare and dignity” (Elklit et. Svensson, 1997:35).

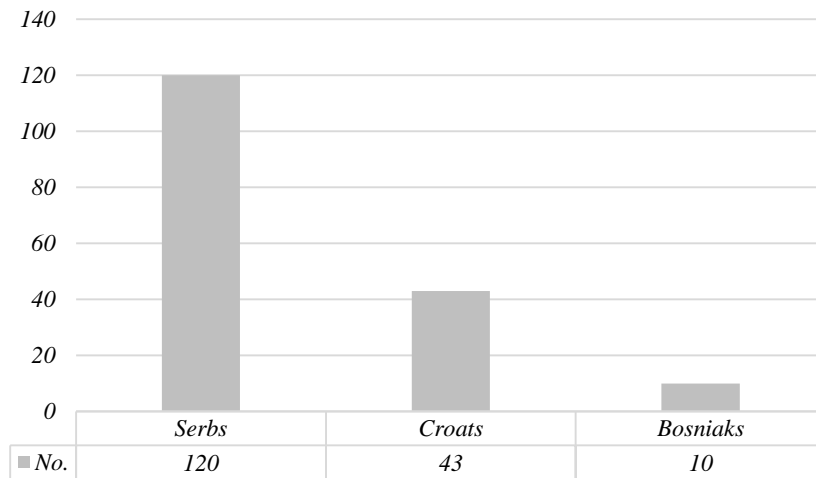
Similarly, Joseph Raz<sup>50</sup> suggests that „a system where individuals are denied to exercise any choices because they are constrained by absolute authority cannot be legitimate“ (as quoted in Zaum, 2006:6)



**Figure 1. Number of suspended individuals by respective HR**

Source: author’s own work

<sup>50</sup> Joseph Raz, 'Introduction', in Joseph Raz (ed.), *Authority* (New York: New York University Press, 1990), pp.12-14.



**Figure 2. Suspended persons**

*Source: author's own work*

As shown in the diagrams, the entity of the Republic of Srpska was the target of substantive changes of its leaders although those were democratically elected by citizens of the Republic of Srpska. Not only at the level of the Republic of Srpska but also those representing interests of the Republic of Srpska in the joint BiH institutions. Although it cannot be said that ethnic affiliation only of the suspended individuals was the logic behind the decisions made in this context, it is obvious that those numerous removals and suspensions from office caused that majority of experienced politicians and other experts were completely removed from the political and professional scene in the Republic of Srpska (Majstorović, 2007). Those individuals never received any kind of compensation neither from the OHR, nor the state union of BiH. They never got any kind of “trial”, they were simply removed as the HR felt it fit and satisfying the purpose and interests of external and foreign elites. If we take into account the claim of Besley (2005) that “who is picked for public office is instrumental to adopting a credible policy stance” (Besley, 2005:45), it helps to further understand the gravity of the imposed measures to political officials from the RS and the RS and BiH political landscape. Their suspension and removal were enforced simply by publishing the decisions on the website of the OHR, and since those decisions were imposed and not adopted through democratic BiH institutions, there was no legal remedy against them (Galić et Woelk, 2023).

So, transgression with the political element added against both entities, gave rise to acquiescing. However, high scope of attack against the Republic of Srpska, produced high support to the HR's actions and measures expressed from the other entity (the Federation of BiH). This support was obvious in political statements and speeches of the Federation of BiH leaders, but also the citizens who in all the polls broadcasted in BiH applauded the use of the Bonn-powers of the HR against the Republic of Srpska politicians and leaders. For years, the Government as well as the National Assembly of the Republic of Srpska acquiesced all those invasive measures that significantly changed its political landscape and the space to politically manoeuvre, representing an asymmetric equilibrium.

The moment the Republic of Srpska started to challenge the HR's decisions<sup>51</sup> (especially in the light of lack of stipulated procedures of nomination, as in the case of Christian Schmidt), those decisions again targeting the DPA (as the product and agreement of the political elites) and the

<sup>51</sup> According to Weingast, an equilibrium is a set of strategies such that no player has an incentive to deviate. In this case, asymmetric means that S attacks both entities, but only one challenges the Sovereign decisions, while the other acquiesces.

Constitution of BiH, as in the case of the “state/entity property”, retaliation of the OHR and the foreign external elites (the PIC) show the new level of attack to the political future of the president of the Republic of Srpska, Milorad Dodik, as the main opponent to decisions of the OHR.

This relation of deep disagreement and non-recognition of each other's status between the OHR and the Republic of Srpska was widely declared during the Session of the Security Council of the UN held on 30 April 2024 starting at 4 pm New York local time (i.e. 10 pm CET)<sup>52</sup>.

By securing the support emanated from the Federation of BiH, its political leaders and the public, the OHR succeeds in transgressing towards the Republic of Srpska, its political leaders and the public, and surviving, as foreseen by the Weingast model.

Following the logic of Weingast, the equilibrium in the relation between the OHR and BiH's entities should have the following “scenario”:

OHR: If either Republic of Srpska or Federation of BiH has ever accepted any transgression, the OHR should transgress against both entities or not transgress at all (the same and equal treatment at all times).

Republic of Srpska: If the Federation of BiH has challenged every previous transgression by the OHR, then the Republic of Srpska should also challenge if the OHR uses the Bonn powers and accept otherwise. If the Federation of BiH has accepted a previous transgression by the OHR, then the Republic of Srpska should accept every time.

Federation of BiH: If the Republic of Srpska has challenged every previous transgression by the OHR, then the Federation should challenge too if the OHR transgresses and accept otherwise. If the Republic of Srpska has accepted a previous transgression by the OHR, its institutions, leaders and public opinion, then the Federation of BiH should accept the OHR transgression every time.

However, in BiH we have the asymmetric equilibrium caused by one entity challenging an OHR transgression while the other is accepting it. The reason for this is cooperation of one the BiH entities (Federation of BiH) supporting the decisions of the OHR against the other BiH entity (the Republic of Srpska), in order to gain political payoffs which would not be gained by the strict implementation of the Dayton Peace Agreement.

## 2) **Weingast Model 2 applied to transgression of the HR towards Croats in the Federation of BiH**

According to both the DPA and the Constitution of BiH, Bosnia and Herzegovina has a three-member collective Presidency, composed of three representatives of each of the ethnic constitutional peoples in BiH.

For Croats in BiH, the election of the Croat Member of the Presidency is especially sensitive issue, since their position has been that a person representing Croats is the person who is a Croat by his ethnicity (the current Croat member, Željko Komšić), but that his politics and statements align to those of Bosniaks.

The Croatian position on this issue is that Željko Komšić is being elected to this high function for numerous consecutive terms because Bosniaks vote for him against another Croat who actually has support of Croats in BiH, and would follow politics that is not aligned to the Bosniaks' one.

All the proposals of the Election Law that came from the Croat side were rejected by the Bosniak elite. In the end, the HR imposed the amendments in Decision Enacting the Law on Amendments to the Election Law of Bosnia and Herzegovina, published on the website on 26 March 2024 (three days after the decision of the EU Council that BiH should start accession negotiation), as well as its Corrigenda, published on 2 April 2024<sup>53</sup>. This imposition bypassed both the Council of Ministers and Parliament Assembly of Bosnia and Herzegovina.

<sup>52</sup> <https://press.un.org/en/2024/sc15688.doc.htm>

<sup>53</sup> <https://www.ohr.int/cat/hrs-decisions/decisions-relating-to-state-symbols-state-level-matters-and-const-issues/>

Those two decisions contain total of 114 amendments of the Election Law of Bosnia and Herzegovina, which constitutes 70% of changes of the Law<sup>54</sup>, while the Legal Office within the Council of Ministers issued the Opinion that amendments to any law may be accepted only if they constitute up to 50% of the content of the Law.

In this concrete example, the conclusion can be reached that political parties, as well as two major ethnic peoples residing in the entity of the Federation of BiH, are facing the massive coordination problem. This problem was caused by the fact that the positions and interests of citizens and ethnic political parties differ, meaning that violations of the rights of Croats may benefit Bosniaks. The Croats' reaction (challenging) to the transgression of the OHR should be self-enforcing, meaning of such a scale and quality that the OHR would restrain itself from transgressing.

Also, each of the challenges mentioned above have one major precondition, be it the social consensus. The construction of a consensus about limits to be put on the actions and transgressions of the OHR, means that citizens targeted by the OHR transgressions should agree not only on "a set of actions that trigger their reaction" (Weingast, 1997:251), but also on the very transgressions that undermine their civil/human/economic/political rights. The current political narrative in BiH adopted the new terminology stating that any problem recognized as such a transgression actually represents the "red lines" in political theatre in BiH as a whole, as well as its two entities.

## Conclusion

Immediately after the 1992-1995 civil war, the Office of the High Representative, seemed to be a necessary tool of the international community in state-building of BiH.

However, this paper claims that it has metamorphosed into the institution instigating the coordination dilemma within the BiH society which cannot agree on the limits of the OHR.

Existing ethnic divisions in BiH impede resolution of the coordination dilemma about the appropriate role of the OHR. Opposite interests and values of three constituent BiH ethnic groups create asymmetric equilibria where one group of citizens (Bosniaks) form a sort of coalition with the OHR against remaining citizens (Serbs and Croats). This coalition undermines the social trust and questions the democratic stability.

Furthermore, additional problem arising around the operation of the OHR is the issue of authority. According to Zaum (2006:4-5), the conclusion is derived that there is a clash between the current HR, Mr. Schmidt, who is in authority but is not authority himself. Zaum (2006:4) claims that in order to exercise their political authority, an individual/body needs to be legitimate, and since Mr. Schmidt was not elected in accordance with the DPA (Annex 10 of the DPA), there are opposite views within international community, but in BiH as well regarding legality of his occupying the position as well as regarding his decisions. Also, according to Zaum, "authority entails the right to be obeyed within the scope of its rules. This right to obedience emphasises voluntary submission to the commands of an authority, and distinguishes authority clearly from other forms of power, such as coercion or persuasion" (Zaum, 2006:5). This condition obviously is not in force in BiH any more. Those claiming that Mr. Schmidt is not legally and lawfully elected HR (Serbs in BiH) claim that he has not authority and that disobedience towards his decisions is in place. Consequently, HR Schmidt relies on coercion and persuasion, as tools unimaginable in a sovereign state.

Therefore, the conclusion derived is that the OHR metamorphosed into an international supra-authority governing BiH while simultaneously undermining the sovereignty of the country that is supposed to start its process of negotiation for the full EU membership.

Bosnia and Herzegovina also proves one other hypothesis of Weingast which is that deep ethnic divisions and attempts of BiH political elites to gain some benefits while other two constituent peoples in BiH are facing losses and setbacks caused by the OHR transgression of their rights.

<sup>54</sup> <https://www.srna.rs/sr/novost/1198451/nesic:-bih-nema-izborni-zakon>

List of Abbreviations:

BiH – Bosnia and Herzegovina  
 FBiH – Federation of Bosnia and Herzegovina (entity in BiH)  
 DPA – Dayton Peace Agreement  
 HR – High Representative  
 ICG – International Crisis Group (ICG)  
 OHR – Office of High Representative  
 PIC – Peace Implementation Council  
 RS – Republic of Srpska (entity in BiH)

**References**

- Banning, T. (2014). The 'Bonn Powers' of the High Representative in Bosnia Herzegovina: Tracing a Legal Figment. *Goettingen Journal of International Law*, (6), 259-302.
- Baros, M. (2010). The High Representative for Bosnia and Herzegovina: A Requiem for Legality. Published in *European Journal of International Law*, Oxford.
- Barretto, M. A. G. (2013). Asymmetric Equilibrium in Weak Institutions. Available at: <https://www.researchgate.net/publication/258993314>
- Beglerović, N. (2022). The Role, Expectations and Challenges of High Representative in Bosnia and Herzegovina. *Politics in Central Europe* (ISSN 1801-3422). Vol. 18, No. 3, DOI: 10.2478/pce-2022-0018
- Berkowitz, D., Pistor, K., & Richard, J. F. (2003). Economic development, legality, and the transplant effect. *European Economic Review*, vol. 47(1), 165-195.
- Besley, T. (2005). Political Selection. Published in *Journal of Economic Perspectives*—Volume 19, Number 3—Summer 2005—Pages 43–60.
- Bochsler, D. Merdzanovic, A. & Petrić, D. (2020) Turning International Intervention into Domestic Cooperation in Post-War Societies, *International Peacekeeping*, 27:1, 124-151, DOI: 10.1080/13533312.2019.1680291. To link to this article: <https://doi.org/10.1080/13533312.2019.1680291>
- Chandler, D. (2007). From Dayton to Europe. *International Peacekeeping*, 12:3, 336 - 349 To link to this article: DOI: 10.1080/13533310500074077 URL: <http://dx.doi.org/10.1080/13533310500074077>
- Cowen, T., Coyne, C.J. Postwar Reconstruction: Some Insights from Public Choice and Institutional Economics. *Constit Polit Econ* 16, 31–48, (2005). <https://doi.org/10.1007/s10602-005-5851-1>
- Cox, M. (2001). State Building and Post-Conflict Reconstruction: Lessons from Bosnia.
- Elklit, J. and Svensson, P. (1997). The Rise of Election Monitoring. What makes elections free and fair? Published in *Journal of democracy*, Volume 8, Number 3, July 1997.
- Franić, D. (2013). Bosni sustav u Bosni i Hercegovini.
- Gilbert, A. (2017). The Limits of Foreign Authority: Publicity and the Political Logic of Ambivalence in Postwar Bosnia and Herzegovina. Published in *Comparative Studies in Society and History* 2017;59(2):415–445. 0010-4175/17 # Society for the Comparative Study of Society and History 2017, doi:10.1017/S0010417517000093
- Greif, A. (2006). Chapter 8: Building a State: Genoa's Rise and Fall. In *Institutions and the Path to the Modern Economy* (pp. 217-269). Cambridge University Press.
- Hudson, K. (2003). Breaking the South Slav dream: the rise and fall of Yugoslavia.
- Karić, T. and Mihić, V. (2020). Construing Reconciliation – Lay People Definitions in Bosnia and Herzegovina: A Qualitative Approach. Published in *PRIMENJENA PSIHOLOGIJA*, 2020, Vol. 13(2), STR. 211-242. <https://doi.org/10.19090/pp.2020.2.211-242>
- Knaus, G. and F. Martin (2003). Travails of the European Raj. *Journal of Democracy* 14(3): 60-74.
- Lancaster, M. (2024). Western Balkans: Renewed Security Challenges on NATO's Doorstep.
- Jovanović, J. (2013). Does Bosnia and Herzegovina still need the OHR?

- Merdžanović, A. (2016). ‘Imposed consociationalism’: external intervention and power sharing in Bosnia and Herzegovina. Published in *Peacebuilding* 5(1):1-14  
DOI: [10.1080/21647259.2016.1264918](https://doi.org/10.1080/21647259.2016.1264918)
- Pehar, D. (2012). Bosna i Hercegovina kao Veleposlanstvo Visokog predstavnika – republikanska kritika.
- Office of the High Representative (02/27/2008 Brussels). Press conference by the High Representative Miroslav Lajčák following the Peace Implementation Council Steering Board session in Brussels on 26-27 February 2008. <http://www.ohr.int/press-conference-by-the-high-representative-miroslav-lajak-following-the-peace-implementation-council-steering-board-session-in-brussels-on-26-27-february-2008/>
- Martin, E. C. (2007). Nation Building in Bosnia and Herzegovina: Cooperation, Coordination and Collaboration. Published in *South East European Journal of Economics and Business*. DOI: 10.2478/v10033-007-0001-5
- McCann, L. (2007). Bases of Legitimacy and Problems of Accountability in International Administrations: An Examination of the Office of the High Representative (OHR) in Bosnia and Herzegovina.
- Parish, M. (2007). The Demise of the Dayton Protectorate. *Journal of Intervention and State Building, Vol. 1* (Special Supplement).
- Petrović, Z. (2019). Dayton Peace Agreement – The Basic Constitutional Order of BiH.
- Rohan, M., Maxwell M., and Andreas, J. (2013). Introduction: ‘Mission BiH’, *Whitehall Papers*, 80:1, 6-12, DOI: 10.1080/02681307.2013.803793.
- Tepšić, G. (2024). Building Nations Instead of Peace(s): the Bosnian Metacconflict. *Serbian Political Thought*. Vol. 16, pp. 23-38. 2024, UDC 323.1:327.57(497.6), <https://doi.org/10.22182/spt.1622017.2>
- Tepšić, G. and Džuverović, N. (2018). Bosnia and Herzegovina. *Collection: Social and Political Science 2018*. DOI: <https://doi.org/10.4337/9781783479054.00010>. Available at: <https://www.elgaronline.com/edcollchap/edcoll/9781783479047/9781783479047.00010.xml>
- Szewczyk, B. M. J. (2010), The EU in Bosnia and Herzegovina: powers, decisions and legitimacy. *Occasional Papers No. 83. European Union Institute for Security Studies*. ISBN 978-92-9198-164-9 ISSN 1608-5000
- United Nations, <http://webtv.un.org/meetings/events/watch/arria-formula-meeting-in-commemoration-of-the-25-year-anniversary-of-the-general-framework-agreement-for-peace-in-bosnia-and-herzegovina/6212120452001>
- Vrbetić, M. (2024). Protecting Dayton’s Shared Governance by Countering Faux Narratives of Russia’s Influence in Bosnia and Herzegovina. Published in *National Security and the Future 1* (25) 2024. DOI: <https://doi.org/10.37458/nstf.25.1.10>
- Wagner, R. (1989). Constitutional Order in a Federal Republic. *Public Choice*, 61(2), 187-192. Retrieved April 20, 2021, from <http://www.jstor.org/stable/30025035>.
- Weingast, B. (1997). The Political Foundations of Democracy and the Rule of Law. *The American Political Science Review*, 91(2), 245-263.
- Zaum, D. (2006). The Authority of International Administrations in International Society. Published in *Review of International Studies*.

Kinga Szabó<sup>55</sup>***Platforms and trust as two columns of sharing economy***

*In the past two decades, economic models based on platform-based sharing, driven by the IT revolution, have caused a fundamental shift in traditional business practice, global capitalism, and societal values. The platform, along with all its features, has taken over the role of the organizational form since they have brought together strangers with under-utilized capacities and belongings, with those who need them without looking for ownership. The entire economic ecosystem - marketing techniques, business practices, supply chains, and consumption habits - has undergone a significant transformation. Consumer behavior is changing rapidly, and consumers are looking for appropriate and efficient access to goods and services through the Internet, without the financial, emotional, and logistical burdens of ownership. The radius of trust which was initially confined to family, friends, and local communities; now encompasses strangers who do not speak a common language and who are in different countries. Trust driven by Digital Identity (DI) and Trust and Reputation Information (TRI) have enabled what was considered unbelievable or even impossible some years ago. Further expansion and deepening of trust, based on new technologies combined with the international legal framework, has the potential to rewrite modern capitalism and societal values. This paper introduces the role of platforms in the evolution of the sharing economy, the role of trust in promoting such platforms, and the role of well-designed platforms in fostering and nurturing trust which is essential for promoting and sustaining sharing economy models.*

*Keywords: Sharing economy, platforms, Digital Identity, trust in sharing economy, reputation information*

*JEL code: R59*

<https://doi.org/10.32976/stratfuz.2024.19>

**Introduction**

Generally, if we have a critical look, sharing economy is not a wholly new concept since it has existed in human civilizations for thousands of years in different forms. A good example not from the not-so-distant past, there were agricultural practices where the crop from the land was shared among the family members yearly rather than dividing the plot ownership. Another similar case is renting hotel accommodation, or an apartment is an example of sharing economy. In this case the buyer, rather than acquiring the ownership of the property, prefers to gain limited rights of use, which is based on time and space. A very simple practice of sharing economy in everyday life before the widespread of the Internet is the access to books in public libraries (Ozanne and Ballentine 2010). There is a well-built system of libraries, which regulates access to books and this form of sharing economy is very well spread all over the world. According to Chen (2009), the concept of a museum is also based on the sharing economy because in this case the customer, rather than owning the art pieces, acquires a right to visit the museum and to enjoy the beauty of the art pieces. There are many cases in the world where houses and apartments are owned on a time-sharing basis and such apartments are available to the owner only for a specific period, for example one month or two weeks a year; so that many different owners can have the right to use it for one month or two weeks each. Strictly speaking the concept of cooperative societies and associations can also qualify to be part of the sharing economy and under this concept, several individuals pool their resources and share the benefits. Club membership is yet another good

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example of sharing economy which has been in existence for centuries (Botsman and Rogers, 2010).

In recent times, there have been multiple explanations for the growth of sharing economy models. As stated by Chen (2009) and Marx (2011) ownership is no longer the ultimate representation of consumer need. During the last decade, we have seen a rise in access systems in the marketplace that go beyond conventional forms of access based on ownership because ownership and attachment are becoming increasingly loose, porous, and liquid. Modernity characterizes the current social conditions in which social structures and institutions are increasingly unstable and are undergoing change therefore, they cannot serve as frames of reference for human actions and long-term life strategies (Bauman, 2007). Gradually, institutions, people, information, and places considered solid during the last century have tended to dematerialize and liquidize (Ritzer, 2010). Equally, customer identity and ethics are also becoming fluid and liquid since values are constantly changing. Emotional, social, and cultural ownership inserted in a property is becoming flexible, temporary, and liquid, therefore access has emerged to manage the challenges of a liquid society. (Bardhi, Eckhardt, and Arnould, 2012).

Theoretically, the sharing economy is an umbrella term involving a variety of consumer options since the concept and the definition of sharing economy are not yet fully clarified in the literature and there is no agreement on the use of the term “sharing economy”. The present model of the sharing economy has emerged during the last two decades which is based on shared use of physical or human resources. IT platforms have transformed with the expansion of the Internet and digital applications the very concept of the sharing economy infusing a new life into this ancient concept. According to Botsman & Rogers (2011), the sharing economy has also been referred to as ‘collaborative consumption’ or ‘collaborative economy’ which is defined as a socio-economic model which is based on the shared use of under-used commodities. Botsman & Rogers (2011) further argue that such a collaborative system counters the wastage and underutilization of resources associated with the unequal distribution of wealth and resources. Belk says (2007) that the action of sharing involves “the act and process of distributing what is ours to others for their use and the act and process of receiving or taking something from others for our use”. Moreover, Belk (2014) defines collaborative consumption as “people coordinating the acquisition and distribution of a resource for a fee or other non-monetary compensation like bartering, trading, and swapping.” Bardhi and Eckhardt (2012) further argue that the sharing economy is more like an access economy as the sharing aspect in this context is only secondary, and is market-mediated by an intermediary firm. According to Sundarajan (2016), the sharing economy is crowd-based capitalism since there is a transfer of ownership through on-demand access.

According to the Harvard Business Review the word ‘sharing economy’ is a misnomer and ‘access economy’ has been suggested by Harvard Business Review (2015) as the correct word for sharing economy. Some other researchers call it an on-demand economy (Jaconi, 2014) or gig economy (Wilson, 2017), and other scholars prefer to call it a platform economy. Hence, coming up with a complete and final definition of sharing economy that reflects a consensus, or a common usage is nearly impossible. Given great conceptual diversity in defining its boundaries, it is also debatable whether the use of public parks, public libraries, and traditional bed and breakfast services form part of the modern concept of sharing economy or not.

The economic development since the industrial revolution, extensive growth in human population in the last two centuries, and the concept of welfare society born in the 20th century have brought to life a consumer society with excessive consumption and fast depletion of natural resources, which has been leading to serious environmental problems. Sharing economy could offer a possible solution for the preservation of natural resources and for the reduction of waste and the carbon footprint. The exchange, lending, or renting of underutilized goods and services to people can give the same benefits as those of ownership without putting extra burden on natural resources or the environment therefore, the sharing economy directly promotes the model of sustainable development. Moreover, the sharing economy offers a kind of answer to sustainability and hyper-consumption and encompasses multiple social dimensions such as those involving values,

practices and consumption habits, environmental awareness, quality of life, technological development, and economic and social perspectives. The fundamental base of the sharing economy is not the financial transactions but the collaboration among people regarding the usage of underutilized goods and services, which results in a mutual advantage for both parties that are involved in the sharing.

### **Theoretical background**

We humans are social animals (Aronson, 2007) driven by a need to belong; what Brooks (2011) refers to as "an urge to merge." Therefore, sharing is as old as humanity itself and examples of the sharing economy can be seen in ancient times in activities such as hunting, fishing, farming, and these practices evolved into tribal or community behaviours, activities, and rules. Public institutions such as baths, libraries, transportation, parks, hotels, and similar practices exemplify the sharing economy in recent history. The sharing economy has undergone significant transformation in the 21st century with the advent of the Internet, mobile devices, mobile applications, and technology platforms. Global business models have appeared, driven by peer-to-peer (P2P) or consumer-to-consumer (C2C) Internet platforms, information systems, and social media, which are based on real-time interactions. The rapid growth of information technology and various online platforms has introduced what we call the "sharing economy" (SE). This new business model focuses on the sharing of resources, means, and assets over time and the exchange of goods and services, which are in contrast with traditional business models of opening stores, hiring employees, and selling products directly to consumers.

### **Modern concepts in the sharing economy**

The current concept of the sharing economy was formed thanks to several factors, including economic stagnation, economic crises, the weakening of the desire for ownership, the reduction of disposable income due to the development of innovative sharing concepts, thanks to the availability of new technological tools and platforms, increasing unemployment, urbanization, and environmental protection aspects. (Ogilvy, 2010). This development has led to a model in which consumption is based on time, space, or a fixed price. Consumers choose access-based consumption when they cannot afford items or do not want to own them due to maintenance, space, cost, or other reasons. In market-mediated cases of access, consumers are often willing to pay a premium for the temporary use of an item. (Durgee, J., & O'Connor G., 1995). This indicates that in access-based consumption, the relationship between the consumer and the object shifts from ownership to access. (Snare, F., 1972).

According to various studies, although properties still exist, they are less likely to be exchanged in the traditional market. (Rifkin, J., 2014). Consumers increasingly seek access to assets and prefer to pay for the experience of limited and temporary access instead of buying and owning real estate and assets. According to the researchers, ownership is no longer the ultimate expression of consumer desire because access systems that go beyond traditional forms of access have proliferated on the market in the last decade. (Chen, Y., 2009; Marx, P., 2011).

Modernity is characterized by current social conditions, where social structures and institutions are increasingly unstable and undergoing significant changes, rendering them ineffective as a frame of reference for human actions and long-term life strategies. (Bauman, Z., 2007). Institutions, people, objects, information, and places that were considered solid and permanent in the last century are increasingly dematerialized and liquidated. (Ritzer, G., 2010). Likewise, consumer identity and ethics have become malleable and transient. Values are constantly changing, and the emotional, social, and cultural property embedded in property has become flexible and transitory, that's why access has emerged to address the challenges of a liquid society. (Bardhi, F., Eckhardt, G.M., & Arnould, E. J., 2012).

The increasing acquisition and maintenance costs associated with ownership, coupled with the instability of social relations and the uncertainty of the labor market, have made ownership a less accessible and more precarious way of consumption than it was before. (Cheshire, L., Walters, P., & Rosenblatt, T., 2010). Consequently, many question the need for ownership when the benefits can be enjoyed at a fraction of the cost and without the hassles of access, storage, and maintenance. As urban density becomes a growing concern due to the re-urbanization movement and sustainable development, apartments and condominiums have proliferated in city centers. These urban environments offer an alternative to the long commutes and car dependency typical of suburban life. At the same time, they also create new challenges that the sharing economy can handle. Unlike earlier information or technology-based businesses, sharing-based businesses rely on a critical mass of providers and consumers who are close to each other or other services, creating value through proximity benefits. (Leinberger, C. B., 2007; Davidson, N. M. & Infranca J.J., 2016) Uber, for example, efficiently transports people from one common area to another, minimizing the need for idling and parking. The driver picks up a passenger at a nearby location and, after dropping them off, picks up another passenger from the same area, virtually eliminating the need for idling or parking. This system also eliminates the need for the passenger to navigate heavy traffic, as would be necessary in the case of self-driving.

### **Sharing Economy on Platforms**

The act is not new since sharing has been part of human society since ancient times and bartering systems and communal ways of life have existed for centuries (Belk 2010; Sundararajan 2016;). However, the nature of sharing has changed significantly, especially in recent years, with the emergence of the sharing economy how sharing widely occurs nowadays between like-minded strangers who overlap on a willingness to trust strangers. The concept of the sharing economy has received a widespread notion in recent years after an intense discussion of sharing and economic collaboration came to light (Cheng 2016) and it has become a significant third alternative business model to traditional business-to-business (B2B) and business-to-consumer (B2C) models. This new approach to value creation brought new opportunities and challenges for businesses. The present form of the sharing economy can be traced back to the 2008 financial crisis when people sought alternatives to traditional ownership models due to financial constraints. Individuals began to prefer temporary access to goods and services, instead of owning objects directly, they wanted to use them as a service. The change in consumer behavior was driven by the need for affordability and flexibility during uncertain economic and social conditions. The sharing economy has facilitated this change by providing online platforms where individuals can connect and engage in economic exchange without the need for traditional ownership. The online platforms host a sharing society where the distance between individuals and desired objects is bridged through digital interactions. The growth of the sharing economy means a major change in the consumption and exchange of goods and services, which reflects changing social values and economic realities.

Price Waterhouse Cooper (PwC) describes the sharing economy as an emerging ecosystem that makes money out of underutilized assets, favoring renting, leasing, or offering micro-skills in exchange for access or money (PwC, 2015). The rapid growth of the Internet, IT technology and applications, mobile technologies, and areas such as Big Data, and Artificial Intelligence (AI) have given new strength and energy to platform-based sharing economic models (Wirtz et al., 2019). These cost-effective alternatives have fulfilled a wide range of consumer needs, including accommodation for short and long stays, transportation -local and long distance, equipment rentals, office rentals, event management, supply of meals, sports facilities, entertainment, and even personal loans. Various companies like Uber, Ola, Turo, Airbnb, HomeAway, Eatwith and Swiggy are companies of the sharing economy catering to various consumer needs. The sharing economy has been widespread all over the world and has become a major economic force globally, according to recent research, sharing startups have raised more than \$15 billion in venture capital by early

2015, with the top 17 sharing companies each worth more than 1 billion (USD) and employing more than 60,000 people (Venture Beat, 2015). Price Waterhouse Cooper (PwC) estimates that global revenue from sharing in key sectors (travel, car sharing, finance, staffing, music, and video streaming) will grow from \$15 billion in 2015 to \$335 billion by 2025 (PwC, 2015). Researchers mention that the sharing economy is growing faster than major tech companies like Facebook, Google, and Yahoo combined (Growth Business, 2017), which has led to an explosion of sharing economy startups.

Although sharing has historical roots, its current form has been brought to life by digital platforms and other large-scale mediating technologies. The Internet, digitization, smartphones, IT applications, and platforms help the search for a partner between those who have idle wealth and the capacity to rent, sell, or share and those who need it. People use these platforms and mobile applications on a real-time basis to access rooms, cars, dining, rides, and entertainment. The effects of the sharing economy extend beyond the financial and business areas since they add value to unused, idle assets, provide stable income for the elderly, enable social interactions, reduce carbon footprint, and provide cost-effective goods and services to lower-income segments of society (Acquier, A., Daudigeos, T. & Pinkse, J., 2017.). As McLaren and Agyeman put it, the sharing economy has awakened the potential to transform business practices, empower previously powerless people, save resources, and promote social connections (McLaren & Agyeman, 2015). The emergence and growth of the sharing economy not only overturned traditional business models but also the regulatory frameworks governing the business sector (Shueh, 2014). Furthermore, it has also challenged the mainstream well-established industries such as hotels, vehicle sales, restaurants, home appliance manufacturing, and entertainment by providing convenient and cost-effective access to resources without the financial and economic burden of ownership. The sharing economy is defined as an economic model in which technology makes it easier for people to get what they need from each other (Owyang, 2015; Maycotte, 2015) so that the societal, economic, and technological forces are firmly in place to drive the sharing economy. As the sharing economy becomes more popular, people discover more and more the benefits of peer-to-peer exchange of goods and services (Maycotte, 2015).

Platforms have an innovative and leading role in organizing businesses, creating networks and communities, and facilitating participation in the sharing economy. The increase in the use of platforms has made it possible for many startups to form and join the sharing economy movement. Companies are stimulated by these platforms to develop new techniques and methods to integrate suppliers and customers into their value-creation processes to enhance the success of new business models and service concepts. eBay is a good example since as a sharing platform allows individuals to become retailers from their homes. Likewise, other platforms and sharing sites allow individuals to act as car rental companies, rental agencies, boutique hotels, and ad-hoc taxi operators, successfully turning unused, idle capacity into productive assets. The sharing model operates exceptionally well for items or services that are expensive to purchase and widely owned by individuals who do not fully utilize them (The Economist, 2013), therefore the use of platforms opens new opportunities for innovative startups and novel business models.

Asset sharing has been possible for many years, but transaction costs have often made sharing expensive and problematic. However, the global spread of the Internet and smartphones has substantially reduced the transaction costs related to sharing and making sharing easier than ever before. Today, the sharing economy is considered a very vital, significant element of the modern economy and innovation, which is driven by the rapid growth of new digital technologies, Artificial Intelligence (AI), and Big Data, as well as the evolution of consumer preferences and consumption patterns, and which brings together consumers and producers includes new forms of interaction between them. The innovative products or services characteristic of the sharing economy typically operate in the cloud and use technologies such as Big Data and Artificial Intelligence (Giones and Brem, 2017) such as Airbnb and Uber.

The sharing economy is a distinctive form of digital entrepreneurship facilitated by the Internet and digital technologies (e.g. cloud-based services, different types of applications, peer-to-peer

platforms) that deals with both physical and intangible digital goods and services (Giones and Brem, 2017; Cheng, 2016). An excellent example of this is Uber, where drivers deliver a physical product, but the main part of service provision is digitally organized (Sussan and Acs, 2017). The case of Airbnb is similar, since Airbnb uses digital processes to connect consumers looking for accommodation with providers, ultimately providing a non-digital accommodation service.

The new business models emerging in the sharing economy fundamentally rely on efficient and scalable technology that enables large-scale networks to be created and matched with the goods or services they offer or demand (May, Königsson, & Holmstrom, 2017; Botsman & Rogers, 2011; Allen, 2017). These technologies facilitate direct transactions between people and connect individuals in unprecedented ways (Caldieraro et al., 2018). The success of companies operating in the sharing economy is often closely related to the technologies on which they run (Frenken, 2017). In the scientific literature, access to sharing economy platforms can be divided into three major categories: (a) *Slice Capacity*: This refers to the division of ownership of assets, such as a car or an apartment, into smaller units of time. (b) *Aggregate capacity*: Here assets that were individually too small to be significant are aggregated into something tangible, reliable, and consistent. (c) *Open capacity*: This refers to opening excess capacity, as in the case of Google Maps, for others to create new services or products.

The tools and services offered through sharing economy platforms are incredibly diverse, catering to a wide range of customer needs, from transportation alternatives to accommodation, transportation services, personal property sales, sports and entertainment, and more, therefore it is very difficult to systemize them. Platforms such as Airbnb, HomeAway, XiaoZhu, and onefinestay are popular among travellers looking for accommodation, from budget-conscious individuals to luxury consumers to business travellers. Ride-sharing platforms such as Uber, Lyft, BlaBlaCar, Grab, and Ola offer an alternative to traditional taxi services, offering convenient and often more cost-effective transportation options in the cities. Including transportation and accommodation, sharing economy platforms present a wealth of services such as EatWith and MealSharing platforms allowing individuals to experience home-cooked meals with local hosts, personalizing dining experiences. RentMyWardrobe and DesignerShare allow users to share their wardrobes with fashion fanatics close to them, contributing to the sustainability and affordability of fashion. The rise of sharing economy platforms has disrupted traditional industries previously dominated by companies such as hotels, taxi companies, and restaurants. The sharing economy has also generated unique and unusual services like BorrowMyDoggy, which brings together dog lovers to share the responsibility of caring for their pets. The exchange of tools and services through online sharing platforms is beneficial for both service providers and users because owners and service providers can earn revenue from unused assets, while users can flexibly access assets or services only when they are needed, resulting in more efficient resource allocation and cost savings.

### **Trust in Digital Identity (DI) on platforms**

Digital identity has become a cornerstone of modern interaction, especially in the sharing economy, which can foster trust in an unknown situation. It builds trust in unclear situations by providing a comprehensive online footprint of entities - be they individuals, platforms, or products - over time. The global spread of the Internet and digital technologies has expanded the possibilities of online interaction and communication, which necessitates a reliable digital identity system.

There are three key elements in any sharing economy transaction: the person, the product, and the platform (3P). While the person as the decision maker bearing the consequences is crucial, the platform facilitating the transaction and the products or services offered are equally important. Digital identity includes an organization's accumulated online footprint, which reflects the organization's reputation and trustworthiness, which are based on past interactions and feedback.

Online reviews play a significant role in establishing a good reputed digital identity since these reviews are a form of computer-based communication that results from users sharing their experiences and ratings over time, which can be considered as an information source about prior consumer experiences and help to separate different service characteristics that influence user perception (Siering et al., 2018). Moreover, online reviews are often seen as more useful because they convey actual on-the-ground experiences (Cheng et al., 2019) than standardized information such as safety guarantees and certifications.

Text feedback is increasingly popular due to its rich quality content because it provides detailed information about users' perceptions, preferences, and behaviour. According to researchers, online reviews considerably influence the purchasing decisions of other users (Matzat et al., 2012). General digital identity has a more precise meaning in the sharing economy because it is shaped by the interplay of information shared by users about their peers and the performance of the platform. This reputation-building information is vital to any sharing economy platform since it underscores the importance of trust and transparency in facilitating successful interactions.

User-generated content (UGC) plays a crucial role in the sharing economy by transforming it into statistical syntheses, which are known as Reputation Scores or Trust and Reputation Information (TRI). These scores result from user reviews and ratings, typically on a scale of 1-5 or 1-10, which are often supplemented with additional questions and comments. This kind of feedback and review, which users and suppliers give is now a general and standard practice in the sharing economy, with platforms such as Uber, Airbnb, and Booking.com prominently displaying these scores to build trust and guide consumer behaviour.

Uber, for example, collects ratings from both drivers and passengers, asking about various aspects of the service such as punctuality, price, driver behaviour, and car cleanliness. Similarly, platforms such as Airbnb and Booking.com ask users to provide detailed feedback on accommodations and services because these ratings are then used to calculate and display Reputation Scores, which help potential users make well-built decisions and moreover promote trust in the platform.

Such reviews are even more critical in specialized contexts such as long-distance car sharing or accommodation services since no one wants to travel a long way with an unreliable driver or stay in an unsafe or unsanitary accommodation. Therefore, customer reviews are a key factor in decision-making for choosing these services such as Hungary's Oszkár for car sharing and Airbnb for accommodation. Trust, which is essential for users to make confident decisions is increased by positive reviews and high Reputation Scores.

Trust is a crucial element of any business transaction, but it is especially important in the sharing economy since the presence of trust mitigates uncertainty in a complex and unfamiliar business environment and reduces perceived financial and security risks. Platforms can create a safer and more reliable ecosystem for their users and drive more transactions and lasting engagement when they effectively manage and display trust and reputation information (TRI).

It is a common practice among Internet users that they often see multiple sources before finalizing their decisions and many platforms offer comparative price studies, allowing prospective buyers to weigh their options. Price, services, and trust are the main factors, which are combined into a single package before the order is placed, therefore the buyer's expectation that the other party adheres to the stated agreement is crucial. Likewise, the party offering the service on the platform expects users to adhere to contractual terms, which reinforces the importance of mutual trust. Therefore, the concept of peer-to-peer trust mediated by platforms is key to the sharing economy. The trust affects not only peers on the demand and supply side but also platform providers. These expanded networks of trust, facilitated by digital mechanisms, have made "stranger sharing" increasingly viable. The success and proliferation of IT platforms indicate that digitally generated trust reputation information (TRI) is effective in fostering consumer trust and confidence. Without the intentional creation of digital trust, the sharing economy might not have developed the way it has.

Digital identity (DI) and trust reputation information (TRI) are now an integral part of not only sharing economy platforms but also the broader advertising strategies of the e-commerce industry.

These digital trust-building mechanisms help alleviate the uncertainty inherent in transactions involving strangers, thereby encouraging more interaction and increasing the sense of security. As a result, platforms like Uber, Airbnb, and various e-commerce sites rely heavily on user reviews, ratings, and comparison information to build and maintain trust among their users.

This multi-stakeholder trust system guarantees that both buyers and providers can engage in transactions with confidence, knowing that a trusted digital trust framework is behind their interactions, which has enabled a new era of stranger sharing, where individuals can seamlessly connect and transact with others, relying on the solid trust mechanisms these platforms create.

## Conclusion

The sharing economy promotes a change in consumption habits towards more sustainable and responsible practices since it encourages individuals to think over their attitudes to ownership and consumption, meanwhile emphasizing the importance of shared consumption and community engagement. By sharing resources, individuals can not only cut down their environmental footprint but also improve their overall quality of life.

Sharing, which can be an alternative to private ownership, involves the voluntary borrowing, sharing, and use of commonly owned resources. The concept of sharing extends beyond physical objects such as houses and cars to more abstract resources such as knowledge and relationships. According to Frenken and Schor (2017), the roots of the sharing economy go back to the 1990s, when internet sites such as eBay and Craigslist made it easy to remarket goods and marked the beginning of the "sharing economy". Sharing can also be seen as a means of promoting social relations and enabling production, not just consumption, which has been highlighted by Frenken and Schor (2017) including examples such as coworking spaces, where individuals share their tools or space to facilitate a joint workplace.

The economic impact of the sharing economy is still a matter of debate, but it has grown substantially and has resulted the billions of dollars.

Companies operating in the sharing economy have expanded their online presence by supporting community involvement in recent years, which has transformed consumption patterns by offering lower costs and higher quality perceived by consumers through digital platforms. According to Botsman and Rogers (2011), the key elements of the sharing economy are digital platforms.

The sharing economy from the point of view of sustainability serves as a path towards alternative economic models that differ from traditional economic models, which are fueled by growing environmental awareness and the widespread availability of the Internet. Consequently, the sharing economy offers an opportunity for businesses to appeal to environmentally conscious consumers and thereby encourage new forms of consumption and consumer choice. It also represents a social and economic change in the way people meet their needs.

Despite the sustainability potential inherent in the sharing economy, however, according to Barnes and Mattsson (2016), economic and technological factors, rather than sustainability concerns, are the primary drivers of the growth of community consumption. As a result, sustainability issues may not currently be a driving force for many sharing economy businesses.

In summary, a sharing economy is defined as an economic system centered on the sharing of resources, including products, services, space, money and knowledge, either through access or transfer, and whether or not payment is involved.

## References

- ACQUIER A., DAUDIGEOS T. AND PINKSE J., (2017): *Promises and paradoxes of the sharing economy: An organizing framework*. Technological Forecasting & Social Change, 125(C), 1–10.

- ALLEN, JONATHAN P., (2017): “*Technology and Inequality Case Study: The Sharing Economy.*” In *Technology and Inequality*, 121–35. Palgrave Macmillan, Cham.
- ARONSON, ELLIOT (2007): *The Social Animal*, Palgrave Macmillan, 10th revised edition, 2007, [ISBN 1-4292-0316-1](https://doi.org/10.1086/666376)
- BARDHI, FLEURA- ECKHARDT, M. GIANA (2012): *Access-based Consumption: the case of car sharing.* Journal of Consumer Research Vol. 39, No.4S., pp. 881–898, <https://doi.org/10.1086/666376>
- BARDHI, F., ECKHARDT, G.M., & ARNOULD, E. J. (2012): *Liquid Relationship to Possessions.* Journal of Consumer Research, 39 (3), <https://doi.org/10.1086/664037>
- BARNES, S. J., & MATTSSON, J. (2016): *Understanding current and future issues in collaborative consumption: A four-stage Delphi study.* Technological Forecasting and Social Change, 104, 200–211. <https://doi.org/10.1016/j.techfore.2016.01.006>
- BAUMAN, Z., (2007): *Liquid Times: Living in an Age of Uncertainty.* Cambridge: Polity.
- BELK, R. (2007). *Why not share rather than own?* The Annals of the American Academy of Political and Social Science, 611, 126–140.
- BELK, RUSSELL (2010): *Sharing.* Journal of Consumer Research Vol. 36, No.5S., pp. 715–734, <https://doi.org/10.1086/612649>
- BELK, RUSSELL (2014): *You are what you can access: Sharing and collaborative consumption online.* Journal of Business Research, Vol.67, No.8S., pp.1595–2000., <https://doi.org/10.1016/j.jbusres.2013.10.001>
- HARVARD BUSINESS REVIEW: *Boosting Demand in the “Experience Economy”*, (January–February 2015). Retrieved from <https://hbr.org/2015/01/boosting-demand-in-the-experience-economy>
- BOTSMAN, RACHEL-ROGERS, ROO (2011): *What’s Mine is Yours: The Rise of Collaborative Consumption*, New York, NY: Harper Collins.
- BROOKS, D. (2011): *The Social Animal: The Hidden Sources of Love, Character, and Achievement*, Random House
- CALDIERARO F., ZHANG J.Z., CUNHA M. JR AND SHULMAN J.D., (2018): “Strategic information transmission in peer-to-peer lending markets”, Journal of Marketing, Vol. 82 No. 2, pp. 42–63.
- CHEN, Y. (2009): *Possession and Access: Consumer Desires and Value Perceptions Regarding Contemporary Art Collection and Exhibit Visits*, Journal of Consumer Research, 35 (April), 925–40.
- Retrieved from  
[http://www.academia.edu/5044703/Possession\\_and\\_Access\\_Consumer\\_Desires\\_and\\_Value\\_Perceptions\\_Regarding\\_Contemporary\\_Art\\_Collection\\_and\\_Exhibit\\_Visits](http://www.academia.edu/5044703/Possession_and_Access_Consumer_Desires_and_Value_Perceptions_Regarding_Contemporary_Art_Collection_and_Exhibit_Visits)
- CHENG M., (2016): “*Sharing Economy: A Review and Agenda for Future Research.*” International Journal of Hospitality Management 57 (August): 60–70.
- CHENG, XUSEN- FU, SHIXUAN- SUN, JIANSAN- BILGIHAN, ANIL- OKUMUS, FEVZI (2019): *An investigation on online reviews in sharing economy driven hospitality platforms: A viewpoint of trust*, Tourism Management, Vol. 71, pp. 366–377.
- CHESHIRE, L., WALTERS, P., & ROSENBLATT, T. (2010): *The Politics of Housing Consumption: Renters as Flawed Consumers on a Master Planned Estate*, Urban Studies, 47 (12), 2597–2614.
- Retrieved from  
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.866.131&rep=rep1&type=pdf>
- DAVIDSON, N. M. & INFRANCA J.J. (2016): *The Sharing Economy as an Urban Phenomenon.* Yale Law & Policy Review, vol. 34, no. 2, Spring 2016, pp. 215–279. Retrieved from [http://ylpr.yale.edu/sites/default/files/YLPR/davidson\\_infranca\\_article22.pdf](http://ylpr.yale.edu/sites/default/files/YLPR/davidson_infranca_article22.pdf)
- DURGEE, J., & O’CONNOR G. (1995): *An Exploration into Renting as Consumption Behaviour.*

Psychology and Marketing, 12 (2), 89–104.

FRENKEN, KOEN, (2017): “Political Economies and Environmental Futures for the Sharing Economy.” Philosophical Transactions. Series A, Mathematical, Physical, and Engineering Sciences 375 (2017). <https://doi.org/10.1098/rsta.2016.0367>

FRENKEN K. AND SCHOR J., (2017) “Putting the sharing economy into perspective”, Environmental Innovations and Societal Transitions, Vol. 23, pp. 3-10.

GIONES F. AND BREM A., (2017): *Digital Technology Entrepreneurship: A Definition and Research Agenda*. Technology Innovation Management Review, 7, 5, 44-51.

GROWTH BUSINESS. Sharing economy outstrips combined growth of Facebook, Google and Yahoo. Available at: <https://growthbusiness.co.uk/sharing-economy-outstrips-combined-growth-of-facebook-google-and-yahoo-12378/> (Accessed June 1, 2024).

JACONI, M., (2014, July 13). The 'On-Demand Economy' Is Revolutionizing Consumer Behavior — Here's How. *Business Insider*. Retrieved from <http://www.businessinsider.com/the-on-demand-economy-2014-7>

LEINBERGER, C. B. (2007): *The Option of Urbanism: Investing in a New American Dream*, Washington, DC: Island Press.

MARX, P. (2011): The Borrowers. *New Yorker*, January 31, 2011. Retrieved from <http://www.newyorker.com/magazine/2011/01/31/the-borrowers>

MATZAT, UWE- SNIJDERS, CHRIS (2012): Rebuilding Trust in Online Shops on Consumer Review Sites: Sellers’ Responses to User-Generated Complaints, *Journal of Computer-Mediated Communication*, Vol. 18 No. 1, pp. 62–79. <https://doi.org/10.1111/j.1083-6101.2012.01594.x>

MAY, SPENCER, MARCUS KÖNIGSSON, AND JONNY HOLMSTROM, (2017): “Unlocking the Sharing Economy: Investigating the Barriers for the Sharing Economy in a City Context.” *First Monday* 22 (2). <https://doi.org/10.5210/fm.v22i2.7110>.

MAYCOTTE H.O., (2015): *Millenials Are Driving the Sharing Economy-And So Is Big Data*, 25.11.2016, <http://www.forbes.com/sites/homaycotte/2015/05/05/millennials-are-driving-the-sharing-economy-and-so-is-big-data/#495063702991> (Accessed June 1, 2024).

MCLAREN D., AND AGYEMAN J., (2015): *Sharing Cities: A Case for Truly Smart and Sustainable Cities*. MIT Press. (p.64).

OGILVY (2010): *Eyes Wide Open, Wallet Half Shut: The Emerging Post-recession Consumer Conscious-ness*. Retrieved from <http://www.wpp.com/wpp/marketing/consumerinsights/eyes-wide-open-wallets-half-shut>

OWYANG JEREMIAH, (2015): *Report: The New Rules of the Collaborative Economy*, 2015 Data on the Rise of Sharing. Posted on October 5th, 2015 in: Collaborative Economy.

OZANNE, L., & BALLANTINE P. (2010): *Sharing as a Form of Anti-consumption? An Examination of Toy Library Users*. *Journal of Consumer Behaviour*, 9 (6), 485–98. doi: 10.1002/cb.334

PWC (2015): *The Sharing Economy. PricewaterhouseCoopers Consumer Intelligence Series*. Available at: <https://www.pwc.com/us/en/technology/publications/assets/pwc-consumer-intelligence-series-the-sharing-economy.pdf> (Accessed May 15, 2024).

RITZER, G., (2010): *Sociological Theory*. New York: McGraw-Hill.

RIFKIN, J., (2014): *The Zero Marginal Cost Society*. New York: Palgrave Macmillan

SHUEH JASON, (2014): *Why is everyone watching the Sharing Economy?* Tribune Business News, 11 Feb 2014.

SIERING MICHAEL, DEOKAR AMIT V., AND JANZE CHRISTIAN, (2018): Disentangling consumer recommendations: Explaining and predicting airline recommendations based on online reviews, *Decision Support Systems*, Vol. 107, pp. 52–63. <https://doi.org/10.1016/j.dss.2018.01.002>

SNARE, F., (1972): The Concept of Property. *American Philosophical Quarterly*, 9 (2), 200–

206.

SUNDARARAJAN, ARUN (2016): *The Sharing Economy: The End of Employment and the Rise of Crowd-Based Capitalism*, Cambridge, MA: MIT Press

SUSSAN F. AND ACS Z. J., (2017): The Digital Entrepreneurial Ecosystem. *Small Business Economics*, 49, 1, 55-73.

VENTURE BEAT, (2015): The sharing economy has created 17 billion-dollar companies (and 10 unicorns). Available at: <http://venturebeat.com/2015/06/04/the-sharing-economy-has-created-17-billion-dollar-companies-and-10-unicorns/>. (Accessed September 17, 2019).

WILSON, B., (2017): What is the 'gig' economy? Retrieved from <http://www.bbc.com/news/business-38930048>

WIRTZ JOCHEN, FUNG SO KEVIN KAM, MODY MAKARAND AMRISH, LIU STEPHANIE Q., CHUN HELEN, (2019): Platforms in the peer-to-peer sharing economy. *Journal of Service Management* Vol 30, Issue 4.

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***Travel footprint, or how responsibly and sustainably do professionals creating and providing travel experiences behave?***

*In the 21st century, sustainability has become a prominent issue in the tourism sector. While conscious and responsible consumer decisions are increasingly prioritized in our daily lives, the question arises whether similar scrutiny is applied during leisure and business travel. In this recent empirical research, these questions are examined in detail in the light of the travel habits of tourism experts. The findings indicate that tourism professionals make more conscious consumer decisions in their daily activities compared to when they engage in leisure or business travel, where economic considerations tend to take precedence amidst today's macro-environmental changes, alongside a preference for compressed experiences. We further investigated the extent to which tourism professionals attending a professional conference on sustainability behaved consciously and responsibly when choosing their mode of transportation to attend the event. In this regard, we calculated their travel footprint, which is consumption-based and solely based on the use of transportation modes. We introduced this indicator on a pilot basis, with plans to apply it more extensively and over longer timeframes in the future, and to compare it across different target groups. Our main findings that tourism professionals surveyed in the research consider sustainability to be important and even prominent in their daily activities, and less so in their business activities, only 11% of them consciously choose the means of transport.*

*Keywords: sustainability, travel, ecological footprint*

*JEL codes: L83, Z82*

<https://doi.org/10.32976/stratfuz.2024.20>

## **Introduction**

Our research group has been studying the travel habits of domestic consumers for several years (2021, 2022, 2023) (Behringer et al., 2023). In our most recent study, we paid particular attention to examining the travel habits of tourism experts, as well as the integration of sustainable attitudes into their consumer decisions regarding destination and tourism service choices.

"Tourism is a powerful force for positive change when managed responsibly and sustainably," says Zurab Pololikashvili, the Secretary-General of the United Nations World Tourism Organization<sup>61</sup>. The adoption of the Statistical Framework for Measuring the Sustainability of Tourism represents a paradigm shift, going beyond GDP to measure what matters most to people and the planet. Our research group aims to contribute to this noble cause and value creation; thus we have set out to examine the perspective of responsible and sustainable management in this study regarding the habits of creators of tourism services and comparing them. The survey of travel habits of the experts was conducted on a sample of 74 individuals.

The methodological innovation of our research lies in the novel application of calculating travel ecological footprints. Our respondents were participants of a conference held annually on a

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<sup>61</sup> <https://www.unwto.org/news/un-adopts-a-new-global-standard-to-measure-the-sustainability-of-tourism>

specific theme, organized around World Tourism Day, as recommended by the United Nations World Tourism Organization (UN Tourism), and held on September 27, 2023. These participants attended lectures and professional debates on sustainability topics. The professional event was organized by the Budapest Metropolitan University/higher education institution with several objectives, including joining World Tourism Day, presenting to the profession, drawing attention to the responsibility of tourism organizations and businesses in producing conscious and responsible tourism offerings, and initiating the measurement of participants' consumption-based travel footprints.

In light of the above, our study seeks to answer the following questions:

- What role does sustainability and environmental consciousness play in the travel decisions of tourism professionals?
- Is there any difference observed between the business travels of professionals, and their conscious and responsible activities in their daily routines?
- What scale of travel footprint did the tourism professionals leave behind as a result of their participation in a conference focused on sustainability?

The questionnaire survey was conducted in September 2023, during the preparation and follow-up of the conference related to World Tourism Day. The conference aimed to highlight the importance of sustainable and responsible tourism, so by querying the participating professionals, we expected to gather relevant information regarding how theoretical interest in sustainable tourism manifests in everyday travel decisions and the selection of holiday destinations. The current study partially processes the questionnaire, focusing specifically on examining travel related to the conference.

### **Sustainability Theory and Interpretation in Tourism**

The concept of sustainability has increasingly come to the forefront in the field of tourism. Tourism is a significant economic sector, yet it faces numerous environmental and social challenges, being both a victim and a contributor. Research highlights the importance of integrating environmental and economic components for sustainable development (Manea & Cozea, 2022). Therefore, there is growing attention towards the theoretical foundations and practical implementation of sustainable tourism, supported by various international organizations. The 2023 World Tourism Day of the United Nations World Tourism Organization focused on sustainable and responsible tourism, as well as promoting green and innovative investments (UNWTO, 2023), underscoring the increasingly urgent need for solutions in this area. The development of tourism can only occur on sustainable grounds through high-level collaboration among stakeholders (Bhaskara & Filimonau, 2021). As the role of tourism in human life continues to grow, sustainability is becoming unavoidable not only in everyday life but also in travel.

Environmental consciousness is an important factor in daily life, with the majority considering themselves environmentally conscious (MacInnes et al., 2022). However, the choice of eco-friendly services in tourism remains relatively low (Lukács et al., 2022). There are differences in individual awareness based on education and social status (Muth, 2022; Kupi & Szemerédi, 2022), emphasizing the role of education and social factors in reacting to climate change. Among university students, there is openness to sustainability and recognition of its importance, but they are reluctant to sacrifice convenience (Kántor, 2022), highlighting the role of service providers in offering products that inherently consider sustainability. Conversely, the older generation is more conscientious about environmental sustainability and eco-conscious travel practices. They are willing to make sacrifices and endure discomfort to protect the environment (Gonda & Raffay, 2021).

A study examining environmentally conscious tourism behaviour identified nine factors influencing tourists' behaviour. These factors include *knowledge* (awareness of the environment), *attitude* (inclination towards specific actions), *values* (long-lasting guiding principles), *emotions* (positive and negative attitudes towards certain behaviors), *personal and social norms* (internal

and external motivators), *cognitive dissonance* (harmony or conflict between attitudes and behaviours), *everyday environmental consciousness* (escaping from the familiar environment during travels), and *habits, practices* (routine behaviour during travels) (Hegedüs et al., 2023). Together, these factors determine to what extent a tourist is willing to behave in an environmentally friendly manner.

To promote the sustainability of tourism, it is important for tourism providers and decision-makers to consider these factors and implement measures that encourage environmentally friendly behaviour. This may involve targeted educational programs, offering positive experiences that consider natural and social environments, influencing social norms and habits, and introducing incentives that promote sustainability. These measures form the basis for the sustainable development of tourism.

Encouraging responsible behaviour among travellers is crucial in sustainable tourism. Various initiatives and campaigns by tourism stakeholders aim to draw attention to the local environment and culture, forming the basis for measures against mass tourism. These include engaging local communities, preserving cultural heritage, and distributing economic benefits among the local population. This provides an opportunity for local residents to participate in tourism, transforming them from mere victims of its negative aspects into beneficiaries. Incorporating sustainable practices into tourism experiences and offering sustainable options can encourage tourists to adopt environmentally friendly behaviours. One such example is the "from producer to consumer" strategy, which promotes regional cultural heritage through collaboration between local producers and tourism service providers (Dankó, 2023).

It is also important to consider that efficiency problems arising from production processes and technological deficiencies in tourist regions, as well as underemployment, limit the foundations of sustainable development (Nguyen et al., 2024), which can only be supported by public policy initiatives. Not only service providers, local residents, and tourists play significant roles, but also the cooperation of all stakeholders and regional, national, and international regulatory and strategic collaboration is necessary (Gössling, 2012). Furthermore, it is important to introduce sustainable technologies and innovations, for example, in accommodations and catering establishments. This includes the use of renewable energy sources and the introduction of up-to-date water and waste management solutions.

Although mass tourism still dominates the supply and demand within the tourism industry, there is a growing number of people who recognize the negative environmental impacts of tourism and strive to minimize or avoid them during their travels. The strengthening of environmentally conscious consumer attitudes is expected to act as an incentive for tourism service providers to adopt more environmentally friendly practices, which is particularly important for the long-term sustainable development of tourism.

### **Travel Footprint Measurement**

The Ecological Footprint (EF) is one of the best-known alternative economic indicators. Its creation stemmed from the recognition that measuring economic performance solely in monetary terms is insufficient from a sustainability perspective. According to the EF concept, the consumption of any community can be expressed in terms of the land area required for the production of goods and services (Kitzes et al., 2009). The concept of Ecological Footprint utilizes six land-use categories: *Cropland*, *Grazing land*, *Forest footprint*, *Fishing ground*, *Built-up land*, and *Carbon footprint* (Wackernagel & Beyers, 2019). This indicator can be used at both micro and macro levels, with a general observation being that if something can be expressed in monetary terms, its ecological footprint can also be interpreted. The Global Footprint Network calculates the ecological footprint of countries annually and makes the data table used for this calculation available (Galli et al., 2020). Similarly, several indicators with similar concepts have been developed (carbon footprint, GHG footprint, water footprint, etc.), collectively referred to as the "footprint family" in the literature (Harangozó et al., 2016).

A common question arises as to why we should use the ecological footprint measurement method if it is suitable for all purposes served by money. The literature argues that its use is primarily justified because unlike money, the concept of "too much" is interpretable with the ecological footprint, as biological capacity - the supply side of ecological footprint accounts - also represents a natural limit to consumption (Toth & Szigeti, 2016). This represents the inherent advantage of the ecological footprint over other types of footprint indicators. The ecological footprint is also at the centre of interest for research methodological innovations (Kocsis, 2014).

The ecological footprint indicator faces numerous criticisms (Galli et al., 2019), with one of the most significant being the delineation of the population. Therefore, calculating the ecological footprint of the world or a physically distinct state (e.g., Australia) represents the least of the problems. The freer the movement of the population somewhere, the greater the problem with calculating the ecological footprint.

### Travel Footprint Calculation

The calculation of the ecological footprint can fundamentally be approached in two ways. The *"bottom-up" method* involves measuring individual consumption (e.g., using consumption diaries), while the *"top-down" method* relies on secondary statistical data (e.g., census databases) (Harangozó et al., 2019). While the bottom-up method is extremely labour- and time-intensive, the limitations of the top-down method stem from the characteristics of the secondary database. Therefore, the two methods are often combined: available secondary datasets are utilized, and any missing data are supplemented by primary data collection. With this approach, significantly more accurate measurements can be achieved compared to the former. However, the problem with applying a combined methodology is that individual approaches can significantly hinder the comparability of different studies. The ecological footprint finds a wide range of applications (Wackernagel & Beyers, 2019), and it is used in numerous applied research studies to quantify environmental impacts, including travel-related footprints.

Characteristics of Travel Footprint Calculation:

- In national-level calculations, resource use in the transportation sector is highlighted.
- In calculations from the consumption side, the travel footprint primarily appears in the Carbon footprint among the six land-use categories (Rojas et al., 2022). In these calculations, the travel footprint is mainly associated with the fuel consumption of vehicles.
- An important methodological question is that the ecological footprint accounts only for carbon dioxide emissions from fuel use, not other GHG emissions, thus underestimating the true environmental impact.
- If investments are considered, the establishment of environmental infrastructure entails significant environmental burdens (Jóvér et al., 2023). Therefore, it is crucial to consider the time frame for which our travel footprint-related recommendations apply. For example, in the short term, examining existing infrastructure, traveling by train is almost certainly more favourable than by car. However, in the long term, the construction of a new railway line has a huge ecological footprint due to cement consumption; thus, both technology and utilization need to be examined.

In our research, we primarily formulated short-term, consumer-oriented statements, which also represent one limitation of the study.

### Materials and Methods

In our primary research, we conducted direct data collection consistent with the research objectives, using self-administered questionnaires in English and Hungarian. The survey was conducted from September 27, 2023, to October 15, 2023. The questionnaire contained closed-ended questions. The questionnaire consisted of three sections, of which our current research

processed two parts. The first section included demographic questions. The respondents were participants of a tourism conference (n=74), with two-thirds of the respondents being female (66.2%), and over half (56.7%) aged between 36 and 55 years old. Additionally, more than half of them (54%) were residents of Budapest.

In the second part of the questionnaire, participants were asked questions regarding their travel to the conference. The questions focused on the primary and secondary modes of transportation and the distance travelled. These questions laid the groundwork for calculating the ecological footprint. When formulating the questionnaire questions, we took into account previous research findings suggesting that asking for precise, data-intensive information significantly reduces questionnaire completion rates (Harangozo & Szigeti, 2017). The calculation methodology was adopted from our previous research (Kovács et al., 2017), which we briefly outline below. Using the DEFRA database (Table 1) for CO<sup>2</sup> conversion factors for different modes of transportation and the distance travelled (Table 2), we estimated the direct carbon dioxide emissions associated with the travel (Table 3). We then converted this into global hectares (the average biocapacity of the Earth's surface) using the conversion factor provided by the Global Footprint Network (the international organization responsible for calculating ecological footprints) (Lin et al., 2018). For easier comprehension, we converted our results into global square meters (gsm), which is one-thousandth of a global hectare. The questionnaire allowed participants to specify both primary and secondary modes of transportation.

**Table 1: Conversion Factors**

	CO <sup>2</sup> kg/passenger-km
<b>Local public transportation (tram, metro)</b>	0.02
<b>Electric bicycle (assuming the smallest motorbike)</b>	0.08
<b>Bus</b>	0.1
<b>Train</b>	0.03
<b>Car (compact car)</b>	0.132

Source: DEFRA, 2023

**Table 2: Distance travelled**

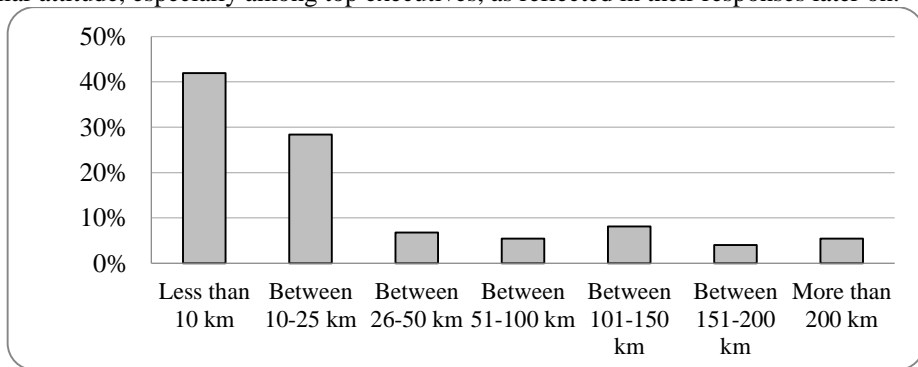
Modes of transportation	Primary mode of transportation distance travelled (km)	Number of participants using this mode	Secondary mode of transportation distance travelled (km)	Number of participants using this mode	Total distance travelled
<b>Local public transportation</b>	378	33	418	15	796
<b>Train</b>	630	7	60	4	690
<b>Car</b>	1223	29	30	4	1253
<b>Pedestrian</b>	5	1			5
<b>Bus</b>	26	1	12	2	38
<b>Electric bicycle</b>	4	1	4	2	8
<b>Bicycle</b>	38	2	4	2	42

Source: Own research

In the second part of the questionnaire, respondents also received questions regarding environmental consciousness and the awareness of choosing transportation modes.

## Results

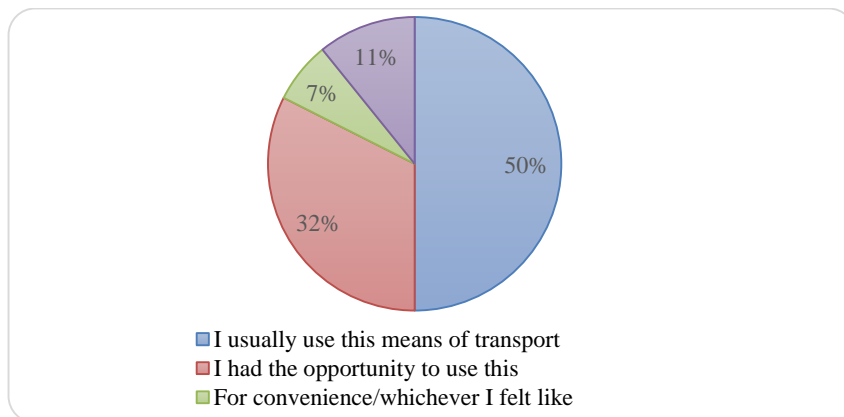
According to the results of the questionnaire, more than half of the conference participants arrived from Budapest. In line with this, the majority of participants (31 individuals) travelled less than 10 km to the event (Figure 1). One surprising finding of our research, when comparing the results of Table 2 and Figure 1, is that only 4 individuals arrived at the conference by bicycle, and even fewer used electric bicycles. This is particularly surprising considering that the conference was held in pleasant autumn weather, perfect for cycling. Upon further analysis of the responses, it is noteworthy that more than one-third of respondents traveling less than 10 km arrived by car. The high proportion of car arrivals can be explained by the fact that it is still a common travel habit and behaviour for businesspeople to travel by car, which is more comfortable and currently a more familiar attitude, especially among top executives, as reflected in their responses later on.



**Figure 1: Percentage of Respondents' Travel to the Event**

Source: Own research findings, edited by the authors

Based on Table 2, it can be seen that the majority of participants (48 individuals) used public transportation as either their primary or secondary mode of transportation. However, the longest distance travelled (1253 km) was by car. Half of the respondents chose their mode of transportation out of habit when traveling to the conference (Figure 2).



**Figure 2: Reasons for Choosing the Mode of Transportation**

Source: Own research findings, edited by the authors

80% of the conference's travel footprint is caused by car travel (Table 3), despite the fact that one-third of car users (33 individuals) shared the car with at least one fellow traveller.

**Table 3: Conference Travel Footprint**

	<b>A</b>	<b>B=A/1000</b>	<b>C=B*0.338</b>	<b>D=C*10,000</b>	<b>E</b>
<b>Mode of transportation</b>	CO <sup>2</sup> kg	CO <sup>2</sup> t	EF gha	EF gm <sup>2</sup>	%
<b>Local public transportation</b>	15.9	0.0159	0.00538	53,8	8
<b>Train</b>	20.7	0.0207	0.00699	69,9	10
<b>Car</b>	165.4	0.1654	0.05590	559	80
<b>Pedestrian</b>	0	0	0	0	0
<b>Bus</b>	3.8	0.0038	0.00128	12.8	2
<b>Electric bicycle</b>	0.6	0.0006	0.00022	2.2	0
<b>Bicycle</b>	0	0	0	0	0
<b>Total</b>			0.06978	697.8	

Source: Own calculation based on DEFRA database and Lin, 2018

**Table 4: How much attention do you pay to sustainability aspects, environmentally conscious, responsible behaviour?**

<b>Response Options</b> (6 = completely)	<b>During Business Travel</b>		<b>Everyday Life</b>	
	Number of Respondents	Distribution of Responses	Number of Respondents	Distribution of Responses
<b>1</b>	2	3%	0	0%
<b>2</b>	7	9%	1	1%
<b>3</b>	15	20%	8	11%
<b>4</b>	20	27%	21	28%
<b>5</b>	27	36%	28	38%
<b>6</b>	3	4%	16	22%

Source: Own research findings

Respondents pay more attention to sustainability and environmental aspects, as well as responsible behaviour, during their everyday life, according to the results of Table 4.

## Conclusions

Although tourism professionals surveyed in our research consider sustainability to be important and even prominent in their daily activities, and less so in their business activities, only 11% of them consciously choose the means of transport they use to arrive at the conference.

One methodological innovation of our study was to provide respondents the opportunity to indicate a secondary mode of transportation in addition to their primary mode. This was done with the aim of reducing information loss during the research. Out of the 74 experts who completed the questionnaire, 29 took advantage of this option, which supports the notion that allowing for secondary mode of transportation choices significantly brought us closer to understanding the real travel characteristics.

Based on the research findings, it would be beneficial to initiate carpooling for the next conference and encourage participants to use low-carbon emission transportation modes. This initiative could

effectively demonstrate the commitment of the conference organizers to sustainability and encourage conference participants towards more conscious choices.

### Discussion

A limitation of the study is that it was conducted with a small sample of experts, so the results cannot be generalized to a wider community. The thematic nature of the conference topic may have influenced the respondents to provide responses to the questionnaire that were more favourable than their actual preferences. According to the respondents themselves, the conference had an impact on shaping their attitudes (Table 5). While this is advantageous in terms of the conference's objectives, it should be taken into account when evaluating the results of the research. Given that a high proportion of respondents, regardless of age, selected response option 'Yes, its importance has (somewhat) increased for me', when asked 'Did your opinion on sustainability and environmental consciousness change based on the conference presentations?', the authors hypothesise that attending a conference on sustainability will have a positive impact on the travel footprint of professionals in the future. Measuring this will be the subject of our next research at our next tourism conference.

**Table 5: Did your opinion on sustainability and environmental consciousness change based on the conference presentations?**

	Below 25 years old	Between 25 and 35 years old	Between 36 and 45 years old	Between 46 and 55 years old	Between 56 and 65 years old	Over 65 years old
<b>Yes, its importance has increased for me.</b>	45%	25%	32%	30%	17%	34%
<b>Yes, its importance has somewhat increased for me.</b>	36%	58%	53%	50%	50%	0%
<b>My opinion has not changed about it.</b>	9%	17%	5%	15%	33%	33%
<b>I consider the issue less important.</b>	0%	0%	5%	0%	0%	0%
<b>I cannot comment on it.</b>	10%	0%	5%	5%	0%	33%
<b>Total</b>	100%	100%	100%	100%	100%	100%

Source: Own research findings

The questions regarding ecological footprint did not allow for precise calculation, only expert estimation. It would be worthwhile to test in later stages of the research whether more precise questioning significantly reduces willingness to complete the questionnaire.

The high willingness of car users to share the vehicle with a fellow traveller may be indicative of environmental consciousness (Szigeti et al., 2019), but this requires further in-depth investigation. Similarly, it is a question requiring further research to what extent the significant use of public

transportation can be attributed to the participants' consciousness or whether the main factor in their choice was the fact that the conference venue is located in direct proximity to one of the major public transportation hubs in Budapest.

The calculation of the ecological footprint for the travel footprint is not standardised, so its comparison with other studies is not meaningful. The literature on ecological footprint calculation (Harangozó-Szigeti, 2017) suggests that the results of the calculation should not be compared with other research but used to assess own development. Accordingly, we plan to continue the research this year, where we will have a comparable dataset.

## References

- Behringer, Zs., Kulcsár, N., Hinek, M., & Tevely, T. (2023). Changes in tourist decisions in the shadow of the global crisis – how travel preferences and consumer priorities evolved during COVID-19 and beyond. *The Hungarian Journal of Marketing and Management*, 57(2), 61-70. DOI: 10.15170/MM.2023.57.02.06 <https://journals.lib.pte.hu/index.php/mm/article/view/6555/6238>
- Bhaskara, G. I. & Filimonau, V. (2021). The COVID-19 pandemic and organisational learning for disaster planning and management: A perspective of tourism businesses from a destination prone to consecutive disasters. *Journal of Hospitality and Tourism Management*, 46(6), 364–375. <https://doi.org/10.1016/j.jhtm.2021.01.011>
- Dankó, L. (2023). Helyi termékekre fókuszáló turizmus a körforgásos és fenntartható gazdaságban (Tourism focusing on local products in a circular and sustainable economy) In: Bene, Zs. (szerk.), *THE Eszencia – Bor és Tudomány: Fejezetek a Lorántffy Intézet oktatóinak tollából* (Chapters from the Lorántffy Institute's lecturers). (pp. 86-100.) Sárospatak, Tokaj-Hegyalja Egyetem
- DEFRA (2023). Greenhouse gas reporting conversion factors <https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2023>
- Galli, A., Giampietro, M., Goldfinger, S., Lazarus, E., Lin, D., Saltelli, A., Wackernagel, M., & Müller, F. (2016). Questioning the ecological footprint. *Ecological Indicators*, 69, 224–232. <https://doi.org/10.1016/j.ecolind.2016.04.014>
- Galli, A., Iha, K., Moreno Pires, S., Mancini, M. S., Alves, A., Zokai, G., Lin, D., Murthy, A., & Wackernagel, M. (2020). Assessing the ecological footprint and biocapacity of Portuguese cities: Critical results for environmental awareness and Local Management. *Cities*, 96, 102442. <https://doi.org/10.1016/j.cities.2019.102442>
- Gonda, T. & Raffay, Z. (2021). Környezettudatosak-e a hazai turisták? (Are domestic tourists environmentally conscious?) *Turizmus Bulletin*, 21(2), 4-14. <https://doi.org/10.14267/TURBULL.2021v21n2.1>
- Gössling, S. (2012). Climate policy and tourism. In: Holden, A. & Fennell, D. (szerk.), *The Routledge Handbook of Tourism and the Environment*. (pp. 421–434.) Routledge, New York.
- Harangozó, G., Kovács, Z., Kondor, A. C., & Szabó, B. (2019). A budapesti várostérség fogyasztási alapú ökológiai lábnyomának változása 2003 és 2013 között (Change in the consumption-based ecological footprint of the Budapest urban area between 2003 and 2013). *Területi Statisztika*, 59(1), 97–123. <https://doi.org/10.15196/ts590105>
- Harangozó, G., Széchy, A. Z., & Zilahy, G. (2016). A fenntarthatósági lábnyom-megközelítések szerepe a vállalatok fenntarthatósági szempontú teljesítményértékelésében (The role of sustainability footprint approaches in the sustainability-focused performance assessment of companies). *Vezetéstudomány / Budapest Management Review*, 2–13. <https://doi.org/10.14267/veztud.2016.07.01>

- Harangozo, G., & Szigeti, C. (2017). Corporate Carbon Footprint Analysis in practice – with a special focus on validity and reliability issues. *Journal of Cleaner Production*, 167, 1177–1183. <https://doi.org/10.1016/j.jclepro.2017.07.237>
- Hegedüs, S., Kiss, K. & Kovács, E. (2023). A környezettudatos fogyasztói magatartás turisztikai aspektusai (Tourism aspects of environmentally responsible consumer behaviour). *Turizmus Bulletin*, 23(1). 15-24. <https://doi.org/10.14267/TURBULL.2023v23n1.2>
- Jóvér, V., Major, Z., Németh, A., Kurhan, D., Sysyn, M., & Fischer, S. (2023). Investigation of the geometrical deterioration of paved superstructure tramway tracks in Budapest (Hungary). *Infrastructures*, 8(8), 126. <https://doi.org/10.3390/infrastructures8080126>
- Kántor, Sz. (2022). Hallgatók fenntartható turisztikai fogyasztásai (Sustainable tourism consumption by students). *Turisztikai és Vidékfejlesztési Tanulmányok*, 7(4), 33-45. <https://doi.org/10.15170/TVT.2022.07.04.03>
- Kitzes, J., Galli, A., Bagliani, M., Barrett, J., Dige, G., Ede, S., Erb, K., Giljum, S., Haberl, H., Hails, C., Jolia-Ferrier, L., Jungwirth, S., Lenzen, M., Lewis, K., Loh, J., Marchettini, N., Messinger, H., Milne, K., Moles, R., ... Wiedmann, T. (2009). A research agenda for improving National Ecological Footprint Accounts. *Ecological Economics*, 68(7), 1991–2007. <https://doi.org/10.1016/j.ecolecon.2008.06.022>
- Kocsis, T. (2014). Is the Netherlands sustainable as a global-scale inner-city? Intensifying Spatial Sustainability. *Ecological Economics*, 101, 103–114. <https://doi.org/10.1016/j.ecolecon.2014.03.002>
- Kovács, Z., Szigeti, C., Egedy, T., Szabó, B., & Kondor, A. C. (2017). Az urbanizáció környezeti hatásai - Az ingázás ökológiai lábnyomának változása a Budapesti várostérségben (The Environmental Impact of Urbanisation - Changing the Ecological Footprint of Commuting in the Budapest Urban Area). *Területi Statisztika*, 57(5), 469–494. <https://doi.org/10.15196/ts570501>
- Kupi, M. & Szemerédi, E. (2022). A magyarok környezettudatos utazással kapcsolatos attitűdjeinek és egyes magatartásformáinak vizsgálata a Covid-19 járvány tükrében (Examining the attitudes and certain behaviours of Hungarians towards environmentally conscious travel in the light of the Covid-19 epidemic). *Turisztikai és Vidékfejlesztési Tanulmányok*, 7(2), 49-71.
- Lin, D., Hanscom, L., Murthy, A., Galli, A., Evans, M., Neill, E., Mancini, M., Martindill, J., Medouar, F.-Z., Huang, S., & Wackernagel, M. (2018). Ecological footprint accounting for countries: Updates and results of the National Footprint Accounts, 2012–2018. *Resources*, 7(3), 58. <https://doi.org/10.3390/resources7030058>
- Lukács, R., Tütümkov-Hrisztov, J. & Grotte, J. (2022). A hazai generációk, különös tekintettel a digitális bennszülöttek szállodaválasztási szokásai a fenntarthatóság és a digitalizáció mentén (Hotel choice patterns of domestic generations, especially digital natives, in the context of sustainability and digitalisation). *Turizmus Bulletin*, 22(1), 26-37.
- MacInnes, S., Grün, B. & Dolnicar, S. (2022). Habit drives sustainable tourist behaviour. *Annals of Tourism Research*, 92.
- Manea, G.-C., & Cozea, A. (2022). Regional economic development supported by sustainable tourism. *Dutch Journal of Finance and Management*, 5(1), 21885. <https://doi.org/10.55267/djfm/13400>
- Muth, D. (2022). A klímatusatosságot magyarázó elméletek átfogó elemzése: strukturális, intézményi és egyéni megközelítések (A comprehensive analysis of theories explaining climate awareness: structural, institutional and individual approaches). *Tér és Társadalom*, 36(4). 86-107.
- Nguyen, D. T., Kuo, K. C., Lu, W.M., & Nhan, D. T. (2024). How Sustainable Are Tourist Destinations Worldwide? An Environmental, Economic, and Social Analysis. *Journal of Hospitality & Tourism Research*, 48(4), 698-711. <https://doi.org/10.1177/10963480231168286>

- Pololikashvili, Z. (2024). UN Adopts a New Global Standard to Measure the Sustainability of Tourism. <https://www.unwto.org/news/un-adopts-a-new-global-standard-to-measure-the-sustainability-of-tourism>
- Rojas, C., Muñoz, I., Quintana, M., Simon, F., Castillo, B., de la Fuente, H., Rivera, J., & Widener, M. (2022). Short run “rebound effect” of Covid on the Transport Carbon Footprint. *Cities*, 131, 104039. <https://doi.org/10.1016/j.cities.2022.104039>
- Szigeti, C., Kovács, Z., Egedy, T., & Szabó, B. (2019). Az ingázásból származó ökológiai Lábnyom csökkentésének lehetőségei a közösségi gazdaság révén a budapesti városrégióban (Opportunities to reduce the Ecological Footprint of Commuting through the Community Economy in the Budapest Urban Region). *Közlekedéstudományi Szemle*, 69(2), 58–74. <https://doi.org/10.24228/ktsz.2019.2.5>
- Toth, G., & Szigeti, C. (2016). The historical ecological footprint: From over-population to over-consumption. *Ecological Indicators*, 60, 283–291. <https://doi.org/10.1016/j.ecolind.2015.06.040>
- UNWTO (2023). World Tourism Day 2023. <https://www.unwto.org/world-tourism-day-2023>
- Wackernagel, M., & Beyers, B. (2019). *Ecological footprint: Managing our biocapacity budget*. New Society Publishers.

**György Kocziszký<sup>62</sup> - Boglárka Bánné Gál<sup>63</sup>**

***Ex-Post Territorial Impact Assessment of the European Union Funds Used in the 2014-2020 Programme Period***

*Since its accession to the European Union (2004), Hungary has been allocated a considerable amount of EU funds intended to promote regional development and convergence. The first part of this study reviews the literature dealing with the use of EU funds. Then a developed model of ex-post impact assessments is presented. The validity of the model is examined based on the use of the cohesion resources in the 2014-2020 planning period in Mezőkövesd District, Borsod-Abaúj-Zemplén County, Hungary. The results are presented in a spider-web diagram and quantified with the help of an aggregate index.*

*Keywords: EU cohesion funds, complex index, impact assessment, Mezőkövesd District.*

*Code: R11; R58*

<https://doi.org/10.32976/stratfuz.2024.21>

## **1. Research objectives, basic questions and literature review**

The documents of the European Union pay particular attention to reviewing the results (outputs) related to the Community's cohesion policy. This expectation is echoed in the documents of not only the governmental organisations of the member states, but also of the European Court of Auditors and the European Commission (EC, 2015, 2016). The need for reviewing the results is also reflected in the analyses of some institutes (WIFO, 2009, 2020) and researchers (Alecke et al, 2010; Allard et al, 2012; Kocziszký, 2006, 2009; Fier et al., 2005) dealing with the use of EU funds, the European Regional Development Funds and the European Social Fund. However, the need to carry out an impact assessment of the use of resources has only been formulated in recent years. At the end of each planning period, both the donor (the EU) and the beneficiary are expected to prepare an ex-post assessment of the use of funds at the project, programme and regional levels. Apart from the positive impacts of the funds used, the analyses also draw the decision-makers' attention to several negative impacts. The mid-term review conducted by the European Court of Auditors also deals with this issue. The document highlighted that the developments financed by the European Development Fund (ERDF) and the European Social Fund (ESF) are generally output-oriented and the performance monitoring also follows this approach, however, mostly without a thorough impact assessment of the results (ESF, 2018).

The need for carrying out an impact assessment was more clearly formulated in the 2014-2020 programme period. However, the relevant methodological recommendation was insufficient. Based on the methodologies used, the studies published over the past decade can be classified into four groups:

- a) The verbal cause-and-effect chain analysis, which shows the potential causes and their effects (Ishikawa diagram). Most analyses use this type of methodology (ERDF, 2015).
- b) Descriptive statistical analysis (shift-share analysis), which compares the change in the local weight of some social and economic interventions with similar processes in a larger unit (county, region, country). (Batog et al., 2004).
- c) Econometric methods, used for conducting multi-variable analysis based on autoregressive or vector autoregressive models.

Potvorsky investigated the impact of state aid in 27 countries. The findings show that state aid has a moderate effect on real growth rate and employment rate, whereas the

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subprime deferred value of the real growth rate has a favourable impact on state aid (Potvorszky, 2016).

Spatial computable general equilibrium models (SCGE), which are the extended models of economic models, are applied to investigate impacts of government and regional interventions with special attention to the equilibrium criteria of the economy. In the Hungarian literature Varga was the first to apply the spatial computable general equilibrium model for the impact assessment of regional development policy (Varga, 2007; Jánosi et al., 2010).

- d) The combination of descriptive statistics and econometrics, which was used by Austrian Institute of Economic Research (WIFO) in 2020 to evaluate the effectiveness of the cohesion fund resources in Austria when the country celebrated its 25<sup>th</sup> anniversary of accession to the EU (Mayerhofer et al., 2020).

The objective of this study is to conduct an impact assessment of the EU resources allocated to a particular administrative unit (Mezőkövesd District) in the programming period 2014-2020. Special attention is paid to the degree to which the state and local governments are engaged and the application opportunities of enterprises and in particular to investments that

- increase the economic output of the area;
- improve the fulfilment of headline objectives related to territorial development (increase in employment, economic development, market competitiveness, etc.);
- have a favourable impact on the well-being of people living in the area.

During the analysis, the study focused on the following questions:

- What impacts can generally be identified in the regions under investigation where EU resources were used?
- How can an individual impact factor be quantified?
- How can an overview of social, economic and environmental impacts be provided?

First, this study presents a research model. Then the results and impacts of the development resources allocated and used in the programme period 2014-2020 are analysed.

## 2. Research methodology and model

Impact can generally be defined as the intervention result of a specified change or influence on someone or something. Based on this definition, regional development interventions influence the living conditions of people residing in a specified area, the changes in economic, social and environmental conditions, improve them and allow the conditions before and after the interventions to be compared. It should be noted that in the majority of national regional development documents the term 'impact' is used as a synonym for the term 'outcome'.

While the beneficiary of the outcome is mostly a restricted group of people, the impact is experienced at a community level. It is obvious that individual benefits do not automatically result in benefits at a community level, which may lead to community protests against certain developments.

Considering the aforementioned ideas, it can be claimed that impact is a complex concept that can be measured both at regional (micro-, meso- and macrolevel) and sectoral levels in a net (direct) and a gross (cumulative) form.

The weak point of impact assessments is that they fail to consider that changes are influenced not only by external (exogenous), but also by internal (endogenous) factors, which can either strengthen or weaken the consequences of external factors. The applied methodology and data shortage may hinder the attempts to separate the latter.

The five steps of the analysis are as follows (Figure 1):

- a) The characteristics of the region under investigation and the beneficiary projects (inputs) were taken into account.
- b) The output and impact indicators suitable for measuring regional interventions were compared.

- c) The results (outputs) of the indicators of the beneficiary projects were quantified based on the ex-post analysis (2014-2020).
- d) The impacts (outcomes) generated by outputs were quantified.
- e) Finally, general conclusions were summarised.

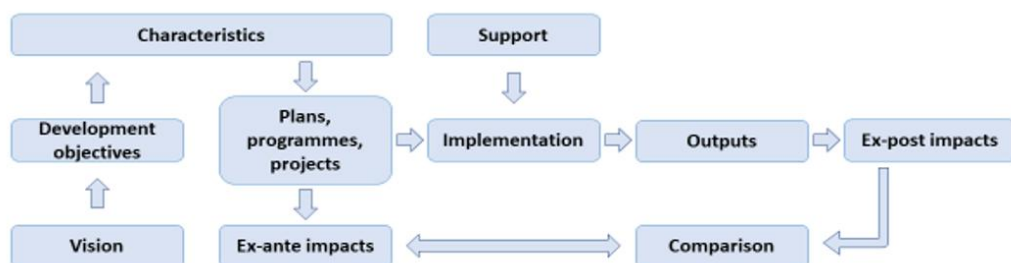


Figure 1: Logical process of the research

Source: authors' elaboration

The first part of the research is exploratory. First, the collected data were systematised and statistically processed, which allowed quantitative analyses to be conducted.

## 2.1 Input indicators of the model

When the input, output and impact indicators were compiled, the focus was on data relevancy, availability, and interpretability at the territorial level. The input indicators (in accordance with the quantification of the indicators on the output side) were classified into four groups (Table 1):

Table 1: Input indicators of the model

Source: authors' elaboration

Name of the main group	Sources
Economic indicators	Hungarian Central Statistical Office (HCSO)
Social indicators	Hungarian Central Statistical Office (HCSO)
Environment indicators	Hungarian Central Statistical Office (HCSO)
Support indicators	Integrated Territorial Programme
- projects won	
- resources awarded	

## 2.2 Output indicators of the model

The study investigated 12 output indicators belonging to the three main groups (environment, economic, and social) of the model. (Table 2)

Table 2: Output indicators of the model

Source: authors' own elaboration

Main group	Name of the indicator	Interpretation of the indicator	Source of the indicator
Environment	Proportion of dwellings supplied with public water (%)	Proportion of dwellings in a specified settlement supplied with public water compared to the total dwellings	Hungarian Central Statistical Office (HCSO)

	Proportion of dwellings connected to the public sewage network (%)	Proportion of dwelling in a specified settlement connected to the public sewage network compared to the total dwellings	Hungarian Central Statistical Office (HCSO)
	Amount of public waste per capita removed from a specified settlement by public utility company (kg/capita)	Total amount of solid waste generated in a specified settlement and removed from the owner by public utility company	Hungarian Central Statistical Office (HCSO)
	Amount of treated waste per capita in a specified settlement (kg/capita)	The proportion of the waste per capita treated to recover materials or energy in a specified settlement	Hungarian Central Statistical Office (HCSO)
	GHGs emission (CO <sup>2</sup> equivalent)	Annual emissions reduction in GHGs of modernised facilities due to the project	Project portal
	Renewable energy resources (MW)	Total amount of energy produced by equipment and appliances operating on renewable energy sources	Project portal
	Renewed or newly developed green areas (m <sup>2</sup> )	Renewed or newly developed green areas and related natural or developed water areas from project sources in a settlement	Project portal
<b>Society</b>	Number of crimes per hundred thousand inhabitants	Data collection unit registered and used by investigative authorities in a specified settlement	Hungarian Central Statistical Office (HCSO)
	Demographic situation	Number of children aged 0-14 per hundred inhabitants aged 65 and over Number of classes (years of education) completed by inhabitants over the age of 7 (class number)	Hungarian Central Statistical Office (HCSO)
<b>Economy</b>	Number of tax payers per thousand inhabitants	Number of tax payers per thousand inhabitants in specified a settlement (tax payer/thousand inhabitants)	Hungarian Central Statistical Office (HCSO)
	Number of enterprises per thousand inhabitants	Number of enterprises per thousand inhabitants in a specified settlement (enterprise/thousand inhabitants)	Hungarian Central Statistical Office (HCSO)
	Earnings	Income forming the tax base of personal income tax per capita (thousand forint/capita)	Hungarian Central Statistical Office (HCSO) Summary table
	Gross migration difference per thousand inhabitants	The difference between the rate of inhabitants joining and those leaving the specified settlement in a given year, measured per thousand inhabitants.	Hungarian Central Statistical Office (HCSO)

Correlation studies verified that there is a cause-and-effect relationship between each indicator.

### 2.3 Impact indicators

The effects of development interventions can be evaluated on the basis of three aggregated indices: economic sub-index, human development sub-index and environmental sub-index.

- a) A change in an economic impact expresses the impacts of structural and added-value changes of the developments, which influence both inputs (labour force structure, etc.) and outputs (export structure, etc.) (Kocziszký, 2011a).

In order to determine the partial index (GRI) of economic impacts for a given period, the following relationship was used in the model:

$$GRI = [(f_1 \times b_1) + (f_2 \times b_2) + (f_3 \times b_3)] / 3$$

where:

$f_1$  represents the primary sector,

$f_2$  = secondary sector ,

$f_3$  = tertiary sector,

$f$ = employment rate of a specified sector,

$b$  = gross nominal wage in a specified sector.

Considering the above, the index value can be determined as follows:

$$GRI (\%) = GR(t_1) / GR(t_0)$$

- b) Change in the Human Development Index (HDI)

The Human Development Index is a summary measure of three factors (life expectancy, education and income). As for the specified area, this can be calculated as follows (Lipták, 2017):

$$HDI = \sqrt[3]{I_1 * I_2 * I_3} ,$$

where HDI represents the Human Development Index,

$I_1$  = Number of children aged 0-14 per inhabitants aged 60 and over

$I_2$  =average education

$I_3$  = income index forming the tax base of PIT per capita.

- c) The model considers the results of changes in the form of an aggregated index and uses seven indicators (number of dwellings supplied with public water, number of dwellings connected to a public sewage network, amount of waste removed from a settlement, use of renewable energy sources, size of green area):

The aggregated index can be determined in three steps. First, the individual values are normalised by

$$I_n = (X_i - X_{\min}) / (X_{\max} - X_{\min})$$

where

$X_i$  reflects the individual value of the specified settlement,

$X_{\min}$  = minimal value,

$X_{\max}$  = maximal value.

Then the indicator average can be calculated based on the normalised value:

$$\bar{X} = \left( \sum_{i=1}^n X_i \right) / n$$

In the third step the aggregated index value can be computed:

$$J = \sqrt[7]{X_1 * X_2 * \dots * X_7}$$

All three groups of indicators can be expressed as a percentage, which makes comparison of partial results (sub-indices) in space and time easier. An aggregated index can be calculated from the simple average of the three values, which allows a comprehensive evaluation of the development interventions.

### 3. Ex-post impact assessment of territorial developments

In the programming period 2014–2020 the interventions from EU resources contributed to the development of the area, the population retention capacity of the settlements, the transition to a low-carbon economy, the improvement of the local community services and the development of human resources. This study examines the impacts of these issues in detail: characteristics of the given area; settlement development goals, activities, and resources; development outputs and development impacts.

#### 3.1 Administrative situation, location and characteristics of the area

As of 1 January 2013 new districts were re-established in Hungary, forming units that make up the administrative level of the state administration, located between the settlement and country levels (Act XCIII of 2012). Thus, the Mezőkövesd District was formed, which is one of the 16 districts of Borsod-Abaúj-Zemplén County.

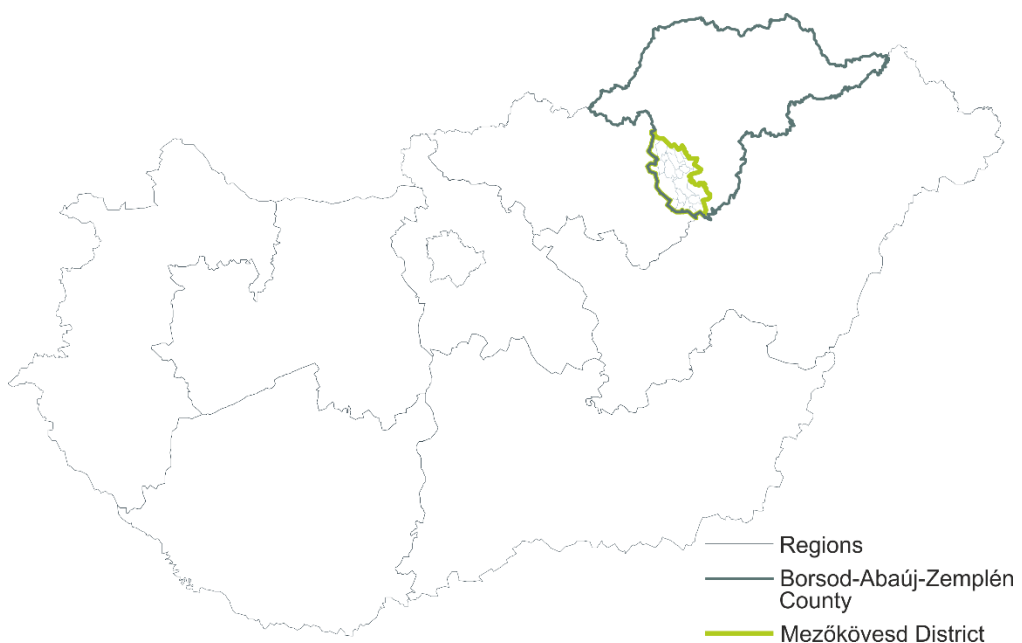


Figure 2: Geographical position of Mezőkövesd District

Source: authors' own elaboration

After 1989, the economic, social and environmental conditions of the territory underwent unfavourable transformations. Large-scale agriculture disappeared. Some of the medium-sized companies that were displaced from the capital went bankrupt. As a result, Mezőkövesd District ranked only 93 (out of 175) in the national competitiveness ranking, ending up in the upper middle position and scoring below the national average (Lengyel et al., 2015).

Before the programme period 2014–2020, the social situation of majority settlements in the area had stagnated after the political reform. Both the economy and the economic infrastructure were

underdeveloped and the regional potential was not utilised (such as the advantages arising from the proximity of the motorway). Consequently, Government Decree 209/2014 (XI.26) qualified this district as a beneficiary. (Since its calculated complex indicator was 41.32, it was ranked 86 out of 197 districts) (Government Decree 209/2014 (XI.26) on the classification of beneficiary districts).

Although the competitiveness of the district is below the average, it can be easily accessed. The electrified main railway line passes through Mezőkövesd. The 2×2-lane motorway M3 is only 1.5 km away from the town. Mezőkövesd is located only 45 km away from Miskolc, the seat of Borsod-Abaúj-Zemplén County, 132 km from Budapest, the capital of the country, 24 km from Eger, the seat of Heves County, 107 km away from Debrecen, the seat of Hajdú-Bihar County, and 101 km away from Szolnok, the seat of Jász-Nagykun-Szolnok County. Since the M3 and M30 motorways were built, the accessibility of the central regions of the country has significantly improved, which has positively affected the district as a whole. The nearest airports with international traffic serving flights are Budapest Ferenc Liszt International Airport (150 km), Debrecen Airport (110 km) and Košice (135 km).

Mezőkövesd is a suburb of Borsod-Abaúj-Zemplén County. This is the town where foreign capital reaches the country while moving eastward.

The economy in Mezőkövesd was dominated by machine manufacturing and metal processing industries from 1970. After the privatisation period, a number of Hungarian-owned enterprises were formed and Mezőkövesd also attracted foreign investors.

Even in 2010s arable farming was a dominant activity in the Mezőkövesd District. The production of field crops like winter wheat and sunflower prevails. In addition, viticulture and winemaking also play a significant role. Agricultural production areas are mostly dedicated to monoculture and intensive farming, the ecological consequences of which can be detrimental in a number of ways. Intensive cultivation practices involving the application of excessive amounts of fertilisers and pesticides, deep ploughing and over-irrigation used in monoculture production leads to an imbalanced diversity of the soil and increases its CO<sub>2</sub> emissions. The application of a combination of crop rotation and land fallowing techniques ensures biodiversity, maintains soil fertility and promotes the CO<sub>2</sub> storage capacity of the soil. As for the livestock sector, poultry farming (production of broiler chickens, hatching eggs and eggs for consumption) dominates, while the role of both beef cattle and hog farming is decreasing.

The tourism industry is a flagship sector in the Mezőkövesd District and due to its inter-sectoral nature, its development is a significant source of revenue. Among the most popular tourist attractions in the district are the spas: Zsóry Thermal Bath and Spa in Mezőkövesd and the Thermal Bath and Spa in Bogács. Matyó folk traditions and embroidery also play a prominent role.

The opportunities to break out of the development trap are very complex and affect both demand and supply (Table 3).

Table 3: SWOT analysis of Mezőkövesd District

Source: authors' own elaboration

STRENGTHS	WEAKNESSES
	- Available capital is limited.

<ul style="list-style-type: none"> <li>- Mezőkövesd District is on a growth path, boasts active development and the adoption of solutions offered by future technology during infrastructural investments.</li> <li>- Mezőkövesd is the centre of human-education, health, cultural and social infrastructure of the area.</li> <li>- It is connected to the M3 motorway.</li> <li>- The settlement centres and community spaces have been upgraded.</li> </ul>	<ul style="list-style-type: none"> <li>- The proportion of unskilled and underskilled labour force is high.</li> <li>- Demand is low.</li> <li>- Entrepreneurial activity is low.</li> </ul>
<p style="text-align: center;"><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>- Making the product supply of the district more diverse by designing new products specific to the district and offering already available ones;</li> <li>- Enhancing sustainable tourism development;</li> <li>- Encouraging the start-up of goods-producing/service micro-enterprises;</li> <li>- Improving the standard of services based on the market needs;</li> <li>- Building energy-efficient systems in order to reduce overhead costs;</li> <li>- Applying incentive tools to encourage investment;</li> <li>- Connecting the district to the trans-European network since it is located along the M3 motorway;</li> <li>- Making the district suitable for attracting and maintaining industries that generate significant added value;</li> <li>- Developing service packages tailored to individual needs.</li> </ul>	<p style="text-align: center;"><b>THREATS</b></p> <ul style="list-style-type: none"> <li>- Decreasing and aging population (negative natural reproduction and migration balance);</li> <li>- Emigration of young people and qualified work force and increasing proportion of dependents;</li> <li>- Lack of joint actions;</li> <li>- Low willingness to establish regional partnerships for cooperation at inter-professional and public levels.</li> </ul>

### 3.2. Settlement development objectives, tendering activities and sources

As for the territorial development objectives for the 2014-2020 programme period, the main objectives were as follows: to improve the quality of life, stop population aging, create a liveable environment, decrease social tensions, improve the economic potential and performance of the area and create a competitive economy.

In the investigated period, the intensity of support of the European Union programs varied. In the Territorial and Settlement Development Operative Programs, the support amounted to 100%. The beneficiaries could be primarily municipalities (in some cases civil organisations) and the advance payments amounted to 100%. The beneficiaries of the Economic Development and Innovation Operational Programs (EDIOP) were small and medium-sized enterprises SMEs, and support was in the range of 50-70%.

Regional plans and programs, as well as output indicators, were assigned to each goal (Figure 3).

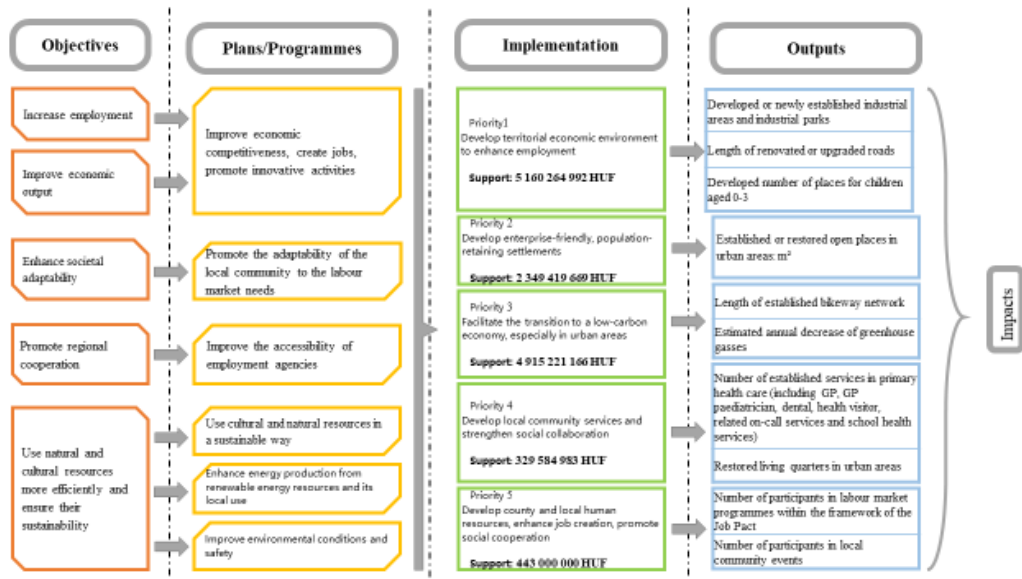


Figure 3. Impact chain of implemented developments from EU sources  
Source: authors' own elaboration

Calls for proposal, project generation and data collection processes are complex and time consuming. The steps are shown in Table 4.

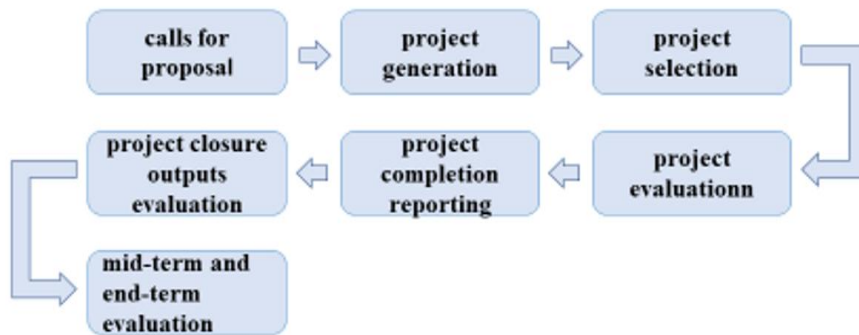


Figure 4: The process from the call for tenders to the closing of program  
Source: authors' own elaboration

### Project selection experiences

When the grant applications were submitted, the majority of the beneficiaries had minimal project content both from a technical and budgetary points of view. It was not unusual that only the grant agreements were signed, following which the actual technical and professional contents as well as the budget were elaborated and the supporting documents were prepared. Upon the approval of the project, beneficiaries faced difficulties and challenges in the implementation process (including unsettled ownership rights, inaccurate technical content, feasibility risks of the planned technical content, cost redesign, modifications of project elements due to incomplete preparation). Any amendment requests had to be approved by the participating organisations, which made further amendments necessary (major milestones in the progress report, transfers between budget

lines, etc.). These were the reasons for discrepancies between the number of project ideas outlined in the identification and submitting stages (Table 5).

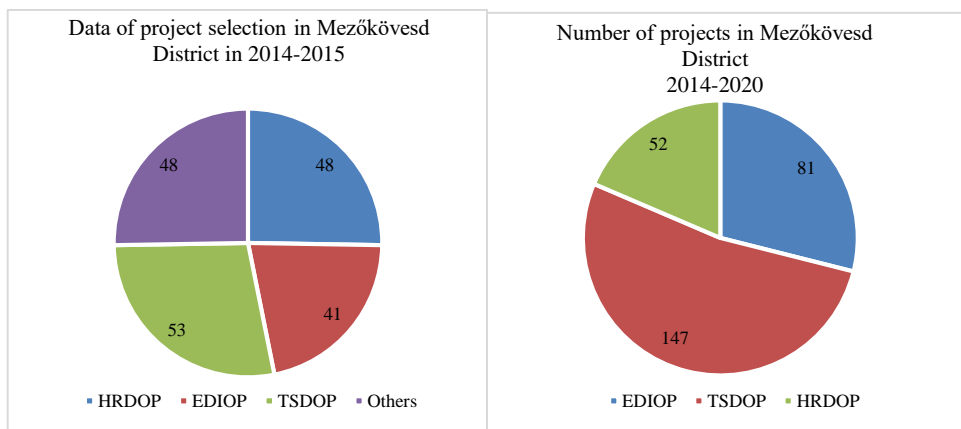


Figure 5: Distribution of project ideas (left) and submitted projects (right).  
Source: authors' own elaboration

The amendments made the preparation stage longer and the project implementation period shorter. (The calls for proposal maximised the project preparation period to 18 months and the duration of the project implementation to 18 months.)

The preparation time of 18 months was quite long for beneficiaries. However, small-scale projects could have been implemented during this period.

The participating organisations and beneficiaries focused on closing the 2014-2020 HRDOP projects in the second half of 2023, as they had to be completed by the end of December 2023.

Public procurement processes were longer comparable to the previous period, thus several issues had to be clarified, which led to delays in project closure beyond the set deadline. Involving planning councils and competent authorities in permitting procedures also prolonged the preparation cycle.

The current regulatory environment does not impose strict reporting obligations. Beneficiaries are expected to report only on whether the project remains fully consistent with the set key milestones. However, both the county municipality and the state treasury would greatly benefit from additional information if mandatory information on the progress of a specific project had to be provided every quarter. This would be important because in the preparation phase of some projects, beneficiaries and stakeholders could be informed in time either about the public procurement that has been announced several times, or about the increased need for funds for the investment. Thus, a territorial actor would have more possibilities for efficient intervention in time and the project could start the implementation phase sooner. Territorial actors can intervene only if they possess information supported by accurate data and can get access to this information in time.

### Grants awarded

Figure 6 illustrates the number of initiated, approved and implemented projects within the Territorial and Settlement Development Operational Programme (TSDOP), Economic Development and Innovation Operational Programme (EDIOP), and Human Resource Development Operational Programme (HRDOP), as well as the allocated resources. In the case of EDIOP applications, the amount of support in the implementation period. increased in parallel

with the number of applications, while in the TSDOP and HRDOP cases, resources were scarce in the implementation phase.

In the 2014-2020 programme period, the beneficiaries waited to initiate projects while the calls for applications were open. Thus, they elaborated and submitted their development requests under known conditions. In the case of EDIOP, there is a two-fold difference between the planning and implementation phases, while in the case of TSDOP, there is almost a three-fold difference. On the basis of the experience gained, it can be claimed that the main reason for waiting lies in the unwillingness of companies to share their development ideas with other actors in the economy, primarily in order to protect their market position. The reason why municipality projects were prepared so slowly was a shortage of human resources.

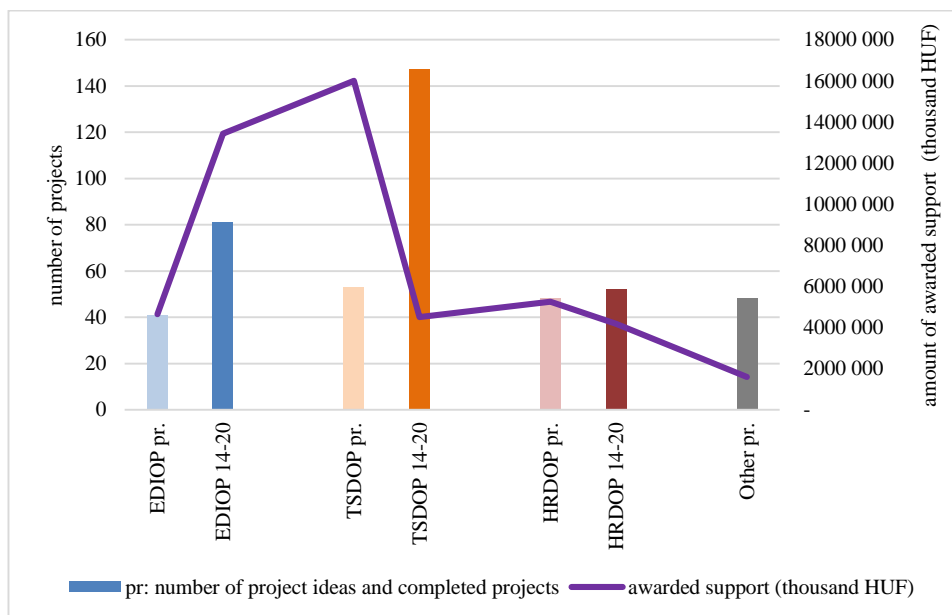


Figure 6: Number of identified and implemented projects and the amount of awarded support (thousand HUF)

Source: authors' own elaboration

Installation of solar energy systems was given high priority and projects with 50-79% intensity received financial support. Lower aid intensity was granted to projects involved in complex information development, production capacity expansion or credit-product related projects.

### 3.3. Development outputs

The financial resources used by Borsod-Abaúj-Zemplén County in the programme period 2014-2020 amounted to HUF 133 billion. The funds allocated to the Mezőkövesd District was proportionate to the population and accounted to HUF 1.55 billion/year. During seven years, this amount was as high as HUF 10.88339 billion, which was supplemented by the cost increases necessary to complete certain developments. This is summarised in Figure 7.

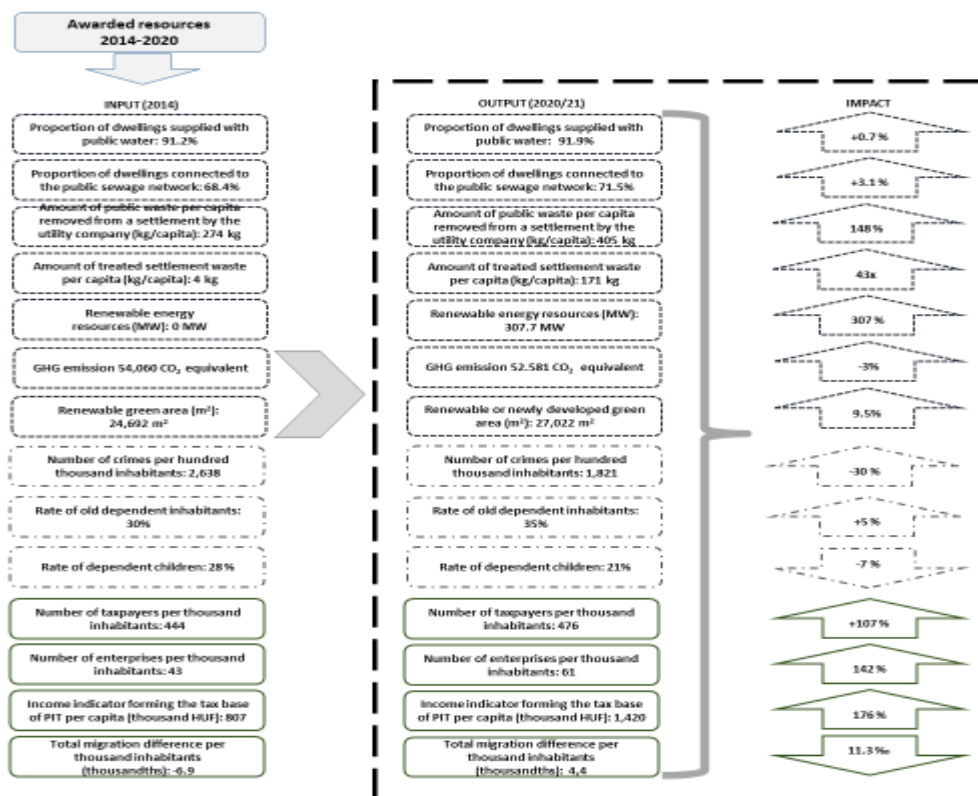


Figure 7: Changes in economic, environmental and societal outputs in the Mezőkövesd District in the EDIOP programme period 2014-2020

Source: authors' own elaboration

### Environmental outputs of developments

The proportion of dwellings supplied with public water at the beginning of the programme period (2014) was already relatively high, 91.2%, which increased to 91.9% in 2020. A higher increase (from 68.4% to 71.5%) was observed in the proportion of dwellings connected to the public sewage water network (HCSO). The amount of public waste removed per capita from a specified settlement also increased (it amounted to 274 kg in 2014 and to 405 kg in 2020) (HCSO). One of the causes of this may be due to the increased demand for packaging materials of products during the investigated period. Also, customers' purchasing behaviour changed and there was a greater demand for pre-packed products. In addition, the number of dwellings using municipal waste collection services significantly increased.

The amount of treated waste recovered per capita increased from 4 kg to 171 kg over the seven years (HCSO) due to a more eco-conscious consumer attitude towards selective waste collection.

### Societal outputs of developments

The number of crimes per hundred thousand inhabitants decreased in the district by one third, from 2638 to 1821 cases (30% decrease) (HCSO). This is presumably due to the higher employment rate, increased public security and decreased unemployment rate (Figure 8). This also significantly contributes to the shift in the total migration difference in a positive direction.

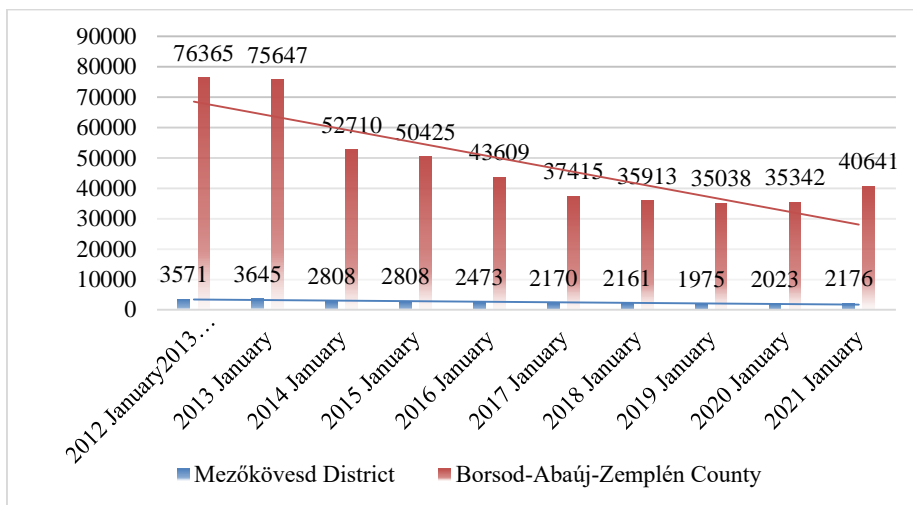


Figure 9: Number of registered job seekers on the closing date

Source: authors' own elaboration based on the data of National Employment Service

The number of civil organisations operating in the area remained almost unchanged (Figure 9).

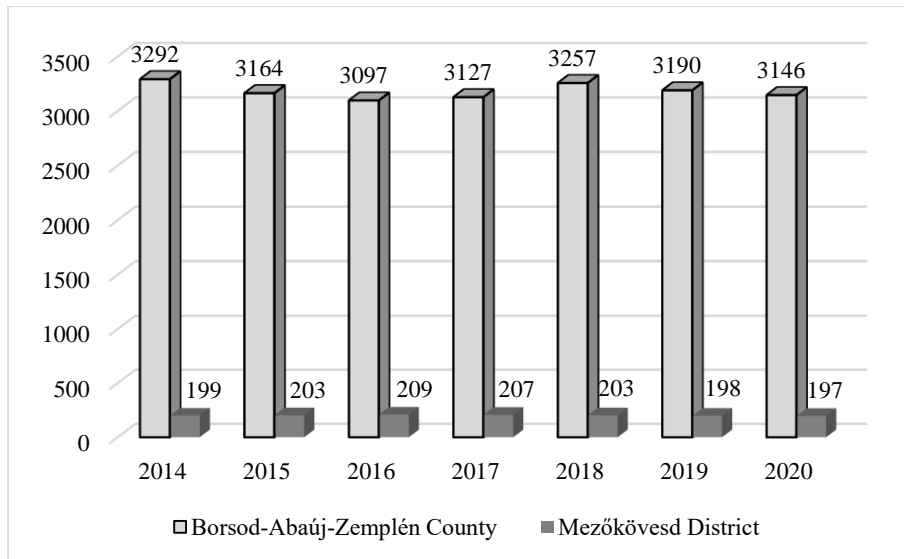


Figure 9: Change in the number of civil organisations (2014-2020)

Source: General Assembly of B.-A.-Z. County (2023)

## Economic outputs of developments

The primary objective of EU project applications was to foster economic development. Local governments would have been unable to make investments without EU financial resources because they had only limited possibilities for savings.

When the use of resources was investigated, special attention was paid to technological development and the purchase of equipment. In the 2014-2020 programme period the completed projects had a favourable impact on entrepreneurial activities in the district.

The development of the district is ahead of the county data in terms of several indicators. EU funds boosted economic recovery and resulted in increased entrepreneurial spirit, a higher number of tax payers and a 75% increase in income forming the tax base of PIT per capita (Table 4).

Table 4: Changes in some indicators of  
Borsod-Abaúj-Zemplén County and the Mezőkövesd District (2014-2020)

Source: authors' own elaboration

	Density of public road network (km)		Number of taxpayers per thousand inhabitants		Income indicator forming the tax base of PIT per inhabitant (thousand HUF)		Number of enterprises per thousand inhabitants		Total migration difference per thousand inhabitants (thousandths)	
	Mezőkövesd District	Borsod-Abaúj-Zemplén Country	Mezőkövesd District	Borsod-Abaúj-Zemplén Country	Mezőkövesd District	Borsod-Abaúj-Zemplén Country	Mezőkövesd District	Borsod-Abaúj-Zemplén Country	Mezőkövesd District	Borsod-Abaúj-Zemplén Country
2014	55.1	59.5	444	434	807	768	43	43	-6.9	-5.7
2015	55.1	59.4	449	442	862	827	44	44	-1.7	-5.7
2016	55.1	59.8	503	492	945	909	45	44	-2.9	-5
2017	55.2	59.7	499	488	1077	1031	48	47	0.1	-6.3
2018	58.8	60.6	494	488	1215	1162	52	51	1.2	-7.1
2019	62.2	61.5	488	484	1376	1307	58	56	2.1	-7.1
2020	58.9	61.3	476	476	1420	1374	61	59	4.4	-5.8

The gross migration difference of Borsod-Abaúj-Zemplén County fluctuated between -5.0 and -7.1, whereas in the Mezőkövesd District it amounted to -6.9 in 2014. However, this difference turns into a positive figure in 2017, and grows further (HCSO). The ability of the district to retain its population and attract more people to the area was due to predictable developments, favourable transport conditions, new investments and jobs creation (Figure 10).

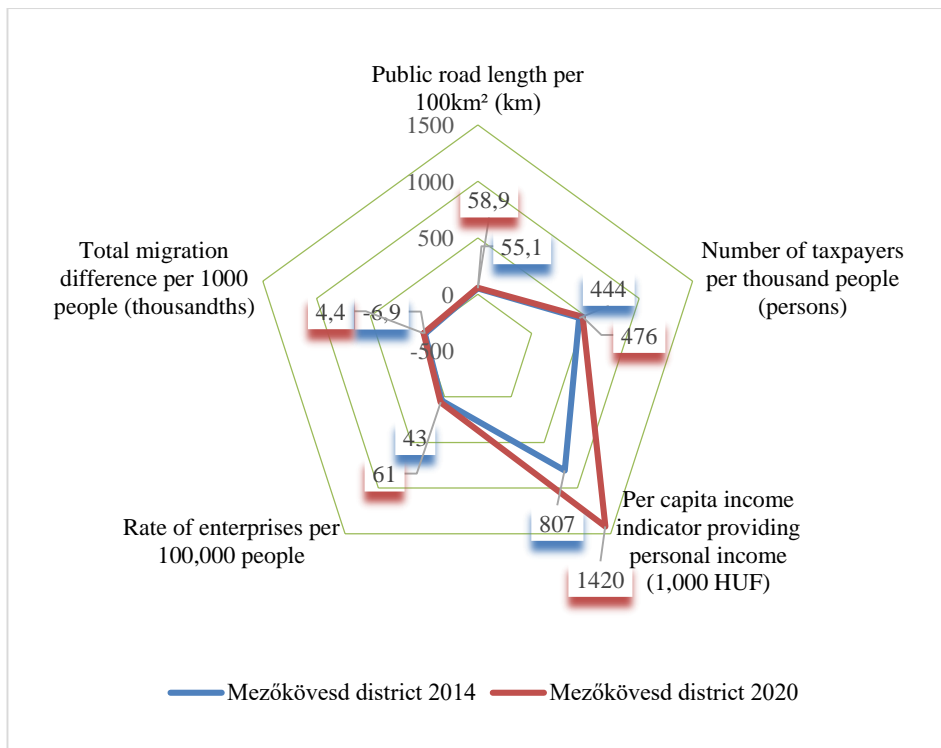


Figure 10: Evolution of development indicators in the Mezőkövesd District in the period 2014-2020

Source: authors' own elaboration based on <https://map.ksh.hu/timea>

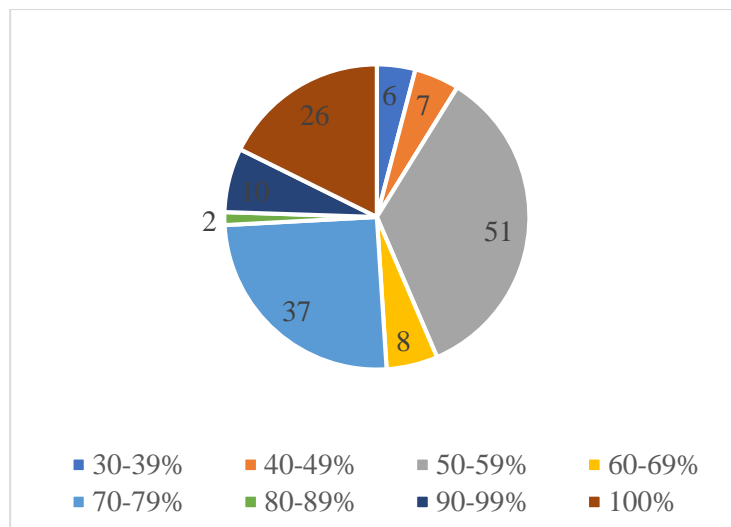


Figure 11: Distribution of support intensity of TSDOP applications in Mezőkövesd District in the 2014-2020 programme period

Project beneficiaries invested 56% of the granted EU resources in qualitative site development.

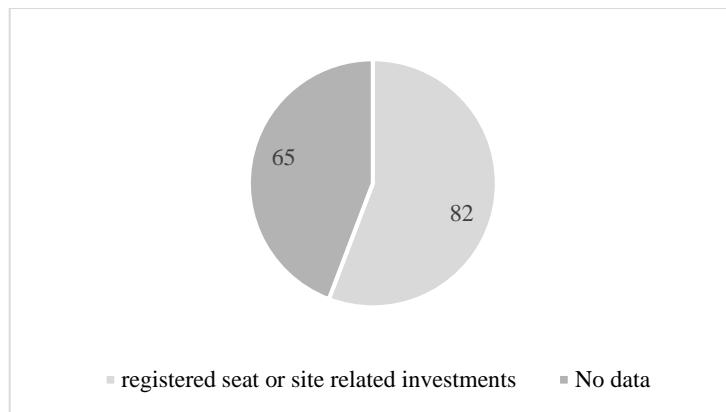


Figure 12: Number of investments within EDIOP in Mezőkövesd District (2014-2020)  
Source: authors' own elaboration based on <https://www.palyazat.gov.hu/eredmenyek>

About one fourth of EU funds were aimed at job creation and retention.

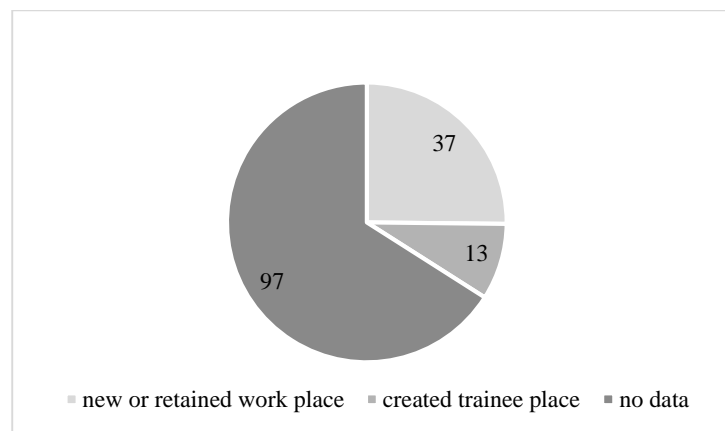


Figure 13: Number of jobs created in the Mezőkövesd District within EDIOP (2014-2020)  
Source: authors' own elaboration based on <https://www.palyazat.gov.hu/eredmenyek>

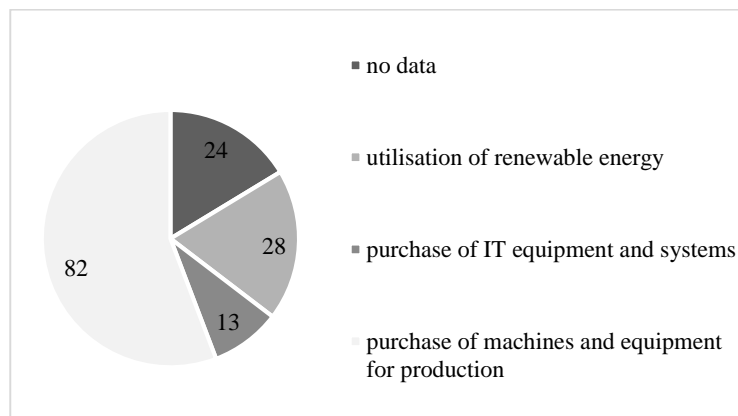


Figure 14. Number of purchased items of equipment within EDIOP (2014-2020)  
Source: authors' own elaboration based on <https://www.palyazat.gov.hu/eredmenyek>

Entrepreneurial activities are reflected in the fact that there were 43 enterprises/thousand in the district in the 2014 figures, which is the same as the county average. As for the number of enterprises in the Mezőkövesd District, the settlements of Mezőkövesd (58), Bogács (52), Cserépfalu (48) and Bükkábrány (45) stand out, whereas in Négyes (17) and Csincse (11) the number of enterprises was considerably lower.

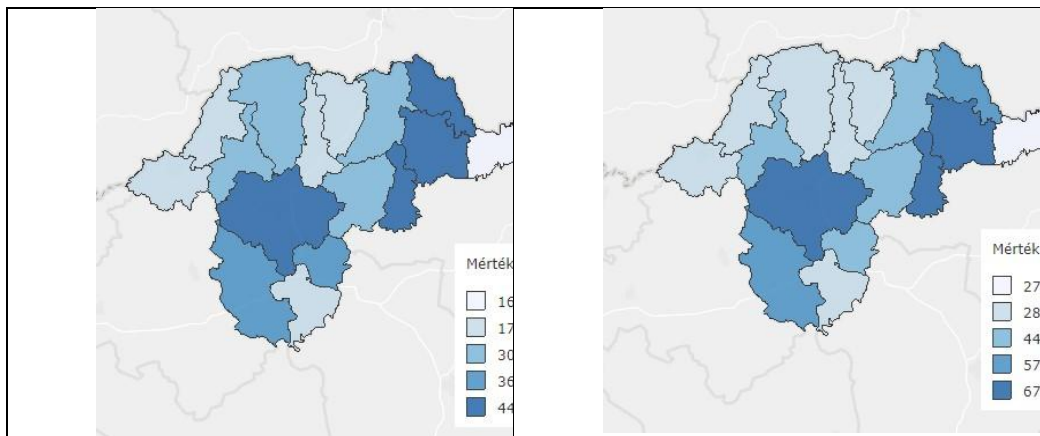


Figure 15: Number of enterprises per thousand inhabitants in districts of Borsod-Abaúj-Zemplén County in 2014 (left) and 2020 (right)

Source: <https://map.ksh.hu/timea>

The projects completed in the 2014-2020 period had a favourable impact on entrepreneurial activities in the Mezőkövesd District, since there were 61 enterprises per thousand inhabitants in 2020, which was higher than both the county average (59) and the regional average (62).

As for the number of taxpayers per thousand inhabitants, Borsod-Abaúj-Zemplén County (with 443 in 2014 and 485 in 2020) was below the regional average both in 2014 (434) and in 2021 (476). In terms of the number of taxpayers per thousand inhabitants in 2014, the Mezőkövesd District (444 people) surpassed the regional indicator. However, differences within the district can also be observed. The indicator is the highest in Cserépváralja (580 people) and the lowest in Sály (275 people). Data for 2021 shows that the number of taxpayers per thousand inhabitants in the Mezőkövesd District (485 people) grew in parallel with the regional average (483 people) and surpassed the Borsod-Abaúj-Zemplén County average (476 people). The differences between the settlements within the district also changed in the investigated period, since the number of taxpayers was the highest in Bükkábrány (538 people).

Since entrepreneurial activities grew in the Mezőkövesd District, the number of taxpayers also increased (Figure 16) and so did the indicator of income forming the tax base of PIT per thousand inhabitants (Figure 17).

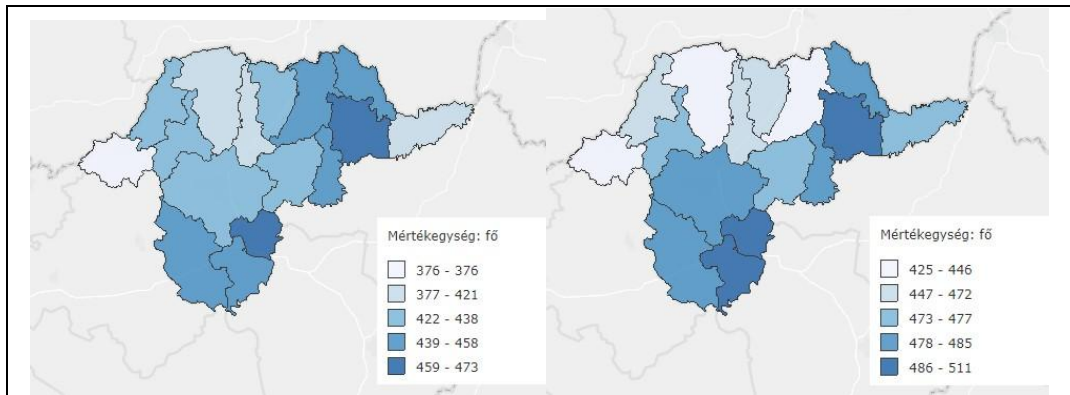


Figure 16: Number of taxpayers per thousand inhabitants in the districts of Borsod-Abaúj-Zemplén County in 2014 (left) and 2021 (right)

Source: <https://map.ksh.hu/timea>

The indicator of the income forming the tax base of PIT per thousand inhabitants also shows a positive trend. In 2014 the district indicator (HUF 807,000) was higher than that of the country (HUF 768,000). In 2021 the district indicator was HUF 1,591,000, while the county indicator was only HUF 1,532,000 (Figure 17).

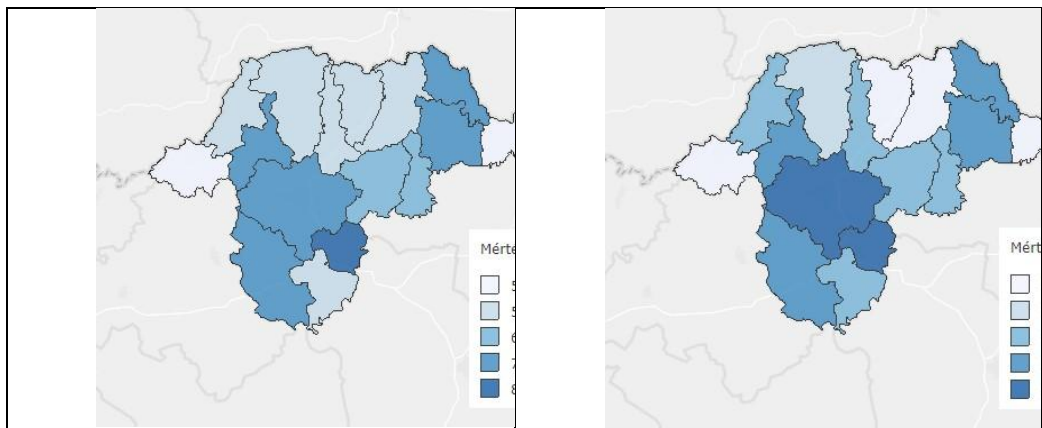


Figure 17: Income forming the tax base of PIT per permanent resident in the districts of Borsod-Abaúj-Zemplén County in 2014 (left) and 2021 (right)

Source: <https://map.ksh.hu/timea>

#### 4. Results of the impact assessment

The outputs were used to investigate three impacts in the examined area. The weighed data of the added values of employment and sectors were used to measure the economic structural impact. The obtained results clearly show that the weight of the tertiary sector increases compared to primary and secondary sectors. The human development index value increases because years of schooling increase, the rate of early school leavers decrease, and gross incomes grow. The developments resulted in a decreased environmental load due to the changes in the conditions of infrastructure, waste collection and treatment (Table 5).

Table 5: Evolution of impact sub-indices and aggregated indices of the developments in the Mezőkövesd District in the period 2014-2020

Source: authors' own elaboration

Impact index	Year	
	2014	2020
Economic impact sub-index	0.42	0.54
Human development impact sub-index	0.871	0.882
Environmental impact sub-index	0.231	0.349
Aggregated impact index	43.8	54.9

## 5. Conclusions

The current target system and the allocation mechanism of territorial development is basically value-oriented, which may change in time and space. It makes a difference, however, whether the assessment is limited to the results or the fund provider also wants to examine the complex social, economic and environmental effects of the intervention.

This study uses an intermediate solution to deal with the challenges arising from the latter. Based on the social, economic and environmental results of the territorial developments (14 indicators), three impact sub-indicators (expressing the evolution of changes in economic structure, human development and environmental load) were elaborated. The aggregate index created from three sub-indices allows not only temporal but also spatial comparison. The spatial and aggregated indices take into account direct impacts resulting from funding, but neglect indirect and spillover impacts.

The validity of the model was tested by analysing the impacts of the developments in the Mezőkövesd District, Borsod-Abaúj-Zemplén County, Hungary, in the EU funding programme period 2014-2020.

## References

- Amundson, R.; Berhe, A. A.; Hopmans, J. W.; Olson, C.; Sztein, A. E.; Sparks, D. L. (2015): Soil and human security in the 21st century. 348, 1261071. <https://doi.org/10.1126/science.1261071>
- Allard, C; Choueiri, N; Schadler, S; Elkon, R. (2008): Macroeconomic Effects of EU Transfers in New Member States. IMF Working Paper, 08. 223.
- Balás G., Csité A., Kiss G., Major K., Németh N., Piross A., (2015) Az EU-források gazdaságfejlesztési és növekedési hatásai. HÉTFA Kutatóintézet, Budapest. [https://hetfa.hu/wp-content/uploads/Fejlpolhatasok-HETFA\\_151130.pdf](https://hetfa.hu/wp-content/uploads/Fejlpolhatasok-HETFA_151130.pdf). (downloaded: 2024.03.11.)
- Banai Á., Lang P., Nagy G., Stancsics M. (2017): A gazdaságfejlesztési célú EU-támogatások hatásvizsgálata a magyar KKV-szektorra. Közgazdasági Szemle (LXIV), október, pp.: 997–1029., [https://real.mtak.hu/65181/7/2\\_C1\\_01\\_Banai\\_A\\_u.pdf](https://real.mtak.hu/65181/7/2_C1_01_Banai_A_u.pdf),
- Batog, J., Batog, B. (2004): Shift-share Analysis of Employment Growth within the EU Countries in 1999-2005. Downloads /BatgBatg%20(1). pdf
- BAZ (2013): Borsod-Abaúj-Zemplén Megye Területfejlesztési Koncepciója – Helyzetértékelés, 2013., <http://www.baz.hu/hatarozat.php?id=1655> (downloaded: 2022.09.17.)
- Beutel, J. (2002): The economic impact of objective 1 interventions for the period 2000-2006. Final report tot he Directoreate General for Regional Policies. Abe Books, Konstanz
- Bourguignon, F.; Sundberg, M. (2007): Aid Effectiveness: Opening the Black Box. The American Economic Review, (97) No. 2. pp.: 316–321., <https://doi.org/10.1257/aer.97.2.316>, (downloaded: 2024.02.18.)

- Burnside, C.–Dollar, D. (2000): Aid, Policies, and Growth. The American Economic Review, Vol. 90. No. 4. pp.: 847–868. o. <https://doi.org/10.1257/aer.90.4.847>.  
<https://www.aeaweb.org/articles?id=10.1257/aer.90.4.847>, (downloaded: 2024.02.18.)
- EC (2014): Ex-ante assessment methodology for financial instruments in the 2014-2020 programming period Strengthening research, technological development and innovation (Thematic objective 1) Volume I.-II. European Instrument Bank
- EC (2015): European Structural and Investment Funds 2014-2020: Official Texts Commentaries. Directorate General for Regional and Urban Policy, European Commission, Brussels.
- EC (2016): Ex post Evaluation of the ERDF and Cohesion Fund 2007-13: European Commission Staff Working Document, SWD 316 final, Brussels.
- EFRE (2015): EFRE-Programm BadenWürttemberg 2014-2020. Bewertungsplan. Ministerium für Landischen Raum und Verbraucherschutz, Stuttgart. [efre-bw.de/wp-content/uploads/EFRE\\_2014-2020](efre-bw.de/wp-content/uploads/EFRE_2014-2020) (downloaded: 2024.03.20.)
- ESZA (2015): 2014-2020-as programozási időszak. Monitoring és értékelés az európai kohéziós politikában. Útmutató. Budapest.
- ESZA (2018): Az ERFA és az ESZA projektjeinek kiválasztása és monitoringja a 2014-2020-as időszakban. Európai Számvevőszék, Nr. 21.
- Fier A., Heger D., Hussinger K., (2005): Die Wirkungsanalyse staatlicher Förderprogramme durch den Einsatz von Matching- und Selektionsmodellen am Beispiel der Fertigungstechnik. <ftp://ftp.zew.de/pub/zew-docs/dp/dp0509.pdf>, (downloaded: 2024.03.11.)
- Haberl, H.; Erb, K.H.; Krausmann, F.; Gaube, V.; Bondeau, A.; Plutzer, C.; Fischer-Kowalski, M. (2007). Quantifying and mapping the human appropriation of net primary production in earth's terrestrial ecosystems. Proc. Natl. Acad. Sci. USA, (104)., pp.: 12942–12947. <https://doi.org/10.1073/pnas.0704243104>, (downloaded: 2024.03.18.)
- János P.; Atsushi, K.; Thissen M.; Varga A. (2010): Regionális fejlesztéspolitikai hatáselemzés térbeli számszerűsített általános egyensúlyi modell, Közgazdasági szemle (LVII) február, pp.: 165–180.
- Kocziszký Gy. (2006): Chances of Convergence of the Region of Northern Hungary. Studia Universitatis Babes-Bolyai Oeconomica 51(2), pp. 3-22.
- Kocziszký Gy. (2009): Methodology of Regional Development, Miskolci Egyetemi Kiadó
- Lipták K. (2017): Települési humán potenciál vizsgálata. Észak-magyarországi Stratégiai Füzetek, 2. pp.: 55–65.
- Mayerhofer, P., Bachtrögl, J., Nowotny, K., Streichner G. (2020): Quantitative Wirkungen der EU-Struktur- und Kohäsionspolitik in Österreich – ein Beitrag zu 25 Jahre Österreich in der EU. Österreichisches Institut für Wirtschaftsforschung, Wien.
- More-Hollerweger E., Schober C. (2013): Erarbeitung von Indikatoren zur Wirkungsmessung von grenzüberschreitenden Kulturprojekten EU-Programm „Kultur“ - Phase 2007- 2013, Fokus auf Projekte mit österreichischer Trägerschaft. Wien.
- Mouque, D. (2012): What are counterfactual impact evaluations teaching us about enterprise and innovation support? Regional Focus, Directorate General for Regional and Urban Policy, European Commission, [http://ec.europa.eu/regional\\_policy/sources/docgener/focus/2012\\_02\\_counterfactual.pdf](http://ec.europa.eu/regional_policy/sources/docgener/focus/2012_02_counterfactual.pdf). (downloaded: 2024.04.02.)
- Országos Hulladékgazdálkodási Terv 2014-2020 (2055/2013. (XII. 31.) Korm. határozat) Egységes szerkezetben, 2013., 7-8 p., <https://2015-2019.kormany.hu>, (downloaded: 2024.04.02.)
- Pandit, A., Minné, A.E., Li, F., Brown, H., Jeong, H., James, J.A.C., Newell, J.P., Weissburg, M., Chang, M.E., Xu, M., Yang, P., Wang, R., Thomas, V.M., Yu, X., Lu, Z., Crittenden, J.C. (2017): Infrastructure ecology: an evolving paradigm for sustainable urban development. Journal of Cleaner Production, Volume 163, pp.: 19–27. <https://doi.org/10.1016/j.jclepro.2015.09.010>

- Pereira, A.–Gaspar, V. (1999): An Intertemporal Analysis of Development Policies in the EU. *Journal of Policy Modeling*, Vol. 21. No. 7. pp.: 799–822., [https://doi.org/10.1016/S0161-938\(98\)00020-9](https://doi.org/10.1016/S0161-938(98)00020-9)
- Pénzes J., (2015): A kedvezményezett térségek lehatárolásának aktuális kérdései, *Területi Statisztika*, 55. pp.: 206–232., <https://core.ac.uk/download/pdf/42939562.pdf> (downloaded: 2023.12.05.)
- Potvorszki G., (2016): Európai Unió értelemben vett állami támogatás mikro- és makrogazdasági hatásvizsgálata: elmélet és gyakorlat, PhD Dissertation, University of Miskolc, Hungary.
- Romer, P. M. (1986): Increasing Returns and Long Run Growth. *Journal of Political Economy* (94) 5. pp.: 1002-1037.
- Stoate, C., Báldi, A., Beja, P., Boatman, N.D., Herzon, I., van Doorn, A., de Snoo, G.R. Rakosy, L. Ramwell, C. (2009): Ecological impacts of early 21st century agricultural change in Europe – A review. *Journal of Environmental Management*. Volume 91, Issue 1, October 2009, pp.: 22-46. <https://doi.org/10.1016/j.jenvman.2009.07.005>
- van der Ree, R., Smith, D.J., Grilo, C. (eds. 2015): *The Ecological Effects of Linear Infrastructure and Traffic - Challenges and Opportunities of Rapid Global Growth*. Wiley Online Library; <https://doi.org/10.1002/9781118568170.ch1>
- Varga A. (2007): GMR-Hungary: A Complex Macro-Regional Model for the Analysis of Development Policy Impacts on the Hungarian Economy, Hungarian National Development Agency, Budapest.
- Zawadzka, J.E., Corstanje, R., Fookes, J., Nichols, J. and Harris, J. (2017): Operationalizing the ecosystems approach: Assessing the environmental impact of major infrastructure development. *Elsevier, Ecological Indicators*, Volume 78, July 2017, pp.: 75-84. <https://doi.org/10.1016/j.ecolind.2017.03.005>

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***Human Resource Assessment and Sustainability - Investigating the Measurability of Human Activity***

*Sustainability, as a complex set of goals, has many possible interpretations and approaches the 17 Sustainable Development Goals (SDGs) set out in the document have 169 sub-goals, of which Goal 10 is "reduced inequalities". There are 10 sub-goals linked to this goal, the first of which is aimed at reducing income inequality. Employers have direct responsibility and considerable leeway to develop fair wage systems. For HR professionals, the practical implementation of this is a major task, and their knowledge can therefore be a key factor in achieving SDG 10. In our research, we sought to answer the question of what future HR professionals know about the accounting measurability of human performance and how they assess its monetary valuation. In our view, HR professionals who are aware of the issues of human performance measurement and recognize the fundamental problems can play a significant role in meeting SDG 10. In our primary research, we surveyed 448 undergraduate human resources students from early December 2022 to the end of January 2023 using an online questionnaire. The questionnaire contains closed and open questions in addition to demographic data. Our research shows that the value of human activity is not well expressed in monetary terms, which implies that wages and the value of work are not closely related.*

*Keywords: sustainability, inequality, human resources*

*JEL-codes: D63, J01, J70*

<https://doi.org/10.32976/stratfuz.2024.22>

## **Introduction**

The social and environmental issues of sustainability are closely related to planning (Cruz and Tan, 2022), methodological (Sharaai et al., 2022), decision-making (Tian et al., 2022), and company analysis perspectives (Radácsi, 2021). Among the social issues of sustainability, the role of communities is also prominent (Basri et al., 2022).

Work organization can be a key factor in sustainability efforts, and its absence, even with good technical solutions, can lead to failure (Al Zarooni et al., 2022). Several studies have addressed the question of how university students perceive sustainability issues, how involved they are in the circular economy (Szigeti et al., 2023), or how they relate to sustainable business models (Csutora et al., 2022).

One of the key questions related to sustainability is the issue of equality - inequality, which is also included in the UN Sustainable Development Goals (SDGs) (Szennay et al., 2019). One important manifestation of inequality is the disparity in wages and incomes. One of the fundamental issues of ecological economics is the measurability of human activity in monetary terms, the conflict of values (Kocsis, 2001).

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Our research focuses on the question of how well-informed university students are about the interpretation and quantifiability of human capital, whether they agree with the practice of valuing people and human activity in monetary terms, and how much they see the contradictions. In our research, we interviewed undergraduate students enrolled in human resources studies. We hypothesize that students are aware of the basics of both HR and accounting and can make a nuanced assessment of the potential and limitations of these disciplines. The study is also of major importance from a societal perspective, as future HR professionals can have a significant impact on the achievement of sustainability goals to tackle inequalities.

## **Literature review**

In the modern approach to human capital at companies, the concept of human capital and the strategic approach to human resources have become increasingly common over the last two decades.

### ***Understanding human resources***

The concept of human capital from the economic perspective derives historically from Beer and colleagues (1984), who argued that people should be seen as corporate assets rather than a cost and that they can form the basis of a company's competitive advantage by making the best use of their capabilities.

The term human resources has its roots in management and represents how people are treated to enable the effective utilization of their potential. The recognition that people create value for the company through their knowledge and ability to work has required a new approach to managing people.

In contrast to the previous administrative and resource-based approach to human resources, the current one emphasizes its strategic and value-creating nature. In effect, the competitive advantage of companies derives from how they acquire, develop, and use human capital in a way that is specific to them.

In contrast to competitive advantage, the inadequate management of human capital is a risk for the firm, i.e. losing a significant part of its wealth (Amit and Belcourt, 1999).

Strategic human resource management is an integrated approach that is an integral part of the implementation of the business strategy and should be treated as a critical factor in which both cost-effectiveness and efficiency are considered. It refers to policies, processes, and methods by which a company gains a competitive advantage (Bakacsi et al., 2006).

In research related to human resource management (HRM), several authors pointed out that HRM plays a key role in environmental and social sustainability beyond economic performance (Csehné Papp et al., 2021).

Considering the literature, human resource management can also be related to the relatively new field of controlling, human controlling. In the 21st century, research on human controlling and the integration of human resource management and controlling systems has come to the forefront of professional interest.

In the study of different aspects of human resource management, the methods of controlling and performance evaluation have also been examined, and the links and applications between them have been explored (Karoliny and Poór, 2010).

For modern organizations, the analysis of the impact of human controlling tools on effective management is an area of research (Bakacsi, 2004).

The role of human controlling and its application in corporate strategy also becomes important in the context of the concept of strategic human resource management (Bakacsi et al., 2006).

Human controlling can be seen as a strategic management tool, the basic purpose of which is to collect, analyze and evaluate human resource information to support the achievement of organizational goals.

Human controlling goes beyond traditional human resource (HR) functions to integrate HR into strategic and financial planning and management. Human controlling aims to ensure the efficient and effective use of human capital, to provide the skills and knowledge needed to achieve organizational goals, to identify and manage human resource risks, and to improve the cost-effectiveness of HR activities, employee engagement, and retention.

According to Kissné's (2010) online article *Human Capital Management in Practice* on [hrportal.hu](http://hrportal.hu), one of the main tasks of human capital management is planning, which involves assessing human capital needs against organizational objectives and developing human capital development plans.

After collecting the data on human resources, the analysis process follows. The analysis may include labor costs (wage demand), wage levels (wage ratio) and wage profitability (wage efficiency), or even employee satisfaction. By calculating the wage intensity, analysts look at the share of wage costs in the cost structure, i.e. in the total use of resources.

Wage level refers to the wage cost per 100 cents of sales or production value, while wage profitability measures the reciprocal of the previous measure, the sales or production value that can be generated per unit of wage. The latter indicator, i.e. wage efficiency, can be analyzed in more detail by breaking it down into labor productivity and average wages, and by establishing further relationships.

The next step is reporting, i.e. communicating human resources information to management, followed by continuous monitoring of the implementation of human capital development plans and the implementation of any interventions.

To achieve its tasks, human controlling also involves the planning and control of human resources costs, and with the indicators used to measure the effectiveness of human capital (e.g. staff productivity, turnover rate). Benchmarking, i.e. comparing human resource practices with other organizations, is also important, as is the use of feedback systems to measure employee satisfaction and engagement (Kissné, 2010).

The applicability of human controlling has also been addressed by research that focus on the analysis of the role of the controller and the competences required. Indeed, labor market surveys have revealed links between the main tasks of controlling employees and the skills required for successful performance (Musinszki and Nácsa, 2021).

In his study, Drusza (2018) concludes that strategic EEM is a key issue for national security organizations, too. The application of appropriate EEM strategies can significantly contribute to increasing the efficiency and effectiveness of organizations and to the successful implementation of national security missions.

The author points out that recruitment and selection are key elements of strategic EEM in the national security domain, as finding and employing people with the right skills and commitment is of paramount importance. Continuous training and development is also a key factor in ensuring that staff are up to date with the latest technologies and methods. Regular performance evaluations and the provision of appropriate motivation schemes are also essential for effective operations. Security requirements and building trust are particularly important in the

In the regional economic approach to human resource management, the assessment of the human potential of municipalities can be highlighted.

Lipták (2017) analyzed the state of human resources in Hungarian municipalities through several indicators and their impact on competitiveness and sustainable development. In line with the socio-economic inequality dimensions, regions with a developed central location and large cities show much better results than peripheral rural areas, which often face human resource problems. Local authorities, the education system, and training provision also play an important role in developing human potential to increase the population retention capacity of a municipality.

In their study, Lipták and Horváth (2018) examined the role of social innovations in employment policy and rural development. The authors emphasized that social innovations are key factors in the development of local communities and to fostering economic growth. They pointed out that

these innovations contribute to increasing employment opportunities and making better use of local resources.

The study focused in particular on rural development, where social innovations can play an important role in the catching up of peripheral regions. The authors show how involving local communities and supporting local initiatives can lead to sustainable development. They also highlighted the importance of community-based enterprises and local cooperation in rural development.

Examples of practical applications of social innovations and their success factors are analyzed. They found that social innovations increase labor market participation and reduce social inequalities. The authors made suggestions for making employment policies and rural development programs more effective through social innovation. Finally, they concluded that social innovations are essential in modern employment and rural development strategies.

Csugány and Tánczos (2018) examined methods for measuring the role of human resources in technological development. The authors emphasized that technological development has a significant impact on the labor market and human resource management. The paper also emphasized that the effective introduction and use of technological innovations depends to a large extent on a well-trained and flexible workforce.

Csugány and Tánczos analyzed methods for measuring the contribution of human resources, with a special focus on the adaptation of new technologies and productivity growth. They pointed out that traditional measurement methods often fail to take into account the human aspects of technological development, and that new, more comprehensive approaches are needed. The measurement models presented in this study help to identify key areas where human resource development has the greatest impact on technological progress.

The authors formulated how human resource measurement can be integrated into corporate strategies to better support technological innovation. They also suggested that continuous training and workforce development are essential to maintain competitiveness in a rapidly changing technological environment. Overall, it can be concluded that effective management and measurement of human resources are key factors to the technological development and long-term success of companies.

Human capital includes the knowledge and experience that employees within an organization have acquired through education, life experience, or work experience. Human capital can be increased through training and development. Indeed, examples of companies demonstrate the return on investment in human capital. Practices such as employment for an indefinite period, job rotation, training, and development, or programs to promote corporate integration are effective (Johnson, 1988 in Hitt et al., 1994).

At the same time, the low power distance and the focus on employee development can also draw attention to the importance of corporate culture for human capital (Armstrong, 2018). A key area for reconciling individual and organizational interests is long-term planning, whereby investing in employees provides the company with the knowledge and skills it needs.

The strategic view of human resources has sought to identify cost-effectiveness and efficiency from the outset, as it has become expected to account for its contribution to the strategic goals of the company. At the same time, measuring intangible strategic resources such as human capital is a major challenge. The inclusion of sustainability considerations in financial and corporate reporting contributes to ensuring that human capital is given proper weight in corporate decision-making (Győri and Csillag, 2019).

Especially in knowledge-based industries, there is an increasing need to properly assess these critical assets and to take them into account in the assessment of corporate wealth (Harangozó, 2020).

### ***Human resources in accounting***

Even though human resources are part of a corporation's resources, they cannot be presented in accounting documents in the same way as other assets. Following the logic of asset classification, human resources as human assets should be included in intangible assets, i.e. intangible assets serving an activity for more than one year. However, in the balance sheet, the balance sheet lines related to the measurement of the value of human resources have not been separated. Human resources are becoming increasingly valuable, which is why they are the focus of more scientific research. This is explained by the growing importance of human-generated value-based activities in socio-economic life. "Today, the only truly valuable resource for individuals and society is knowledge. With knowledge, everything else can be created. Knowledge has become a means of production" (Gyökér, 2004).

This is also proven by the fact that business-modeling tools all take human capital into account as an essential part of corporate value creation (Györi et al., 2021).

Both English and German literature also discuss human capital (Humankapital), human resources (human resource), and human assets (Humanvermögen). In most of the literature, human resources and human capital appear as synonymous concepts. According to Laáb (2006), however, the source of human capital is intellectual capital, and intellectual capital is understood to be an asset within the balance sheet. Boda (2008) distinguishes between visible and invisible assets, according to whether or not it is a specific item of assets that can be measured by accounting.

Over the past decades, a trend has emerged of researchers - Edvinsson and Malone (1997), Sveiby (2001), Stewart (2002) - who are able to measure invisible assets.

There are many names for invisible assets, but there is a huge overlap in terms of content. Common to all the works is that, in dealing with invisible assets, they also consider their quantification, the basic philosophy is based on the determination of the difference between the market value of the firm and the total value of the assets (balance sheet total) as recognized in the accounts. As human capital is not tangible in nature, but some intangible assets are included in the balance sheet, Bacsur and Boda (2006) also draw attention to the importance of the elimination of durable intangible assets.

## Material and methods

In our primary research, we surveyed 410 undergraduate human resources students using an online questionnaire that was available from early December 2022 until the end of January 2023. The questionnaire contained mainly closed questions, including multiple-choice, tick-box, and Likert-scale questions. At the end of the questionnaire, students were also allowed to express their views on the topic. The composition of the sample by gender, permanent residence, and accounting knowledge is shown in the following table (*Table 1*).

**Table 1: The composition of the sample**

Gender		Accounting skills		Permanent residence							
Male	Female	basics of Account	Human management	Buda-pest	Pest	Central Trans-danubia	West Trans-danubia	South Trans-danubia	North Hungary	Northern Great Plain	Southern Great Plain
62	348	227	183	143	106	48	19	6	34	20	31

Source: Own calculation

85% of the students who completed the questionnaire were women, which can be explained by the fact, that a similar gender gap in favor of women can be also observed for the core population of human resources undergraduates. 45% of the respondents have a background in human resource management accounting, i.e. they are in their fifth semester, while more than half of the

survey respondents are in their lower semester and have only studied the basics of accounting. In the composition by place of residence, 3 respondents were not included in the table because they are foreign students. By region, more than a third of respondents live in Budapest and a quarter in Pest County. More than 10% of respondents live in Central Transdanubia, 8% in Northern Hungary, and 8% in the Southern Great Plain. The fewest respondents live in Western and Southern Transdanubia.

In this paper, we examine the Likert scale statements from the survey responses. Each statement can be rated from 1 to 6, so for example, a 1 represents 'strongly disagree' and a 6 represents 'strongly agree'. Accordingly, the responses can be ranked, but the "distance" between them cannot be explained and therefore the strength of the interval scale is not met. Kendall's tau-b coefficient was used to determine the strength and direction of the association between two variables measured on the ordinal scale. The calculation can be considered a non-parametric alternative to Pearson's correlation. For those statements where there is a significant association stronger than the mean, we examined the positional measures (mode and median) to assess its content.

The statements of the questionnaire:

- 1) Short-term goals to maximize profits often mean that human resource development is often sidelined (*PROFIT*).
- 2) In the income statement using the total cost method, all income, revenue, costs, and expenses, except depreciation, can be linked to human resources (*AMORTIZATION*).
- 3) Expenditure on human resources does not only have an impact on the costs of the current year but in many cases serves the interests of the enterprise in the longer term (*EXPENDITURE*).
- 4) The human subjectivity of competitiveness factors makes it easy to measure human capital (*COMPETITIVENESS*).
- 5) The biggest challenge for companies is to find and retain the right people for certain jobs (*CHALLENGE*).
- 6) It would provide significant additional information if firms' annual reports could provide details on the trends of their human resources (turnover, absenteeism, training, etc.) (*INFORMATION*).
- 7) People who are highly paid do important work for society (*HIGH SALARY*).
- 8) Those who earn little are worth little (*LOW SALARY*).
- 9) The value of a person can be expressed in monetary terms (*VALUE 1*).
- 10) A person's value is the discounted sum of his or her lifetime earnings (*VALUE 2*).
- 11) At university, you should acquire skills that are immediately useful in the labor market (*SKILLS*).
- 12) Knowledge that does not pay in the labor market has no value (*VALUE 3*).
- 13) The value of all human activity can be expressed in monetary terms (*VALUE 4*).
- 14) Time spent with friends is worthless (*VALUE 5*).

The statements are listed with their abbreviations in brackets in Table 2.

## Results

In the correlation matrix (*Table 2*) we have marked the \*\* statistically significant relationships, highlighting those stronger than medium (0.4). In below table

\*\* = Correlation is significant at the 0.01 level (2-tailed),

\* = Correlation is significant at the 0.05 level (2-tailed),

a = Correlation Coefficient,

b = Sig. (2-tailed).

**Table 2: Correlation matrix**

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
PROFIT	a	1.000	.151**	.280**	-.229**	.245**	.288**	-.056	-.216**	-.105*	-.186**	0.058	-.161**	-.147**	-.143**
	b		0.000	0.000	0.000	0.000	0.000	0.171	0.000	0.013	0.000	0.153	0.000	0.000	0.001
AMORTIZATION	a	.151**	1.000	.135**	-.069	.161**	.153**	-.053	-.164**	-.104*	-.039	-.012	-.093*	-.068	-.087*
	b	0.000		0.001	0.091	0.000	0.000	0.192	0.000	0.013	0.350	0.764	0.024	0.096	0.045
	a	.280**	.135**	1.000	-.344**	.224**	.289**	-.197**	-.261**	-.155**	-.267**	.081*	-.172**	-.124**	-.157**

EXPENDITURE	b	0.000	0.001		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.043	0.000	0.002	0.000
COMPETITIVENESS	a	-.229**	-.069	-.344**	1.000	-.184**	-.198**	.222**	.264**	.190**	.273**	-.039	.247**	.139**	.199**
	b	0.000	0.091	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.329	0.000	0.001	0.000
CHALLENGE	a	.245**	.161**	.224**	-.184**	1.000	.284**	-.136**	-.211**	-.123**	-.169**	.138**	-.176**	-.081**	-.179**
	b	0.000	0.000	0.000	0.000		0.000	0.001	0.000	0.003	0.000	0.001	0.000	0.046	0.000
INFORMATION	a	.288**	.153**	.289**	-.198**	.284**	1.000	-.174**	-.223**	-.160**	-.211**	.099*	-.186**	-.105**	-.232**
	b	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.013	0.000	0.010	0.000
HIGH SALARY	a	-.056	-.053	-.197**	.222**	-.136**	-.174**	1.000	.402**	.282**	.298**	0.065	.271**	.188**	.221**
	b	0.171	0.192	0.000	0.000	0.001	0.000		0.000	0.000	0.000	0.105	0.000	0.000	0.000
LOW SALARY	a	-.216**	-.164**	-.261**	.264**	-.211**	-.223**	.402**	1.000	.528**	.449**	-.067	.465**	.351**	.486**
	b	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.110	0.000	0.000	0.000
VALUE 1	a	-.105*	-.104*	-.155**	.190**	-.123**	-.160**	.282**	.528**	1.000	.500**	0.028	.379**	.429**	.387**
	b	0.013	0.013	0.000	0.000	0.003	0.000	0.000	0.000		0.000	0.492	0.000	0.000	0.000
VALUE 2	a	-.186**	-.039	-.267**	.273**	-.169**	-.211**	.298**	.449**	.500**	1.000	-.002	.366**	.416**	.367**
	b	0.000	0.350	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.956	0.000	0.000	0.000
SKILLS	a	0.058	-.012	.081*	-.039	.138**	.099*	0.065	-.067	0.028	-.002	1.000	0.067	0.060	-.063
	b	0.153	0.764	0.043	0.329	0.0001	0.013	0.105	0.110	0.492	0.956		0.097	0.132	0.137
VALUE 3	a	-.161**	-.093*	-.172**	.247**	-.176**	-.186**	.271**	.465**	.379**	.366**	0.067	1.000	.356**	.337**
	b	0.000	0.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.097		0.000	0.000
VALUE 4	a	-.147**	-.068	-.124**	.139**	-.081*	-.105**	.188**	.351**	.429**	.416**	0.060	.356**	1.000	.322**
	b	0.000	0.096	0.002	0.001	0.046	0.010	0.000	0.000	0.000	0.000	0.132	0.000		0.000
VALUE 5	a	-.143**	-.087*	-.157**	.199**	-.179**	-.232**	.221**	.486**	.387**	.367**	-.063	.337**	.322**	1.000
	b	0.001	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.137	0.000	0.000	

Source: Own calculation

Table 2 shows that there is a stronger than significant, medium statistical relationship between the pairwise statements in the following table (Table 3).

**Table 3: Statements with a significant relationship stronger than medium**

Statements	Statements
Who earns little is worth little (8)	People who are paid a high salary do important work for society (7) The value of a person can be expressed in monetary terms. (9) A person's value is the discounted sum of his lifetime earnings. (10) Knowledge that is not paid for in the labor market has no value. (12) Time spent with friends is worthless. (14)
The value of a person can be expressed in monetary terms. (9)	The value of a person is the discounted sum of his or her lifetime earnings. (10) The value of all human activities can be expressed in monetary terms. (13)
The value of a person is the discounted sum of his lifetime earnings. (10)	The value of all human activities can be expressed in monetary terms. (13)

Source: Own calculation

The below table shows that students disagreed with the content of the statements with a statistically significant correlation stronger than medium (Table 4).

**Table 4: Positional averages**

Statement	Mode	Median
PROFIT	5	5
AMORTIZATION	4	4

<b>EXPENDITURE</b>	5	5
<b>COMPETITIVENESS</b>	2	3
<b>CHALLENGE</b>	5	5
<b>INFORMATION</b>	5	5
<b>HIGH SALARY</b>	2	2
<b>LOW SALARY</b>	1	1
<b>VALUE 1</b>	1	1
<b>VALUE 2</b>	1	2
<b>SKILLS</b>	4	4
<b>VALUE 3</b>	1	2
<b>VALUE 4</b>	1	2
<b>VALUE 5</b>	1	1

Source: Own calculation

## Conclusions and Discussion

The majority of respondents to the questionnaire survey were female students of human resources who already had some basic accounting knowledge but had not yet studied human resource management accounting. Although gender and accounting competencies may be a good representation of the population, we consider the proportion of students living in neighboring regions to be low in terms of residential composition and therefore do not consider the sample to be representative. However, the high number of respondents means that the survey can shed light on correlations that could form the basis for improvements in educational methodology. It is therefore a special corporate resource that differs significantly from other inputs, which also has a major impact on accounting measurability and the design of the information system (management of invisible assets, competency-based pay policy).

According to the results of the research, undergraduate students in human resources fundamentally disagree with the statement that the value of people and human activity can be well expressed in monetary terms. They see the problem that wages and the value of a job are not necessarily linked and that skills are not only important if they can be immediately used in the labor market. In the next phase of our research, we would like to compare our results with the views of other groups of students.

We plan to use the results directly in educational development and training design, reinforcing the idea that sustainability in a deeper sense is not based on uniform actions and slogans, but is inseparable from responsible practice in all areas of life.

## References

- AL ZAROONI, K.-ZAKARIA, R.-ABIDIN, N.I.-KHAN, J.S.-SHAMSUDDIN, S.M.-SAHAMIR, S.R.-ABAS, D.N. (2022): A Review of Joint Management Body and Life Cycle Cost Analysis for Green Building Project Facilities Management, *Chemical Engineering Transactions*, 97, 439-444. <https://doi.org/10.3303/CET2297074>
- AMIT, R.-BELCOURT, M. (1999): Human resources management processes: a value-creating source of competitive advantage, *European Management Journal*, 17(2), 174-181. [https://doi.org/10.1016/S0263-2373\(98\)00076-0](https://doi.org/10.1016/S0263-2373(98)00076-0)
- ARMSTRONG, M. (2018): *Strategic human resource management: a guide to action*, Kogan Page, London and Philadelphia [https://www.usb.ac.ir/FileStaff/5912\\_2018-10-6-18-43-1.pdf](https://www.usb.ac.ir/FileStaff/5912_2018-10-6-18-43-1.pdf)
- BACSUR K.-BODA GY. (2006): *Személyügyi kontrolling*, Perfekt, Budapest
- BAKACSI GY. (2004): *Szervezeti magatartás és vezetés*, Aula Kiadó, Budapest

- BAKACSI GY.-BOKOR A.-CSÁSZÁR CS.-GELEI A.-KOVÁTS K.-TAKÁCS S. (2006): *Stratégiai emberi erőforrás menedzsment*, Akadémiai Kiadó, Budapest
- BASRI, N.M.-SHARAAI, A.H.-ARSYAD, M.M.-PONRAHONO, Z. (2022): Community Practice in Low Carbon Lifestyle Towards Sustainable Development Goals in Kuala Lumpur, *Chemical Engineering Transactions*, 97, 349-354. <https://doi.org/10.3303/CET2297059>
- BEER, M.-SPECTOR, B.-LAWRENCE, P.R.-MILLS, D.Q. (1984): *Managing Human Assets: The Groundbreaking Harvard Business School Program*, New York, NY, Free Press
- BODA GY. (2008): *A tudástőke kialakulása és hatása a vállalati menedzsmentre*, Információs Társadalomért Alapítvány, Budapest
- CRUZ, D.E.-TAN, R.R. (2022): A Supply Chain Optimization Model Considering Cost and Water Footprint, *Chemical Engineering Transactions*, 97, 301-306. <https://doi.org/10.3303/CET2297051>
- CSEHNÉ PAPP I. – NAGY CS. – KARÁCSONY P. (2021): Az emberi erőforrás menedzsment szerepe a fenntartható fejlődésben, *Észak-magyarországi Stratégiai Füzetek*, 18(3), 103-112. [https://www.strategiaifuzetek.hu/files/673/Strategiai+fuzetek+2021-3\\_103.pdf](https://www.strategiaifuzetek.hu/files/673/Strategiai+fuzetek+2021-3_103.pdf)
- CSUGÁNY J. – TÁNCZOS T. (2018): A humán erőforrás technológiai fejlődésben betöltött szerepének mérési sajátosságai, *Észak-magyarországi Stratégiai Füzetek*, 15(1), 30-42. [https://www.strategiaifuzetek.hu/files/268/30\\_2018-1-1Strategiai+fuzetek\\_2018\\_1.pdf](https://www.strategiaifuzetek.hu/files/268/30_2018-1-1Strategiai+fuzetek_2018_1.pdf)
- CSUTORA M.-HARANGOZÓ G.-SZIGETI C. (2022): Sustainable Business Models-Crisis and Rebound Based on Hungarian Research Experience, *Resources*, 11(12), 107. <https://doi.org/10.3390/resources11120107>
- DRUSZA T. (2018): Stratégiai emberi erőforrás-menedzsment nemzetbiztonsági területen, *Belügyi Szemle*, 66(2), 60-76. <https://doi.org/10.38146/BSZ.2018.2.4>
- EDVINSSON, L.-MALONE, M. (1997): *Intellectual Capital*, Harper Collins, New York
- GYÖKÉR I. (2004): A vállalat szellemi tőkéje - számolatlan vagyon, *Harvard Business Manager*, 6(6), 48-58.
- GYÖRI ZS.-CSILLAG S. (2019): Vállalati felelősségvállalás és fogyatékkal élő személyek foglalkoztatása: külön múlt – közös jövő? - 2. rész: A fogyatékkal élő személyek foglalkoztatása a CSR-szakirodalomban és a gyakorlatban, *Vezetéstudomány*, 50(7-8), 16-30. <https://doi.org/10.14267/VEZTUD.2019.07.02>
- GYÖRI ZS.-KAHN, Y.-SZEGEDI K. (2021): Business Model and Principles of a Values-Based Bank-Case Study of MagNet Hungarian Community Bank, *Sustainability*, 13(16), 9239. <https://doi.org/10.3390/su13169239>
- HARANGOZÓ T. (2020): Integrating human capital into corporate strategic performance management: Practical challenges and implications from the leader's perspective, *Vezetéstudomány/Budapest Management Review*, 51(5), 51-64. <https://doi.org/10.14267/VEZTUD.2020.05.05>
- HITT, M.A.-HOSKISSON, R.E.-HARRISON, J.S.-SUMMERS, T.P. (1994): Human Capital and Strategic Competitiveness in the 1990s, *Journal of management development*, 13(1), 35-46. <https://doi.org/10.1108/02621719410050174>
- KISSNÉ ANDRÁS K. (2010): Humán kontrolling a gyakorlatban, <https://www.hrportal.hu/hr/human-kontrolling-a-gyakorlatban-20101005.html>
- KAROLINY M-NÉ (szerk.) – POÓR J. (szerk.) (2010): *Emberi erőforrás menedzsment kézikönyv: Rendszerek és alkalmazások*, Complex Kiadó Jogi és Üzleti Tartalomszolgáltató Kft.
- KOCSIS T. (2001): A materializmustól a teljes emberig - A fogyasztás önkéntes csökkentéséről a nyugati társadalmakban, *Kovács*, 5(3-4), 101-136. [https://unipub.lib.uni-corvinus.hu/243/1/teljes\\_emberig.pdf](https://unipub.lib.uni-corvinus.hu/243/1/teljes_emberig.pdf)

- LAÁB Á. (2006): *Számviteli alapok*, TYPOTEX, Budapest
- LIPTÁK K.-HORVÁTH K. (2018): Társadalmi innovációk szerepe a foglalkoztatáspolitikában és a vidékfejlesztésben, *Észak-magyarországi Stratégiai Füzetek*, 15(3), 55-68. [https://www.strategiaifuzetek.hu/files/291/55\\_2018-3Strategiai+fuzetek+2018-3.pdf](https://www.strategiaifuzetek.hu/files/291/55_2018-3Strategiai+fuzetek+2018-3.pdf)
- LIPTÁK K. (2017): Települési humán potenciál vizsgálata Magyarországon, *Észak-magyarországi Stratégiai Füzetek*, 14(2), 55-64. <https://www.strategiaifuzetek.hu/files/131/2017-2-4.pdf>
- MUSINSZKI Z.-NÁCSA CS. (2021): Kontroller feladatok és kompetenciák – egy munkaerőpiaci felmérés eredményei, *Észak-magyarországi Stratégiai Füzetek*, 18(különszám), 126-135. [https://www.strategiaifuzetek.hu/files/215/SF-2021-k\\_126.pdf](https://www.strategiaifuzetek.hu/files/215/SF-2021-k_126.pdf)
- RADÁCSI L. (2021): *Felelős és fenntartható vállalat*, SALDO, Budapest
- SHARAAI, A.H.-MASRI, M.F.-KALVANI, S.R. (2022): The Social Impact Study through the Life Cycle of Rice Production at Selangor, Malaysia, *Chemical Engineering Transactions*, 97, 517-522. <https://doi.org/10.3303/CET2297087>
- STEWART, T.A. (2002): *The Wealth of Knowledge*, Nicholas Brealey Publishing, London
- SVEIBY, K.E. (2001): *Szervezetek új gazdagsága: a menedzselt tudás*, KJK KERSZÖV, Budapest
- SZENNYAY Á.-SZIGETI C.-KOVÁCS N.-SZABÓ D.R. (2019): Through the Blurry Looking Glass—SDGs in the GRI Reports, *Resources*, 8(2), 101, MDPI AG. Retrieved from <http://dx.doi.org/10.3390/resources8020101>
- SZIGETI C.-REMSEI S.-BÁNDY K. (2023): *What are the Young People's Perceptions of the Circular Economy?* In Conference Proceedings of the 7th FEB International Scientific Conference: Strengthening Resilience by Sustainable Economy and Business - Towards the SDGs, 455-462. <http://doi.org/10.18690/um.epf.3.2023.50>
- TIAN, R.-HOY, Z.X.-WOON, K.S.-HANAFIAH, M.M.-LIEW, P.Y. (2022): Socio-economic Correlation Analysis of E-waste and Prediction of E-waste Generation via Back-propagation Neural Network, *Chemical Engineering Transactions*, 97, 397-402. <https://doi.org/10.3303/CET2297067>

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## Szerzőink figyelmébe

A szerkesztőség kéri a szerzőket, vegyék figyelembe a formai megjelenésre vonatkozó alábbi szempontokat:

### Terjedelem, kiegészítések:

A „Tanulmány” rovatban maximálisan 35.000, a többi rovatokban maximálisan 18.000 karakter terjedelmű tanulmány közölhető.

A tanulmány elejére öt soros összefoglalót, valamint 3-5 kulcsszó megnevezését és JEL-kód meghatározást kérünk.

A szöveget fájlban kérjük leadni, lemezen vagy e-mailen. (MS WORD bármelyik változatában lementve.)

Kb. 10-15 sorban rövid összefoglalót kérünk a tanulmányról angolul, valamint a cikkben szereplő ábrák és táblázatok címét is kérjük angolul.

Kérjük a szerző adatainak megadását az alábbiak szerint: név, tudományos fokozat, beosztás, munkahely

### Szöveg formázása

*Oldalméret:* JIS B5 – 18,2 x 25,7 cm.

*Margók:* fent: 2,22, alul: 2,5, balról: 2,5, jobbról: 2 cm; fejléc és lábléc: 1,25 cm.

*Betűtípus és betűméret:* Times New Roman 10-es, a jegyzetek 9-es betűmérettel.

*Bekezdések:* cím után nincs behúzás, egyébként 0,7 cm, a bekezdések között sorkihagyás nincs.

*Címek:* stílusbeállítás nélkül, fő cím és a fejezetek címek vastag, az alfejezetek címei vastag és dőlt betűtípussal.

*Szövegek kiemelések:* szimpla dőlt betűtípussal.

### Ábrák, táblázatok:

Terjedelmi okok miatt kérjük, hogy egy tanulmányban legfeljebb 4-5 ábra szerepeljen.

Az ábrákat (pl.: térképek, diagramok, rajzok, fényképek) és táblázatokat megfelelően formázva a szövegbe építve kérjük elküldeni. A fénymásolással, szkenneléssel készült ábrákat nem tudjuk elfogadni, mert a nyomda számára nem megfelelő a minőségük. Színes ábrák közlésére sincs módunk. Mindenképpen szükséges az ábrák és táblázatok külön számozása (pl.: 1. ábra; 2. ábra; 1. táblázat; 2. táblázat), s hivatkozásuk pontos feltüntetése a szövegekben, zárójelben, döntve: (1. ábra) vagy (1. táblázat).

Az ábra címét az ábra alatt, középen elhelyezve, a táblázatok címét a táblázat fölött balra igazítva kérjük elhelyezni. Az ábrák és táblázatok alatt fel kell tüntetni a forrást is. Ha saját készítésű az ábra, akkor a „Forrás: Saját szerkesztés, ill. Saját számítás.” megnevezést kell használni.

### Irodalmi hivatkozások, jegyzetek:

Az irodalmi hivatkozásokat minden esetben kérjük feltüntetni, a szerző vezetéknévét és a kiadását évét zárójelbe téve. Pl.: (Conti 1993). Pontos idézetnél az oldalszám is szükséges. Pl.: (Conti 1993, 76) vagy (Conti 1993, 76-86). A hivatkozások ne lábjegyzetként, hanem csak a fent leírt formában kerüljenek a szövegbe.

Az irodalomjegyzékben csak olyan tételek szerepeljenek, amelyekre a szövegben hivatkozás található, s minden meghivatkozott irodalmat feltétlenül fel kell tüntetni az irodalomjegyzékben.

A jegyzeteket kérjük a szöveg végén, számozott formában elhelyezni. A jegyzetek a főszöveg kiegészítéseit tartalmazzák, ne legyen bennük pl. ábramagyarázat, hivatkozás.

A szöveg után kérjük beírni az irodalomjegyzéket, a következő alapformákban:

Könyv: szerző (megjelenés éve): *A mű címe*. A kiadás helye: a kiadó neve.

Folyóirat: szerző(k) (a megjelenés éve): A cikk címe. *A folyóirat neve*. (Az évfolyam sorszáma), a szám sorszáma, a cikk kezdő és befejező oldalszáma.

Gyűjteményes kötetben szereplő cikk: szerző(k) (a megjelenés éve): A cikk címe. In: *A gyűjteményes kötet címe*. (szerk. vagy ed(s): Szerkesztő(k) neve), a kiadás helye: a kiadó neve, a hivatkozott írásmű kezdő és befejező oldalszáma.

*Példák:*

CRONAUGE, U. (1992): Kommunale Unternehmen. Berlin: Erich Schmidt Verlag

ALCHIAN, A.-DEMSETZ, II. (1972): Production, information costs and economic organisation. *America Economic Review*, 2. 775-795.

PÉTERI G. (1991): Az önkormányzatok és oktatási intézményeinek viszonya, finanszírozási kérdések. In: *Önkormányzat és iskola*. (szerk.: Kozma T.) Budapest: Oktatókutató Intézet, 122-154.

***Köszönjük!***

***Szerkesztőség***

## Notes for Contributors

The editorial board of the journal welcomes studies on economic, regional and social issues in Hungarian and in English language. Our journal was launched in 2004. It is published four times a year from 2021 (of which once in English and three times in Hungarian). We are waiting for studies, essays and book reviews submitted for the first publication only. The studies are rated by two double-blind reviewers in each case.

There is no publication fee!

The papers are double blind reviewed before publication. The Editorial Office does not retain manuscripts and reserves the right to decide about the publication of papers submitted.

The maximum length of a paper that can be accepted is 35,000 characters. An abstract in five lines followed by 3-5 keywords is to be given at the beginning of the paper and JEL-code.

Please provide the author's details as follows: name, academic degree, position, job.

The text is to be submitted in file by e-mail. (Any version of MS WORD can be used for saving it.)

Tables are to be incorporated in the text in the appropriate format. Their exact place in the text and captions are to be signalled by numbering.

A maximum of 4-5 figures can be included in a paper for reasons of length.

Figures (e.g. maps, diagrams, drawings, photos) and the tables are to be appropriately formatted and incorporated in the text. Figures produced by photocopying and/or scanning cannot be accepted, for their quality is not suitable for the press. It is not possible to publish colour figures. Figures and tables are to be numbered separately (e.g. Figure 1, Figure 2, Table 1, Table 2.), and their references (Figure 1) or (Table 1) given in italics in the right place in the text in brackets.

The caption of a figure is to be given below the figure, in the middle of the line, and the caption of a table is to be given above the table in the middle of the line. Figures and tables are to be followed by the source. If the figure is the author's own work, then 'Source: author's own work or Author's own calculation' is to be used. .

References to literature are to be given in every case: the author's name and the year of publication in brackets. E.g.: (Conti 1993). For quotations the page is also to be given. E.g.: (Conti 1993, p.76) or (Conti 1993, pp.76-86). References are not to be given as footnotes, but only in the above format in the body of the text.

The list of literature should include only works with reference to them in the body of the text. Every work referred to should be included in the list of literature.

Notes are to be given as footnotes in a numbered format. Notes are to include additions to the main body of the text, and they should not contain explanations of figures or references.

The text is to be followed by the list of literature, in the following formats:

Text formatting:

Side size: JIS B5 - 18.2 x 25.7 cm.

Margins: top: 2.22, bottom: 2.5, left: 2.5, right: 2 cm; header and footer: 1.25 cm.

Font and font size: Times New Roman 10, footnotes 9.

Paragraphs: no indentation after the title, otherwise 0.7 cm, no line spacing between paragraphs.

Titles: without style setting, main title and chapter titles in bold, subchapter titles in bold and italics.

References:

Books: author (year of publication) Title of the work, name of publisher, place of publication.

Periodicals: author(s) (year of publication) Title of the paper. Name of the periodical. (Number of volume), number of issue, numbers of the first and last pages of the paper.

Books with several authors: author(s) (year of publication) Title of the paper. In: Title of the book. (szerk. or ed(s), or Hrsg.: Name(s) of editor(s)), name of publisher, place of publication, numbers of the first and last pages of the paper referred to.

Examples:

Cronaue, U. (1992): Kommunale Unternehmen. Erich Schmidt Verlag, Berlin.

Alchian, A.-Demsetz, II. (1972): Production, information costs and economic organisation. American Economic Review (XII.) 2. pp. 775-795.

Péteri G. (1991): Az önkormányzatok és oktatási intézményeinek viszonya, finanszírozási kérdések. In: Önkormányzat és iskola. (szerk.: Kozma T.) Oktatókutató Intézet, Budapest, pp. 122-154.

Please make sure that if the literature used has a DOI number, it must be listed in the bibliography!

Thank you!

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