ISSN 2560-421X UDK 33+502/504

ECONOMICS

of Sustainable Development

1

Vol. VI Niš, 2022

ECONOMICS OF SUSTAINABLE DEVELOPMENT
ЕКОНОМИКА ОДРЖИВОГ РАЗВОЈА

ДРУШТВО ЕКОНОМИСТА “ЕКОНОМИКА” НИШ
SOCIETY OF ECONOMISTS “EKONOMIKA”, NIS

The Journal is issued two times a year. Year VI, I-VI 2022, Vol. 1

ECONOMICS
OF SUSTAINABLE DEVELOPMENT

PUBLISHER: Society of Economists "Ekonomika", Nis

EDITORIAL BOARD

Lector
NIKOLA TATAR

Prepress & Cover:
MILAN D. RANDJELOVIĆ

Address:
"EKONOMIKA", Society of Economists
18000 Nis, Maksima Gorkog 5/36

Phone: +381 (0)18 4245 763; 211 443
e-mail: zoki@medianis.net; ekonomika@sbb.rs
WEB: http://www.ekonomika.org.rs

Bank Account: 160-19452-17

Printed by:
"MEDIVEST"
18000 Niš
Copies: 200

САДРЖАЈ / CONTENT

ОРИГИНАЛНИ НАУЧНИ РАДОВИ / ORIGINAL SCIENTIFIC PAPER

ПРЕГЛЕДНИ РАДОВИ / SCIENTIFIC REVIEW PAPER

ECONOMICS OF SUSTAINABLE DEVELOPMENT
Vol. 6, january-june 2022, № 1
UDK 33+502/504
ISSN 2560-421X

Marijana Seočanac[1]
Faculty of Hotel Management and Tourism, University of Kragujevac

P. 1-10
ORIGINAL SCIENTIFIC PAPER
DOI: 10.5937/ESD2201001S
Received: October 28, 2021
Accepted: January 11, 2022

TRANSFORMATIVE EXPERIENCES IN NATURE-BASED TOURISM AS A CHANCE FOR IMPROVING SUSTAINABILITY OF TOURISM DESTINATION

Abstract

The consequences of the coronavirus pandemic, such as social isolation and physical (social) distancing, have led many people to become more aware of the values of nature. Natural destinations provide tourists with the opportunity for easy social distancing and improvement of mental and physical health. At the same time, they provide an opportunity for various stakeholders in the destination to, through experiences in the natural environment, encourage the transformation of tourists towards values and behaviours aimed at preserving the environment. Therefore, this paper aims to present, based on a review of existing literature, transformative experiences in nature-based tourism as a means to improve the sustainability of a tourist destination and identify possible solutions for designing such experiences.

Keywords: *transformative experiences, nature-based tourism, sustainability, COVID-19*

JEL classification: *Z32, Q51*

ТРАНСФОРМАТИВНА ИСКУСТВА У ТУРИЗМУ ЗАСНОВАНОМ НА ПРИРОДИ КАО ШАНСА ЗА УНАПРЕЂЕЊЕ ОДРЖИВОСТИ ТУРИСТИЧКЕ ДЕСТИНАЦИЈЕ

Апстракт

Последице пандемије корона вируса, као што је изолација и физичко (социјално) дистанцирање, довели су до тога да многи људи постану свеснији вредности природе. Природне дестинације пружају могућност туристима за лако социјално удаљавање, побољшање менталног и физичког здравља. Истовремено, пружају могућност и различитим стејкхолдерима на дестинацији да, кроз искуства у природном окружењу, подстакну трансформацију туриста ка вредностима и понашањима усмереним ка очувању животне средине. Стога, циљ овог рада је да се на основу прегледа постојеће литературе, трансформативна искустава у туризму заснованом на природи представе као средство за унапређење одрживости туристичке дестинације, и идентификују могућа решења за дизајнирање таквих искустава.

Кључне речи: *трансформативна искуства, туризам заснован на природи, одрживост, COVID-19*

[1] marijanaseocanac@gmail.com, ORCID ID 0000-0001-7232-3624

Introduction

Tourism, as one of the fastest growing industries, intensively uses and consumes natural resources, which greatly affects the environment. Mass tourism as a product of such intensive tourism development can lead to environmental degradation but also endanger the survival of the entire tourism industry. The World Tourism Organization (2013) sees sustainability as a solution, i.e. it emphasizes that tourism will not have a future if it does not become sustainable. This points to the need for tourism transformation which, as Sheldon (2020) points out, can only happen if the values of all stakeholders in tourism are transformed. Alternative tourism such as "nature-based, adventure, rural or agricultural and heritage, religious, wellness and spa, educational or volunteer tourism" as Reisinger (2013) argues, has the capacity to encourage the transformation of tourists (p. 29).

The coronavirus pandemic and the current health situation, restriction of international travel, border closures, social distancing (Luković & Stojković, 2020), lockdowns, have led to people becoming more aware of the values of nature and the need to preserve those resources. Research has shown that people are increasingly interested in experiences involving immersion in nature and outdoor activities, including natural protected areas, adventure, eco-tourism, cultural and rural tourism (World Tourism Organization – WTO, 2020). Natural destinations provide an opportunity for tourists to escape lockdowns, improve mental health, and at the same time provide an opportunity for easy social distancing (Spenceley, 2021). In addition to activities that contribute to the personal development of tourists (Wolf et al., 2017), travel to protected areas and the natural environment may include activities that seek to develop tourists' awareness of global issues, environmental protection, promote intercultural understanding and learning (Lean, 2009). As Sheldon (2020) points out, experience in the natural environment "creates more self-awareness, more self-inquiry into the purpose of life, living by a higher set of values, and making greater contributions to others" (p. 2). That is, after such an experience, tourists begin to increasingly advocate for environmental protection and social empowerment in their community (Pung et al., 2020).

If we think about experiences in nature-based tourism, as suggested by Higham and Carr (2002), as extremely effective means of influencing the behaviour of visitors towards the environment, we can say that the new situation represents an ideal opportunity for tourism to act, through experiences in the natural environment, as a transformative force on tourists. The aim of this paper is to draw attention to the concept of transformative experiences in nature-based tourism, as a means to improve the sustainability of tourist destinations, and to identify the impacts that transformative experiences in nature-based tourism can have on tourists, community, and the natural environment.

The paper consists of three parts. The first part is dedicated to clarifying transformative tourism experiences, while the second part focuses on transformative experiences in the context of nature-based tourism. In the third part, ways for designing transformative experiences in nature-based tourism will be identified.

1. Transformative tourism experiences

Transformation can be explained as an improvement in personal growth and a developmental change that has broad social implications (Wolf et al., 2017). Wade (1998) sees transformation as "a dynamic, uniquely individualized process of expanding consciousness whereby individuals become critically aware of old and new self-views and choose to integrate these views into a new self-definition" (p. 713). Travel has been identified as an agent of change because it contains most of the conditions necessary for individual as well as social transformation to occur (Wolf et al., 2017).

As Kottler (1998) points out, tourist experiences have transformative potential because they provide an opportunity for tourists to detach themselves from their comfort zone. The assumption made by Firat and Venkatesh (1995) is that tourists strive for transformative experiences because everyday life mostly excludes magic, mystery, and passion. Kirillova et al. (2017) define transformative experiences as "those special extraordinary events that do not only trigger highly emotional responses but also lead to self-exploration, serve as a vehicle for profound intra-personal changes, and are conductive to optimal human functioning" (p. 498).

Kottler (2002) described the process in which the transformative potential of the tourist experience is realized as a process that takes place in an environment unknown to tourists, in which they gain a new perspective on life and work, and which consequently leads to changes in their previous beliefs. As a result of such a transformative tourism experience, tourists become agents of change (Soulard et al., 2021), that is, changes resulting from participation in transformative experiences tourists bring with them when returning to their living environment (Kottler, 2002). Teoh et al. (2021) suggest that tourism experiences produce ideas, which can potentially change one's perspective and previous assumptions, which creates a transformative process. If a person recognizes these ideas and applies them in his/her daily life, he/she experiences transformation.

As Teoh et al. (2021) emphasize transformative tourism experiences have strong personal and social implications and are of great importance to the individual, society, and tourism (Sheldon, 2020). Participation in transformative experiences can bring various changes to tourists, intangible (e.g., changes in attitudes or beliefs) or tangible (e.g., acquisition of new skills) (Fu et al., 2015). On the other hand, they can bring significant social changes, such as changing the way of thinking about others, gaining tolerance towards others, trust, friendship, altruism, intercultural understanding (Becker, 2018).

According to Roberson (2002), transformation occurs accidentally. According to this author, reading about a destination before or after a trip, as well as gaining new perspectives on other cultures, can initiate the transformation of tourists. This was also supported by Sheldon (2020), who points out that transformation is not the primary motive for tourists to travel, but that it happens due to spontaneous triggering moments. He explains the transformative moment as mostly "emotionally intensive, sensorially impressive and cognitively stimulating", with the capacity to encourage tourists to leave their safe zone, reconsider their inner values and start "deeper awakening to a new way of being in the world" (p. 4). On the other hand, a review of the literature conducted by Melo et al. (2021) revealed some of the prerequisites for personal transformation. These authors state that the journey must be independently organized and motivated by a desire

for transformation and learning. Also, the importance of drowning in the local culture was emphasized, as well as the new environment, which is in contradiction with the usual living environment of tourists. Well-known companions, repeated activities, and the inability to access the way of life of the local population were identified as factors that prevent the transformation of tourists (Pung & Del Chiappa, 2020).

Howard (2012) points out that interactions with people and nature are essential for developing transformative experiences. Similarly, Agapito et al. (2014) explain that tourism experiences that rely heavily on nature have the capacity to trigger transformation in tourists. Sheldon (2020) agrees with this, describing locations in nature as extremely "fertile places for transformation to occur" (p. 5).

2. Transformative experiences in nature-based tourism

Urbanization, income increase, flexible working hours, and the need to improve subjective well-being are some of the factors that have led to an increase in tourist demand for experiences based on nature and sustainability (Elmahdy et al., 2017). Puhakka and Siikamaki (2012) observed that tourists visiting untouched and attractive natural areas perceive the environment primarily as a key component that contributes to the quality of their holiday experience. Authors Wolf et al. (2017) systematized the literature and found that experiences in nature-based tourism bring ecological, psycho-physiological, and social benefits to tourists.

The research conducted by Ruhanen (2019) found that tourists visiting ecotourism sites are primarily driven by the experience in the natural environment, and identified personal benefits, such as adventure, physical activity, learning, and enjoyment, as the main motives for traveling to natural areas. Ross (2010) confirms that experiences involving responsible and sustainable practices guided by values of respect for ecosystems and hosts have great potential for transforming tourists. This has also been observed in various studies that suggest that experiences in nature have positive health outcomes (Shin et al., 2010), lead to a reduction in the risk of heart attack (Wolf et al., 2017), and a reduction in stress (Hansmann et al., 2007), mental and social well-being, as well as a range of positive emotions, such as contentment, joy, and happiness (Ballew & Omoto, 2018). Thus, nature is perceived as a space that enables the spiritual growth and psychological regeneration of people (Heintzman, 2009). Experiences in nature-based tourism have also been found to have positive social outcomes, such as creating community cohesion and strengthening family networks (Hewlett & Edwards, 2013).

The authors Poria et al. (2009) and Poudel and Nyaupane (2013) found that interaction with the natural environment provides tourists with a pleasant experience, brings joy, and encourages curiosity and a desire to learn. As a result, they point out, there is an increase in understanding, compassion, and respect for nature by tourists, and in the long run, increased environmental awareness leads to changes in ecosystem conservation behaviour (Ballantyne et al., 2011) and travel intentions (Chen et al., 2011). More specifically, these tourists are beginning to search intensively for a sustainable tourism offer and to advocate for the growth of a tourism industry that will not jeopardize its own future (WTO & WYSE Travel Confederation, 2008). Also, Walter (2016) points out that after returning home, these tourists begin to engage in environmental initiatives,

such as planting trees, take part in political activism for environmental protection, and begin teaching children about the need to preserve the environment, thus contributing to the community.

More recently, various authors (e.g., Lu et al., 2017; Smith & Melissen, 2018) have begun to view experiences as a means of gaining a competitive advantage. Chandralal and Valenzuela (2013) point out that it is not easy for a tourist destination to convince tourists to visit it again. Various studies (e.g., Zhang et al., 2018; Wong et al., 2020) have identified that experiences are a major driver of revisiting in nature-based tourism. Transformative experiences bind tourists to the place where they experienced such experience, increase the number of word-of-mouth recommendations and revisits (Jepson & Sharpley, 2015). Authors Miller et al. (2019) by systematizing the results of various studies (e.g., Pinkus et al., 2016; Snyman, 2017; Jorgenson et al., 2019) conducted in parks and protected areas found that providing quality experiences to visitors lead to the economic sustainability of these areas – through the growth in the number of repeat visits and positive word-of-mouth, which leads to the creation of additional jobs for the local population, thus reducing poverty and providing support to the local economy. Increasing tourist support to the parks and philanthropic donations to environmental organizations have been identified as some of the results of the change in tourists induced by the transformative experiences in nature.

3. Designing transformative experiences in nature-based tourism

To provide transformative nature-based tourism experiences, and to ensure the longevity of responsible behaviour, i.e. the adoption of such behaviour in everyday life, various solutions have been offered in the literature. Butcher (2002) focused on the promotion and presentation of nature-based tourism experiences. He emphasizes the need to present sustainable behaviour and sustainable tourism as "doing tourism differently" or "saving the world". Wolf et al. (2017) believe that marketing should highlight the benefits that a transformative experience in nature-based tourism can bring to tourists, such as physical and psychological well-being, the ability to build self-confidence, the opportunity to create community spirit, and a sense of purpose. Steg et al. (2014) point out that a nature-based tourist experience should be shaped as a status improvement because if it is shaped solely as a hedonistic experience, it will not produce the desired effect. Therefore, Villarino and Font (2015) and Hanna et al. (2017) emphasize the necessity of placing tourists at the centre of the experience and communicating those aspects of the destination that lead to the creation of transformative nature-based tourist experiences.

Poudel and Nyaupane (2013) suggest that the interpretation of the environment, for example by a tour guide, can help tourists to transform. That is, these authors argue that guided experiences lead to positive changes in the behaviour and attitudes of tourists and represent a very effective means of reducing negative environmental impacts. Sheldon (2020) points out that guided experiences can include ecotherapy, i.e. treatments to improve the spiritual, mental, or physical condition. As an example, he cites forest-bathing or guided tours in forests and nature parks that aim to provide healing and transformative

experiences. The author finds another example in Hawaii, where locals' knowledge of the healing power of the natural world is used as part of the design of a transformative tourism experience (for example, tourists can gain knowledge of Hawaiian practices of traditional preparation and use of native herbs to achieve spiritual and emotional balance). Liu et al. (2016) suggest involving tourists in the process of experiencing co-creation, which will enable them to be directly involved in choreographing their activities. These authors believe that tourists in nature-based tourism should not only be treated as reactive agents but also as collaborators in creating experiences that will increase their satisfaction and lead to the creation of unforgettable experiences.

Memorability of the experience in nature-based tourism has been the subject of research in the literature. Ballantyne et al. (2011) exploring visitor changes in four different wildlife locations in Australia, found that although changes in visitor attitudes toward the environment were initially observed, additional research found that they did not continue four months after the experience. On the other hand, Hughes et al. (2011) in their study measured changes in tourists' knowledge gained through experience in nature-based tourism, three months after the experience. The authors found that those tourists who received support after visiting the Australian turtle rookery, in the form of weekly updates via email, family activities, and quizzes, a website specifically designed to support visitors, maintained or even increased their knowledge in the observed period, while tourists who did not have such incentives, as expected, recorded a lower result. Also, Ardoin et al. (2015) propose the creation of communities through social networks such as Facebook, Twitter, and Instagram, which, as they explain, will encourage the exchange of experiences among members and thus extend the durability of the experience.

Conclusion

A recent Air Travel Sustainability survey and a survey conducted by Boooking.com found that nearly 60% of respondents think more about sustainability and the environment than before COVID-19 (Spenceley, 2021). Wang & Lyu (2019) point out that awakening tourists are more likely to respect the ecosystem and behave responsibly towards the environment. It has been identified that more aware and responsible tourists and stakeholders will contribute to the renewal and restoration of tourist destinations thus shaping a different future for tourism (Sheldon, 2020). As explained in this paper, such change needs to be encouraged but also maintained. As Hanić and Mitić (2020) point out, human impact on the environment increases the risk of contagious diseases in humans. As a way of recovery after COVID-19, but also reducing the risk of future epidemics, these authors point out that our impact on the environment must be reduced, which will minimize the risk of infectious diseases at the source, that is in nature.

A review of the literature has shown that nature-based tourism has a great potential to lead to the individual transformation of tourists towards values and behaviours that incorporate responsibility towards the environment. Consequently, this change will have significant implications for the sustainability of the tourist destination itself. That is, as Sheldon (2020) pointed out, "transformed tourists live by a higher set of values, are more aware and sensitive to their impact on the destination, and moderate their behaviour accordingly, they can transform destinations while transforming themselves" (p. 10).

Providing experiences that have the capacity to encourage the transformation of tourists should be the task of all stakeholders in the destination. Some of the suggestions on how to initiate transformation in nature-based tourism and maintain the values and changes in tourist behaviour that have arisen as a result of the transformative experience are given in this paper. As mentioned, the benefits of tourist transformation are multiple and continue even after tourists leave the destination, which means that the transformation of tourists through nature-based tourism has benefits even outside the tourist destination that initiated these changes.

Literature

Agapito, D., Valle, P., & Mendes, J. (2014). The sensory dimension of tourist experiences: Capturing meaningful sensory-informed themes in Southwest Portugal. *Tourism Management*, 42, 224–237.

Ardoin, N. M., Wheaton, M., Bowers, A. W., Hunt, C. A., & Durham, W. H. (2015). Nature-based tourism's impact on environmental knowledge, attitudes, and behavior: a review and analysis of the literature and potential future research. *Journal of Sustainable Tourism*, *23*(6), 838–858.

Ballantyne, R., Packer, J., & Falk, J. (2011). Visitors' learning for environmental sustainability: Testing short-and long-term impacts of wildlife tourism experiences using structural equation modelling. *Tourism Management*, *32*(6), 1243–1252.

Ballew, M. T., & Omoto, A. M. (2018). Absorption: How nature experiences promote awe and other positive emotions. *Ecopsychology*, *10*(1), 26–35.

Becker, E. (2018). Tour-guiding as a pious place-making practice: The case of the Sehitlik Mosque, Berlin. *Annals of Tourism Research*, *73*, 81–90.

Butcher, J. (2002). *The moralisation of tourism*. London, England: Routledge.

Chandralal, L., & Valenzuela, F.-R. (2013). Exploring Memorable Tourism Experiences: Antecedents and Behavioural Outcomes. *Journal of Economics, Business and Management*, *1*(2), 177–181.

Chen, C. M., Chen, S. H., & Lee, H. T. (2011). The destination competitiveness of Kinmen's tourism industry: Exploring the interrelationships between tourist perceptions, service performance, customer satisfaction and sustainable tourism. *Journal of Sustainable Tourism*, *19*(2), 247–264.

Elmahdy, Y. M., Haukeland, J. V., & Fredman, P. (2017). *Tourism megatrends: A literature review focused on nature-based tourism*. MINA fagrapport 42. Oslo, Norway: Norwegian University of Life Sciences, Faculty of Environmental Sciences and Natural Resource Management.

Firat, A. F., & Venkatesh, A. (1995). Liberatory Postmodernism and the Re-Enactment of Consumption. *Journal of Consumer Research*, *22*(3), 239–267.

Fu, X., Tanyatanaboon, M., & Lehto, X. Y. (2015). Conceptualizing transformative guest experience at retreat centers. *International Journal of Hospitality Management*, *49*, 83–92.

Hanić, A., & Mitić, P. (2020). Uticaj COVID-19 na životnu sredinu i energetski sektor [Impact of COVID-19 on the environment and energy sector]. In A. Hanić, & P. Mitić (Eds.), *Black swan in the world economy 2020* (pp. 141–157). Belgrade, Serbia: Institute of Economic Sciences.

Hanna, P., Font, X., Scarles, C., Weeden, C., & Harrison, C. (2017). Tourist destination marketing: From sustainability myopia to memorable experiences. *Journal of Destination Marketing & Management*, *9*, 36–43.

Hansmann, R., Hug, S.-M., & Seeland, K. (2007). Restoration and stress relief through physical activities in forests and parks. *Urban Forestry & Urban Greening*, *6*(4), 213–225.

Heintzman, P. (2009). Nature-based recreation and spirituality: A complex relationship. *Leisure Sciences*, *32*(1), 72–89.

Hewlett, D., & Edwards, J. (2013). Beyond prescription: Community engagement in the planning and management of national parks as tourist destinations. *Tourism Planning & Development*, *10*(1), 45–63.

Higham, J., & Carr, A. (2002). Ecotourism Visitor Experiences in Aotearoa/New Zealand: Challenging the Environmental Values of Visitors in Pursuit of Pro-environmental Behaviour. *Journal of Sustainable Tourism*, *10*(4), 277–294.

Howard, C. (2012). Speeding up and slowing down: pilgrimage and slow travel through time. In S. Fullagar, K. W. Markwell, & E. Wilson (Eds.), *Slow tourism: Experiences and mobilities* (pp. 11–26). Bath UK: Channel View.

Hughes, K., Packer, J., & Ballantyne, R. (2011). Using post-visit action resources to support family conservation learning following a wildlife tourism experience. *Environmental Education Research*, *17*(3), 307–328.

Jepson, D., & Sharpley, R. (2015). More than sense of place? Exploring the emotional dimension of rural tourism experiences. *Journal of Sustainable Tourism*, *23*(8-9), 1157–1178.

Jorgenson, J., Nickerson, N., Dalenberg, D., Angle, J., Metcalf, E., & Freimund, W. (2019). Measuring visitor experiences: creating and testing the tourism autobiographical memory scale. *Journal of Travel Research*, *58*(4), 566–578.

Kirillova, K., Lehto, X., & Cai, L. (2017). What triggers transformative tourism experiences?. *Tourism Recreation Research*, *42*(4), 498–511.

Kottler, J. A. (1998). Transformative travel. *Futurist*, *32*(3), 24–28.

Kottler, J. A. (2002). Transformative travel: International counseling in action. *International Journal for the Advancement of Counseling*, *24*, 207–210.

Lean, G. (2009). Transformative travel: Inspiring sustainability. In R. Bushell & P. J. Sheldon (Eds.), *Wellness and tourism: Mind, body, spirit, place* (pp. 191–205). Elmsford, NY: Cognizant Communication.

Liu, C. H., Horng, J. S., Chou, S. F., Chen, Y. C., Lin, Y. C., & Zhu, Y. Q. (2016). An empirical examination of the form of relationship between sustainable tourism experiences and satisfaction. *Asia Pacific Journal of Tourism Research*, *21*(7), 717–740.

Lu, D., Liu, Y., Lai, I., & Yang, L. (2017). Awe: An important emotional experience in sustainable tourism. *Sustainability*, *9*(12), 2189.

Luković, S., & Stojković, D. (2020). Covid-19 pandemic and global tourism. *Hotel and Tourism Management*, *8*(2), 79–87.

Melo, C., Richards, G., & Smith, M. K. (2021). Transformational Tourism Experiences: A new communication path for destinations and service providers. In M. G. Dinis, L. Bonixe, S. Lamy, & Z. Breda (Eds.), *Impact of New Media in Tourism* (pp. 210–233). Hershey, PA: IGI Global.

Miller, Z. D., Rice, W. L., Taff, B. D., & Newman., P. (2019). Concepts for understanding the visitor experience in sustainable tourism. In S. F. McCool, K. Bosak, *A Research Agenda for Sustainable Tourism* (pp. 53–69). Cheltenham, England: Edward Elgar Publishing.

Pinkus, E., Moore, S. A., Taplin, R. & Pearce, J. (2016). Re-thinking visitor loyalty at 'once in a lifetime' nature-based tourism destinations: empirical evidence from Purnululu National Park, Australia. *Journal of Outdoor Recreation and Tourism*, *16*, 7–15.

Poria, Y., Biran, A., & Reichel, A. (2009). Visitors' preferences for interpretation at heritage sites. *Journal of Travel Research*, *48*(1), 92–105.

Poudel, S., & Nyaupane, G. P. (2013). The role of interpretative tour guiding in sustainable destination management: A comparison between guided and nonguided tourists. *Journal of Travel Research*, *52*(5), 659–672.

Puhakka, R., & Siikamaki, P. (2012). Nature tourists' response to ecolabels in Oulanka PAN Park, Finland. *Journal of Ecotourism*, *11*(1), 56–73.

Pung, J. M., Gnoth, J., & Del Chiappa, G. (2020). Tourist transformation: Towards a conceptual model. *Annals of Tourism Research*, *81*.

Pung, J., & Del Chiappa, G. (2020). An exploratory and qualitative study on the meaning of transformative tourism and its facilitators and inhibitors. *European Journal of Tourism Research*, *24*, 2404.

Reisinger, Y. (2013). *Transformational tourism: Tourist perspectives*. Oxford, UK: CABI.

Roberson, D. N. (2002). Modern day explorers – the way to a wider world. *World Leisure*, *44*(3), 35–42.

Ross, S. L. (2010). Transformative Travel: An Enjoyable Way to Foster Radical Change. *ReVision*, *32*(1), 54–61.

Ruhanen, L. (2019). The prominence of eco in ecotourism experiences: An analysis of postpurchase online reviews. *Journal of Hospitality and Tourism Management*, *39*, 110–116.

Sheldon, P. J. (2020). Designing tourism experiences for inner transformation. *Annals of Tourism Research*, *83*, 102935, 1–12.

Shin, W. S., Yeoun, P. S., Yoo, R. W., & Shin, C. S. (2010). Forest experience and psychological health benefits: The state of the art and future prospect in Korea. *Environmental Health and Preventive Medicine*, *15*(1), 38–47.

Smit, B., & Melissen, F. (2018). *Sustainable customer experience design: Co-creating experiences in events, tourism and hospitality*. Abingdon, Oxon: Routledge.

Snyman, S. (2017). The role of private sector ecotourism in local socio-economic development in southern Africa. *Journal of Ecotourism*, *16*(3), 247–268.

Soulard, J., McGehee, N. G., Stern, M. J., & Lamoureux, K. M. (2021). Transformative tourism: Tourists' drawings, symbols, and narratives of change. *Annals of Tourism Research*, *87*, 103141.

Spenceley, A. (2021). *The future of nature-based tourism. Impacts of COVID-19 and paths to sustainability*. Gland, Switzerland: Luc Hoffmann Institute.

Steg, L., Perlaviciute, G., Van der Werff, E., & Lurvink, J. (2014). The significance of hedonic values for environmentally relevant attitudes, preferences, and actions. *Environment and Behavior*, *46*(2), 163–192.

Teoh, M. W., Wang, Y., & Kwek, A. (2021). Conceptualising co-created transformative tourism experiences: A systematic narrative review. *Journal of Hospitality and Tourism Management*, *47*, 176–189.

Villarino, J., & Font, X. (2015). Sustainability marketing myopia: The lack of persuasiveness in sustainability communication. *Journal of Vacation Marketing*, *21*(4), 326–335.

Wade, G. H. (1998). A concept analysis of personal transformation. *Journal of Advanced Nursing*, *28*(4), 713–719.

Walter, P. G. (2016). Catalysts for transformative learning in community-based ecotourism. *Current Issues in Tourism*, *19*(13), 1356–1371.

Wang, L., & Lyu, J. (2019). Inspiring awe through tourism and its consequence. *Annals of Tourism Research*, *77*, 106–116.

Wolf, I. D., Ainsworth, G. B., & Crowley, J. (2017) Transformative travel as a sustainable market niche for protected areas: a new development, marketing and conservation model. *Journal of Sustainable Tourism*, *25*(11), 1650–1673.

Wong, J. W. C., Lai, I. K. W., & Tao, Z. (2020). Sharing memorable tourism experiences on mobile social media and how it influences further travel decisions. *Current Issues in Tourism*, *23*(14), 1773–1787.

World Tourism Organization., & World Youth Student & Educational Travel Confederation – WYSE Travel Confederation. (2008). Youth travel matters: understanding the global phenomenon of youth travel. Madrid, Spain: UNWTO.

World Tourism Organization. (2013). *Global Report on The Power of Youth Travel. Affiliate Members Report: Volume thirteen*. Madrid, Spain: UNWTO.

World Tourism Organization. (2020). *Understanding domestic tourism and seizing its opportunities. UNWTO Briefing note – Tourism and COVID-19, Issue 3*. Madrid, Spain: UNWTO.

Zhang, H., Wu, Y., & Buhalis, D. (2018). A model of perceived image, memorable tourism experiences and revisit intention. *Journal of Destination Marketing & Management*, *8*, 326–336.

ECONOMICS OF SUSTAINABLE DEVELOPMENT
Vol. 6, january-june 2022, № 1
UDK 33+502/504
ISSN 2560-421X

Marija Petrović-Ranđelović[1]
Snežana Colić[2]
University of Niš, Faculty of Economics

Branka Stojanović-Ranđelović[3]
City Administration of the City of Niš,
City Administration for Social Activities

P. 11-24
SCIENTIFIC REVIEW PAPER
DOI: 10.5937/ESD2201011P
Received: December 18, 2021
Accepted: January 29, 2022

THE IMPORTANCE OF SOCIALLY RESPONSIBLE BUSINESS OF THE BANKING SECTOR FOR ACHIEVING SUSTAINABLE DEVELOPMENT: THE EXAMPLE OF THE REPUBLIC OF SERBIA

Abstract

The strategic approach to socially responsible business is necessary for increasing competitiveness and achieving sustainable development goals. Banks as intermediate financial institutions play a significant role in respecting all principles and mechanisms of socially responsible business. In modern business conditions, sustainable banking has become a global phenomenon. The concept of sustainable development effects the banking reorientation towards provision of new banking services and creating new, green, banking operations. Green banking contributes to achieving both profit and expanding social and environmental goals. Therefore, the focus of this paper is on the analysis of the development level of green banking and finance in the Republic of Serbia, as part of the strategy of socially responsible business and sustainable development of banks in Serbia. The goal is to point out the current level of development of social responsibility and environmental awareness of banks and their clients, on the activities that banks conduct environmentally, but also on the development of green banking development in the domestic financial market.

Keywords: *sustainable development, social responsibility, green finance, banking, the Republic of Serbia*

JEL classification: ***Q50, G21, O1***

ЗНАЧАЈ ДРУШТВЕНО ОДГОВОРНОГ ПОСЛОВАЊА БАНКАРСКОГ СЕКТОРА ЗА ОСТВАРИВАЊЕ ОДРЖИВОГ РАЗВОЈА: ПРИМЕР РЕПУБЛИКЕ СРБИЈЕ

Апстракт

Стратешки приступ дтуштвено одговорном пословању неопходан је за повећање конкуренстности и остваривање циљева одрживог развоја. Банке, као

[1] marija.petrovic@eknfak.ni.ac.rs, ORCID-ID 0000-0003-2905-1023

[2] sneskaa992@gmail.com, ORCID-ID 0002-1683-8292

[3] Branka.Randjelovic@gu.ni.rs, ORCID-ID 0000-0001-8377-8085

интермедијане финансијске институције, имају значајну улогу у поштовању свих принципа и механизама друштвено одговорног пословања. У савременим условима пословања, одрживо банкарство постало је глобални феномен. Концепт одрживог развоја утиче на преоријетацију банкарског пословања ка пружању нових банкарских услуга и креирању нових, зелених, банкарских послова. Зелено банкарство доприноси остваривању како профитних, тако и ширих друштвених и еколошких циљева. С тога, фокус овог рада је на анализи нивоа развојености зеленог банкарства и финансија у Републици Србији, као дела стратегије друштвено одговорног пословања и одрживог развоја банака у Србији. Циљ је да се укаже на тренутни ниво развијености друштвене одговорности и еколошке свести банака и њихових клијената, на активности које банке спроводе у циљу очувања животне средине, али и на перспективе развоја зеленог банкарства на домаћем финансијском тржишту.

Кључне речи: *одрживи развој, друштвена одговорност, зелене финансије, банкарство, Република Србија*

Introduction

Given the fact that human's irresponsible behaviour against nature has reached unexpectedly large proportions, the question that arises is at what price is society, generally speaking, ready to test the limits of endurance of this planet? It is more than clear that the diversity of environmental problems leads to the focus primarily on the problem of sustainability of the planet and the necessity of determining certain rules of human behaviour.

The joint efforts of national governments, corporate sectors and individuals can be influenced to find constructive solutions to reduce destructive effects of business activities on the environment. As a result, responsibility, sustainable development and environmental protection at the global level have gained key importance. Also, in today's corporate environment, social responsibility is a critical component of a company's operations.

Banks' role as key intermediary financial institutions is critical in this regard, because they are also expected to consider the impact of their operations on society and the environment. Given that they belong to the service sector of the economy, banks have long been exempted from this requirement, because it was considered that their operations do not have a significant impact on the environment. However, what largely determines the need and obligation of banks to incorporate environmental management systems through their operations, and perform a systematic assessment of the impact of their clients' operations on the environment, is precisely the relationship of clients themselves to the environment. Furthermore, one of the preconditions for social responsibility to be considered as one of the aspects of bank distinction by implementing various operations in this field is the high degree of competition among banks on the domestic market. Because the increased process of globalization, followed by deregulation in the financial sector, and the most recent global economic crisis, have considerably impacted market competition, social responsibility innovations are becoming increasingly important.

Regarding the banking sector, there is more and more talk about sustainable business in finance, green banking and environmentally oriented banking products. Accordingly, the aim

of this paper is to point out the importance of socially responsible business of banks through the development of green finance and banking and to determine the level of development of certain dimensions of social responsibility of banks in the Republic of Serbia.

Having that in mind, the structure of this paper is as follows. After introductory discussions, the socially responsible business of banks as a precondition for sustainable development will be pointed out. In the third part of the paper, an analysis of sustainable, green finance and green banking will be performed. After pointing out the business of green banks and especially green banking products, an overview of the best practices of socially responsible business of the banks in the Republic of Serbia will be given.

Social responsibility of banks as a basic premise for sustainable development

The concept of sustainable development gained importance at the end of the 20th and the beginning of the 21st century. With the sharp increase in the number of inhabitants on the planet, the increasing exploitation of natural resources, the lack of joint responsibility, there is a possibility of depletion of natural resources and endangering the environment. Although the prevailing view during the 1970s was that there was no significant link between the concept of environmental protection and accelerated development, the increasing pace of economic growth, significant use and redirection of natural resources to increase production, all in the service of economic growth, showed the opposite. This misconception is a consequence of the wrong attitude that environmental protection requires a redirection of real and financial resources and thus endangers the growth of the economy (Petrović-Randjelović, Radojčić & Manasijević, 2018). However, the end of the 20th century showed that ecological protection and accelerated development of the economy are inseparable wholes, and as such, they form two basic concepts on which sustainable development is based.

The concept of sustainable development of banks involves socially responsible business, as well as business that is directed to preserve the environment. The banks are expected to actively participate in the development of corporate social responsibility and environmental protection, and in order to realize the concept of sustainable development, on the one hand, and increase competitive advantage, on the other hand (Jančetovič, Janković & Cvijić, 2012, p. 56).

Sustainable development means development "that meets the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations General Assembly, 1987, p. 43). Because it is considered that all development must be long-term and equitable, there is a growing concern for long-term development in all areas of the economy, including the financial sector. Sustainability is reflected in the effort to ensure that corporate entities, financial institutions (banks, insurance companies, savings banks, funds), governmental and non-profit organizations operate in a way that will have positive implications for economic growth, social progress and environmental protection. (Stanojević, Mitić, Rakić, 2013, p. 438).

The concept of sustainable development refers to three dimensions - economic, social and environmental dimension (Giddings, Hopwood & O'Brien, 2002). The environmental aspect implies a requirement for the preservation of natural resources, with an emphasis on air, water, land, as well as the rational use of renewable energy sources.

Corporate social responsibility is becoming an indispensable element of sustainable development. This concept means that the company incorporates both internally and in relation to stakeholders concerns on social issues and environmental protection into its business (Kundid, 2012, p. 497). World Business Council for Sustainable Development (2000) defines corporate social responsibility as "the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as the local community and society at large" (p. 8).

While some authors view sustainable development at the macro level, emphasizing that socially responsible business that includes five essential dimensions (stakeholders, social environment, economic reality, environmental protection and the aspect of voluntariness) represents the micro aspect of sustainable development, others believe that sustainable development is the basis of socially responsible business.

Due to the nature of their activities, banks are not considered as a direct polluter of the environment. Although, they still indirectly bear part of the responsibility for pollution in the situation when they borrow the money to those clients whose activities contribute to the pollution of the environment. There are also cases where banks are directly responsible for the adverse environmental impact caused by their client's business activities. In that view, they can play a key role in promoting the sustainable development by diverting attention from the traditional approach to business, which is based on profit maximization, towards a modern approach where the strategic decisions are made while respecting people, the planet and profit.

The role of banks and financial institutions in preserving the environment is twofold. First, banks are obliged to act ethically and socially responsibly towards clients, as well as towards employees and other stakeholders. Second, no less important role of banks is to ensure that companies, as their clients, adapt their practices to the preservation of the environment through their operations, performing the function of service providers. In that way, they are encouraged to offer funds under more favourable conditions, and for the adoption of green technologies, the implementation of projects that will have a long-term beneficial impact on the environment and social welfare, as well as to adopt green practice by innovating products, and using sophisticated green technological solutions (D'Monte, 2010).

Sustainable, green finance and green banking

Generally speaking, there is no unique definition of green finance in theory. The growing importance of the concept of green finance in the contemporary conditions confirms also a multitude of terms used to denote the same phenomenon. In this regard, the term green finance with sustainable development can be explained by the concepts of sustainable finance, environmental financing, greenhouse gas emission reduction financing and climate change.

The trend of "greening" finances for the last decades is the topic in the world, created from the need for profit to maximize, but to make it difficult and maintain environmentally and socially responsible business in parallel. In this regard, the policy of green finances involves reorienting from profits as primary, if not the undertaking activities, to goals that incorporate sustainable development, socially responsible business with the inevitable realization of profits (Rakić, Mitić & Raspovović, 2012, 173).

Respecting the deductive approach, socially responsible banking, or green, ethical banking, environmentally friendly banking can be seen as a segment of socially responsible, sustainable finance. It can be said that it represents the decision of banks to provide products and services only to clients who take into account the consequences of their actions, both from the social aspect and from the aspect of an environmental impact (Bouma, Jeucken & Klinkers, 2001). Similarly, "sustainable banking can be interpreted to mean the process whereby banks consider the impacts oftheir operations, products and services on the ability of current or future generations to meet their needs" (UNEP FI, 2007, p. 41). The trend of banking through green financial architecture is actually nothing more than a starting point for positioning modern banking in an area characterized as a triad of economic prosperity, environment and orthodox financial sector, which can be seen in Table 1.

Table 1: Conceptual framework of green finance and banking

GREEN FINANCE AND BANKING	FINANCIAL SECTOR
✓ Financing green companies and technologies ✓ Development of green products ✓ Considering environmental risks for credit assessment ✓ Efficient emission of green securities	✓ Development of new financial products and technologies ✓ Improvement of the risk management system ✓ Lending to multiple sectors and technologies ✓ Efficient issue and trade of securities
ENVIRONMENTAL PROTECTION	**ECONOMIC GROWTH AND DEVELOPMENT**
✓ Green industry and technology ✓ Legislation for a better environment ✓ Active trade in the "carbon" market	✓ Development of new technologies ✓ Designing efficient market trading patterns ✓ Development of eco-friendly industry

Source: Authors' review based on Noh, H. J., 2018

Sustainable-green finance can be broadly defined as the totality of financial resources and assets in banks, investment funds and insurance companies, as well as their flows, which are aimed at achieving environmental, social and economic goals, i.e. Sustainable Development Goals (SDGs) defined by the United Nations Development Program (Staub-Bisang, 2012).

The factors that influenced the "greening" of finances are numerous. They result from the use of increasingly modern and sophisticated information and communication technologies that significantly increase people's opportunities, enable them to be informed about the latest events at the moment when they happen, making clients more picky, capricious and emancipated. Modern technologies provide additional opportunities in terms of mastering multifunctional knowledge, skills and expertise, a faster information flow, increasingly innovative eco campaigns supported by leading media, developing environmental awareness of the population against current issues of environmental destruction, but also the adoption of regulations by governments and their implementation through programs of environmental protection (UNEP FI, 2007).

Some authors (Jeucken & Bouma, 1999) identify as many as four successively related phases that banks need to go through in order to adopt the sustainability postulate and operationalize it by establishing a social and environmental management system within their business model. These are (Jeucken & Bouma, 1999) :

1. Defensive banking – banks are currently resisting environmental rules because they are incompatible with their profit-driven operations;
2. Preventive banking – banks include environmental issues and risk management efforts into their regular business activities due to many driving forces.;
3. Offensive banking – banks take into account the consequences of both their internal and external activities, develop and market environmentally friendly projects, focus on financing renewable energy projects, invest in environmental projects and disclose various reports based on environmental performance; and
4. Sustainable banking – all bank activities are now sustainable; despite large profits, they do not invest in environmentally harmfull business; the goal is no longer to attain the highest financial rate of return, but to achieve the highest sustainable rate of return.

In line with the previous points, banking that supports economic growth while reducing the pressure on the environment, taking into account social issues, management aspects, reducing risks related to the financial system, can be considered the next stage in the development of banking activities (Rakić et al., 2012, p. 184).

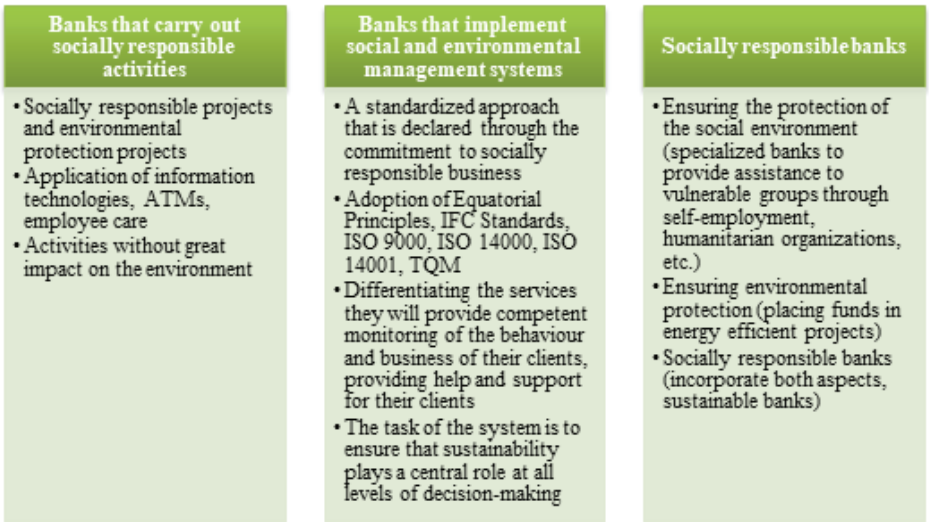
Green banks and green banking products

In order for a bank to qualify as "green", it is necessary for it to include the environmental aspect in its business, to employ the staff who are qualified to perform green investment activities, to encourage the preservation and protection of the environment, to comply with legal regulations in the field environmental protection of the jurisdiction in which it operates as well as to raise the environmental awareness of the community in which it operates through its activities.

Different banking entities are at different levels of operationalization of a socially responsible green banking, according to which they become skilled to the smaller or greater extent of ethical elements, and some aspects of their business remain deprived of "green" regulation, controls and reporting. In this sense, they cannot be characterized by green (alternative, specific) banks, but they are certainly not even traditional (exclusively profit oriented) banks. Using the three-phase model of green banking development, it is possible to distinguish the following types of "green" banks (Figure 1):

1. Banks that carry out socially responsible activities;
2. Banks that implement the social and environmental management systems; and
3. Socially responsible banks, as well as appropriate subtypes, the characteristics of which are clearly given below (Jeucken & Bouma, 1999, p. 30).

Figure 1: Types of socially responsible, green banks



Source: Authors' review based on Jeucken & Bouma, 1999, p. 30

Green banking is actually a classic banking business which, due to the growing needs of the modern economy and sustainable development, conditioned by the improvement of banking techniques, has undergone certain improvements and modifications. They are becoming numerous and diverse, enabling banks to increase their market share, increase profits, improve employee satisfaction, gain customer loyalty, improve business reputation through positive media coverage, strengthen relationships and partnerships with environmentally minded stakeholders. The classification of the most important environmental banking products and services, as well as their grouping into certain units, places them in four groups: business with the economy and investment banking, retail banking, asset management, and insurance (Petrović – Ranđelović, Radojčić & Manasijević, 2018, p. 147).

A green stock differs from an ordinary bond in that it indicates the obligation of the bond issuer to finance exclusively green projects, assets or business activities with the funds collected from the issue of these bonds. According to the World Bank criteria, renewable energy sources, energy efficiency, sustainable waste management, sustainable land use, biodiversity conservation, clean transportation, and climate change adaptation are all examples of green projects (The World Bank, 2015).

Green loans, unlike green bonds, should support small-scale projects for companies, small and medium-sized enterprises and households. The granting of green loans by commercial banks requires constant assessment of the company's operations, creditworthiness, categorization, disclosure of the progress of activities and control, which requires additional organizational and operational costs (Staub-Bisang, 2012).

Examples of the best socially responsible practices of the banks in the Republic of Serbia

In 1987, the World Environment Commission published a report entitled "Our Common Future" and laid the foundations for the development and implementation of sustainable development policy. This report was the basis for creating a sustainable development strategy in many countries (Sovilj, 2020).

In the Republic of Serbia, the National Strategy for Sustainable Development was adopted in 2008 and defines sustainable development "as a goal-oriented, long-term, continuous, comprehensive and synergetic process that affects all aspects of life (economic, social, environmental and institutional) at all levels" (Vlada Republike Srbije, 2008, p. 2). Accordingly, it can be said that the concept of sustainable development "implies simultaneous achieving of economic growth (raising economic efficiency and productivity, modernization of technology), social progress (socially responsible business while reducing poverty, improving health care) and the environment (reducing pollution and heat, biodiversity conservation, etc.), i.e. in the synergy of these areas" (Stanojević, Mitić & Rakić, 2013, p. 438).

Comparing the banking sector in the Republic of Serbia to other sectors of economy, a slow implementation of the basic principles of sustainable development can be seen. This can be justified to some extent by the fact that banks are not direct polluters of the environment, but that through activities and business with clients, they indirectly contribute to environmental damage. The National Strategy for Sustainable Development of the Republic of Serbia does not recognize banks and the banking sector as an important component of sustainable development, except for the recommendation related to encouraging the development of electronic banking (Vlada Republike Srbije, 2008, p. 39). It can be said that the action plan for the implementation of the National Strategy for the period from 2009 to 2017, also did not adequately consider the position and possibilities of the banking sector in the context of sustainable development. According to the Action Plan, banks can finance certain projects in terms of sustainable development, such as activities related to protection against degradation and land use change, and only in the activities of building a market for long-term loans for the purchase of state and other land. It can be seen from the Action Plan that banks are enabled to implement indirect activities that will contribute to achieving the goals of sustainable development.

There are banks that operate in the Republic of Serbia, which through credit lines, finance renewable energy sources and energy efficiency. These banks include Banca Intesa, Erste Bank, ProCredit Bank, UniCredit Bank and Credit Agricole Bank, etc. In terms of the use of renewable energy sources in the Republic of Serbia, it is important to emphasize that significant efforts are being invested in implementing certain renewable energy sources. Financial support is mainly coming from foreign and European funds. In Table 2 a review of the most important activities of banks in the Republic of Serbia, which are aimed at achieving sustainable development goals, is given.

Table 2: An overview of green products and services of each individual bank in Serbia

Banks operating in the Republic of Serbia	The level of implementation of the concept of green finance and banking in practice
ADDIKO BANK AD	Donations to the RS Paralympic Committee; supports humanitarian projects, talent development, education, sports, culture; sponsorships (Atelje 212, Exit, Mussicology sessions); Addiko EBank, Addiko Mobile, Addiko Chat Banking on Viber, Addiko mKredit, Addiko Business EBank Corporate, WEB SME E-banking Micro; Credit for farmers.
AIK BANK AD	The overall benefit of the company is a benchmark when choosing the activities of the bank; E and M banking.
BANCA INTESA AD	Implementation of the Ten Principles of the UN Global Compact, Code of Ethics, Human Rights Principles, Non-Financing of Arms Policy, Environmental Protection and Energy Efficiency Policy, Policy with Political Parties, Guidelines for the Prevention of Money Laundering and Terrorist Financing and Relations with Sanctioned Countries, Good Practice Sustainability of the parent group Intesa Sanpaolo; Awards - Special VIRTUS Award for Volunteering awarded by Trag Foundation, Award for Contribution to the Local Community awarded by the association Moja Srbija, Award of the Forum for Responsible Business and Smart Collective for the best corporate volunteering program in Serbia in 2015 for "Intesa od srca"; Employee care, e-banking.
CREDIT AGRICOLE BANK AD	Asseco E-bank and Halcom Hal e-bank; Signatory of the UN Global Compact as a framework under which companies commit themselves to harmonizing their activities with the ten universal principles in the field of human rights, labour, environmental protection and anti-corruption, ISO 9001 quality system-Certificate, CSR activities-Villa Dobrila team for children from socially vulnerable groups, the Magic Breakfast project to collect food for children with disabilities).
ERSTE BANK AD	Net and mBanking applications, mToken, Sale of apartments under construction-Green project financing, Youth current account, Cash loan for retirees; Program Step by step-development of social banking, Erste Energy Efficiency Loan from the EBRD line.
EUROBANK AD	e-B @ nking; Medifree programs - allows users and members of their families to perform free check-ups with specialist doctors; Cash loans for retirees with life insurance included; Project financing - Merin Hill and Exing Home 65; Small business support programa.
HALKBANK AD	"People first and foremost", "So many things unite us", E and M banking, Loans for energy savings, Loans for the purchase of new eco-vehicles, Subsidized loans in cooperation with the Ministry of Agriculture, Revolving Loans Fund from the EU line to subsidize entrepreneurship.
KOMERCIJALNA BANKA AD	E banking, KOM4PAY, Hal e Bank, Office iBank, KOmBANKBiz, mBank KOmBANKBiz; Loans for students, Loans for retirees; Loans from the COSME program for entrepreneurs and micro, small and medium enterprises in accordance with the Europe 2020 Strategy - Smart, Sustainable and inclusive growth; Loans from WB EDIF program-whose purpose is to provide support to micro clients, small and medium enterprises in the Western Balkans in order to develop and innovate; Investment loans in physical assets of agricultural holdings - IPARD incentives.

MTS BANK AD	Full application of digital banking, clients are in the centre of attention, strives for continuous offer of top quality, builds mutual trust and strong connection with users of their products and services, leading them through the world of modern banking; Corporate Governance Code-Employees, Transparency in Reporting, Suppression and Prevention of Corruption and Bribery.
NLB BANK AD	NLB loans for the purchase of new tractors; Mobile banking. Application of 4 pillars-Business responsibility (development of products that comply with social responsibility standards and transparent personalized communication with customers), Responsibility to employees (work in an inspiring environment with the possibility of continuous improvement), Responsibility towards the local community (School of Life, School of Business Skills, Awakening of Spring), Environmental Responsibility (NLB Organic Competition).
VOJVOĐANSKA BANKA AD and OTP BANKA SRBIJA AD	Membership in numerous associations and non-governmental organizations, the purpose of which is to harmonize and improve business as well as promote sustainable development, Sustainable Development Reporting, UNICEF Friends Club, Cultural Heritage, Art Gallery, Corporate Volunteering, Sign Language), Diplomacy Commerce Special Award 2019, Corporate Volunteering Award 2017, VIRTUS Acknowledgment 2016, The Most Humane Environment 2015, Products for Registered Farms, Electronic Banking.
PROCREDIT BANK AD	ISO 14001: 2015. Implementation of 3 pillars-Internal environmental management system (raising awareness among employees, cooperation with "green" suppliers, investing in better insulation, improving waste management, establishing the Energy Efficiency Service), Environmental and social risk management in lending (rejection of requests for credit of companies involved in environmentally risky activities); Green financing includes: Credit for energy efficiency, renewable energy sources and other environmental protection measures for companies, households).
RAIFFEISEN BANK AD	iCash credit - digital revolution in lending and opening accounts with video identification
UNICREDIT BANK SRBIJA AD	Support for non-profit organizations, cultural creativity, sports activities, socially vulnerable groups; Consumer loans for energy efficiency. Application of Environmental Principles.
OPPORTUNITY BANK AD	Sponsor of the Reforestation Action "Wherever you find a convenient place to plant a tree"; Social performance management; SMART certificate 2018; Dedicated current account for farmers; Development loans for investment funds; My own loan.
BANKA POŠTANSKA ŠTEDIONICA AD	Home b@nking and E-bank; Sponsorship of Ilustrofest.

Source: Authors' review based on the data from the official websites of the observed banks, 2021

It can be concluded that the "green" bank practice in the Republic of Serbia is at the very beginning of development. Most banks are familiar with this concept, understand its importance and show the desire to implement it. Their motives are not the product of the sincere desire to be responsible for social and living environment, nor part of their business philosophy. They approach it because it is what is expected of them, which will improve their image and reputation among customers in the market. In addition, clients themselves in the Republic of Serbia are not environmentally sufficiently aware, so when choosing a bank they prefer economic to environmental criteria. Regulations in the field of green finances in the Republic of Serbia are not at an enviable level. In some segments the Republic of Serbia lags

behind EU solutions on which it should rely and with which it should achieve harmonization. Most regulations are not binding in their nature but that is a matter of free choice of the bank's management body, which is in the domain of internal regulations. All this has led to the fact that banks implement only the basic level of "green" practices, with the exemption of individual banks.

Conclusion

The importance of a strategic approach to corporate social responsibility and active investment in improving the social environment by banks is undeniably great. In this way, banks make their contribution to the development of the social community, environmental protection while meeting the needs of customers, but also encourage employee satisfaction and motivation, create a recognizable image and ensure the trust of stakeholders.

In the Republic of Serbia, the operations of banks and other economic entities are exposed to a large number of challenges and risks, so there is a need and necessity to implement socially responsible operations. To solve numerous problems, not only is the role of the state enough, but also the engagement of various economic subjects. One of them is the adoption of green banking practices, which can be characterized as a logical development trend within conservative banking, whose benefits for the environment and society in general are multiple and indisputable. By promoting green banking, banks gain a public favour, build a strong corporate image, save non-renewable resources, achieve lower emissions, develop environmental awareness among customers, achieve better market access, and improve overall customer service, while engaging in socially responsible and environmental friendly projects.

The idea of green banking refers to the commitment of banks and other financial institutions, so that all loans and other financial services and products must be in accordance with the "green" philosophy. It is concluded that it is not enough for a bank just to save on paper, treat its employees well or introduce E-banking in order to declare itself as a bank that operates in an environmentally and socially sustainable manner. Much more needs to be done, and this is precisely the reason why a small percentage of banks are in a global context said to be truly "green". The application of the concept of green banking in the Republic of Serbia is still in the beginning. In order for it to come to life, not only goal-oriented activity of banks is needed, but also great support from the state for the purpose of its efficient implementation.

References

Addiko Bank (2021). Retrieved Jun. 20, 2021, from https://www.addiko.rs/o-nama/drustvena-odgovornost/

AIK Banka (2021). Retrieved Jun. 20, 2021, from https://www.aikbanka.rs/fizicka-lica/24-7/

Banca Intesa (2021). Retrieved Jun. 20, 2021, from https://www.bancaintesa.rs/stanovnistvo/odrzivost.html

Banka Poštanska Štedionica (2021). Retrieved Jun. 20, 2021, from http://www.posted.co.rs/donacije.html

Bouma, J., Jeucken, M. & Klinkers, L. (2001). Sustainable Banking: The Greening of Finance. Sheffield: Greenleaf Publishing in association with Deloitte & Touche.

Credit Agricole (2021). Retrieved Jun 20, 2021, from https://www.creditagricole.rs/o-nama/odrzivi-razvoj/un-globalni-dogovor.318.html

D'Monte L. (2010). For Banks, Green is the New Black, Business Standard. Retrieved Jun 20, 2021, from http://www.business-standard.com/article/beyond-business/for-banks-green-is-the-new-black 110052100014_1.html

Erste Bank (2021). Retrieved Jun. 20, 2021, from https://www.erstebank.rs/sr/o-nama/drustveno-odgovorno-poslovanje

Euro Bank (2021). Retrieved Jun. 20, 2021, from https://www.eurobank.rs/about-us/doprinos-zajednici.87.html

Giddings, B., Hopwood, B. & O'Brien, G. (2002) Environment, economy and society: fitting them together into sustainable development. Sustainable Development, 10(4): 187-96.

Halk Bank (2021). Retrieved Jun. 20, 2021, from http://www.halkbank.rs/pretraga.nspx?q=dru%C5%A1tveno%20odgovorno%20poslovanje

Jeucken, M. (2001). Sustainable Finance and Banking. London: Earthscan Publication Ltd.

Jeucken, M. H. A. & Bouma, J. J. (1999). The Changing Environment of Banks. Retrieved Jun. 20, 2021, from https://pravicnabankaenglish.files.wordpress.com/2014/03/jeucken-the-changing-environment-of-banks.pdf

Komercijalna Banka (2021). Retrieved Jun. 20, 2021, from https://www.kombank.com/sr/o-nama/korporativna-odgovornost

Kundid, A. (2012), Društveno odgovorno poslovanje banaka u Republici Hrvatskoj. Ekonomska misao i praksa, XXI(2): 497-528. Retrieved Jun 20, 2021, from http://ec.europa.eu/growth/industry/corporate-social-responsibility_en

MTS Banka (2021). Retrieved Jun. 20, 2021, from https://mtsbanka.rs/#gsc.tab=0

NLB Bank (2021). Retrieved Jun. 20, 2021, from https://www.nlb.rs/o-nama/drustvena-odgovornost

Noh, H. J. (2018). Financial Strategy to Accelerate Green Growth. ADBI Working Paper 866. Tokyo: Asian Development Bank Institute. Retrieved Jun. 20, 2021, from https://www.adb.org/publications/financial-strategy-accelerate-green-growth

Opportunity Banka (2021). Retrieved Jun. 20, 2021, from https://www.obs.rs/

OTP Banka and Vojvođanska Banka (2021). Retrieved Jun. 20, 2021, from https://www.otpbanka.rs/odrzivo-poslovanje/

Petrović-Ranđelović, M., Radojčić, J. & Manasijević, A. (2018). Uloga i značaj bankarskog sektora u ostvarivanju ciljeva održivog razvoja. In: Conference Proceedings of the Fourth International Scientific-Business Conference Leadership & Management: Integrated Politics of Research and Innovations, LIMEN 2018 (pp. 144-150). Belgrade: Association of Economists and Managers of the Balkans.

ProCredit Bank (2021). Retrieved Jun. 20, 2021, from https://www.procreditbank.rs/o-nama/ekoloski-pristup

Raiffeisen Banka (2021). Retrieved Jun. 20, 2021, from https://www.raiffeisenbank.rs/digitalne-usluge/

Rakić, S., Mitić, P. & Raspopović, N. (2012). Primena koncepta "zelenog" u finansijama i bankarstvu. Poslovna ekonomija, XI(2): 167-182.

Sovilj, R. (2020). Koncept održivog razvoja u savremenom bankarstvu - zeleno bankarstvo. In: Izazovi održivog razvoja u Srbiji i Evropskoj Uniji (pp. 264-281). Beograd: Institut društvenih nauka. Retrieved Jun. 20, 2021, from http://iriss.idn.org.rs/488/

Stanojević, D., Mitić, P. & Rakić, S. (2013). Strategija bankarskog sektora u kontekstu održivog razvoja - perspektive Srbije. In: XVIII internacionalni naučni skup SM2013 Strategijski menadžment i sistemi podrške odlučivanju u strategijskom menadžmentu, (437 – 446). Subotica: Ekonomski fakultet.

Staub-Bisang, M. Wiley, J. & Sons, (2012). Sustainable Investing for Institutional Investors - Risks, Regulations and Strategies. Retrieved Jun. 20, 2021, from https://www.wiley.com/en-usSustainable+Investing+for+Institutional+Investors%3A+Risks%2C+Regulations+and+Strategies-p-9781118203194

The World Bank (2015). World Development Report 2015: Mind, Society, and Behavior. Retrieved Jun. 20, 2021, from https://www.worldbank.org/en/publication/wdr2015

UNEP FI (2007). Banking on Value: A New Approach to credit Risk in Africa. Retrieved Jun. 20, 2021, from http://www.unepfi.org/fileadmin/documents/banking_on_value.pdf

UNICREDIT BANKA AD (2021). Retrieved Jun. 20, 2021, from https://www.unicreditbank.rs/rs/o-nama/odrzivost/odrzivo-poslovanje.html

Vlada Republike Srbije (2008). Nacionalna strategija održivog razvoja. Retrieved Jun. 20, 2021, from http://www.zurbnis.rs/zakoni/Nacionalna%20strategija%20odrzivog%20razvoja.pdf

United Nations General Assembly (1987). Report of the World Commission on Environment and Development: Our common future. Oslo, Norway: United Nations General Assembly, Development and International Co-operation: Environment. Retrieved Jun. 20, 2021, from https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf

World Business Council for Sustainable Development (2000). Corporate Social Responsibility: Making Good Business Sense. Retrieved Jun 20, 2021, from http://www.ceads.org.ar/downloads/Making%20good%20business%20sense.pdf

ECONOMICS OF SUSTAINABLE DEVELOPMENT
Vol. 6, january-june 2022, № 1
UDK 33+502/504
ISSN 2560-421X

Bojan Krstić[1]
Faculty of Economics, University of Niš

Milica Jovanović Vujatović[2]
Innovation Center, University of Niš

P. 25-34
SCIENTIFIC REVIEW PAPER
DOI: 10.5937/ESD2201025K
Received: October 18, 2021
Accepted: December 2, 2021

OPEN INNOVATION STRATEGY AS A DETERMINANT OF SUSTAINABLE ENTERPRISE COMPETITIVENESS

Abstract

In order for enterprises to be successful in their field, they must have an adequately defined and implemented innovation strategy. In today's business practice, enterprises that do not do this, run the risk of lagging behind their competitors. It is also important to define an effective open innovation strategy that will contribute to a greater competitive advantage of the enterprise. There are no generalized strategies that enterprises can implement, but guidelines that enterprises must follow and adapt to their own characteristics, strengths and weaknesses are given. The aim of this paper is to highlight the importance of accepting the model of open innovation for modern companies in order to achieve sustainable competitiveness of an enterprise.

Keywords: *open innovation, open innovation strategy, sustainability, competitiveness*

JEL classification: ***M21, O31, O36***

СТРАТЕГИЈА ОТВОРЕНИХ ИНОВАЦИЈА КАО ДЕТЕРМИНАНТА ОДРЖИВЕ КОНКУРЕНТНОСТИ ПРЕДУЗЕЋА

Апстракт

Да би предузеће било успешно у својој грани, мора имати адекватно дефинисану и имплементирану стратегију иновација. У савременој пословној пракси, предузећа која ово не учине ризикују да буду у заостатку у односу на своје конкуренте. Такође је битно дефинисати и ефикасну стратегију отворених иновација која ће допринети већој конкурентској предности предузећа. Ипак, не постоје генерализоване стратегије које предузећа могу имплементирати, већ су дате смернице које предузећа морају пратити и прилагодити сопственим карактеристикама, снагама и слабостима. Циљ рада је да истакне важност прихватања модела отворених иновација како би модерно предузеће стекло одрживу конкурентност на тржишту.

Кључне речи**:** *отворене иновације, стратегија отворених иновација, одрживост, конкурентност*

[1] bojan.krstic@eknfak.ni.ac.rs, ORCID ID 0000-0003-4597-6819

[2] jovanovicmilicaa90@gmail.com, ORCID ID 0000-0002-6410-0938

Introduction

The open innovation model includes a strategic, managerial exchange of information with stakeholders outside the organization, with the aim of incorporating resources and knowledge into the innovation process of the organization. This model is not limited to the private sector and businesses, but can also be accepted by other entities such as universities and non-profit organizations.

The open innovation model is focused on the knowledge that an enterprise can provide from different sources, in order to encourage innovation and thus create added value for consumers. In fact, focusing on the open innovation model, the enterprise does not strive to come up with the best ideas on their own. Instead, it optimally combines ideas from the internal and external environment, to more effectively manage costs and risk and to accelerate the process of technology development. Sources of knowledge typically include suppliers, research centers, universities, customers, competitors and complementary enterprises. Moreover, through approaches such as crowdsourcing, enterprises can collaborate with a wide range of innovators wherever they are - within or outside the boundaries of the enterprise.

Enterprises that embrace this model of innovation must have a proactive approach to intellectual property management, in order to reap the benefits of their own and external knowledge and innovation in a strategic sense. In this way, they use intellectual property rights that are protected, such as in the case of patents, or unprotected, as is the case with trade secrets, to share this knowledge with external partners when collaborating. In addition, they establish knowledge management processes to ensure that sharing expertise with external participants is managed in a strategic way.

Modern enterprises can adopt open innovations for defense reasons, i.e. to manage and optimize risks connected with product development process. They more often cooperate for offensive reasons - to proactively use innovations and knowledge from the environment to improve their offer and to stay ahead of their competitors. Innovative enterprises have always integrated external knowledge into their product development. The difference between the open innovation model and the traditional - "closed" innovation approach is not as clearly underlined as it is sometimes presented. Namely, enterprises often use a hybrid approach.

The importance of the model of open innovation in modern business conditions

Although there is historical data on external innovation markets, before the rise of corporate research and development laboratories during the so-called Interbellum period, large industrial companies successfully applied the model of closed innovation during most of the twentieth century (Lamoreaux & Sokoloff, 1999). The second industrial revolution caused the intensification of capital-intensive companies that organized innovative processes and activities independently. In order to optimize their large and specialized production activities, these companies have started to invest large funds in internal research and development activities that are specific to each company. The

existence of a large technological base within large corporate laboratories for research and development is important not only for reducing production costs but also for the development of new and profitable products (Chandler, 1990). The new products, protected by intellectual property rights, created large profits, which was then used for investment in internal research and development. This cycle of closed innovations contributed to many fundamental technological discoveries during the twentieth century.

In order for enterprises to develop and successfully commercialize new products and services, they can no longer rely solely on their internal research and development (R&D) capacities, but need to find and integrate interesting external ideas into their existing knowledge base.

During the last decade of the 20th century, an increasing focus on the application of open innovation models has far-reaching implications for internal R&D departments in large enterprises. The use of external knowledge implies the development of strong absorption capacity and capabilities, but also enables enterprises to determine how they can develop the necessary technology and make progress (Cohen & Levinthal, 1990). From the 1990s onwards, the implementation of the vertical integration strategy in most large enterprises was no longer effective.

Table 1: Key principles of the models of closed and open innovation

CLOSED INNOVATION	***OPEN INNOVATION***
"Most smart people in our field already work for us."	"Not all smart people work for us, so we need to find and harness the knowledge and expertise of individuals/institutions outside of our company."
In order to profit from research and development, an enterprise must discover and develop itself.	External research and development can create significant value, while internal implementation of research and development activities is needed to verify some part of that value.
"If we make the innovation ourselves, we will be the first to place it on the market."	"We don't have to start researching first to profit from innovation."
"If we commercialize the idea first, we will win."	"It is better to build a more successful business model than to be the first to enter the market."
If the enterprise creates the the most innovative ideas in the industry, it will win.	If the enterprise makes the best use of internal and external ideas, it will win.
"We should control our intellectual property rights so that our competitors do not profit from our ideas."	"We should profit from someone else's use of our intellectual property, and we should buy someone else's whenever it enhances our business model."

Source: Wang, Vanhaverbeke & Roijakkers (2012)

Chesbrough (2003) identified a some factors that led enterprises to question the main determinants on which closed approach to innovation is based: 1) the supply of highly trained R&D workers has increased dramatically; 2) increasing the quality and availability of external experts; 3) the emergence of risk capital for financing high-tech ventures; 4) the increase of sophisticated customers and suppliers; 5) time for placement of new products and services has been significantly reduced; 6) the knowledge on which it is based new technological development has become more complex. As a consequence

of this development, many large companies have decided to move away from the internal approach to innovation and focus on the application of open innovation models (the opposing principles of closed and open innovation model are presented in Table 1).

The importance of applying the open innovation model is reflected in the following differences in relation to the closed innovation model:

1) It allows to discover internal resources for the external environment;
2) Licensing or selling products on the market;
3) Offering ideas and external knowledge;
4) Acquiring inputs for the innovation process through formal and informal relationships;
5) Gathering resources and support;
6) Achieving the legitimacy of the external environment;
7) Nurturing cumulative and incremental innovations;
8) Accessing a wide range of ideas and knowledge;
9) Discoveries of new radical problem solving;
10) Accessing partners' knowledge and resources (Jamett, Alvarado & Maturana Valderrama, 2017).

This model looks at a project/research as an open system that assumes that knowledge is transferred and that the enterprise must find an approach to combine it as a key process in the development of innovation. The basic characteristics of open innovation are reflected in the form of the enterprise's relationship with all stakeholders (including subjects from the external environment), use of external resources (ideas, people, technology, etc.) and intensive external communication (Chesbrough, 2004).

The application of the open innovation model has brought the following innovations and advantages for enterprises: 1. equal importance is given to external knowledge, compared to knowledge from inside the organization; 2. the central role of the business model is in transforming research and development into commercial value; 3. the importance of assessing R&D projects; 4. purposeful output flows of knowledge, ideas and technology; 5. an abundant fundamental body of knowledge; 6. a proactive role of intellectual property management; 7. appearance of innovation intermediaries; 8. emergence of new metrics for evaluating innovative performances (Brunswicker & Vanhaverbeke, 2015).

Key benefits of implementing an open innovation strategy - impact on sustainability and competitiveness

In the era of knowledge economy, investments in intangibles and innovations are essential for success and survival of enterprises (Jovanović, Petrović & Janjić, 2021). Innovation strategy is considered to be the key factor for a sustainable competitiveness of the enterprise, which has become the basis for competitiveness at national and global level. It is necessary for an enterprise to identify that innovation activities are necessary for survival in the dynamic business conditions and that effective and efficient innovation process can be achieved in connection with external organizations and experts (Janjić & Rađenović, 2019).

The innovation strategy defines the way in which the management intends to use the innovation capacities of the enterprise to improve performance and achieve the desired competitive position. It has two important roles. First, it defines the areas in which new products will appear, and the second role is to shape the innovation portfolio and how it will be managed (Krstić & Rađenović, 2018).

The implementation of the open innovation strategy implies the adoption of the following forms of external cooperation:

1) Purchase of intellectual property - It represents the way in which organizations can formulate new technologies to negotiate and buy them if there is a will to develop them;
2) Outsourcing - Outsourcing innovation implies that cooperation units are separated and formally linked by contract;
3) Joint ventures - It is a contractual agreement which creates a special legal entity in which the parent companies hold shares under the conditions and provisions specified in the legal document;
4) Strategic alliances - An agreement between two or more independent enterprises, by joining or sharing some of their skills or resources, determines the degree of interaction in order to increase their competitive advantage;
5) Networking - An indirect organizational form between the market and enterprises that characterizes the plurality of cooperation agreements between different groups or stakeholders (suppliers, customers, competition, the public and private institutions, etc.);
6) Involving customers - Processes, actions and interactions in which the development team cooperates with current or potential customers in the program, project or some phases of the development process, in order to find certain information as latent needs, developing customer knowledge and new solutions;
7) Sale of intellectual property - Ways in which organizations can formulate new technologies for negotiation, market sales if they are unwilling to develop them;
8) Spin-off - An agreement made with the aim of commercializing one or more research results outside the main activity of the parent company (technical and competitive) (Jamett, Alvarado & Maturana, 2017).

The main benefits of open innovation strategy imply a higher success rate in launching new products and services, improved R&D results, cost savings, and therefore, improved overall efficiency. These benefits are the result of the following: 1) Better availability of customer/market needs information - open innovation is a successful way to create user-driven innovation, by incorporation of customers in product development process; 2) Improved enterprise reputation and commitment to customers - open innovations involve the customer directly in the process of product development and joint design, while in some cases customers in turn receive fees or some product-related benefits; 3) Access to new markets - open innovation processes enable enterprises and their collaborative partners to reach new and targeted markets; 4) Open innovation strengthens research and development performance - access to new technological solutions/opportunities; 5) Open innovation encourages efficiency - reduction of costs

of innovation process and faster market placement; 6) It ensures resource sharing opportunity - based on technology platforms, enterprises with external participants can share risk and large investments in infrastructure and research equipment, as opposed to individual investments that are very expensive and risky. Besides that, sharing these technology platforms has a positive impact on building networks and partnerships (Allied Consultants Europe, 2012). All these benefits from the implementation of the innovation strategy, ultimately, lead to sustainable competitiveness of the enterprise.

Open innovation model is not only a strategy that can be applied by modern and successful companies, but is a necessary way to bring innovation to the market. Regardless of the form, the main motives for using the open innovation strategy can be grouped into five categories - the first relating to the commercialization of research and technology activities of academic community, while the other four include business alliances:

1) "Spin-off" of the research institute for the commercialization of technology - Enterprises keep close links with the academic institutions of which they are part, collaborating on research projects and engaging qualified people from academic/research sector.
2) Sharing qualified resources - The goal of open innovation strategies does not have to be just the creation of new products or services, but the exchanging of qualified resources over a long period of time.
3) Joint development of technology - This is the most typical reason for the strategy of open innovation. Enterprises with specific and synergistic technical competencies form technological partnerships not only for the long-term exchange of qualified resources, but also for the development and marketing of innovative products/services.
4) Joint development of the business model - Some enterprises join alliances in the downstream phases. Thus, these alliances only secure the customization of product/service solutions. However, they play an important role in the creation of business models that were eventually adopted in order to commercialize the developed concept. It means that, although these alliances were not particularly important for the development of a specific technology, they have a role in identifying the most relevant business application of an already developed technology.
5) Involvement of the user community - Information and telecommunication technologies often enable interaction between the manufacturer and the user community (Di Minin et al., 2016).

In order to increase the impact of open innovation strategy on the sustainable competitive advantage of enterprises, the following is required: 1) establishing activities aimed at external processes of open innovation through risky ventures, licensing of intellectual property and involvement of employees not employed in the research and development sector; 2) promoting collaborative actions with customers and external actors; 3) studies and technological analysis - technology prediction; 4) defining an exclusive fund for investment in innovations; 5) establishing a process of formal partnerships for technological development; 6) review of internal processes that allow greater fluidity of implementation of ideas, prototypes and innovation projects in a way

that is not related to the work and routine of the enterprise; 7) radical removal of the myth from the organizational culture that no one can make mistakes (mistakes are allowed if they happen and are quickly revised); 8) ensure that neither top management nor short-term goals interfere with current and future innovation initiatives; 9) seek initiatives through partnerships, spin-off companies, risky ventures and effectively introduce radical innovations in the organization (Paulo, Oliveira & Porto, 2017).

Challenges in application of open innovation model - the aspect of sustainable competitiveness

In modern conditions, enterprises enter into various forms of cooperation in order to gain competitive advantage and growth. Different forms of cooperation in R&D activities enable enterprises to have a better competitive position in a rapidly changing global market. The enterprise's motives for joining the alliance are related to the exchange of knowledge, skills and technology, which ultimately leads to creating greater value for partners, achieving synergies and sustainable competitiveness (Jovanović, 2016).

However, the collaboration forces companies to explore areas they have never explored before and problems they have never faced before. Professional relationship management is the beginning of a cooperation that can begin by hiring a new partner and creating a relationship with the partner's management. This has become a kind of challenge as enterprises have different organizational and cultural elements and characteristics, especially when enterprises start collaborating with subjects from external environment. Therefore, management must constantly motivate people to be creative despite the new circumstances. It requires effective communication about a number of organizations and cultures is necessary, especially in creating solutions to solve inter-organizational problems (Boudreau, 1998).

Previously presented forms of external cooperation (strategic alliances, joint ventures, networking, outsourcing, purchase/sale intellectual property, involving customers, spin-off) of the enterprise indicate certain effects from the aspect of the enterprise competitiveness. Thus, by purchasing intellectual property, a company can, without investing in its own research and development activities, acquire certain technology that can be further improved and reach an innovated product in order to gain a competitive advantage. On the other hand, when it comes to outsourcing, it can lead to a loss of research and long-term development because it is often used as a substitute for innovation. In this way, long-term sustainability of the enterprise is called into question.

When it comes to strategic alliances, it is crucial to choose an adequate innovation strategy (open innovation strategy) in order for the company to gain sustainable competitiveness based on joining strategic alliances. The importance of the innovation strategy for the success of the alliance is reflected in the following: 1) the innovation strategy enables the realization of the strategic goals of the alliance, the creation and delivery of value and the creation of a sustainable competitive advantage; 2) it helps in more precise tracking and understanding market and technological trends and their impact on the position of a strategic alliance; 3) innovation strategy imposes the creation of plans for the development of innovation opportunities and mobilization resources; 4)

innovation processes are developed for the needs of long-term goals; 5) the development of an innovation strategy contributes to strengthening the knowledge of the market and consumers, technology, competition, suppliers, as well as the knowledge of available financial resources (Dodgson, Gann & Salter, 2008).

The challenges that enterprises face in implementing an open innovation strategy can be observed through certain dimensions:

1) Networks - An effective open innovation strategy is not only the result of good knowledge among participants, but more importantly, it occurs as a result of mutual trust. In order to strengthen the cluster and eliminate the gap that affects the mutual trust of the participants, it is necessary to hold regular meetings and create opportunities for dialogue.
2) Technology - This dimension is related to research and technological development practices, such as technological intelligence and technology resources, common infrastructure and supporting resources for R&D.
3) Human capital - Human capital is an extremely important factor for the implementation of an effective open innovation strategy. Many R&D projects record extremely high failure rates because they do not have adequate human resources with the necessary competencies, skills and knowledge.
4) Business model - Open business model suggests new challenges and problems for intellectual property management. Enterprises must bypass defensive reactions to begin to view intellectual property as a strategic asset, intensifying interaction with their environment. This dimension highlights issues of intellectual property management, along with risky financing and open business models (Allied Consultants Europe, 2012).

Conclusion

Over the past decade, the open innovation model approach has continued its successful entry not only into large innovative companies, but also into small and medium-sized enterprises and public organizations. The concept behind this logic is as follows - organizations should reap more benefits from the use of external ideas and technology, while selling or licensing their own ideas/technologies for research and development outside of their regular business.

It is considered that organizations will continue to implement the open innovation strategy, because it is necessary in order to gain and maintain a competitive advantage. Being in touch with business environment and external stakeholders is critical to understanding the desires, needs and disadvantages of partners, clients, suppliers and distribution channels.

Most organizations that implement an open innovation strategy today seem to rely more on an internal approach. This may be the case because it is easier to use the purchased one than to place your own expertise. However, this has to be different because of the advantages of commercializing unused ideas, making a benefit above the profits of the organization's traditional operations. The open innovation model has great prospects, as it provides new opportunities to offer clients more innovative and sophisticated products/services. Innovative and flexible culture, open testing,

business models on open basis have no limits as long as they are guided by market needs.

In order to benefit from the open innovation model, it must create added value for customers, but companies must also be able to absorb most of that value. This is a direct result of the important link between enterprises efforts to implement open innovation models and their strategies through the concept of a business model. Considering this, it can be argued that open innovation strategies are helpful and relevant in certain circumstances. In particular, enterprises must apply open innovation models, closed innovation approach, or combined innovation models depending on business conditions in order to achieve different innovation goals and superior performance.

References

Allied Consultants Europe (2012). *Efficient open innovation.* https://www.spaceconsulting.eu/media/publications/efficient-open-innovation.pdf (Accessed 10/09/2021)

Boudreau, J.W. (1998). Strategic human resource management measures: Key linkages and the PeopleVANTAGE model. *Journal of Human Resource Costing & Accounting*, 3(2), 21-40.

Brunswicker, S., Vanhaverbeke, W. (2015). Open innovation in small and medium-sized enterprises (SMEs): External knowledge sourcing strategies and internal organizational facilitators. *Journal of Small Business Management*, 53(4), 1241-1263.

Chandler, A.D. (1990). *Scale and Scope: The Dynamics of Industrial Capitalism*. Cambridge: Belknap Press.

Chesbrough, H. (2004). Managing open innovation. *Research-Technology Management*, 47(1), 23-26.

Chesbrough, H.W. (2003). *Open Innovation: The New Imperative for Creating and Profiting from Technology*. Boston: Harvard Business School Press.

Cohen, W.M., Levinthal, D.A. (1990). Absorptive capacity: a new perspective of learning and innovation. *Administrative Science Quarterly*, 35(1), 128–152.

Di Minin, A., De Marco, C.E., Marullo, C., Piccaluga, A., Casprini, E., Mahdad, M., Paraboschi, A. (2016). *Case Studies on Open Innovation in ICT.* Institute for Prospective Technological Studies (IPTS JRC) Science for Policy Report EUR 27911 EN.

Dodgson, M., Gann, D., Salter, A. (2008). *The Management of Technological Innovation: Strategy and Practice.* New York: Oxford University Press.

Jamett, I., Alvarado, L., Maturana, S. (2017). Analysis of the state of the art of open innovation: *Practical implications in engineering*, 32(2), 73-84.

Janjić, I., Rađenović, T. (2019). The importance of managing innovation in modern enterprises. *Ekonomika*, 65(3), 45-54.

Jovanović, M. (2016). Creating Value in Strategic Alliances as a Source of Competitive

Advantage. *Marketing*, 47(2), 148-160.

Jovanović, M., Petrović, B., Janjić, I. (2021). Key determinants of sustainable intellectual capital of enterprises. *Economics of sustainable development*, 5(1), 1-10.

Krstić, B., Rađenović, T. (2018). *Strategijsko i operativno upravljanje intelektualnim kapitalom preduzeća.* Niš: Ekonomski fakultet Niš.

Lamoreaux, N., Sokoloff, K. (1999). *Inventive activity and the market for technology in the United States*, 1840–1920. Working Paper No.7107, National Bureau of Economic Research, Cambridge: MA.

Paulo, A.F., Oliveira, S.V., Porto, G.S. (2017). Mapping impacts of open innovation practices in a firm competitiveness. *Journal of technology management & innovation*, 12(3), 108-117.

Wang, Y., Vanhaverbeke, W., Roijakkers, N. (2012). Exploring the impact of open innovation on national systems of innovation—A theoretical analysis. *Technological Forecasting and Social Change*, 79(3), 419-428.

ECONOMICS OF SUSTAINABLE DEVELOPMENT
Vol. 6, january-june 2022, № 1
UDK 33+502/504
ISSN 2560-421X

Tamara Stanković[1]
Goran Milovanović[2]
Aleksandra Anđelković[3]
University of Niš, Faculty of Economics

P. 35-43
SCIENTIFIC REVIEW PAPER
DOI: 10.5937/ESD2201035S
Received: October 10, 2021
Accepted: December 2, 2021

PERFORMANCES OF KEY PROCESSES IN GREEN SUPPLY CHAINS

Abstract

There is an obvious negative influence of business activities of supply chains on the environment, which represents one of the most significant problems at the global level. Due to their activities, industries have disrupted the environmental balance greatly. The concept of green supply chain arose from the successful execution of production activities while taking care of the environment. The subject of this paper refers to describing activities within chains in specific segments in order to examine the ways in which satisfactory financial performances can still be achieved in combination with environmental (green) performances. The goal of this article is to identify supply chain components that can adopt environmental activities, demonstrate environmental responsibility and improve green performance. The focus is mostly on identifying measures inside core processes, such as defining environmental activities and restructuring supply chains, in order to meet the expectations of environmental preservation and environmentally conscious consumers (buyers) as green supply chain members.

Key words: *green supply chains, ecology, sustainable development, green performances*

JEL classification: ***Q5***

ПЕРФОРМАНСЕ КЉУЧНИХ ПРОЦЕСА У ЗЕЛЕНИМ ЛАНЦИМА СНАБДЕВАЊА

Апстракт

Евидентан негативан утицај пословних активности ланаца снабдевања на животну средину, један је од најизраженијих глобалних проблема. Индустрије су својим активностима у великој мери нарушиле природну равнотежу. Успешно извршење производних активности уз бригу о природи, допринело је настанку концепта зеленог ланца снабдевања. Предмет овог рада односи се на описивање активности ланаца у одређеним сегметнима, како би се испитали начини помоћу којих се могу постићи задовољавајући

[1] tamara.stankovic.995@gmail.com, ORCID ID 0000-0003-2719-3765

[2] goran.milovanovic@eknfak.ni.ac.rs, ORCID ID 0000-0002-9758-3606

[3] aleksandra.andjelkovic@eknfak.ni.ac.rs, ORCID ID 0000-0002-7053-1830

финансијски резултати у комбинацији са еколошким перформансама. Циљ рада је указати на сегменте ланаца снабдевања у којима је могуће имплементирати еколошке активности, еколошку одговорност и унапредити еколошке перформансе. Акценат је, пре свега, на идентификовању мера унутар главних процеса, односно дефинисању еколошких активности и редизајнирању ланаца снабдевања како би се одговорило на захтеве очувања животне средине и еколошки свесних потрошача (купаца) као чланова зелених ланаца снабдевања.

Кључне речи: *зелени ланци снабдевања, екологија, одрживи развој, зелене перформансе*

Introduction

Business activities in supply chains are focused towards satisfying the aims of different stakeholders. In order to accomplish superior business performances, it is necessary to implement different concepts, which, from a holistic perspective, create new roles for the members of supply chains. In order to achieve competitiveness, it is important to fulfil more and more sophisticated demands of consumers. Due to this fact, there is a separate segment of activities which represent the efforts of companies focused on sustainability or sustainable development. Green innovations represent one of the demands of consumers, especially of those who are environmentally oriented. On the one hand, there is a large positive association between green innovation and environmental performance, and on the other hand, there is a significant positive relationship between environmental performance and competitive advantage (Khaksar et al., 2016). Sustainable development is currently a source of distinction and of a competitive advantage (Zimon et al., 2019). A very significant segment of this concept refers to the environmental aspect of business activities.

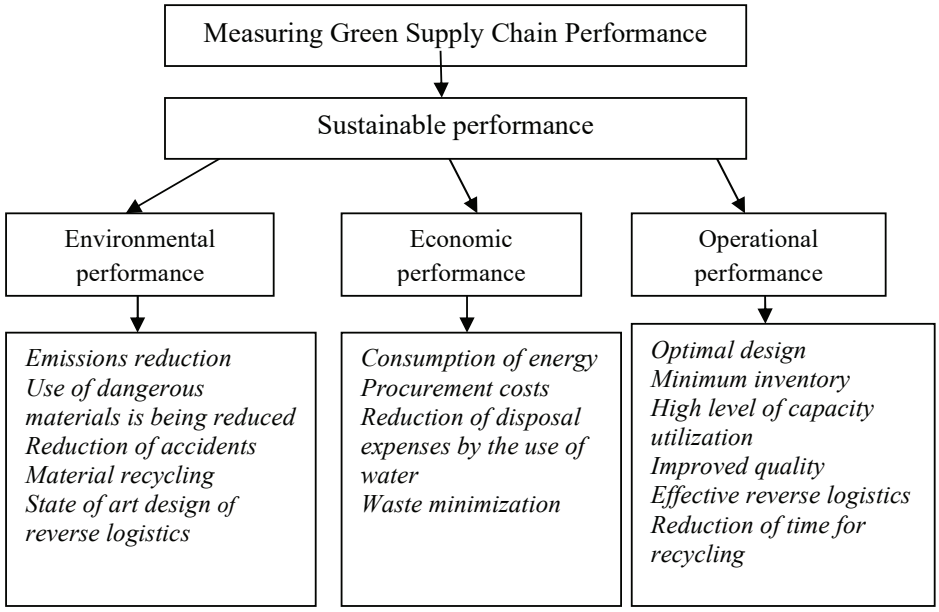
Green supply chains are becoming increasingly important as the environment continues to deteriorate, as evidenced by limited raw material resources, overflowing waste sites and rising pollution levels (Srivastava, 2007). All of the above-mentioned represent problems that managers encounter during the realisation of business activities; therefore, it is necessary to proactively consider the alternatives which will be appropriately implemented within the strategy of the supply chain. This field of research is very appealing because the environmental question is crucial for improving the quality of life. The environmental issues emphasize the importance of incorporating environmental considerations into supply chain design. On the one hand, this is a realistic need for preserving the environment, while on the other, it is a potential opportunity for numerous savings and creating partner relationships with consumers, but also with other members of the supply chains.

Measuring green supply chain performance

In the late 1990s, academic interest in sustainability began to grow significantly. This increased interest inspired a slew of new research projects focusing on various supply chain activities with significant environmental consequences (Min & Kim, 2012). There

is no universally accepted concept of green and sustainable supply chains (Fahimnia et al., 2015). By using a life cycle approach to product design, material selection, production, sales and recovery, GSCM attempts to maximize overall environmental profit, assisting the firm in realizing its long-term development and improvement goals (Shi Guang et al., 2012). Green chains are characterised by the fact that they implement within them the activities of reverse logistics, which make consumers active participants. Different frameworks for assessing performance have been established, with the goal of first identifying the segments of chains where environmental principles are used, and then, defining quantitative and qualitative indicators to describe these effects. Figure 1 depicts Dey and Cheffi's proposed framework for measuring environmental performance, which is based on the AHP technique.

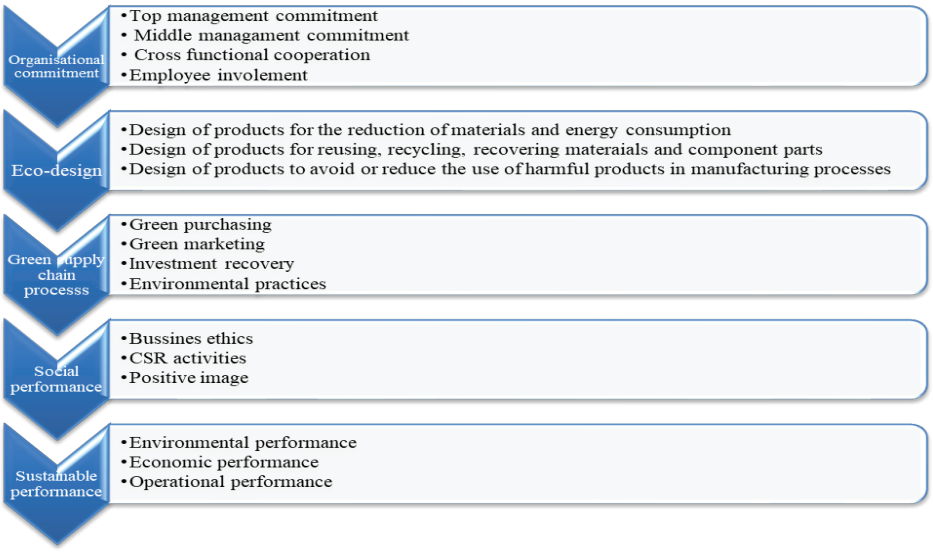
Figure 1: AHP method-based framework for monitoring environmental performance



Source: Adapted according to Dey & Cheffi (2012)

In their paper, the authors Dey and Cheffi segmented the performances of green chains by observing them through the perspectives of consumers, the focus company and suppliers. This model provides a wider image of not only environmental performances, but also the application of the sustainability system. With the aim of comparing, the model, proposed by Bhattacharya and his associates and based on the Balanced Scorecard scheme, is shown below.

Figure 2: Measuring green supply chain performances



Source: Adapted according to Bhattacharya et al. (2014)

The second model, as well, overviews from a wider perspective the significance of environmental principles within the context of sustainable development. The focus of the following section will be directed towards the segments which accomplish environmental business effects. By comparing the aforementioned models, the authors point to the chain segments which contain environmental effects that will be described further in a more detailed analysis.

Green procurement

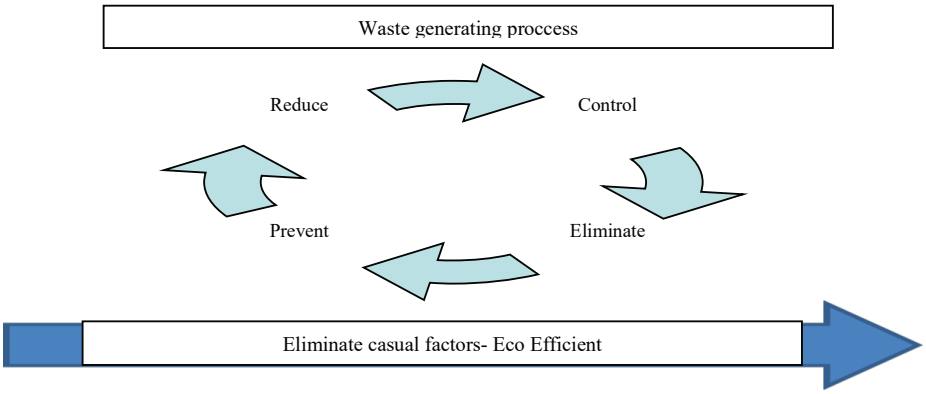
Cost, quality and delivery are the three main considerations in traditional purchasing (Ghosh, 2019). Along with traditional purchasing elements, like product pricing and supplier location, green purchasing methods cover all environmental issues in supply management decisions (Yook et al., 2018). By using these activities, companies tend to apply in the beginning green standards in the *upstream* segment of the chains, while these standards will be used in other segments of the business for the formation of superior performances. Environmental considerations are integrated into purchasing policies, programs and actions (Fang et al., 2020). The activities which the company most often performs in order to make this segment green are related to the use of environmental materials, primarily those whose implementation in the production process creates a smaller amount of waste. The company needs to pay special attention to toxic gases and hazardous materials which come as a consequence of the procurement process. Green purchasing strategies limit waste generation and stimulate recycling and reuse activities while having no negative impact on the company's performance (Khan

et al., 2017). The model of used transportation should be taken into account, as well as other segments which will be further analysed in detail.

Green production and eco-packaging

Production and its activities play an important part in designing green supply chains. Paul, Bhole and Chaudhari believe that the term *green* is used too often today, thus its role has lost its meaning. What environmental production is or is not should be carefully analysed, as well as the way in which these activities are performed. While e-waste is the most pressing issue in today's world, green technology is the use of one or more environmental sciences, green chemistry, environmental monitoring, and electronic devices to monitor, model, and conserve the natural environment and resources, as well as to mitigate the negative effects of human activity (Paul, Bhole, & Chaudhari, 2014). Environmental activities of supply chains are reflected in such production processes which lead to the least possible amount of different types of waste, which refers to the *outbound* systems of logistics in chains. Figure 3 shows which activities are involved in achieving environmental effects in production.

Figure 3: Green production and waste



Source: Adapted according to Deif (2011)

Green production should be observed as an opportunity to achieve a bigger competitive advantage, because it can help producers to differentiate themselves from the competition. The accomplished savings through reduction, control, elimination and prevention of waste, will create the space for differentiating at the chain level. The use of renewable energy sources, the reduction of dangerous materials, the management of poisonous gases, and, above all, the application of green technology are the major tasks carried out within the corporate operation.The aforementioned activities refer to the inbound segment in the supply chains. The design of the inbound segment of business activities is closely related to the lean systems whose application leads to optimal environmental effects. According to a study conducted by Diaz-Elsayed et al. (2013), the deployment of tailored lean and green techniques resulted in a decrease of roughly 10.8% of part production costs in an automotive industry (Gandhi et al., 2018).

Packaging can have a very active role in the achievement of a competitive advantage. Furthermore, packaging can significantly contribute to environmental preservation and the development of long-term relationships with customers. While analysing the role of packaging, there are different aspects of observation that need to be pointed out. Logistics concerns include packaging unit size and ease of handling, whereas marketing concerns include package color and labeling (Madhani, 2017). By introducing the concept of green supply chains, packaging also receives a completely new role. Besides its logistics and market related role, packaging becomes the means of the implementation of environmental principles. The term eco-packaging has been coined for this purpose. The attitudes of consumers are analysed through one research, and the conclusions are as follows. The environment-friendly container option (recyclable-labeled carton package) was clearly chosen by the respondents, but non-recyclable plastic packages had negative utility estimations (Magnier & Crie, 2015). Such preferences by consumers are significant because the participants of chains, and thus the creators of business practices have to take into account the demands of their clients. The comparison of traditional and eco-packaging indicates the occurrence of additional participants who are in charge of collecting packages and reusing them within the activities of managing eco-packaging. The two main functions are achieved by the principles of 4R1D, which stands for reduce, reuse, reclaim, recycle and degradable (Zhanga & Zhao, 2012). The main goals of such a positioned chain are connected with the previously mentioned activities. It is necessary to reduce the amount of waste which occur as the result of processes within chains. It is important to implement the policies of reusing certain resources, and also within these activities, returning flows which would make potential resources return to producers. All the activities serve the function of constructing recycling systems and using degradable materials. The application of the aforementioned principles enables the creation of coherent systems which could be used for the implementation of the apparently conflicting goals.

Green transportation and warehousing

Transportation services are an integral part of almost every segment of a supply chain, referring to transportation among its members or to the one within a single company. Using any type of transportation leads to negative environmental consequences; however, due to its necessity, it represents an inevitable business activity. The negative consequences refer primarily to the emission of CO_2 and the negative effects have taken a global scale. The term "green transportation" refers to the use of a low-polluting fuel as the source of energy in order to create a multi-transportation and allocation method (Jumadi & Zailani, 2010). Besides the choice of appropriate fuel, it is necessary to take care of the appropriate model of transportation, as well as the routes, thus saving on both time and financial aspects. The type of transportation also plays a significant part. The vehicle routing and scheduling problem (VRSP) was developed by Dantzig and Ramser and it has been well studied and many different solution algorithms, which include exact, heuristic and metaheuristic approaches that have been developed (Salimifard et al., 2012). The Emissions Vehicle Routing Problem (EVRP) is defined as follows: "The main goal or portion of the generalized cost function is to reduce pollutants and fuel consumption" (Toro et al., 2016).

One of the most important aspects of in-house and outbound logistics and distribution is warehousing (Agyabeng-Mensah et al., 2020). Besides the fact that a warehouse represents the place for storing products and semi-products, its role is also reflected in adding value. Special functions of warehouses enable adding value to products. The products which leave a warehouse are more valuable to consumers due to the special storing conditions in the warehouse. In a warehouse, there are numerous elements that can be implemented, but in general, any feature that decreases energy consumption or material usage/waste is a greening element (Đukić et al., 2010). The following are some of the elements that are frequently cited in literature and also applied in practical examples: (Đukić et al., 2010):

- utilizing a paperless warehouse management system,
- utilizing energy efficient lighting,
- utilizing sensor doors,
- utilizing wind turbines or solar energy,
- utilizing ventilators to suppress hot air,
- utilizing lighting sensors,
- utilizing better insulation,
- utilizing the equipment which emits lower levels of carbon,
- utilizing returnable equipment, using improved equipment intended for warehouses.

Eliminating paper documents in warehouses refers to the implementation of automated systems for tracking the merchandise within a warehouse. The eco-packages which can be reused and efficiently recycled should also be applied here. The use of materials which are less polluting for the environment is crucial for, primarily, raising awareness about ecology. The use of adequate lighting in a warehouse is very significant. Lighting is often used in the processes of adding value, and the expenses which are generated during this occasion are high. That is why the use of lighting is recommended only when it is necessary. The sensors which recognise the need for lighting are used for this purpose, and when there is no need, the lighting is turned off. The use of adequate construction materials certainly improves insulation, which prevents unnecessary energy consumption. A significant role is given to the use of adequate operating equipment depending on the type of the warehouse. Workers in fully automated warehouses utilize forklifts and cranes that follow a predetermined route, saving fuel and time and, as a result, improving supply chain performance.

Conclusion

Green supply chains enable the implementation of environmental activities. In order for supply chains to achieve their performances, both financial and environmental, it is necessary to find new ways of performing basic functions such as procurement, production, transportation and warehousing. The domain of greening refers mostly to logistical activities which create a balance between the demands of consumers, on the one hand, and the fulfilment of environmental standards, on the other. Waste and harmful chemicals can be reduced by making better use of inputs and operating with them in

different spatial and transport units. There is a constant need in science to find new methods which would make it possible for supply chains to operate in accordance with the environmental requirements to a large extent.

The application of environmental activities in chains is a necessity facing every company, because simultaneously with the excessive and uncontrolled consumption of resources they become scarcer. This imposes the need for questioning the existing strategies in search of already scarce and depleted resources. Moreover, science is focused on the creation of new materials which will replace the existing conventional ones, and in that sense, provide a priori the application of environmental standards.

References

Agyabeng-Mensah, Y., Ahenkorah, E., Afum, E., Dacosta, E. & Tian, Z. (2020). Green warehousing, logistics optimization, social values and ethics and economic performance: the role of supply chain sustainability. The International Journal of Logistics Management, 31(3), 549-574.

Bhattacharya, A., Mohapatra, P., Kumar, V., Dey, P. K., Brady, M., Tiwari, M. K., Nudurupati, S. (2014). Green supply chain performance measurement using fuzzy-ANP based balanced scorecard: a collaborative decision-making approach. Production Planning and Control: The Management of Operations, 25(8), 698-714.

Deif, A. (2011). A system model for green manufacturing. Journal of Cleaner Production, 19(14): 1553-1559.

Dey, P. K. & Cheffi, W. (2013). Green supply chain performance measurement using the analytic hierarchy process: a comparative analysis of manufacturing organisations. Production Planning & Control: The Management of Operations, 24(8), 702-720.

Đukić, G., Česnik, V. & Opetuk, T. (2010). Order-picking Methods and Technologies for Greener Warehousing. Strojarstvo, 51(1), 23-31.

Fahimnia, B., Sarkis, J. & Davarzani, H. (2015). Green supply chain management:A review and bibliometric analysis. International Journal of Production Economics, 162(C), 101-114.

Fang, H., Wang, B. & Song, W. (2020). Analyzing the interrelationships among barriers to green procurement in photovoltaic industry: An integrated method. Journal of Cleaner Production, 249, 1-15.

Gandhi, N., Thanki, S. & Thakkar, J. (2018). Ranking of drivers for integrated lean-green manufacturing for Indian manufacturing SMEs. Journal of Cleaner Production, 171, 675-689.

Ghosh, M. (2019). Determinants of green procurement implementation and its impact on firm performance. Journal of Manufacturing Technology Management, 30(2), 462-482.

Jumadi, H., & Zailani, S. (2010). Integrating Green Innovations in Logistics Services Towards Logistics Sustainability: A conceptual paper. Environmental Research Journal, 4(4), 261-271.

Khaksar, E., Abbasnejad, T., Esmaeili, A. & Tamošaitienė, J. (2016). The effect of green supply chain management practices on environmental performance and competitive advantage: a case study of the cement industry. Technological and Economic Development of Economy, 22(2), 293-308.

Khan, S. A., Qianli, D., Zhang, Y. & Khan, S. S. (2017). The Impact of Green Supply Chain on Enterprise Performance: In the Perspective of China. Journal of Advanced Manufacturing Systems, 16(3):263-273.

Madhani, P. (2017). Logistics and Marketing Integration: Enhancing Competitive Advantages. The IUP Journal of Management Research, 16(3), 7-29.

Magnier, L. & Crie, D. (2015). Communicating packaging eco-friendliness. An exploration of consumers' perceptions of eco-designed packaging. International Journal of Retail & Distribution Management, 43(4-5), 350-366.

Min, H. & Kim, I. (2012). Green supply chain research: past, present, and future. Logistics

Paul, I. D., Bhole, G. P. & Chaudhari, J. R. (2014). A review on Green Manufacturing: It's important, Methodology and its Application. Procedia Materials Science, 6, 1644-1649.

Salimifard, K., Shahbandarzadeh, H. & Raeesi, R. (2012). Green Transportation and the Role of Operation Research. Proc., 2012 International Conference on Traffic and Transportation Engineering, Vol. 26, Singapore, IACSIT Press 2012, 74–79.

Shi Guang, V., Baldwin, J. & Cucchiella, F. (2012). Natural resource based green supply chain management. Supply Chain Management: An International Journal, 17(1), 54-67.

Srivastava, S. (2007). Green supply chain management: A state of the art literature review. International Journal of Management Reviews, 9(1), 53-80.

Toro, E., Escobar, A. & Granada, M. (2016). Literature review on the vehicle routing problem in the green transportation context. Luna Azul, 42, 362-387.

Wang, Y., Peng, S., Zhou, X., Mahmoudi, M. & Zhen, L. (2020). Green logistics location-routing problem with eco-packages. Transportation Research Part E: Logistics and Transportation Review, 143 (11), 102-118.

Yook, K., Choi, J. & Suresh, N. (2018). Linking green purchasing capabilities to environmental and economic performance: The moderating role of firm size. Journal of Purchasing and Supply Management, 24(4), 326-337.

Zhanga, G. & Zhao, Z. (2012). Green Packaging Management of Logistics Enterprises. Physics Procedia, 24, 900-905.

Zimon, D., Tyan, J. & Sroufe, R. (2019). Drivers of sustainable supply chain management: practices to alignment with un sustainable development goals. International Journal for Quality Research, 14(1): 219-236.

ECONOMICS OF SUSTAINABLE DEVELOPMENT
Vol. 6, january-june 2022, № 1
UDK 33+502/504
ISSN 2560-421X

Aleksandar Popović[1]
University of Niš, Faculty of Economics

Vladimir Radivojević[2]
Faculty of Economics, University of Priština in Kosovska Mitrovica

P. 45-56
SCIENTIFIC REVIEW PAPER
DOI: 10.5937/ESD2201045P
Received: November 28, 2021
Accepted: January16, 2022

THE CIRCULAR ECONOMY - PRINCIPLES, STRATEGIES AND GOALS

Abstract

The circular economy is a major challenge for any national economy. It is a modern model of an economy that focuses on a new model of production and consumption that requires less use of limited resources, minimizing waste (products after their lifetime) in landfills, more efficient management of waste as raw material, minimizing pollution, and all that with the aim of protecting the environment and improving the living standards of the population. In the transition to the circular economy, the state and its bodies, economic entities and the population should be of equal importance. The aim of this paper is to point out the role and importance of the circular economy as a new economic system with special emphasis on the principles of the circular economy, drivers of the circular economy, strategies for establishing and maintaining the circular economy and goals achieved by the circular economy.

***Key words**: circular economy, linear economy, principles, drivers, strategies*

JEL classification: *Q56, Q57, M21*

ЦИРКУЛАРНА ЕКОНОМИЈА – ПРИНЦИПИ, СТРАТЕГИЈЕ И ЦИЉЕВИ

Апстракт

Циркуларна економија представља велики изазав за сваку националну привреду. У питању је савремени модел економије који у свом фокусу има нови модел производње и потрошње који захтева мању употребу ограничених ресурса, минимизирање отпада (производа након њиховог животног века) на депонијама, ефикасније управљање отпадом као сировином, свођење загађења на минимум, а све у циљу заштите животне средине и бољег животног стандарда становништва. У транзицији ка циркуларној економији подједнаки значај треба имати држава и њене институције, привредни субјекти и становништво. Циљ рада је указати на улогу и значај циркуларне економије као новог економског система са

[1] aca_popovic109@hotmail.com, ORCID ID 0000-0002-2826-4660

[2] vladimir.radivojevic@pr.ac.rs, ORCID ID 0000-0002-3928-0623

посебним осврtом на принципе на којима почива концепт циркуларне економије, покретаче циркуларне економије, стратегије успостављања и одржавања циркуларне економије и циљеве који се постижу циркуларном економијом.

Кључне речи: *циркуларна економија, линеарна економија, принципи, покретачи, стратегије*

Introduction

The linear model of the economy has shown great shortcomings in recent decades, given the limited raw materials and energy, the accumulation of waste in regulated and illegal landfills, environmental pollution and the deterioration of the quality of human life. Consequently, there is a need for a new model that will partially or completely eliminate the basic weaknesses of the linear economy due to the increased competition at the national and global market. A model that has crystallized itself in recent decades, and which can oppose the dominant model of the economy (so-called linear model) is the circular economy.

The American economist Kenneth Boulding first used the term circular economy in 1966 in his paper "The economics of the coming spaceship earth", in which he pointed out that there are limited resources, and therefore, it is necessary to constantly recycle waste landfills and reintegrate it into production process. In 1974, Swedish economist Karl Goran-Mahler published a book entitled "Environmental Economics: A Theoretical Inquiry" in which he emphasized economic growth accompanied by a quality environment and social well-being. In 1990, the American economists Pearce and Turner published a book entitled "Economics of Natural Resources and the Environment" in which they described in detail the relationship between the economy and the environment. However, the greatest contribution to the development of the circular economy concept at the beginning of the 21st century was made by the Ellen Macarthur Foundation. It was founded in 2010 with the aim of raising awareness about the application of the circular economy in the economic sphere.

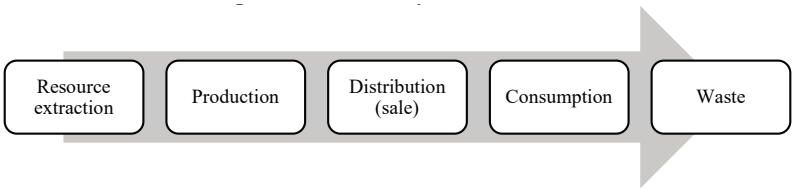
The paper is structured as follows. The first part of the paper points out the most important definitions of the circular economy and its basic elements, while the second part of the paper emphasizes the basic principles on which the circular economy is based. Then, in the third part of the paper, it highlights the basic drivers of the circular economy. Finally, the basic strategies and goals of the adoption and development of the circular economy will be presented.

Key determinants of the concept of circular economy

Contrary to the tendency of the new model of economy to dominate the economic world - the circular economy, the traditional model of the economy, so-called linear model, is dominant in the economic sphere today. The linear model of the economy is based on the following relation: "take-produce-sell-spend-reject" (Mitrović & Manić,

2020, p. 29). The mentioned model starts from the fact that resources are collected directly from nature and that together with energy and work a certain product is produced, then the product is sold on the market to end users, and after its lifetime (impossibility of further use), it is thrown away. The linear production model implies that the product ends up in a landfill. This model is shown in Figure 1.

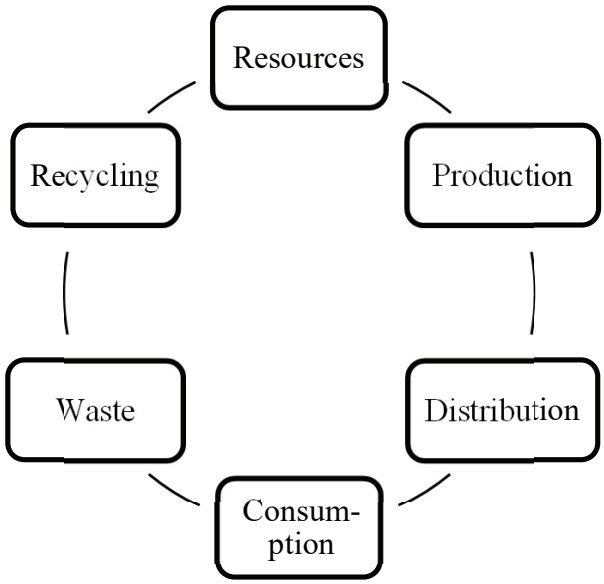
Figure 1. *The basics of the linear model*



Source: According to Vićentijević (2018, p. 79)

Unlike the linear economy model, which ends when the product becomes waste, the circular economy is a continuation of the linear economy. In other words, the circular economy is based on waste as a key resource for the production of new products with as little use of energy and extraction of resources from nature as possible. Unlike the linear economy, the circular economy implies a regenerative economic system based on optimizing the use of natural resources, i.e. saving resources and energy, then reducing waste, using renewable energy sources, all in order to protect the environment and achieve sustainable development. The circular economy model is shown in Figure 2.

Figure 2. *Circular economy model*



Source: According to Agency for Design and Engineering Arh In Green (2019)

The circular economy is an instrument for achieving and promoting sustainable development at the national and global level. The basic idea of the concept is to replace the linear model of the economy, which in modern business conditions becomes impossible due to limited resources, waste accumulation, inadequate waste management and environmental damage. Having in mind that the circular economy is based on the maximum use of products that have completed their life cycle with as little exploitation of new resources as possible, numerous definitions have emerged. Although in recent decades there has been an increasing emphasis on the concept of the circular economy, there is no generally accepted definition of the circular economy. There is an opinion that the comprehensive definition of the circular economy must contain the following four components (Prieta-Sandoval et al., 2017): (1) recirculation of resources, minimization of resource use, recovery of waste values, (2) multidimensional approach, (3) the significance of achieving sustainable development and (4) the close connection with the way society innovates. In this case, in order to understand the concept of the circular economy, we will point out the most important definitions of the circular economy:

- "Circular economy describes an economic system based on business models that replace the concept of 'end of life' by reducing, alternatively reusing, recycling and renewing materials in production / distribution and consumption processes acting at the micro level (products, companies or consumers), meso level (eco-industrial parks) and macro level (city, region, state and beyond) with the aim of achieving sustainable development that includes providing a quality environment, economic prosperity and social equality for the benefit of present and future generations" (Kirchherr et al., 2017, p. 224);
- "Circular economy is a regenerative system in which resource use, waste, emissions and energy consumption are minimized by slowing down, closing and narrowing material and energy loops, which is achieved by long-term design, maintenance, repair, reuse, remanufacturing, renovation and recycling" (Geissdoerfer et al., 2017, p. 766);
- "Circular economy involves turning goods that are at the end of their life into resources for other goods by closing loops in industrial ecosystems and minimizing waste based on the following principles: reuse what can be used, recycle what cannot be reused, fix what is corrupt and reproduce what cannot be repaired" (Stahel, 2016, p. 435);
- "Circular economy seeks to prolong the life of products and materials by taking them over from consumers after their lifetime" (Gregson et al., 2015, p. 9);
- "Circular economy is an economy in which the value of products, materials and resources is maintained in the economy for as long as possible, and waste generation is minimized" (Mihajlov et al., 2019, p. 5).

Based on these definitions, the circular economy can be defined as an economy based on the production of products using waste or products that have ended their life as a basic raw material and as little extraction of necessary new resources as possible, all in order to protect the environment and achieve and improve sustainable development. Regardless of the diversity of definitions of the circular economy, the common elements of all definitions are the following:

- circular economy uses waste as a basic raw material in the production of new products and the provision of new services,

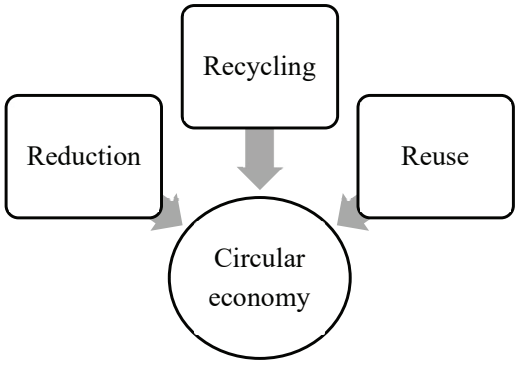
- circular economy emphasizes renewable energy sources,
- circular economy aims to minimize the extraction of resources and energy from nature and waste in landfills through recycling and reuse,
- circular economy extends product life, and
- circular economy encourages economic growth while protecting the environment and establishing sustainable development in order to achieve social well-being.

The transition from the linear to the circular economy is a long, arduous and comprehensive process that requires an interdisciplinary approach. So, it is a process that includes knowledge in the field of economics, ecology, biology, engineering, waste management, etc. As such, it is impossible to expect positive effects at the very beginning of the application of this model in the economy.

Basic principles of the circular economy

The circular economy is based on a basic concept that implies growth by using waste as a basic resource of production, with as little use of energy and new resources from nature as possible, in order to protect the environment and sustainable development. Having in mind the primary goal of the circular economy, the basic principles on which the circular economy is based can be described as "3R" - Reduction, Recycling and Reuse (Yuan et al., 2006). The first "R" principle - Reduction refers to the reduction of use/extraction of new resources from nature in the models of circular economy, while the second "R" principle - Recycling involves the recycling of materials and energy that ended up in waste, and which will revive and become the main resource for product production. Finally, the last, third "R" principle - Reuse implies the reuse of waste as an input in the circular economy. In other words, the "3R" principles are focused on the fact that waste will be recycled and returned to the production process of a new product in the circular economy. Based on the above, we can conclude that recycling plays a key role in the circular economy, since it depends on how much waste will be used as a resource in the production of new products. The principles of circular economy "3R" are illustrated in Figure 3.

Figure 3. *"3R" principles of the circular economy*



Source: According to Feng (2004) and Yuan et al. (2006)

The circular economy is based on the following principles (Ellen Macarthur Foundation, 2019): elimination of waste, circular products/materials and regeneration of nature. Inadequate product design can lead to the accumulation of waste and pollution, therefore, the design should play a major role in the production of products that will allow at the end of their life to be reused in the production of new products and thus minimize waste and pollution. Changing the way we think and use new materials and technologies can significantly reduce waste and pollution. Another principle is that products should be designed for reuse, repair or processing after their service life. The essence of the third principle is that waste does not exist in the circular economy and that each waste serves as a raw material (resource) for the production of a new product.

Drivers of the circular economy

The linear model, in addition to many advantages, brings many disadvantages in terms of environmental pollution, waste accumulation, inefficient waste management, irrational use of resources in nature and energy that has reduced natural capital, unsustainable development, poverty growth and socio-economic inequality. Contrary to this model, the circular economy starts from the tendency to minimize all these shortcomings. Accordingly, in recent decades, the emphasis has been on the introduction of this model within modern companies.

Patwa et al. (2021, p. 726) state that the basic drivers (factors) of the introduction or development of the circular economy model in the national economy are:

- extending the lifespan of the product through "3R",
- ecological balance and protection,
- large flow of data and information,
- state policy and
- consumer behavior.

Extending the product life cycle through "3R" principles is based on the fact that the product that is at the end of its life does not end up in landfill. The solution is in recycling it, which will further lead to its re-inclusion in the production phase of a new product that will meet consumer needs. The point is to move from the "produce-use-discard" relationship to the "produce-use-discard-recycle-reuse-use" relationship. The main factors that will contribute to extending the product life cycle are the following (Patwa et al., 2021, p. 726):

- Product as a service - in this case the product is seen as a service that can be reused by recycling and thus contribute to reducing waste and better management of the same as a basic resource in the circular economy. In other words, the product is accompanied by services that allow you to repair or replace the product. This concept is known as the PaaS concept (Product as a Service);
- Sustainable consumption - the essence of this factor lies in the fact that consumers will use those products and services which do not require irrational consumption of resources and energy, and which will meet their needs for efficient use of resources and energy, better and more quality life, waste minimization and the like;

- Collection – collection of products that ended up in landfills as waste after their lifetime and their inclusion as inputs in the production process will minimize the use of resources and energy from nature, minimize waste at landfills and improve waste management;
- Repair - production of a product with functions that enable its repair or revival contributes to prolonging the product life cycle;
- Distribution and movement of materials - the flow of resources (materials) is important for the introduction and development of the circular economy, and a basic way to achieve an uninterrupted flow of materials is through an integrated (sustainable) supply chain. An integrated supply chain will close the loop that exists between upstream and downstream supply chain participants. Also, inverse logistics, which implies the movement of materials from consumers to producers, is crucial for extending the product life cycle and its reuse by consumers (Zhu et al., 2010).

Another driver of the circular economy is related to ecological balance and protection. The aim of this driver is to reduce the negative effects of the linear economy on the environment by using end-of-life products as basic inputs in the production (or provision) of products (services). Factors contributing to ecological balance and protection are as follows (Patwa et al., 2021, p. 727):

- Energy and resource efficiency - efficient use of resources and energy will enable the production of products that will return to the production system at the end of their life, less waste will be generated and new energy sources, that will result better energy efficiency and less harm to the environment;
- Clean and renewable energy - the so-called green energy sources that come from nature itself, will cause less harmful consequences;
- Waste management - inadequate waste management from the aspect of environmental protection is a global problem. Appropriate waste management, especially hazardous waste, is crucial for achieving ecological balance and protection. The basic principles of waste management are: waste disposal, waste processing, waste reusing and optimization/minimization of the amount of waste at source (Environmental Protection Agency, 2020);
- Waste from energy - the use of waste as energy will reduce waste in landfills and minimize the use of new energy.

The large flow of data and information is the third driver of the development of the circular economy. Fast and efficient data processing plays an important role in the adoption of the circular economy model. The availability of a large amount of information has enabled cloud computing, which allows its users, via the Internet, to meet the requirements in the form of gathering computer resources, such as servers, infrastructure, applications, services and the like (Patwa et al., 2021). Relevant information enables better management of valuable and scarce resources, more efficient use of energy, full monitoring of the product during its lifetime, raising public awareness of environmental protection and so on.

The fourth driver of the circular economy relates to the government policies of one state. Government policies play a key role in the development of the economy whether it is the linear or circular economy. The role of the state in the development of the circular

economy is crucial since it can, through various laws and regulations, direct the behavior of economic entities (on the one hand) and the population (on the other) towards production and consumption that support the basic principles of the circular economy. The goal of every state is to achieve general social well-being (Patwa et al., 2021).

The last driver of the circular economy, but not the least important, is consumer behavior. Consumers in the circular economy are the main link in its development. For the development of the circular economy, the attitude and awareness of consumers towards the principles of the circular economy is of key importance. The state with its regulations can significantly influence the positive attitude of consumers about nurturing the circular economy, but education, communication and cultural factors are important determinants that shape consumer behavior (Patwa et al., 2021). Education is a mechanism which influences the positive attitude of consumers towards nature and environmental protection. Effective communication (advertising, promotion) can influence consumers to participate in the development of the circular economy. How much consumers will accept the new model of economy will largely depend on their cultural environment - ideology, social class, tendency to buy "green" products, the idea of nature conservation.

The success of the introduction of the circular model of the economy will depend on the success of the application of these factors, i.e. the drivers of the circular economy.

Strategies and goals of the circular economy

The concept of the circular economy starts from replacing the current model of economy, the so-called linear model of the economy to ensure economic growth with the reuse of waste as a basic resource in the production of another product, and minimizing the extraction of new resources and energy from nature. Accordingly, the key goals of the circular economy are:

- waste minimization at landfills,
- use of waste as a basic material in the production process,
- rational and efficient use of resources from nature with special emphasis on the use of renewable energy sources,
- production of a product that can be recycled and reused as raw material,
- environmental protection,
- more efficient production models,
- competitiveness of the economy.

Morseletto (2020, p. 3) assumes that, when moving to the circular economy, there are concise goals of the circular economy that are systematized in five main areas of application of the concept: goals related to resource efficiency (water, energy, materials), recycling goals, reduction goals (waste reduction and emissions), recovery goals (waste, water and energy reuse goals) and eco-design goals. These areas of the circular economy are the main areas. However, the basic lack of observation of goals in these areas is wrong because the areas are interconnected (where there is an overlap of goals) and it is impossible to systematically consider all areas and goals of the circular economy. Accordingly, in order to systematically study the goals when moving to the circular economy model, the author starts from the "10R" strategy of Potting et al. (2017). Strategies are defined and systematized based on the following criteria (Morsaletto, 2020, p. 4):

- "useful application of materials,
- extend the life of products and their parts and
- smarter production and use of products".

The first criterion - useful use of materials, means waste that ended up in the landfill, and which by recycling and recovery of the same comes to raw materials and energy for the production of a new product. Within the first criterion, we distinguish two strategies (Potting et al., 2017, p. 5):

- Recovery (R9: Recovery) - recovery involves burning materials (waste) to get energy. The essence of this strategy is that waste (primarily organic waste) is not recycled but used as an energy source;
- Recycle (R8: Recycle) - recycling of waste involves the treatment of waste on the basis of which the material is obtained - secondary material to be used in new production phases as the basic input for production process.

Extending the lifespan of products and their parts is another criterion that aims to define strategies that will contribute to extending the life of products (and their parts) and improve their value (Potting et al., 2017, p. 5). There are five strategies that belong to this main strategy. Those are:

- Repurpose (R7: Repurpose) - repurpose means the use of products and their parts after their use in the production of other products, but which will have a different purpose (function);
- Renewal (R6: Remanufacture) - renewal or reproduction implies the use of parts of discarded products for the production of a new product that will have the same purpose or function and similar quality as the discarded product;
- Overhaul (R5: Refurbish) - overhaul implies constant improvement of the product in order to maintain the quality of the product during the extended life of the product in order to meet the needs of users;
- Repair (R4: Repair) - repair is considered as the servicing of a defective product so that it serves the same purpose (function);
- Reuse (R3: Reuse) – "reuse can be defined as the second or further use (of another user) of a product that is still in good condition and manages to fulfill its original function" (Morsaletto, 2020, p. 7).

Table 1. *Circular economy strategies*

Smarter product use manufacture	R0: Refuse
	R1: Rethink
	R2: Reduce
Extend the life cycle of the product/ product elements	R3: Reuse
	R4: Repair
	R5: Refurbish
	R6: Remanufacture
	R7: Repurpose
Optimal application of materials	R8: Recycle
	R9: Recovery

Source: According to Potting et al. (2017, p. 5)

The third criterion refers to smarter production and use of products that precede previous strategies. The goal of this criterion is to design and develop production systems that will best fit the concept of circular economy (Potting et al., 2017, p. 5). In the field of smarter production and use of products, we distinguish three strategies:

- Reduce (R2: Reduce) - reduce means minimizing the use of new resources, materials and energy from nature, waste in landfills;
- Re-examine or rethink (R1: Rethink) - re-examine means re-elaboration or reconceptualization of ideas, processes, methods, concepts, use and subsequent use of products;
- Reject (R0: Refuse) - reject means to render a product useless with its function (purpose) and abandon the production of such a product, and produce a different product that will have the same function as the product whose production will be suspended (Linder, 2017).

Table 1 shows the basic strategies (criteria) and substrategies that contribute to the adoption of the circular economy and the abandonment of the linear economy. Morsaletto (2020), unlike the original scheme created by Potting (2017) - Table 1, focused primarily on strategies of different levels of circularity, starting from the idea that this order - from R9 to R0, provides identification of the most widespread goals of the circular economy.

Table 2. *Objectives of the circular economy strategy*

Strategies	Substrategies	Aims
Useful application of materials	R9: Recovery	Reduction of waste incineration. The range for waste incineration as a norm in order to establish a circular economy should be from 0% to 10% with a tendency to be as close as possible to 0%. In a perfect circular model, waste does not exist.
	R8: Recycle	Improving environmental performance through high quality recycling, on-site recycling, product content recycling and more. The product concept should be designed in a way that will ensure simple and easy recycling of the same.
Extend the life cycle of the product/product elements	R7: Repurpose	Time aspect of the objectives: to extend the lifespan of products and their elements by abolishing the "planned obsolescence of products", with a mandatory long warranty and reliability. Objectives related to loop efficiency: - cost reduction by improving organization, engineering, supply chain, business processes and spare parts; - improving product design that will enable product longevity, reliability, durability and product disassembly to facilitate product life extension; - cultural factors that imply shorter cycles of innovation, more complex products and various other factors on the supply and demand side.
	R6: Remanufacture	
	R5: Refurbish	
	R4: Repair	
	R3: Reuse	
Smarter product use manufacture	R2: Reduce	Use less material per unit of product (through design). Less use of new resources and energy in nature.
	R1: Rethink	More efficient use of products. Improving environmental performance (reducing emissions, toxicity and other negative effects on the environment). Production of products that can be at low cost "disassembled, repaired and upgraded".
	R0: Refuse	Suspension of production of products that have a harmful effect on the environment.

Source: Morsaletto (2020, p. 4-9)

Table 2 gives the basic goals of the circular economy strategies, from the R9 strategy to the R0 strategy. Morsaletto (2020) assumes that meeting the goals of the R9 strategy and the R8 strategy have the greatest impact on the success of the transition from a linear model to a circular economy, followed by strategies from R7 to the R0 circular economy strategy.

Although the author analyzed the goals separately for each strategy, he also pointed out the connection between the goals of individual circular economy strategies that can lead to compromise, synergy or complementarity between all ten circular economy strategies and their goals.

Achieving the goals of the R strategy of the circular economy will enable a quick and efficient transition from a linear economy to a circular economy model that implies economic growth with minimal use of raw materials and energy from nature and maximum use of waste as basic input in production systems.

Conclusion

The circular economy as a new model of economic system has emerged as a potential solution for the rational and efficient use of limited resources in nature. The circular economy is an economic system based on the production of products using waste as a basic raw material and the least possible extraction of necessary new resources, all with the aim of protecting the environment and achieving and promoting sustainable development. To succeed in its intentions, the circular economy is based on the "3R" principles: Reduction, Recycle and Reuse. In addition to the basic principles of the circular economy, in order to move from the linear to the circular economy, it is necessary to adhere to "10R" strategies - Recovery, Recycle, Repurpose, Remanufacture, Refurbish, Repair, Reuse, Reduce, Rethink, Refuse. The main goals of the circular economy are to minimize waste in landfills and pollution, minimize the use of new resources and energy and their more rational use, improve environmental performance, protect the environment and improve sustainable development.

The development of the circular economy in the near future is crucial for environmental protection and better quality of human life, having in mind the irrational use of resources and negative effects on the environment as a result of the functioning of the linear economy. Establishing and maintaining a circular economy model in the economic sphere brings many benefits to present and future generations.

References

Agencija za zaštitu životne sredine – Ministarstvo zaštite životne sredine Republike Srbije. Available at: http://www.sepa.gov.rs

Agencija za projektovanje i inženjering – Arh In Green. Available at: https://arhingreen.rs/reciklaza-gradevinskog-otpada-1-3/cirkularna-ekonomija/

Ellen MacArthur Fondation: How to build a circular economy. Available at: https://ellenmacarthurfoundation.org

Feng, Z. (2004). Circular economy overview (in Chinese), Beijing, China: People's Publishing House.

Gregson, N., Crang, M., Fuller, S., & Holmes, H. (2015). Interrogating the circular economy: the moral economy of resource recovery in the EU. *Econ. Soc.*, 44, 218-243. https://doi.org/10.1080/03085147.2015.1013353.

Geissdoerfer, M., Savaget, P., Bocken, N.M.P., & Hultink, E.J. (2017). The Circular Economy e a new sustainability paradigm? *Journal of Cleaner Production,* 143, 757-768. https:// doi.org/10.1016/j.jclepro.2016.12.048.

Kirchherr, J., Reike, D., & Hekkert, M. (2017). Conceptualizing the circular economy: An analysis of 114 definitions. *Resources, conservation and recycling*, 127, 221-232. https://doi.org/10.1016/j.resconrec.2017.09.005

Linder, M. (2017). Ripe for discruption: reimagining the role of green chemistry in a circular economy. *Green Chem. Lett. Rev.,* 10(40), 428-435.

Mihajlov, A., Mladenović, A., Jovanović, F. (2019). Cirkularna ekonomija u Srbiji: započet proces, Ambasadori održivog razvoja i životne sredine. Available at: http://ambassadors-env.com/en/www-staro-pre-2020/circular-economy-in-serbia/

Mitrović, Đ., & Manić, E. (2020). Tranzicija ka cirkularnoj ekonomiji u zemljama Evropske unije – konvergencija ili divergencija, *Ekonomske ideje i praksa*, 38, 27-49.

Morsaletto, P. (2020). Targets for a circular economy, Resouces, Conservation & Recycling, 153, 1-12. Available at: http://www.elsevier.com/locate/resconrec

Patwa, N., Svirajah, U., Seetharaman, A., Sarkar, S., Maiti, K., & Hingorani, K. (2021). Towards a circular economy: An emerging economies context. *Journal of Business Research*, 122, 725-735. Available at: www.elsevier.com/locate/jbusres

Potting, J., Hekkert, M., Worrell, E., & Hanemaaijer, A. (2017). Circular economy: measuring innovation in the product chain, Policy report, PBL Netherlands Environmental Assessment Agency, 25-44, the Hague.

Prieta-Sandoval V., Jaca C., & Ormazabal M. (2017). Towards a consensus on the circular economy. *Journal of Cleaner Production*, 179, 605-15. https://doi.org/10.1016/j.jclepro.2017.12.224

Stahel, W.R., (2016). Circular economy. *Nature*, 6-9. https://doi.org/10.1038/531435a.

Vićentijević, K. (2018). Računovodstveni aspekti cirkularne ekonomije u tekstilnoj industriji, *Tekstilna industrija*, 4, 79-84.

Zhu, Q., Geng, Y., & Lai, K. H. (2010). Circular economy practices among Chinese manufacturers varying in environmental-oriented supply chain cooperation and the performance implications. *Journal of Environmental Management,* 91(6), 1324–1331.

Yuan, Z., Bi., J., & Moriguichi, Y. (2006). The circular economy: A new development strategy in China. *Journal of Industrial Ecology*, 10(102), 4-8. https://doi.org/10.1162/108819806775545321

ECONOMICS OF SUSTAINABLE DEVELOPMENT
Vol. 6, january-june 2022, № 1
UDK 33+502/504
ISSN 2560-421X

Milica Đokić[1]
Innovation Center,
University of Niš

P. 57-72
SCIENTIFIC REVIEW PAPER
DOI: 10.5937/ESD2201057D
Received: December 20, 2021
Accepted: February 1, 2022

WORLD ECONOMY IN THE TIME OF PANDEMIC - CONSEQUENCES OF COVID-19 ON WORLD OUTPUT, TRADE AND EMPLOYMENT

Abstract

The outbreak of COVID-19 has completely changed the world. Besides jeopardizing health, the coronavirus has seriously affected all other aspects of people's lives. In order to mitigate short-term, as well as long-term economic consequences of the pandemic, it is crucial to find an appropriate balance between public health protection and unconstrained economic activity. In this paper, the impact of the pandemic on world economy will be analysed, mainly through segments like economic output, trade and employment. Based on the data of the world economic, financial and trade organizations and studies of relevant authors, the aim of this article is to provide an overall perspective of economic effects caused by the COVID-19 crisis in some of the crucial economic areas and to give an outlook for the future. The analysis will also indicate the variation in effects among countries of different levels of development.

Keywords: *economic crisis, COVID-19, world economy, international trade, employment*

JEL classification: ***F01, F10, F40***

СВЕТСКА ЕКОНОМИЈА У ДОБА ПАНДЕМИЈЕ - ПОСЛЕДИЦЕ КОВИД-19 НА СВЕТСКИ АУТПУТ, ТРГОВИНУ И ЗАПОСЛЕНОСТ

Апстракт

Изненадна појава КОВИД-19 је у потпуности променила свет. Осим угрожавања здравља, корона вирус озбиљно утиче и на све остале аспекте живота људи. Како би се ублажиле тренутне, као и дугорочне економске последице пандемије, од суштинске је важности наћи одговарајућу равнотежу између заштите јавног здравља и слободног обављања привредних активности. У овом раду ће бити анализиран утицај пандемије на светску економију, кроз кључне сегменте као што су привредна активност, трговина и запосленост. Ослањајући се на податке светских економских, финансијских и трговинских организација и студија релевантних аутора, сврха овог рада је да пружи општи преглед економских ефеката изазваних

[1] milica91nis@hotmail.com, ORCID ID 0000-0002-7155-3476

КОВИД-19 кризом у неким од кључних економских области и процени будућа кретања. У анализи ће такође бити указано на диспаритете у последицама међу земљама различитог нивоа развијености.

Кључне речи: *економска криза, КОВИД-19, светска економија, међународна трговина, запосленост*

Introduction

Hardly could any of us imagine that in the 21st century we would be put in a quarantine, without possibility to move or with serious restrictions, and that avoiding social contacts would be required and physical distance between people mandatory, while wearing face masks. Since the emergence of corona virus, it was clear that it would be very hard to stop its spreading from China and in a short period of time it went from local to being an international problem. Considering that nowadays, in a highly globalized world, organizations and countries are very inter-connected and mutually dependant, any kind of disruption or change in one area causes problems or certain effects in another.

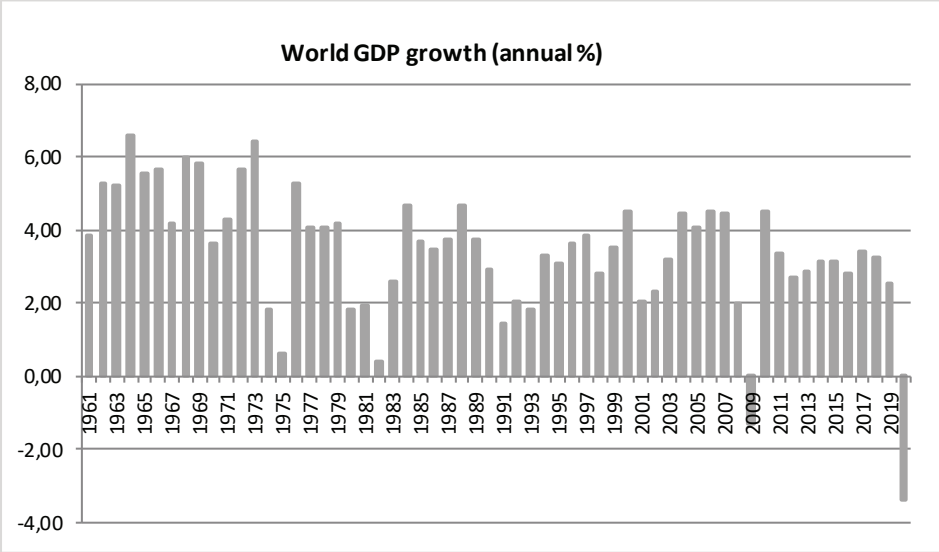
Since the beginning of 2020, social gatherings, travelling, working and even free movement have been limited or entirely forbidden on and off in almost every part of the world. Therefore, everyday life and practices we once had have changed tremendously. What a serious situation the whole world has been in is perhaps best described in the United Nations' statement that we are facing a crisis which is much more than just a health crisis since ″coronavirus disease is attacking societies at their core″ (UN, 2020, pp. 1). It is a human crisis. A crisis that is ″killing people, spreading human suffering and upending people's lives″ (UN, 2020, pp.1). Apart from health, the pandemic has made an enormous impact on trade, transport, employment, tourism, finances and the overall economy, both on the national and global levels. Although it was expected that COVID-19 vaccines discovery would stop the spreading of the infection and bring everything back to normal, global economic prospects are still very vague. Since not all countries have the same access or necessary amounts of vaccines, the vaccination pace varies across the world, and their efficiency declines against new variants of the virus, and recovery is going to be very uncertain and diverse.

New life circumstances caused by the pandemic created new consumer needs and changed some spending patterns, redirecting their purchases towards essential goods, medical and health products, home electronics etc. On the other hand, production and delivery of many inputs was slowed down or even completely stopped temporarily, which resulted in supply and demand mismatches across the world. Millions of jobs have been lost and the number of people at the risk of poverty has been dramatically increased. In order to alleviate the economic consequences of the pandemic, governments around the world have been offering various financial supports to individuals and firms, especially those in the most vulnerable groups and the most affected industries.

The impact of the COVID-19 crisis on world output

Wars, natural disasters, financial crises, political measures, epidemics, riots and any other public disturbance have an impact not only on national but also on world economy as well. They usually cause disruptions on the global level to a certain degree. However, the COVID-19 crisis, which has befallen the world in 2020, can hardly be compared to anything that happened before. The trend of world GDP growth rates for the last sixty years clearly depicts how grave the current circumstances are (Figure 1). Besides few periods of low growth rates in the past, the only year when a decrease in world GDP has been registered was 2009, as the consequence of the world financial crisis. Still, that decline was far less than the one from 2020.

Figure 1. World GDP growth rate 1961-2020



Source: World Bank national accounts data, and OECD National Accounts data files; author's own work

Over the time, economies have adapted better to the pandemic measures and the so called ″new reality″, macroeconomic policy support in many countries has been very helpful and effective, while vaccine discovery has given hope that virus would be put under control. However, prospects for the global economy, although improved in the second half of 2021, still remain unpredictable and diverse across the globe. In many countries, particularly in developing and low-income economies, COVID-19 has induced huge economic shocks, so the recovery will be prolonged. The severity of the pandemic is reflected in the global GDP decrease of 3.5% and the OECD GDP decrease of 4.8% in 2020, which represents considerably larger falls than during the global financial crisis (OECD, 2021). The decline was quite sharp in some European countries and emerging-market economies, particularly those where tourism makes a significant

part of the economy. On the other hand, strict and effective pandemic measures in the Asia-Pacific region helped many economies to overcome the COVID crisis and avoid a large decrease in the output, while China experienced the most rapid recovery and even a rise in GDP of around 2.3% last year. In spite of the stabilization and upward trends in world economy since the third quarter of 2020, it will take a lot of time and effort to get back to the pre-pandemic course. According to the Organisation for Economic Cooperation and Development (OECD, 2021) global recovery will be significant but uneven, with the projected rise of global GDP by 5.8% in 2021 and 4.4% in 2022 (Table 1). While most countries are expected to be back to pre-pandemic GDP levels by the end of 2022, the global economy will remain far from its planned growth path and living standards in many OECD countries will not be back to the level anticipated before the COVID crisis.

Table 1: World GDP, GDP in OECD and Non-OECD countries

	Average 2013-2019	**2019**	**2020**	**2021**	**2022**
per cent					
Real GDP growth[2]					
World[3]	3.3	2.7	-3.5	5.8	4.4
G20[2]	3.5	2.8	-3.1	6.3	4.7
OECD[2]	2.2	1.6	-4.8	5.3	3.8
United States	2.5	2.2	-3.5	6.9	3.6
Euro area	1.8	1.3	-6.7	4.3	4.4
Japan	0.8	0.0	-4.7	2.6	2.0
Non-OECD[2]	4.3	3.7	-2.3	6.2	4.9
China	6.8	6.0	2.3	8.5	5.8
India[4]	6.8	4.0	-7.7	9.9	8.2
Brazil	-0.3	1.4	-4.1	3.7	2.5

Source: adapted from *OECD Economic Outlook, May 2021.*

In the latest International Monetary Fund's (IMF, 2021a) World Economic Outlook, the global economy is projected to grow 6.0% in 2021 and 4.9% in 2022 (Table 2). After a deep crisis and a significant decrease in economic activity across the world during 2020, positive trends are anticipated due to further immunisation of people, normalization of the situation caused by the pandemic and reopening of countries. Still, the revival is going to be uncertain and uneven. Estimations are that the level of global GDP in 2021 will be 3.2% below pre-pandemic projections, and that, despite further recovery and growth, by 2022 it will still remain 1.8% below, while losses of per capita income that arose last year will not be completely recompensed in two-thirds of emerging market and developing economies

[2] Percentage changes

[3] Moving nominal GDP weights, using purchasing power parities

[4] Fiscal year

(World Bank, 2021). Tourism-dependent economies, especially the small ones, will still be affected and go through slower recovery since many travel restrictions will remain. Advanced economies are expected to reopen faster and further improve their prospects for growth in 2022 as vaccination proceeds and additional fiscal measures of support are implemented. Manufacturing and sales seem to be recovering faster, already reaching pre-pandemic levels, while services sector remains weaken and still deeply affected by pandemic measures. United States are leading the advanced economies group with the projected growth of 7%, mostly thanks to the high fiscal support and a good vaccination pace. Economy in the Euro area is expected to grow stronger in the second half of 2021 since strict pandemic measures and uneven vaccine availability slowed down the recuperation in the first one. Economic forecasts for emerging markets and developing economies are not very optimistic considering lower vaccination rates, new waves of infection and therefore newly imposed restrictions and measures. Furthermore, the recovery is expected to be very inconsistent throughout this group, with China and India being at the head and the rest of it lagging behind, especially African economies. As stated in the World Bank report, the long-term outlook for emerging market and developing economies is even more concerning since their potential output is expected to remain below pre-pandemic projections over the next decade (World Bank, 2021). However, the hardest hit by the pandemic are the low income countries, whose development will be significantly decelerated, leaving them more years behind advanced economies compared to the projected pace before the COVID crisis. IMF analysis indicate that these countries will require $200 billion in the next five years just to be able to respond to the COVID crisis and additional $250 billion to improve their economic aspects and go back to pre-pandemic convergence paths (IMF, 2021b).

Table 2: Overview of the World Economic Outlook Projections (percent change)

			Projections	
	2019	**2020**	**2021**	**2022**
World Output	2.8	–3.2	6.0	4.9
Advanced Economies	1.6	–4.6	5.6	4.4
United States	2.2	–3.5	7.0	4.9
Euro Area	1.3	–6.5	4.6	4.3
Germany	0.6	–4.8	3.6	4.1
France	1.8	–8.0	5.8	4.2
Italy	0.3	–8.9	4.9	4.2
Spain	2.0	–10.8	6.2	5.8
Japan	0.0	–4.7	2.8	3.0
United Kingdom	1.4	–9.8	7.0	4.8
Canada	1.9	–5.3	6.3	4.5
Other Advanced Economies[5]	1.9	–2.0	4.9	3.6
Emerging Market and Developing Economies	3.7	–2.1	6.3	5.2

[5] Excludes the Group of Seven (Canada, France, Germany, Italy, Japan, United Kingdom, United States) and the Euro area countries

Emerging and Developing Asia	5.4	–0.9	7.5	6.4
China	6.0	2.3	8.1	5.7
India[6]	4.0	–7.3	9.5	8.5
ASEAN-5[7]	4.9	–3.4	4.3	6.3
Emerging and Developing Europe	2.5	–2.0	4.9	3.6
Russia	2.0	–3.0	4.4	3.1
Latin America and the Caribbean	0.1	–7.0	5.8	3.2
Brazil	1.4	–4.1	5.3	1.9
Mexico	–0.2	–8.3	6.3	4.2
Middle East and Central Asia	1.4	–2.6	4.0	3.7
Saudi Arabia	0.3	–4.1	2.4	4.8
Sub-Saharan Africa	3.2	–1.8	3.4	4.1
Nigeria	2.2	–1.8	2.5	2.6
South Africa	0.2	–7.0	4.0	2.2
Memorandum				
World Growth Based on Market Exchange Rates	2.4	–3.6	6.0	4.6
European Union	1.8	–6.0	4.7	4.4
Middle East and North Africa	0.8	–3.0	4.1	3.7
Emerging Market and Middle-Income Economies	3.5	–2.3	6.5	5.2
Low-Income Developing Countries	5.3	0.2	3.9	5.5

Note: Real effective exchange rates are assumed to remain constant at the levels prevailing during May 5-June 2, 2021. Economies are listed on the basis of economic size.
Source: adapted from *IMF World Economic Outlook, July 2021.*

World manufacturing sector has experienced high growth rates in the second quarter of 2021. As reported by the United Nations Industrial Development Organization (UNIDO, 2021), manufacturing output has already surpassed its pre-pandemic levels in China by the middle 2020, whereas in other developing and emerging industrial economies that happened during the last quarter. Meanwhile, industrialized economies reached their 2019 manufacturing output levels at the end of 2020 and then slightly exceeded it at the beginning of 2021. Given that in 2021 many countries were considerably mitigating their pandemic measures and progressively reopening their economies, global manufacturing production has registered high annual growth rate of 18.2% by the second quarter of 2021. Although very encouraging, it should be kept in mind that such high growth rates are partly a result of very low levels of production last year, when global manufacturing

[6] For India, data and forecasts are presented on a fiscal year basis and GDP from 2011 onward is based on GDP at market prices with fiscal year 2011/12 as a base year

[7] Indonesia, Malaysia, the Philippines, Thailand, Vietnam

output declined by 11.4%. It was the first time since the 2008 financial crisis that global manufacturing dropped. Yet, the recovery seems to be faster, but also uneven across regions.

International trade during the corona virus pandemic

World trade has been seriously impacted by COVID-19 crisis, with both supply and demand sides deeply disturbed. Many companies had their production stopped and doors closed temporary, either because of the governments' measures or because of the disruption in their supply chains and sales. Most governments required temporary closure of non-essential sectors, reduction of working hours or a complete lockdown, which had a severe consequences for both manufacturing and services. In such conditions, long global supply chains were most affected since a number of participants and distance between them is large. Like in any crisis, during the pandemic, uncertainty is very high, people feel insecure and have a fear of income loss. Therefore, they tend to spend less and mostly only on essential and necessary goods, so the demand side has been seriously affected as well. Disruption of supply chains and changed spending patterns caused surpluses of some goods, inducing extra costs for their storage or damage control, while shortages of certain inputs and components in other sectors created bottlenecks in the production process. The pandemic has "revealed the fragility and exposed the global supply chains' vulnerability and low resilience" (Fonesca & Azevedo, 2020, pp.427).

Moreover, changes in trade were very diverse across product categories and sectors. Analysing the impact of COVID-19 on the directions and structure of international trade, OECD authors reported that demand for protective and pharmaceutical products surged in 2020, need for food, home appliances and electronics also grew, and interest in precious metals raised as well (Arriola, Kowalski & van Tongeren, 2021). On the other hand, products such as clothing, different kinds of textile and fabrics, vehicles and machinery were in much lower demand than normally. According to their data, trade in category ″other made-up textiles articles″, which contains masks and other protective equipment, saw a record high increase of 110% during 2020 and in pharmaceuticals it was about 12%. A significant growth was registered in trade within commodities such as stones, precious stones and precious metals (16%) as well as trade in ores, slag and ash (8%). Furthermore, in many agro-food product categories trade was also raised, including animal and vegetable oils (14%), oil seeds and oleaginous fruits (14%), cereals (9%) and sugar (8%). Miscellaneous chemical products category recorded a rise of 9% in trade, while electrical and electronic machinery and equipment trade increased by 5%. In contrast, trade in items like fur-skin, silk and works of art declined considerably, around 40%. Aircraft, spacecraft and parts were 34% less traded last year, as well as mineral fuels, oils and products (31%), while a fall in vehicles and parts trade was less severe, around 14%. As stated in the OECD analysis, the influence of the COVID-19 crisis on trade was more different than the influence of global financial crisis. Namely, during the 2009 crisis negative effects on trade were seen across all product categories, while in 2020 disparity in trade impacts was much larger than not only during global financial crisis, but also any other year in the last two decades. Considering the level of

product's technological sophistication, the data shows that impact of the pandemic was nearly identical since the decrease in goods trade during 2020 was registered among both - technologically complex products and the basic ones - as well as the increase. How strong the influence of the COVID-19 crisis on international trade in certain sectors has been depended on many factors. The study involving 28 exporting countries and multiple importers suggested that ″sectoral characteristics such as the feasibility of remote work, durability of goods, and integration into global value chains played a large role in mitigating or augmenting the trade effects of COVID-19 shocks″ (Espitia et al., 2021, pp.26).

The WTO statistics indicate that the volume of world merchandise trade dropped 12.1% (quarter on quarter) in the second quarter of 2020, but made a substantial increase of 11.4% in the third quarter of 2020 and a rise of 4.4% in the fourth (WTO, 2021). The growth was big enough not only to bring back the volume of merchandise trade in the last quarter of 2020 to its pre-pandemic level, but even above it. The recent trade forecast of WTO predicts that world merchandise trade will increase by 8.0% in 2021 and 4.0% in 2022. Unlike the goods trade, services trade has been much more influenced by lockdowns, other imposed measures and restrictions, and therefore has recovered more slowly. Analysing the world trade in the terms of value, it could be seen that the decline was sharper than in volume. The WTO data shows that the value of world merchandise exports decreased about 8% compared to the previous year, while the value of commercial services was down by 20%. The value of world merchandise trade in US dollar declined by 21% year-on-year in the second quarter of 2020, but by the last quarter it was up by 2%, whereas commercial services trade fell by 28% year-on-year in the second quarter, and has stayed down by 19% year-on-year in the fourth (WTO, 2021).

Table 3: World trade volume (percent change)

			Projections	
	2019	**2020**	**2021**	**2022**
World Trade Volume (goods and services)[8]	0.9	–8.3	9.7	7.0
Advanced Economies	1.4	–9.2	8.9	7.1
Emerging Market and Developing Economies	–0.2	–6.7	11.1	6.9

Source: adapted from *IMF World Economic Outlook, July 2021.*

The IMF report (IMF, 2021a) implies that the world trade had already been slowing down in 2019, before the dramatic fall of 8.3% in 2020. Advanced economies experienced a bigger decline in trade, around 9.2%, while emerging markets and developing economies were in a somewhat better situation, facing a fall in trade volume of 6.7% (Table 3). Projections show that global trade volumes are expected to increase about 9.7% in 2021, mostly as the result of expanded goods trade, while services trade is going to recover much slower due to the still present restrictions related to the

[8] Simple average of growth rates for export and import volumes (goods and services)

movement and social interactions. In 2022, the trade volume is estimated to rise further and approximately equal in advanced and emerging markets and developing economies, around 7%.

As mentioned, service sector was more affected by the pandemic, especially those services which require free movement of people and goods. Travel and tourism has been one of the major sectors of world economy, accounting for around 10% of the world GDP in the last twenty years. And it has been hit hardest. After ten consecutive years of continuous growth, a number of international tourist arrivals plummeted in 2020, reaching the level of thirty years ago. According to the data provided by the World Tourism Organization (UNWTO) the number of international tourist arrivals in 2019 was around 1.5 billion, whereas in 2020 that number was only 381 million (UNWTO, 2021a). That caused a loss of 1.3 trillion US$ in export revenues from international tourism and over 2 trillion US$ loss in global GDP. What brings more concern is that more than 100 million jobs have been at risk, affecting mostly women and youth. Developing countries have been the most vulnerable, especially small islands, in the regions of North-East Asia, South-East Asia, Oceania, North Africa and South Asia. For many of them tourism is one of or a major source of income, amounting up to 50% of total exports (UNCTAD, 2021). As reported by the World Travel & Tourism Council (WTTC, 2021), Travel & Tourism sector in 2019 accounted for 10.4% of the global GDP, which was equal to 9.2 trillion US$, and 10.6% of all jobs, total up to 334 million, providing 25% of all new jobs across the globe. Furthermore, international visitor spending made up around 27% of global services exports and 6.8% of total exports, reaching 1.7 trillion US$. Statistics clearly show how devastating economic effects of restrictions and other pandemic measures have been, revealing losses of almost 4.5 trillion US$ in this sector. Its share in global GDP dropped for almost 50% in 2020, reaching only 4.7 trillion US$. Moreover, 62 million jobs were lost in 2020, while many of the remaining 272 million are at risk, undergoing huge changes and working hours reductions, and depending on government's support. International visitor spending in 2020 declined by 69.4%, whereas domestic visitor spending recorded a smaller fall of 45% related to 2019. Other industries closely connected to tourism have also suffered considerable losses, particularly small and medium enterprises, so the consequences are much more profound. In the first seven months of 2021, the number of international tourist arrivals was still far from the pre-pandemic level, 80% lower than in the same period of 2019 and 40% lower than in 2020 (UNWTO, 2021b). Due to increased vaccination, relaxation of travel restrictions and reopening of many countries, during the summer months of June and July 2021 international tourism registered a modest recovery, although very uneven. Asia and the Pacific continued to struggle the most during the first seven months of 2021, with a 95% decline in international arrivals compared to the same period of 2019, followed by the Middle East (-82%), Europe and Africa (both around -77%). Some small islands in the Caribbean, Africa and Pacific regions, along with a few small European destinations, reported the biggest number of arrivals during June and July, sometimes even above the pre-pandemic levels. Regardless of small and short improvements in 2021, international tourism is still far below the 2019 levels and according to the World Tourism Organization survey most experts expect a return of international arrivals to pre-pandemic levels in 2024 or later (UNWTO, 2021b).

Aviation, alongside tourism, has been one of the biggest losers during the COVID-19 crisis. Borders closure, limited movement of people and goods and complete lockdowns have

had a strong impact on operations of air carriers, airports and air navigation service providers. Both passenger and cargo flights underwent huge changes and suffered severe losses, mainly because of the reduction in the number of flights, offered seats and additional expenses of other required measures. As stated in the latest economic analysis by the International Civil Aviation Organization (ICAO), global passenger traffic in 2020 fell by 60% (2.7 billion passengers) compared to 2019 which led to approximately 371 billion USD loss of gross passenger operating revenues of airlines (ICAO, 2021). The Asia/Pacific region was hit hardest, followed by Europe and North America. Domestic traffic recorded 50% reduction in the number of passengers while international traffic stayed further below the 2019 level, even 74%, due to the border closures and travel restrictions. By far, the lowest number of passengers was registered in April 2020, with the decline of 92% compared to previous year. According to the ICAO assessments, airports and air navigation services providers (ANSPs) have faced enormous losses as well. For the total of 12 months airports around the globe have lost 114.6 billion USD related to 2019, with Europe leading the biggest losers list, followed by the Asia/Pacific region and North America (ICAO & ADS-B Flightaware, 2021a). Air navigation services providers in Europe were also the most affected by the pandemic, suffering more than a half of the total world loss in 2020 which was nearly 13 billion USD (ICAO & ADS-B Flightaware, 2021b). Although the pandemic seems to be getting under control and the restrictions are far less severe, projections for 2021 show that a number of passengers will still be far below the 2019 level, with overall reduction of 2.21 to 2.24 billion (-49% to -50%). Domestic passenger traffic is estimated to be lower for about 34% compared to 2019, whereas international passenger traffic will still be down for more than 70% compared to the pre-pandemic level. Such conditions would lead to approximately 323 to 327 billion USD loss of gross passenger operating revenues of airlines (ICAO, 2021).

According to The United Nations Conference on Trade and Development (UNCTAD), the value of world trade in 2020 declined about 7% with significant heterogeneity in the timing and the magnitude (Nicita & Saygili, 2021). The impact of the pandemic on trade varied across the globe partly because of the existing trade agreements between certain countries and/or regions. The study of UNCTAD showed that trade within regional trade agreements (RTAs) decreased by about 5.6 percentage points, considerably less than trade occurring without any agreement. In addition, the more comprehensive and deeper the RTA was, the more resilient was the trade within it. If trade agreements provided only tariff preferences (shallow RTAs), trade flows were still less disrupted than if there was not any. However, the effects of RTAs during the pandemic were not the same for developed and developing countries, nor for developing countries belonging to different regions. Deep trade agreements have considerably reduced negative effects of COVID-19 crisis regardless of the level of country's development, while shallow trade agreements did not always result in more resilient trade flows for developing countries. The analysis also indicated that the benefits of RTAs have varied a lot across the world. Trade agreements did not help much African countries to make their trade less affected by pandemic shocks, but for Asian developing economies and countries from Latin America and Caribbean region RTAs had much more notable effect.

Even though COVID-19 has seriously affected the international trade, many difficulties have been already overcome. However, the long-term effects of the pandemic may be "more profound than initially anticipated, leading to structural changes in the process of economic globalization" since it could result in stronger competition

for economic and political dominance (Gruszczynski, 2020, pp.342). Depending on the overall impact of the pandemic, we could be witnessing a fundamental change in international trade relations and the governance model.

Turbulence at the labour market and changes in the living standard caused by COVID-19

Since the appearance of the corona virus, most countries imposed lockdown measures, some form of the workplace restrictions and closures in certain sectors, or even all but essential workplaces, over the time. As a result, world economy has faced a potential record high levels of unemployment and poverty. The estimates from the International Labour Organization (ILO) show that around the globe labour markets have been severely disrupted, a lot more than during the 2009 global financial crisis or Great Depression.

Compared to the last quarter of 2019, 8.8% of global working hours were lost in 2020, which is equivalent to 255 million full-time jobs[9] (ILO, 2021). Around a half of those was mainly a consequence of employment loss, mostly in regions like North and Latin America, while in Europe and Asia it was the result of working hours decrease for those who kept their jobs. Women suffered greater losses of employment than men, as well as younger workers compared to the older ones. Employment loss in 2020 mostly led to increasing inactivity rather than unemployment (71%), meaning that people were predominantly withdrawing from the labour market either because they were unable to work or for some reason did not want to search for a job (Figure 2). According to the ILO report (ILO, 2021), in previous global crises a rise in unemployment was usually the main source of working-hour losses, whereas during the ongoing crisis caused by the pandemic both inactivity and reduction in working hours within employment appeared to be major factors. The analysis of the working-hour losses in 2020 by different income groups show that lower-middle-income countries were hit hardest, with losses much higher than the global average (11.3%). High-income countries and upper-middle-income countries experienced similar working-hour losses (8.3% and 7.3% respectively), while countries with low income faced the smallest working-hour losses (6.7%). The second quarter of 2020 was the most difficult one for every income group and in general, when nearly half of total yearly working-hour loss happened.

Losses in working hours resulted in large reductions in labour income. The assessment of labour income loss in 2020, which amounted to 3.7 trillion $ and represented around 4.4% of the 2019 global GDP[10] clearly shows how seriously the labour market and people were affected by the pandemic. It declined by 8.3% in 2020 related to 2019. The data indicates a large disparity within country income categories and geographical regions. Generally, lower-middle income countries suffered the greatest loss of income from work (12.3%), while low-income, upper-middle-income and high-income countries experienced nearly the same extent of a labour income loss (7.9%, 7.6% and 7.8% respectively). Furthermore, workers in Asia and the Pacific were in a somewhat better position than workers from another parts of the world, having lost around 6.6% of the labour income, while those in America were faced with highest labour

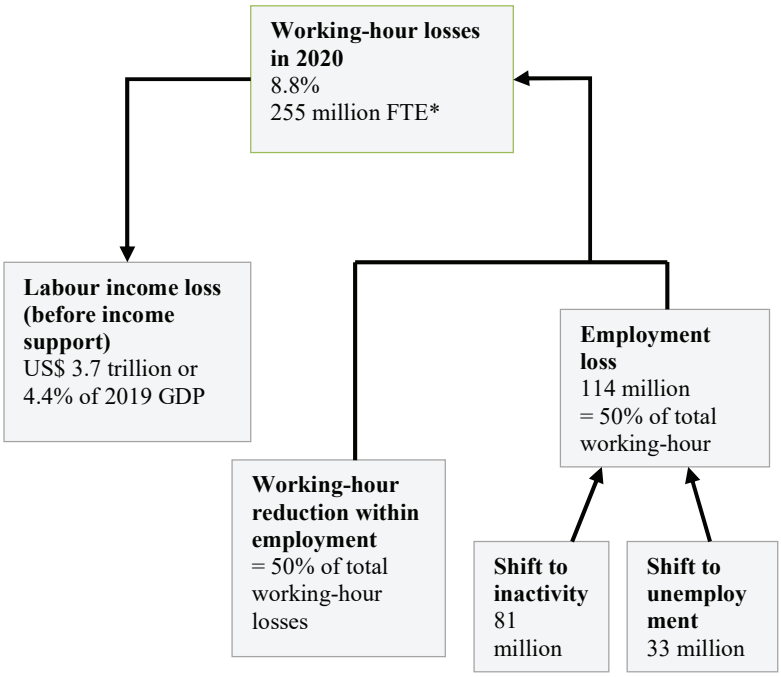
[9] Assuming a 48-hour working week

[10] Global GDP in 2019 using 2019 market exchange rates

income loss of 10.3%. Workers in Europe and Central Asia region and in Arab States suffered similar losses of 8.7% and 8.4%, while in Africa the decrease in labour income was about 9.4%.

Since there is a high degree of uncertainty regarding the pandemic and a wide group of factors that affects the employment and working conditions around the world, the speed of recovery is very hard to predict. As stated in the ILO report (2021), there are three possible scenarios that would lead to different outcomes. The pessimistic scenario projects that the global working-hour losses in 2021 will remain high, around 4.6% compared to the last quarter of 2019, which corresponds to 130 million full-time jobs (presuming 48 working hours in a week). Somewhat better situation is anticipated in the baseline scenario, which estimates the losses up to 3.0% or about 90 million full-time jobs. Even in the most optimistic case, which presumes the rise in economic activity and having the pandemic under control, a decrease in global working hours will amount to 1.3%, equivalent to 36 million full-time jobs. Furthermore, it is anticipated that in 2021 a greater share of working-hour losses will lead to employment loss, rather than to working-hour reduction. However, in order to estimate the real effects of the COVID-19 crisis on the employment so far, it is important to take into consideration the labour market trends which would continue if the pandemic had not occurred. Bearing in mind a long-term trend in the labour force participation rate and assuming the same values of unemployment rates as in 2019, the global employment in 2020 would be 30 million higher than in 2019. This brings us to the conclusion that global employment loss in 2020 is even higher than previously projected, amounting to around 144 million full-time jobs (ILO, 2021).

Figure 2: Estimates of working hours, employment and labour income loss during 2020



*FTE: Full-time equivalent jobs (assuming a 48-hour working week)
Source: adapted from *ILO (2021)*

Changes in employment and in working hours usually led to the income loss, partly or completely. By far, researches indicate that the COVID-19 crisis has influenced living conditions of the most vulnerable groups to the largest extent and that it could cause long-lasting effects on inequality. Even before the pandemic, a huge number of people, especially in the world's least developed countries, did not have many opportunities for decent work, raising their incomes or improving their living standards. Not only that COVID has threatened their health but also significantly increased the risk of poverty. The latest World Bank report on poverty shows that already-poor and vulnerable people are hit hardest by the pandemic-related job losses and deprivation, while the profile of global poverty has been partly changed, creating millions of ″new poor″ (World Bank, 2020). The fact that causes concern is that those who are new poor are usually more educated, live in more urban areas and are less likely to work in agriculture than the population living in extreme poverty before the pandemic. According to the World Bank (2020), it is estimated that between 88 million and 115 million people were pushed into extreme poverty last year because of the global crisis caused by COVID-19, which translates to a poverty rate of between 9.1% and 9.4% in 2020. This dramatically impedes the progress, making almost certainly impossible to achieve the 2030 goal of 3% of extreme poverty. The report suggests that South Asia and Sub-Saharan Africa would be the most affected regions.

Researches show that not all have been bearing the same burden caused by the pandemic and that inequality might be drastically raised. Households in many developing countries have been seriously disturbed by the crisis, where more than one third of respondents stopped working, temporarily or permanently, and over 64% of households had their total income reduced (Bundervoet, Dávalos & Garcia, 2021). That significantly increased food insecurity at the household level. The study also showed that vulnerable groups have been much more affected by the pandemic. Woman, youth and low-skilled workers are segments of society which were in disadvantaged position at the labour market even before COVID-19, thus they experienced the biggest job losses and income reduction. Self-employed and casual workers suffered most from income losses. Many developed countries have faced the same challenges as well. Using a large-scale survey of UK households, researchers came to the results that population with insecure employment, those under the age of 30 and minority ethnic groups are the ones that experienced the largest job losses, while those in lowest quintiles of income have suffered severe declines in household earnings (Crossley, Fisher & Low, 2021). Transaction data from companies showed that during the pandemic the largest spending reduction was recorded among the wealthy, as well as decline in consumption, but expenditure for this group has fallen much more than income. On the other hand, the lowest quartile of income distribution experienced the smallest spending cuts, but the largest decline in earnings, while their total incomes have not fallen as much thanks to the government help (Hacioglu, Känzig & Surico, 2020). Consumption and income inequality has extremely increased, with economically most vulnerable segments of society suffering the biggest loss (Surico, Känzig & Hacioglu, 2020). The analysis conducted in Spain showed that government interventions have been very effective since without them the inequality would have increased substantially, mainly because of job losses and reduced earnings experienced by low-wage workers, as well as among the young, the foreign-born and in regions more dependent on services (Aspachs et al., 2020). Perhaps the best evidence

of how serious the impact of COVID-19 might be is the IMF analysis which suggests that distributional consequences from the current pandemic may be larger than those occurred after any other pandemic in the recent past, and greater than those caused by typical recessions and financial crises (Furceri, Loungani, Ostry & Pizzuto, 2021).

Conclusion

The ongoing COVID-19 crisis has been nothing like the previous ones. The pandemic has been threatening people's health and has taken many lives. In order to stop the spreading of the disease and protect public health, the restrictive measures had to be imposed. Accordingly, economic activity got completely disrupted and the extent of economic consequences has been unprecedented. Furthermore, the duration and intensity of it stays unknown which brings even more uncertainty. It is quite difficult to make predictions about the end of the crisis and when things will go back to normal, if they ever will. Whether it will cause only a short term economic effects or it will lead to structural changes in global economy remains an open question. The "normality" we once knew might be changed forever and we might be witnessing the creation of a new economic order.

The pandemic revealed all the weaknesses of world economy, proved how countries are mutually dependent and that in today's globalised world it is hardly possible to isolate and defend national economy from the outside shocks. Saving lives and protecting economic prosperity simultaneously have been a huge challenge for all countries, regardless of their level of development. Undoubtedly, the way and time of ending this pandemic will very much depend on mutual cooperation and assistance. Only with joint financial and medical support the world will get the chance to win this war against the virus. Moreover, precautionary measures and proactive actions should be taken in order to prevent, or at least minimize the possibility of, similar troubles occurring in the future.

References

Arriola, C., Kowalski, P. & van Tongeren, F. (2021). *The Impact of COVID-19 on Directions and Structure of International Trade*, OECD Trade Policy Paper No. 252, September 2021. OECD Publishing.

Aspachs, O., Durante, R., Graziano, A., Mestres, J., G.Montalvo, J & Reynal-Querol, M. (2020). *Real-Time Inequality and the Welfare State in Motion: Evidence from COVID-19 in Spain*, Barcelona GSE Working Paper Series, Working Paper No. 1202. Barcelona School of Economics.

Bundervoet, T., Dávalos, M. & Garcia, N. (2021). *The Short-Term Impacts of COVID-19 on Households in Developing Countries*, An Overview Based on a Harmonized Data Set of High-Frequency Surveys, Policy Research Working Paper 9582. World Bank Group.

Crossley, T. F., Fisher, P. & Low, H. (2021). The Heterogeneous and Regressive Consequences of COVID-19: Evidence from High Quality Panel Data. *Journal of Public Economics,* Jan, 193:104334. doi:10.1016/j.jpubeco.2020.104334

Espitia, A., Mattoo, A., Rocha, N., Ruta, M. & Winkler, D. (2021). *Pandemic Trade: Covid-19, Remote Work and Global Value Chains*, Policy Research Working Paper 9508. Macroeconomics, Trade and Investment Global Practice. World Bank Group.

Fonseca, L. & Azevedo A. (2020). COVID-19: outcomes for Global Supply Chains. *Management & Marketing. Challenges for the Knowledge Society*, Vol. 15, No. Special Issue, 424-438. doi: 10.2478/mmcks-2020-0025.

Furceri, D., Loungani, P., Ostry, J. & Pizzuto, P. (2021). *Will COVID-19 Have Long-Lasting Effects on Inequality? Evidence from Past Pandemics*, IMF Working Paper No. 2021/127. International Monetary Fund.

Gruszczynski, L. (2020). The COVID-19 Pandemic and International Trade: Temporary Turbulence or Paradigm Shift? *European Journal of Risk Regulation*, Vol. 11, 337–342.

Hacioglu, S., Känzig, D., & Surico, P. (2020). *The distributional impact of the pandemic, CEPR Discussion Paper,* No. 15101. Centre for Economic Policy Research, London.

ICAO & ADS-B Flightaware (2021a). https://data.icao.int/coVID-19/airports.htm

ICAO & ADS-B Flightaware (2021b). https://data.icao.int/coVID-19/ansp.htm

International Civil Aviation Organization (2021). *Effects of Novel Coronavirus (COVID 19) on Civil Aviation: Economic Impact Analysis.* Economic Development – Air Transport Bureau, Montreal, Canada. https://www.icao.int/sustainability/Documents/COVID-19/ICAO_Coronavirus_Econ_Impact.pdf

International Labour Organization (2021). *ILO Monitor: COVID-19 and the world of work*. Seventh edition, Updated estimates and analysis.

International Monetary Fund (2021a). *World Economic Outlook Update*, July 2021.

International Monetary Fund (2021b). *IMF Policy Paper: Macroeconomic developments and prospects in low-income countries*, March 2021.

Nicita, A. & Saygili, M. (2021). *Trade Agreements and Trade Resilience During COVID-19 Pandemic*, UNCTAD Research Paper No. 70. Trade Analysis Branch Division on International Trade and Commodities UNCTAD, United Nations.

OECD (2021). *OECD Economic Outlook*, No. 109, May 2021.

Surico, P., D. Känzig & S. Hacioglu (2020). *Consumption in the time of Covid-19: Evidence from UK transaction data, CEPR Discussion Paper*, No. 14733. Centre for Economic Policy Research, London.

United Nations (2020). *Shared responsibility, global solidarity: Responding to the socio-economic impacts of COVID-19*, March 2020.

United Nations Conference on Trade and Development (2021). *Covid-19 and Toursim: An update, Assessing the economic consequences*. UNCTAD – Division on International Trade and Commodities.

United Nations Industrial Development Organization (2021). *World Manufacturing Production: Statistics for Quarter II 2021,* Getting back on track: the loosening of restrictions fires up post-pandemic recovery. UNIDO Statistics.

World Bank (2020). *Poverty and Shared Prosperity 2020: Reversals of Fortune*. Washington, DC: World Bank. doi: 10.1596/978-1-4648-1602-4

World Bank (2021). *Global Economic Prospects,* June 2021. Washington, DC: World Bank. doi:10.1596/978-1-4648-1665-9.

World Tourism Organization (2021a). *Covid-19 and tourism, 2020: A year in review*. January 2021.

World Tourism Organization (2021b). *World Tourism Barometer*, Volume 19, Issue 5, September 2021.

World Trade Organization (2021). *Report of the TPRB from the director-general on trade-related developments*, (mid-october 2020 to mid-may 2021), Trade Policy Review Body, 13 July 2021.

World Travel and Tourism Council (2021). *Travel and tourism: Economic impact 2021, Global economic impact & trends 2021*, June 2021.

ШАБЛОН / ТЕМПЛАТЕ ЗА ПИСАЊЕ РАДОВА

Име аутора (Font size 10 Normal) Times New Roman (SR-Cyrilic)
Факултет или институција и Град (Font size 10 Italic)

НАСЛОВ СРПСКИ (Font size 11 Bold)

Апстракт

Текст апстракта на српском ...

Кључне речи:

NASLOV ENGLESKI ili neki drugi jezik (Font size 11 Bold)

Abstract

Tekst apstrakta na engleskom ili na nekom drugom jeziku…

Key words:

НАСЛОВ (Font size 11 Bold)

Текст (Font size 10)……...

Литература

1. Списиак литературе

Veličina strane 170mm x 240mm
Margine: Top 30mm Bottom 20mm
Left 22mm Right 22mm

CIP – Каталогизација у публикацији
Народна библиотека Србије, Београд

33+502/504

ECONOMICS of Sustainable Development = Економика одрживог развоја / editor-in-chief Zoran Simonović. - Vol. 5, br. 1 (2021)- . - Niš : Society of Economists "Ekonomika", 2020 - (Niš : "Medivest"). 68 стр. - 24 cm

Dva puta godišnje.
ISSN 2560-421X = Economics of Sustainable Development