Abstract Book

18-19 November 2022

Management Application and Research Center (YUVAM)

CES II
CIRCULAR ECONOMY SERIES II
INTERNATIONAL CONFERENCE

YEDİTEPE UNIVERSITY
PRESS

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DETECTING AND MEASURING SPATIAL AIR POLLUTION SPILLOVER EFFECTS AND HETEROGENEITY USING TREE-BASED MACHINE LEARNING METHODS

Dr. Mehmet Güney CELBİŞ

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Mapping and measuring urban air pollution has a high relevance for environmental policy purposes in the context of cities. From a circular economy perspective, such information can be instrumental in rediverting waste patterns that lead to urban pollution. This study illustrates how spatial spillover effects of urban pollution can be detected and measured through randomized and sequential tree-based algorithms and interpretable machine learning (ML) explanations based on game theoretical methods. In doing so, the study compares and contrasts the spillover effects and spatial clusters detected by these ML algorithms to those of more traditional approaches such as Moran cluster maps based in the Local Indicators of Spatial Association Framework, in addition to the findings of a spatial Durbin model. More specifically, using the well-known Boston Housing dataset for illustrative purposes, the study visualizes the spillover effects of urban pollution through the implementation of a Shapley Additive Explanations (SHAP) analysis on the spatial lag of the air pollution variable constructed through an inverse distance spatial weight matrix and comparing them to the results of a spatial econometric model. Furthermore, the study shows how clusters detected by a random forest proximity approach compares to those detected through the use of the local Moran statistic.

DETERMINANTS OF ECOLOGICAL FOOTPRINT BASED ON *STIRPAT* METHODOLOGY: A PANEL APPROACH

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Environmental degradation is one of the serious problems of our century. Numerous studies have been involved in investigations for reversing the degradation process for different regions. This study is analyzing determinants of ecological footprint employing a panel of 109 countries. The impact of the following determinants on ecological footprint is examined: income per capita, urbanization, level of education, a dummy for the energy importing status, Gini score coefficient, corruption, and a voice coefficient. The STIRPAT methodology is employed, developed by Dietz and Rosa (1994). The estimations of the model reject the hypothesis of the Environmental Kuznets Curve presence in the panel, where both income and square income per capita are positively related to ecological footprint. Energy importer countries tend to create less footprint. The Gini score coefficient is significant and negative. As higher Gini scores are associated with uneven income distribution, this result suggests that fair distribution of income in a country reduces footprint. Corruption has a positive and significant effect on the ecological footprint in all specifications. This study analyzed relations between ecological footprint and a series of determinants contributing to the research to improve environmental quality.

THE MORE SUPPORTIVE, THE BETTER, THE MORE ADAPTIVE, THE BEST: LEADERSHIP SUPPORT, STRATEGIC FLEXIBILITY, AND GREEN MANAGEMENT PRACTICE ADOPTION IN SMES

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Growing global concerns associated with the natural environment, such as alarming ozone depletion, air and water pollution, soil erosion and declining biodiversity compelled firms to engage in sustainable eco-friendly business practices (Lee, 2009; Leonidou, Christodoulides, & Thwaites, 2016; Mustapha, Manan, & Wan Alwi, 2017). The vast majority of the empirical green management (GM) research concentrates on the corporate environmental performance of large firms, but the contribution of small and medium-sized enterprises (SMEs) on economic activity and their collective impact on harming the environment cannot be ignored (Leonidou et al., 2016; Moore & Manring, 2009). Qian and Xing (2016) highlight that "being smaller does not make companies immune from being equally heavy polluters" (p. 2).Therefore, reducing the environmental harm of SMEs seems to be a key success factor in greening the economy and addressing this challenge is a priority for managers and other decision-makers (Ma et al., 2016; Trumpp& Guenther, 2017). The adoption of green management principles in a firm may depend on the support from the leadership team and the capabilitiesto create new resource combinations for the right environmental procedures, namely

strategic flexibility. This study investigates the impact of leadership support and strategic flexibility to implement green management practices in SMEs. In line with the aim of the study, a survey was carried out on a sample of 214 SMEs which operate in the chemical industries in Turkey. The findings revealed that leadership support contributed more than strategic flexibility to the adoption of green management practices of SMEs. However, the combined effect of leadership support and strategic flexibility was the greatest.

HOW CAN THE CIRCULAR ECONOMY CONTRIBUTE TO THE ACHIEVEMENT OF SDG 8: DECENT WORK AND ECONOMIC GROWTH?

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The circular economy is a model of consumption and production, which includes reusing, sharing, repairing, recycling, and refurbishing existing products and materials as long as possible. The related economic model aims to extend the life span of not only products and materials, but also organizations. The main purpose of this research is to investigate how circular economy models contribute to the actualization of one of the sustainable development goals, "Decent Work and Economic Growth". The 8th Sustainable Development Goal has 10 sub-targets. In the process of determining the research sample, sectoral and economic growth opportunities were compared. As a result of this comparison, the IT sector was chosen as the sample, and software companies listed in BIST 100 will be examined. In this context, the extent to which the selected software companies meet the sub-targets according to the determined parameters will be examined through frequency analysis. This research can be considered one of the first studies in the literature that focused on the combination of circular economy and SDG 8: Decent Work and Economic

Growth by performing frequency analysis. Thus, it is foreseen that the outputs of the research will be valuable to organizations and policymakers in achieving the 8th goal.

Keywords: *circular economy, sdgs, sustainable development goal, sdg8*

SECONDHAND FASHION CONSUMPTION IN CIRCULAR ECONOMY

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Globalization and industrialization have affected many aspects of life. Along with the positive impacts there are some negative ones on the environment. The negative effects of industrial production have necessitated possible solutions which effectuated the concept of circular economy. The very idea of consumption and production is reinvigorated within the circular economy. Consumption side of the circular economy is gaining interest along with the production side recently. Circular economy can also be employed at micro scale by consumers. One specific approach for supporting circular economy by consumers islengthening the product life through reuse. Through secondhand markets product life can be extended. Therefore, fewer products can be produced. Secondhand clothing market is estimated to increase by threefold by 2025.The current size of the market in Turkey is 400 million TL. In this conceptual study the secondhand fashion consumption will be analyzed from the perspective of sustainability and circular economy. The aim of this paper is to investigate the evolution of circular consumption. It also aims to discuss the emerging digital secondhand fashion market strategies and fashion rental business. The method of the research is based on a literature review and analysis of market practices.

Key words: *circular economy, secondhand fashion, fashion rental, sustainability, shared economy*

DÖNGÜSEL EKONOMİ PERSPEKTİFİNDE MODA ENDÜSTRİSİNE BAKIŞ

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Dünya nüfusunun hızla artması ve buna bağlı olarak tüketimin de artması; doğal kaynakların hızla tükenmesine, bunun sonucunda bu kaynakların yok olma tehlikesi ile insanlığı karşı karşıya getirmiştir. Bu tehdide karşı bir çözüm niteliğinde olan döngüsel ekonomi, doğrusal ekonomi modelinin tam tersi olarak, ham madde kullanımının azaltılması (reduce), atık maddelerin tekrar kullanımı (reuse) ve geri dönüşüm (recycle) aksiyonlarından oluşan bir yaklaşımdır (Liu et al., 2017). Hızlı endüstriyelleşme ve getirdiği olumsuz sonuçlar neticesinde, ilk 1960'lı yıllarda literatüre giren bu kavram, endüstri ayırt etmeksizin, işletmeleri doğaya, topluma ve ekonomiye temelde iki alanda daha fazla değer yaratmaya teşvik etmektedir; kaynak kullanımının azaltılması ve atık maddelerin/nihai ürünlerin yeni kullanım olanaklarının oluşturulması (Özuyar ve Gürsoy; 2021). Bu anlamda, doğaya en büyük zarar veren sektörlerden biri olan moda endüstrisinin döngüsel ekonomi perspektifinde ele alınmasını bir gereklilik olarak görmekteyiz. Çünkü hızlı moda (fast-fashion) akımının etkisiyle, çok bilinen markalar neredeyse iki haftada bir ürün koleksiyonlarını değiştirmekte ve çevreye geri dönülmez zararlar vermektedir. Bu çalışmada, yaratacağı etki ve anlam bakımından fark yaratılacağına inanıldığı için, doğaya en zarar veren

sektörlerden biri olan moda endüstrisine odaklanılacaktır. Türkiye'de döngüsel ekonomide öncülerden biri olan Nivago şirketi, bu modeli benimseyerek, kullanılmış tekstil ürünlerini tekrar müşterilerine sunmaktadır. Benimsenen nitel çalışma ile Nivago şirketi vaka analizi olarak incelenecektir. Bu bağlamda, hem ikincil veri kaynakları hem de birincil veri olarak, şirket yetkilileri ile derinlemesine görüşme yapılması planlanmıştır. Çalışmamızın ana hedefleri, şirketin iş modelinin, pazarlama hedeflerinin ve uygulamalarının döngüsel ekonomiye katkılarını ortaya koymak ve sektör için bir kıyaslama (benchmark) unsuru yaratmaktır. Nivago şirketinin Türkiye'de alanında öncü olması ve daha önce ülkemizde tamamen döngüsel ekonomi modelini benimseyen bir şirketin vaka analizi yapılmadığı için, literatüre ve iş uygulamalarına fayda sağlanması beklenmektedir.

EXAMINING THE RELATIONSHIP BETWEEN ECONOMIC GROWTH AND SUSTAINABLE DEVELOPMENT IN TÜRKİYE

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Placed on the international agenda with the release of the report Our Common Future, commonly referred to as the Brundtland Report of the World Commission on Environment and Development in 1987, the concept of sustainable development has attracted considerableglobal attentiondue to its influence on three fundamentalelementswhich may enable the present and future generations to balance their economic, environmental, and social needs:economic growth, environmental protection/ sustainability, and social inclusion.

Economic development is a prerequisite for sustainable development. It may reduce poverty as well as hunger and enhance education and well-being. Sustainable development concept refers to the conservation of the limited natural resources for future generations. The relationships between economic development, sustainability, and inclusion factors are of much importance for achieving sustainable development. They can strengthen and reinforce each other when managed properly. The virtuous cycle starts with sustained and inclusive growth which drives progress, creates decent jobs for all, and improves the living standards.

This paper aims to analyze the relationship between economic growthand sustainable developmentin the Turkish economy during the 1985-2022 period by considering the effects of human capital, environment, and inclusion.

THE IMPACT OF RENEWABLE ENERGY ON ECONOMIC GROWTH

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World economy rises on energy sector; with its strategic leadership in economic growth. While global development and population increase continuesly, the demand and need for energy scales up. This is end of "below average growth" era. With the impact of developping technology, renewable energy cost goes down and transformation process speeds up by governments incentives for environmentalist energy production. But; it seems that for long years, still, fossil fuels system will continue. Developments in fossil fuel possesing countries, especially oil, have direct impact on energy prices. As a result; the global trend for energy demand is towards clean (green) energy sources. The fight against CO2 release and climate change will become more important. Although in predictable future, supremacy of fossil fuels will continue; government policies and incentives will be shaped in support of works to minimize their negative impacts to nature. Demand for energy and natural resources has been increasing due to economic and population growth. Over recent years, the country has experienced the fastest surge in energy demand among OECD countries, and according to the International Energy Agency (IEA) forecasts, is set to double its energy use over the next decade. will provide a value to literature by increasing importance of renewable energy sources for nature, human and world. I will try to look the impact of renewable energy on economic growth specific to Turkey and Germany.

Using clean, renewable energy is one of the most important actions you can take to reduce your impact on the environment.

Key Words: *energy, sustainable development, renewable energy, natural resource economics*

Jel Codes: F53 International Agreements and Observance . International Organizations, G18 Government Policy and Regulation, O1 Economic Development, Q2 Natural Resources including Energy, Natural Resources Renewable, Z13 Economic Sociology . Economic and Social Stratification,

SÜRDÜRÜLEBİLİR KALKINMA HEDEFİ 5 - TOPLUMSAL CİNSİYET EŞİTLİĞİ: LOJİSTİK SEKTÖRÜ ÜZERİNE BİR İNCELEME

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Sürdürülebilir Kalkınma Hedefleri, diğer bir tanımı ile Küresel Amaçlar, gezegenimizi korumak, yoksulluğu önlemek ve tüm insanlığın refah ve barış içerisinde yaşayabilmesini sağlamak amacı ile 2015 senesinde kurgulanan evrensel bir eylem çağrısıdır. Kalkınma hedeflerinin beşincisi olan Toplumsal Cinsiyet Eşitliği ise, toplumsal yaşamın her alanına kadınların ve erkeklerin, her anlamda eşit katılım sağlayabilmelerini amaçlamaktadır. İlgili hedefin 6 adet ana, 14 adet de alt hedefi bulunmaktadır.Geçtiğimiz 30 yılı kapsayan küresel dönüşüm sayesinde, iş yaşamında kadının emek gücü, meslek ve mevcut bulundukları iş kolları büyük bir dönüşüm geçirmiştir. Lojistik ve taşımacılık sektörleri de günümüze kadar erkek egemen iş kollarından biri olarak kabul edilmiş olup, kadın istihdamından uzak durulmuştur. Fakat, hızla küreselleşen iş dünyasında, SKH 5 kapsamında kadın ve erkeğin iş yaşamında eşit şartlara sahip olmaları büyük önem kazanmıştır. BİST 100 endeksinde listelenen 10 lojistik şirketi örneklem olarak kabul edilmiş olup, şirketler tarafından yıllık olarak paylaşılan sürdürülebilirlik ve insan kaynakları politika raporları incelenecektir. Bu araştırmanın temel amacı, Türkiye'deki lojistik sektörünü toplumsal cinsiyet eşitliği perspektifinden inceleyerek, sektörün anlık durumuna dair projeksiyon sunmaktır.

Anahtar Kelimeler; *sürdürülebilir kalkınma hedefleri, lojistik sektörü, toplumsal cinsiyet eşitliği, skh*

DÖNGÜSEL TEDARİK ZİNCİRİ UYGULAMALARININ ÖNÜNDEKİ ENGELLERİN KÜRESEL BULANIK AHP YÖNTEMİ İLE DEĞERLENDİRİLMESİ

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Küresel iklim krizi, globalleşen dünya, artan üretim hacimleri ve hızla değişen müşteri beklentilerini karşılamanın yarattığı rekabet ortamı kaynakların sürdürülebilirliğini tehlikeye atmaktadır. 1760'lı yıllarda başlayan Sanayi Devriminden beri "al, yap, sat" mantığı ile işleyen doğrusal ekonomi modelinin kaynaklar için sürdürülebilir bir çözüm sunmaması, son yıllarda yeni bir ekonomik model arayışına sebep oldu. İlk olarak iki İngiliz çevre ekonomisti David Pearce ve R. Kerry Turner tarafından ortaya konulan döngüsel ekonomi kavramı; tedarik zinciri içerisinde dolaşımda olan ürün, malzeme ve enerjinin verimli bir şekilde kullanılmasını amaçlamaktadır. İçerisinde birçok aktör bulunan tedarik zincirleri bu yeni ekonomik modelde; tersine lojistik, yeniden üretim, ürün tasarımı, ürün yaşam çevrimi yönetimi, temiz üretim, sürdürülebilir paketleme, araç rotalama gibi faaliyetler ile önemli bir yere sahiptir. Fakat, giderek karmaşık bir yapıya dönüşen ve denizaşırı faaliyet gösteren tedarik zincirlerinin yeni bir modele adapte olmasında birçok engel ile karşılaşılmaktadır. Bu çalışmanın amacı, döngüsel tedarik zincirlerinin oluşturulmasına engel olan faktörlerin belirlenmesi ve bu faktörlerin önceliklendirilmesidir. Bu amaçla, kapsamlı bir literatür

taraması yapılarak 9 temel engel tanımlandı. Bu engeller, araç bataryası üreten bir işletme üzerinde küresel bulanık AHP yöntemi kullanılarak analiz edildi. Bulgular, tedarik zincirlerinin döngüsel ekonomiyi uygulamasında karşılaşılan temel engelleri ortaya koyarak, strateji ve planlama oluşturulmasında yöneticiler ve paydaşlar için bir yol haritası sunmaktadır.

Anahtar Kelimeler: *döngüsel ekonomi, tedarik zinciri, engeller, küresel bulanık ahp*

THE EFFECTS OF ENERGY CONSUMPTION ON SUSTAINABLE ECONOMIC DEVELOPMENT: ENVIRONMENTAL CONSEQUENCES

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Energy is one of the basic inputs of sustainable economic development. While energy consumption plays a critical role in both economic growth and sustainable development, it also contributes to environmental destruction and degradation. Renewable energy usage reduces environmental pollution and promotes sustainable development. Emissions of the greenhouse gases (GHG) such as CO2 which are borne from non-renewable energy sources harm the environment. Developed countries have focused on increasing the share of renewable energy sources in energy production and reducing GHG emissions in recent years due to both environmental and supply security concerns. This paper investigates the effects of economic growth and energy consumption on the environment within the framework of sustainable development in Turkey for the 2000 and 2021 period. In line with the literature, CO2 will be used as the dependent variable of the model in this study. Energy production from renewable and non-renewable energy sources, per capita energy consumption, and gross domestic product (GDP) will be used as independent variables. The long-term relationship between the variables will be investigated with the Pedroni Cointegration Test. The coefficients

of the relationship will be estimated using the Panel DOLS (Panel Dynamic Ordinary Least Squares) and FMOLS (Fully Modified Ordinary Least Squares) methods. In addition, the Granger Causality Test will be applied in order to determine the causal relationship between the variables to explain the linkages between energy consumption and sustainable development.

Keywords: *Sustainable Development, Environment, Energy Consumption*

THE IMPACT OF ARTIFICIAL INTELLIGENCE ON ENTREPRENEURIAL ORIENTATION

Arzu ŞAR İÇÖZ

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Artificial intelligence (AI) can contribute to complex scientific and engineering workflows by efficiently and precisely simulating, supplementing, or augmenting human intelligence. Technology and digitalization are becoming increasingly important topics for researchers in different disciplines, from economics and management to engineering and humanities.

Digital innovations such as the Internet, big data, cloud computing, artificial intelligence, and various digital technology-based platforms are impacting business initiatives and changing ways that go beyond entrepreneurial and innovation practices to influence culture, politics and society.

With the advent of the Information Age, legacy corporate attitudes and tactics are now envisioned in terms of success, innovation, and creativity, with artificial intelligence as a new approach to deal with the fast and volatile business environment.

Therefore, an entrepreneurial spirit emerges where profit lies in finding new opportunities to develop new products, new services, and new relationships.

Considering that the National Artificial Intelligence Strategy (UYZS) covering the years 2021-2025, which is Turkey's first strategy in this field,

support entrepreneurship and innovationto develop the artificial intelligence ecosystem, this study investigates the effect of artificial intelligence on entrepreneurial orientation.

THE IMPACT OF THE ENVIRONMENTAL PROBLEMS ON THE PROTEST MOVEMENT IN CONTEMPORARY SOCIETY (KYRGYZSTAN'S CASE)

Baurjan SİMAGAMBETOV

Environmental movements against infrastructure developments are on the rise in Central Asia. There have been environmental justice movements in Kazakhstan, and a variety of environmental protests in Kyrgyzstan. In Central Asia, infrastructure development poses real environmental, material and cultural threats to local populations. These communities are often highly reliant on the environment for their livelihoods and well-being, and thus have a heightened understanding of what they stand to lose by not managing it carefully. Threats to the environment, whether they materialize or not, can create 'relative deprivation' for local communities, generating local and specific grievances, which provide a general spur to activism. Despite lacking meaningful capital, poor groups can undertake resistance ranging from overt, confrontational behavior to subtle, everyday forms. This 'environmentalism of the poor' is closely linked to the 'environmental justice' movement. Environment justice can be sub-divided into recognition, distributional and procedural components. Recognition refers to the acknowledgement of collective social identities and their specific needs, concerns and livelihoods. Distributional environmental justice demands the equitable distribution within society of environmental benefits and burdens. Procedural environmental justice calls for the just political and social functioning of society and its institutions, with an emphasis on participation in decision-making. Several environmental mobilizations in Central Asia have been interpreted through an environmental justice lens.

In developing countries, the extractive industry is a major source of revenue for the economies of countries endowed with various mineral resources. These huge deposits of mineral resources in countries represent wealth capital where they are exploited sustainably. Mining, therefore, contributes significantly to the economic activity of several countries in both developed and developing countries. There is no doubt that the exploration of solid minerals will generate economic benefits and contribute considerably to the development of a nation, but the benefits may be outweighed by social and environmental costs. Therefore, governments and other stakeholders need to be mindful of the negative impacts caused by the exploitation of mineral resources on the rights of host communities, the environment, and even the national economy in the long run. The mining industry, by its nature, has a massive footprint such as environmental, social, and economic impacts. There is evidence that host communities are threatened by the dangers posed by the exploitation of mineral resources in some developing countries. This requires an adequate and effective response to reduce and avoid these negative effects. According to the investigations of non-governmental human rights organizations, the increase in the exploitation of natural resources in developing countries has given rise to the violation of human rights.

A major problem is that the legal and institutional framework regulating the mining sector in some developing countries does not adequately cater to the protection of mining host communities and their environment. One reason is that governments of developing countries strive to attract investment in the sector and, therefore, take steps towards creating a conducive environment for non-state actors with less stringent laws to control their activities and protect communities and their environment. The effect is that host communities become poorer and their environment is left devastated. The absence of or poor national frameworks regulating the industry in developing countries, including the poor obser-

vance of human rights, results in human rights abuses by the operations of extractive industries.

The adverse impacts of mining on people and the environment are enormous and should therefore be taken seriously. Although the extraction of resources will contribute to the growth of the economy, it also comes at a cost to the environment, community health, and social outcomes, most of which are borne by mining host communities. Mining has a huge impact on the environment. Mining activities cause harm to humans and the environment in the affected areas. An outcome of these adverse impacts of mining activities is human rights implications. Human rights can be undermined by mining companies in the process of exploration and development of mineral resources. Mining releases toxic substances into the air and water, spills from power plants contaminate domestic water and cause air and water pollution, and ecosystems are destroyed.Environmental movements againstmining and infrastructure developments are on the rise all over the world, Central Asia is no exception.

Anti-mining movements challenge the existing hegemonic power structures that define the environmental conflict by restructuring the scales of meaning and regulation. This is achieved by mounting a defense of the local place. Anti-mining movements jump scales from local to national to global in attempts to target concerns on certain geographical scales in order to challenge national decisions. Scale-jumping can be achieved by creating broader networks of social actors from different geographical locations, expanding the geographical scale at which the anti-mining discourse operates. These actors support local movements by providing experience, and information, enhancing media attention, and enabling a broader 'repertoire of contention' to include legal challenges. A recent study found that when an environmental movement was connected to

more civil society organizations, and especially when it was connected to more nationally or transnationally central civil society organizations, its outcome was more likely to be perceived as a success.

Including a wider range of actors and organizations in this broad network can result in initial discourses of local environmental justice being joined by broader discourses such as climate change, anti-neoliberal ideals,and resource nationalism. For instance, in the Pascua Lama conflict in Chile, local resistance movements referenced wider global claims such as climate change, glacier protection, democracy, and participation. In some cases, this can result in a loss of autonomy for local organizations, a need to alter strategies, ideological conflicts, and identity loss. Local movements need to be careful not to lose the grassroots while establishing links with supralocal organizations. If there are inequities in coalitions, contradictory opinions on the appropriate values and arguments to use may mean that local environmental justice claims lose out to discourses introduced by more powerful supralocal organizations. In Kyrgyzstan, where there are only 600–700 active national non-governmental organizations (NGOs) and few international organizations, local resistance movements may have to be less scrupulous about the social actors whom they form advocacy networks with, increasing the likelihood of this discourse displacement.

At the same time, due to distrust of the authorities in solving environmental problems, the level of protest moods increases in society. About half a thousand different mass actions are held annually in Kyrgyzstan. They can be divided into peaceful and violent. Peaceful environmental protests end with making demands to the authorities. Disruptive climate protests, by their nature, have sharp contradictions and end in clashes. Moreover, they can be accompanied by riots. An interesting observation is a fact that the peak of the most resonant mass protests occurred in 2018-2019. Let's give some examples.

The next and most acute protests, one way or another related to the environmental problems and were held around Kumtor in 2013. These protests ended with the introduction of a state of emergency in the Issyk-Kul region on May 31.This conflict has been resolved.

Another example of an environmental protest held in April 2018, where residents of the Toguz-Torou district set fire to a gold recovery factory under construction at the Makmal deposit. Protesters demanded to stop the work of the Chinese company "JL Makmal Development". In their opinion, the company causes environmental damage to the region. The amount of damage as a result of the riots amounted to $2.3 million. The company's work was suspended.

In December 2018, residents of the Chatkal region took to the rally. They opposed the work of the Turkish enterprise, which was building a gold recovery plant at the Terek-Sai deposit. The company has created more than 350 jobs for local residents with an average salary of 22.5 thousand soms. After the protest action, during which police officers were beaten, the enterprise suspended work for an indefinite period.

The most acute conflict associated with the mining company after 2013 can be considered the events in the Naryn region at the Solton-Sary deposit in August 2019 between local residents and Chinese workers of the gold mining company ZhongJi Mining. As a result, some local residents and workers were forced to turn to medical institutions. Machinery and equipment were damaged at the enterprise. After the intervention of the police, the situation was settled. The protesters demanded from authorities to shut down the company's activities. They explained the requirements by the fact that after the development of the deposit, there is a loss of livestock and certain allergic diseases in residents. The protest action lasted several days. China responded to these events through the Embassy. As a result, the mining field was closed.

An example of peaceful mass protests can be considered the situation around the gold processing plant at the Ishtamberdy deposit in the Jalal-Abad region. In 2018, local residents came to a rally. They claimed that the company does not comply with environmental regulations. The company was required to pay compensation and transfer the tailing facility under construction to another location. A commission worked on the spot, which established minor shortcomings in the development of the field. As a result, the development is not carried out to the present.

The next example of a peaceful public protest is the situation around the Shambesai gold deposit in the Kadamdzhai region. As a result of the activity of local residents, the license of the Chinese company "Tiandi" was suspended. The last rally in the area took place in 2018. Local residents opposed gold mining, explaining their actions as environmental damage.

The most large-scale and resonant protests that affected the entire country were held against the development of radioactive minerals. The YurAsia company intended to develop the Tash-Bulak field (Issyk-Kul region). Further processing of minerals was planned at the Kara-Balta mining plant. As a result, the work of the company was suspended, and the mining of uranium was banned at the level of legislation.

At the beginning of 2020, environmentalprotests took place inKyrgyzstan. The purpose of these protestswas to draw the attention of the authorities and society to the problems of air pollution and the country's ecology. In February 2020, in the village of Sogondu, Alai district, local residents called for the termination of the development of a coal deposit in the Taigak-Tash area. According to the villagers, the "Bikiping" company violates the ecology and the state of the local pasture. As a result, exploration of the area was terminated.

Realizing that the actions of the authorities are not enough to solve the emerging problems, society is increasingly drawing its attention to the

problems of environmental cleanliness. Nevertheless, the ecological situation might continue to lead to mass migration, and as a result, it might change the socio-economic landscape of the country.

The development of new digital technologies was predicted to be a boon for environmental activism. Internet and social media platforms were expected to facilitate broad bottom-up change, enabling activists worldwide to communicate and organize more effectively. However, the emergence of digital technologies may not have revolutionized the methods and impacts of activist organizations, especially for the environmental movement, wherein meaningful change has not yet been realized regarding climate change and nature preservation. Given the many challenges activists face, it is essential to understand how collective action can be undertaken with digital media to produce positive consequences for nature and human relations. Moreover, the neoliberal economic context from which digital technologies emerged and grew further accelerates environmental destruction through overproduction and overconsumption. Young climate activists have used a range of methods, including social media, legal injunctions, and peaceful protest, to draw attention to damaging policies and practices, and also to draw attention to whose voice is heard in discussions about climate action.

In Kyrgyzstan, scholars have observed that when interacting with international monitoring organizations, political elites tend to blame-shift environmental issues within the country, such as littering, onto the supposedly uneducated rural population which refuses to observe the societal conventions. Contrary to this perception, environmental participation in Kyrgyzstan appeared to be on the rise prior to the turbulent events of 2020.

The Move Green youth environmental movement is spreading awareness and increasing transparency of the environmental issues in Kyrgyzstan,

especially the pollution in the country's sprawling capital city, Bishkek. Their Aba. kg mobile application informs Bishkek residents of details about the quality of their air and has been downloaded by more than 3,000 people. Supported by Move Green, as well as the American University of Central Asia, Kyrgyzstan's first independent youth climate forum took place in 2019 and managed to bring together 400 participants. While it is still unclear what Kyrgyzstan's recent transition of power will mean for the future of politics in the country, as of now, it does appear that Kyrgyz citizens still hold the most power in potentially challenging any government action that further threatens the natural environment.