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Chapter II – ABSTRACTS

Determinants of Risk, Profitability, and Probability of Default for Russian Banking Sector

Olga Bekirova[1]

Abstract

The banking sector plays a significant role in modern economic systems. Banks are the core element of the financial sector. Credit institutions conduct settlements, ensure the safeguarding of clients' funds in bank accounts and act as intermediaries via transformation of funds into loans to the economy. To ensure the sustainability of the entire economy healthy functioning of the banking system is needed. At the same time banks face a variety of risks, including credit risk, operational risk, systemic risk, currency risk and liquidity risk. In this regard, it is necessary to timely identify problems in the banks and understand the sources of potential risks.

The vulnerability of the banking sector participants necessitates increased control by the regulator. Since mid-2013, the Bank of Russia has begun to pursue a policy aimed at rehabilitating the banking sector. One of the results was a reduction in the number of credit institutions by more than half over the years. Even though the wave of license revocations that occurred in 2015-2016 has calmed down nowadays, the period when the news about the revocation of a banking license would occur rare has not yet arrived. It is important to note that license revocations in recent years have occurred not only for reasons of financial insolvency and violation of several regulations, but mainly due to dubious transactions and violations of legislation in the field of combating the legalization (laundering) of proceeds from crime. Still there are banks that are close to failure, but their licenses are not revoked. High risk of those banks can be proxied by other financial measures as opposed to estimation of the probability of failure.

The topic of studying the stability of the banking sector in general and individual banks is quite extensive. Among empirical studies two large groups can be conditionally distinguished. The first one includes modeling the probability of bank failure. In this works authors try to identify macroeconomic, institutional, and indicators from balance sheets that affect the probability of default. Most often logistic regressions are used for the analysis [1], [2], [3], [4]. The second strand of the literature considers various individual characteristics of the bank and the factors affecting them. The authors typically consider measures such as profitability (e.g., return on assets and return on equity) and risk (e.g., Z-score and non-performing loans). As a measure of risk researchers often use the Z-score indicator [5], [6], [7]. The Z-score shows how many of its standard deviations a bank's profitability must fall to deplete its capital.

Z-score for each bank i in quarter j is calculated as follows:

$$Z_{ij} = \frac{ROA_{it} + EQTA_{it}}{\sigma(ROA)_{it}},\qquad(1)$$

where ROA_{it} – a return on assets,

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$\sigma(ROA)_{it}$ – a sample estimate of the 4-quarter moving average of the standard deviation of return on assets,

$EQTA_{it}$ – a ratio of equity to assets.

In this study quarterly data from the available finance statement (form 101 and 102) of Russian credit institutions was used. The period from 2013 Q3 to 2022 Q1 was considered. Using econometric estimates, factors that affect both the probability of a bank default as well as other indicators of its activity – the risk of insolvency (measured as Z-score) and its profitability (measured as ROA). Also, it was investigated how the insolvency risk affects the probability of bank failure and bank's profitability.

The results obtained showed that balance sheet ratios are significantly correlated with the probability of bank default, its risk of insolvency and profitability. The results support the "too-big-to-fail" hypothesis for the Russian banking sector, since larger banks have a lower probability of default, but a higher risk of insolvency. It is also worth noting that a special measure of liquidity creation was constructed. The obtained results showed that high liquidity creation puts upward pressure on the level of bank's insolvency risk.

According to the results, the insolvency risk is significantly negatively correlated with the probability of default and positively with bank's profitability. This means that the lower the risk, the lower the probability of bankruptcy and the higher bank's profitability is. Also, the inclusion of the insolvency risk indicator has led to an increase in the predictive power of the models.

In contrast to many studies focusing on the Russian banking sector, in this research various income statement indicators as explanatory variables were used such as net interest margin, the ratio of operating expenses to operating income, non-interest income, interest income on loans to customers and net income from operations with foreign currency normalized to the size of total assets.

Keywords: banking sector, bank sustainability, insolvency risk, Z-score, return on assets, banking license revocation, liquidity creation, Bank of Russia

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Value Chain Concept vs. Competitive Advantage Strategies in Retailing

Katarzyna Bilińska[1]   Barbara Pabian[2]   Beata Reformat[3]

Abstract

The development of retail as a result of many processes, caused, among other things, by the global pandemic, is currently undergoing dynamic changes, making it an interesting field of research at the same time. Within it, we can see that an important role during the development processes of retail entities is played by the pursuit of competitive advantage. Its achievement is carried out based on developing business models, which take the form of specific competitive strategies.

The desirable feature of the above activities is the competitiveness of the company, achieved by providing buyers with more value than the competition offers. Sustainability of competitive advantage is ensured by skillful creation of added value for the customer, with simultaneous creation of value for the company. Both variables are treated by M. E. Porter as the excess of subjectively perceived benefits (for the company it is profit) over subjectively perceived costs (for customers it is the sum of benefits achieved minus costs incurred).

Thus, for the purpose of the discussion carried out, the authors assumed that the concept of competitive advantage strategy in retailing means the way in which a retail company competes, reflecting the effect of using its competitive potential (considering the conditions of the environment), which enables it to effectively generate an attractive market offer and effective instruments of competition[4].

The purpose of the considerations undertaken is to show that the increasingly dynamic area of retail creates great opportunities to achieve competitive advantage through a business model based on the creation of value for the company's customer. Against this background follows a discussion of the basic elements that generate value for the company and its customers, as the basis for building a competitive advantage strategy. The realization of this goal indicates the important role of customer value creation in the context of building a competitive advantage strategy in retailing.

The category of "customer value" in retail is a broad and therefore complex concept, which makes it possible to analyze it through the prism of certain levels. The first of these is formed by "core value," which, enriched by certain unique, rare, and difficult to imitate elements, constitutes "additional value." At the next level, its development appears in the form of "customer service augmented value," which offers elements that enhance the quality of retail sales services. The highest level in the hierarchy under discussion is "relationship-based value."

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[4] It should be noted that the concept of competitive advantage became widespread in the early 1980s and is still being developed and analyzed to this day, both in strategic management, economics, and their numerous sub-disciplines. Hence, defining it is the result of a gradual, long-term process of introducing (both into the sphere of science and business practice) its various interpretations. Some of them complement each other, or are a continuation of each other, but there are also among them completely different concepts.

Its development is justified by the high "networking" of retail, which makes unique relationships in its area, allowing retail enterprises - participants in networks or buying groups - to benefit from the specific resources, capabilities, and competencies of other partners. Access to their knowledge constitutes an important "value" in the form of a sustainable competitive advantage.

The authors analyze examples of elements and activities that generate "customer value" in the retail area. They show considerable variation depending on the participant in the "value chain". Each of them is trying to seek sources of competitive advantage, which allows to attract and retain customers, but also to compete effectively. In doing so, it is important to maintain a balance between the value of the product as perceived by the customer and the management of costs and capital held.

The use of the "value chain" concept in retailing requires retail companies to make decisions through the prism of a system of activities, which begins the stage of searching for the dominant value. Within it comes the identification of the company's areas of activity that create "customer value" and their analysis in terms of building their own value chain. Their structure is formed by both the company's core activities (such as marketing, sales, service, etc.) and supporting activities (such as procurement, resource management, company infrastructure) and the relationships between them.

The next stage of activities boils down to determining the size/scale of the "customer value" that the retail company recognizes as dominant, i.e., providing it with an advantage over its competitors. The goal of the final stage is to prepare and develop communication activities through which the company's customers learn about the "value" offered to them. The procedures of this stage boil down to the selection of appropriate forms and tools of marketing communication that correspond to the needs of the company and its audience, the capabilities of the company. An important role in this process is played by innovations which, in retailing, create favorable opportunities to make significant changes, undertake new activities, provide new services, and thus attract innovative buyers.

The value obtained is the basis of customer satisfaction in connection with the purchase and use of the purchased product, as pointed out by Kotler, Kartajaya and Setiawan, among others. Recently, product disposal costs have also been included in these costs. The implementation of the "value chain" concept makes it possible to build competitive advantage by renewing the value offered to customers, within the individual links of the analyzed chain (manufacturer, supplier, retail chain, etc.), which is in line with the theory presented in the literature.

The consideration given to the concept of the "value chain" in terms of building competitive advantage in retailing, indicates its significant importance, as well as the great opportunities for implementation. These, in turn, are shaped by new needs and expectations of buyers regarding products, forms and ways of service, strong foreign competition in retail, as well as new technologies and changes in the environment. They force the search for new strategies and ideas for activities that are aimed at building and maintaining competitive advantage.

In conclusion, it should be added that the topics raised are only a starting point for a deeper and broader discussion, both among practitioners/managers, representing the retail area, and researchers/researchers of the processes that take place in it.

Keywords: customer value, competitive advantage, retailing

How Renewable Energy and Service Growth Cooperate with Environmental Quality: Evidence for Top Ten Service Value-Added Countries

Imen Chaouali (Corresponding author)[1]   Mehdi Ben Jebli[2]

Abstract

Greenhouse gas (GHG) emissions are spreading around the world with extensive speed and the service sector is one of the influencing activities on the growth of pollution rates. The present study investigates the dynamic relationships between carbon dioxide (CO_2) emissions, real Gross Domestic Product (GDP), renewable and non-renewable energy consumption, and service growth for a panel composed of the top ten countries in service activities. The empirical modeling applies procedures of panel cointegration and tests of Granger causality to explore the dynamic interaction between the analysis variables during the period 1980-2018. The outcomes suggest that the variables are cross-sectionally dependent. Using the tests of Pedroni and Westerlund, the variables are cointegrated. The long-run outcomes revealed an inversed U-sharped form between emissions-GDP proving the validity of the environmental Kuznets curve (EKC) assumption. The FMOLS and DOLS estimates show that non-renewable energy and economic growth contribute to the increase of CO_2 emissions, while service value-added leads to decrease emissions in the long-run. The coefficient related to renewable energy is negative but insignificant for the selected panel. The countries of the top ten in service should stimulate the usage of renewable energy in various service events. Planning for investment plans related to the use of renewable energies is quite essential for the advancement of the service sector leading to mitigating emissions portion.

Keywords: renewable energy, service growth, environmental quality

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New Generation's Perception on Leadership Attitudes, Competences and Behaviours

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Abstract

A new generation is entering into the labour market, a generation with different needs, behaviours and characteristics. This changes in the workforce market will determine the leaders to adapt their leadership style to these new conditions. The aim of the present paper is to explore the Gen Z members' concerns about their entering the labour market, their preferences regarding the employment arrangement and the leadership attitudes, competences and behaviours. The study was based on quantitative research undertaken on a convenience sample of members of Generation Z from Romania. The research methodology involved a design of a conceptual framework, based on three hypotheses, tested by means of Pearson chi-square. The results of the study highlighted a specific cultural context and help leaders to better understand how they can attract, retain and unlock the potential of Gen Z employees.

Keywords: leadership, generation Z, future workforce, work arrangements

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The Role of Social Media Platforms in Choosing Touristic Destinations

Giulia Gavriletea[1]

Abstract

Social media platforms such as Facebook, Instagram, TikTok, and Snapchat are considered important sources of information for people that are planning to travel. Tourist destination selection is now, more than ever, influenced by information provided by these social platforms, and companies that operate in the tourism sector must understand that creating content to connect with potential visitors can bring multiple benefits.

People are now encouraged to post vacation photos, share their travel experiences, and recommend destinations so tourists can choose the places to visit based on these recommendations. There are many destination alternatives for tourists and social platforms are a source of inspiration, especially for the young generation.

Tourists are making comparisons between multiple alternatives and social media play an important role in the planning and decision process. Trust in a tourist destination is now built on ratings and reviews posted by social media users, and now tourists evaluate the alternatives and make a comparison using social media platforms as a primary source of information.

Social media plays a vital role in all three travel stages: pre-travel, when tourists are looking for information for alternative destinations, during travel when they are looking for local attractions, and restaurants and post-travel when they disseminate their travel experiences.

Companies operating in the tourism industry must understand the vital role that social media platforms play in tourists' destination choices and create social media interaction strategies. Many strategies can help companies to attract new customers and to build long-term customer relationships using social media: continuously generating consistent content for social media, running successful ads on TikTok, Instagram, Facebook, etc, and using influencers or brand ambassadors to reach new target customers.

Digitalization is reshaping the tourism industry and there is no doubt that deep structural changes will also characterize this sector in the future.

Keywords: social media platforms, touristic destination

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Social Media and Its Impact on the Tourism Industry

Giulia Gavriletea[1]

Abstract

Social media plays an important role in the tourism industry for both tourists and destinations. Technological advancements and innovations helped social media to play a significant role in people's lives and to become a powerful tool for information dissemination.

There are many opportunities that social media platforms offer to companies that operate in the tourism industry: travel agencies, hotels, resorts, recreation and entertainment companies, etc. These platforms can be used by companies to provide useful information for tourists related to different touristic destinations, accommodations, and activities, to market their brand, to offer remarkable online customer service, to launch digital marketing campaigns, or to provide safe channels for booking or buying travel tickets, accommodations, holiday activities and events tickets.

The increased competition in the global tourism sector forces companies from this sector to build unique competitive advantages and social media can help them to become successful.

Social media platforms are being used by travelers of all ages and attention must be focused not only on attracting new customers but also on customer retention. Old customers can help companies to gain new customers or they can negatively influence prospective customers therefore attention must be focused on finding the best ways to encourage customers to share on different platforms the positive experience and to prevent unfavorable online reviews.

People must be encouraged to disseminate information related to travel experiences and managers that operates in the tourism industry must find proper solutions to stimulate clients to provide positive outcomes related to their vacation on different social media channels.

Positive reviews and useful information provided by tourism companies on different social media platforms that can convert readers into future customers can be the key to the success of companies that operate in this sector.

Keywords: social media, tourism industry

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Interpreting and Responding to Pandemics in Philosophical Traditions and Films of India

Pankaj Jain[1]

Abstract

India and the rest of the world continue to witness waves of COVID-19. In this article, I present myriad examples of ethical issues in the context of pandemics that hit India in the last few centuries. I also analyze the relevance of Indian texts and films in the context of various pandemics. The article quotes several primary and secondary texts to explore interpreting and responding to different pandemics and broader health issues. As the world reels under the COVID mayhem, it is time to take inspiration from various other medical professionals at the forefront of fighting this pandemic. We urgently need their compassion and not any recurrence of colonialism or racism that rears its head even today. Our collective responses to COVID-19 can prompt us to collectively mitigate and adapt to various climate changes across the planet by combining the ideas and imaginations from the "East" and "West."

Keywords: pandemics and Hinduism, pandemics and Jainism, pandemics and Gandhi, pandemics in India, Indian philosophy and pandemics

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Dynamics of Trust and Consumption of COVID-19 Information Implicate a Mechanism for COVID-19 Vaccine and Booster Uptake

Ruben Juarez[1]

Abstract

Vaccine hesitancy remains a significant barrier to achieving herd immunity and preventing the further spread of COVID-19. Understanding contributors to vaccine hesitancy and how they change over time may improve COVID-19 mitigation strategies and public health policies. To date, no mechanism explains how trust in and consumption of different sources of information affect vaccine uptake. A total of 1594 adults enrolled in our COVID-19 testing program completed standardized surveys on demographics, vaccination status, use, reliance, and trust in sources of COVID-19 information, from September to October 2021, during the COVID-19 Delta wave. Of those, 802 individuals (50.3%) completed a follow-up survey, from January to February 2022, during the Omicron-wave. Regression analyses were performed to understand contributors to vaccine and booster uptake over time. Individuals vaccinated within two months of eligibility (early vaccinees) tended to have more years of schooling, with greater trust in and consumption of official sources of COVID-19 information, compared to those who waited 3–6 months (late vaccinees), or those who remained unvaccinated at 6 months post-eligibility (non-vaccinees). Most (70.1%) early vaccinees took the booster shot, compared to only 30.5% of late vaccinees, with the latter group gaining trust and consumption of official information after four months. These data provide the foundation for a mechanism based on the level of trust in and consumption of official information sources, where those who increased their level of trust in and consumption of official information sources were more likely to receive a booster. This study shows that social factors, including education and individual-level degree of trust in (and consumption of) sources of COVID-19 information, interact and change over time to be associated with vaccine and booster uptakes. These results are critical for the development of effective public health policies and offer insights into hesitancy over the course of the COVID-19 vaccine and booster rollout.

Keywords: COVID-19, vaccine hesitancy, booster uptake

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Regional Energy Spot Prices Analysis Using Multi-level Stochastic Volatility Model

Ksenia Kasianova[1]

Abstract

The Russian wholesale electricity market is divided into two price zones: the European (first) price zone and the Siberian (second) price zone. The pricing mechanisms in the first and second price zones are the same: within each price zone, there is a free competition market between producers, which is provided by a significant transmission capacity of the electrical network. At the same time, the flow between the price zones is insignificant, and the equilibrium prices differ to a large extent, since competitive bidding for electricity and capacity is held separately for each price zone.

During the analysis of the spot prices by the price zones a two-level model of stochastic volatility was developed. It was already shown that the dynamics of electricity prices are significantly different in the European and Siberian price zones. The transition to the analysis of reginal prices allows to identify the possible causes of these differences. In particular, one of the analysis tools is the construction of linear regressions of estimates of the coefficients of the stochastic volatility model (calculated for each node/region) on the permanent region's characteristics (geographical location of the region, shares of TPPs, NPPs and HPPs in the power generation structure, shares TPPs operating on gas and coal, the share of the main sectors of GRP).

The previously suggested two-level model of stochastic volatility was adjusted in accordance with the visual analysis for node prices results (disaggregated statistics for more than 7,500 nodes): instead of the indices of industrial production, industrial production volumes were used, including mining, manufacturing; weekly dynamics is modelled as dummy variables for each day of the week; extended non-working days of 2020, 2021 due to COVID-19 are taken into account. Previously, weekly dynamics was taken into account only for dummy variables on Monday, Saturday and Sunday, however, a visual analysis of nodal prices showed that for most nodes the dynamics within the week is not the same (e.g. in some regions, prices rise on Friday higher than on Monday). Since there is a strong correlation within one region, it is possible to analyze node price averaged by regions using adjusted stochastic volatility model without changing the functional form of the model, but using region-specific regressors: temperature, production volumes and resource prices.

As a result of evaluating the models for the region-averaged node prices, the following results were obtained. Firstly, the average price levels in the regions of the first and second price zones are statistically significantly different, and the difference in the averages is approximately 2.2 rubles. Since the electricity market is competitive, these differences must be explained by market conditions, in particular, the structure of generation in the regions, which explains the differences in aggregate supply, and the structure of GRP, which explains the differences in aggregate demand in each of the price zones. These conclusions are confirmed when constructing a regression of estimates of the constant in the stochastic volatility model for each of the regions on the shares of the main industries in the GRP structure and the shares of thermal

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power plants by type of fuel. In particular, prices are higher in regions where the share of manufacturing or trade in GRP is higher, and mining in GRP is lower (these regions mainly include regions of the European price zone). Prices also depend on the share of TPPs operating on gas or coal: the higher the share of TPPs operating on gas (and, accordingly, the lower the share of TPPs operating on coal), the higher the prices. It should be noted that for most regions of the European price zone, the share of thermal power plants operating on gas is higher, and for the Siberian one - on coal. This result suggests that it is necessary to take into account the economic characteristics of the regions, especially when introducing mechanisms for cross subsidization between regions and types of power plants.

Additionally, as a result of the analysis, the differences in weekly price dynamics, the effect of holidays, heating degree-days and volumes of industrial production on prices between regions were explained. Analysis of node prices based on regional maps makes it possible to detect weaknesses in the infrastructure of the electric power industry and regions with anomalous dynamics of electricity prices.

Keywords: electricity prices, spot energy market, Bayesian inference, stochastic volatility

Trends in Sustainable Tourism in Montenegro in the Post Covid-19 Period

Marica Melović[1]

Abstract

It is very certain that the future of the tourism industry in Montenegro and in general will be marked by significant structural changes in the post Covid-19 period. Namely, in the midst of the pandemic, one of the most affected sectors was the tourism and hospitality sector, when they were faced with the cancellation of trips and events, a drastic drop in flights and the closure of a large number of tourist activities, and later destinations. In the post Covid-19 period, changes in the use of tourist services can be expected, as well as an increased demand for new tourist trends, that is, the tourism and hospitality industry must adapt to the new demands of tourists. The pandemic has led to technology becoming a vital tool in tourism, and in the future almost all tourism and hospitality activities will rely on new technologies and digitalization in general. However, it is precisely the increasing application of technology in tourism that causes numerous challenges for the sustainable development of tourism in Montenegro. Namely, tourism, like other economic areas, besides contributing to greater economic benefits, also leads to the creation of problems such as an increasing negative impact on the environment. The Covid-19 pandemic and the immeasurable risks of future uncertain events have imposed new challenges and feats for the sustainable development of tourism. Observing developing countries, such as Montenegro, ecotourism represents the most effective way to promote sustainable economic development. Precisely ecotourism, which is based on the principles of sustainable tourism, represents the paradigm of sustainable development. Based on research conducted in Montenegro, we are of the opinion that ecotourism will certainly be one of the most prevalent trends in sustainable tourism in the post Covid-19 period.

Keywords: tourism, sustainability, Covid-19, ecotourism, Montenegro

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Maximizing Private Business Organizations' Business Performance: Mediating Role of Employee Loyalty

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Abstract

The aim of this study is to evaluate the direct and indirect relationship between corporate image organizational culture, employee engagement, employee loyalty, and business performance among private business organizations in Malaysia in Malaysia. This study is very important to private business organizations because it will give insight into private business organizations to formulate a strategy to maximize their business performance based on non-quantitative determinants. In a private business organization's environment, the ability to maintain the expected business performance is very crucial in order to be able to survive and sustain itself in the future. The research framework of this study contains three independent variables which are corporate image, organizational culture, employee engagement, employee loyalty as a mediator, and business performance as a dependent variable. This study evaluates the direct relationship between corporate image, organizational culture, and employee engagement image to employee loyalty and business performance. Then, the indirect relationship between corporate image, organizational culture, and employee engagement with business performance mediated by employee loyalty was assessed. Primary data were utilized in this study and were collected by using a survey questionnaire which was adopted and adapted from earlier studies. Survey questionnaires were sent via email to the targeted respondents. This study adopted the non-probability sampling technique of purposive sampling to collect data due to the unavailability of the sample frame. In this study, there was a total of 23 observed variables constituted of the exogenous variables and the endogenous variable measurement. The corporate construct consists of 5 measurement items, organizational culture consists of 4 measurement items, employee engagement consists of 5 measurement items, employee loyalty constructs consist of 4 measurement items, and the business performance construct consists of 5 measurement items. A five-point Likert scale was utilized ranging from strongly disagree to strongly agree to measure all constructs' measurement items. Out of the 485 questionnaires distributed, 353 were returned. This made-up a 72.8% response rate and it was sufficient to analyze the data by employing the structural equation modeling technique (SEM). Subsequently, after data screening and removing the outliers, 329 questionnaires were found to be clean and ready to be analyzed. The findings of this study reveal that out of the seven direct relationship hypotheses proposed, only two direct relationship hypotheses were not supported. Corporate image and employee engagement were found not to have a significant influence on business performance. The three indirect relationship hypotheses proposed were supported. All three exogenous variables, corporate image, organizational culture, and employee engagement were important direct antecedents to employee loyalty. However, this study has found that only organizational culture was the most important direct antecedent to business performance whereas corporate image and employee engagement only have an indirect impact on business performance through employee loyalty as a mediator. The model proposed in this study was

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found to have a high predictive performance based on the statistical analysis of PLS_predict analysis.

Keywords: corporate image, organizational culture, employee engagement, employee loyalty, business performance

Unemployment and Shadow Economy: Evidence from BRICS Economies

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Abstract

Shadow economy is a prevalent problem with different dimensions for all countries in the world. The countries have taken institutional, legal, educational, and economic measures to decrease the shadow economy size given its negative economic and social costs. High taxes and social security contributions and heavy regulation are the major factors underly'ng shadow economy. Therefore, a mutual interplay between unemployment and shadow economy size seems possible. This study investigates the causal relationship between shadow economy and unemployment in sample of BRICS economies for the 1991-2017 term through causality test with cross-sectional dependence and unveils a unidirectional causality from unemployment to the shadow economy

Keywords: unemployment, shadow economy, panel causality test

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Eco-innovation and Sustainable Economic Growth: Evidence from EU 27

Florina Oana Virlanuta (Corresponding author)[1]   Silviu Bacalum[2]   Marian Mihu[3]

Abstract

Eco-innovation is an essential element of the European Union's strategies and policies to boost competitiveness, create jobs and generate sustainable economic growth. In this context, eco-innovation is a significant tool that combines low environmental impact with positive socio-economic impact. The aim of our research is to highlight the role of eco-innovation and to investigate the impact of GDP growth, resource productivity and the increase of recycling rate of municipal waste on the eco-innovation index in the 27 Member States of the European Union. The study is based on a set of regression analyses that use panel data estimation models, a GMM estimator with robust standard errors. The results of our analysis reflect that the GDP, resource productivity and recycling rate of municipal waste had a statistically significant and positive effect on eco-innovation in the period 2012-2021.

Keywords: eco-innovation, resource productivity, recycling rate of municipal waste, sustainable economic growth, EU 27

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Environmental Sustainability in the Fashion Industry: The Weight of Sustainability in the Consumer's Purchase Decision

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Abstract

Sustainable fashion is a term that is being used more and more around the world as we all become more aware of the serious environmental impact that our clothes generate. Sustainable fashion is a term for clothes that are created and consumed in a way that can literally be sustainable, protecting the environment.

Through this research I want to focus on researching the clothing market in Romania in order to determine the companies that are sustainable as well as those that are not. In the case of sustainable companies, I will analyze the sustainability measures and strategies they implement, but also the effectiveness of these strategies. There will be also an analysis related to the existing risks for the companies and if the risks can be transferred to the insurance market. For the risks that cannot be transferred we will provide internal measures for protection and retention.

In the case of companies that are not sustainable, I will come with both recommendations of strategies for sustainability as well as examples of good practices that proved to work well at companies in the fashion industry abroad.

Moreover, during this research project I also propose to carry out a study of the opinion of consumers to establish to what extent their decision to purchase clothing items is affected by the sustainability of the item.

Keywords: environmental sustainability, fashion industry

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Prediction of the High Heating Value of Organic Waste and its Potential Utilization as a Source of Sustainable Bioenergy

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Abstract

The sustainable management of municipal solid waste (MSW) and energy shortage are the prevailing issues of the developing countries. The rapid population growth, lack of awareness and adequate waste management techniques a significant amount of MSW are produced as a result of anthropogenic activities. Among the generated waste, organic waste are the main fraction by contributing more than 50% of the total MSW. Being the easiest way, all the produced waste are mostly disposed to dumpsites without any material/energy recovery. The management through open dumping of MSW can led to various public and environmental health issues including contamination of air, water and soil. There exist several waste management technologies to treat such waste and produce valuable products including bioenergy, organic fertilizer and chemicals. This study was designed to access the energy content/calorific value of organic portion of MSW. All the correlations developed in this study are satisfactory for designing assessments of net high heating value of waste biomass. Waste biomass could contribute essentially to satisfy the rising demand of the economical feedstock for WtE Technologies. In light of energy content there is a broad and developing interest in the thermal conversion of biomass for biofuels, to make both energy and synthetic substances. For that reason, organic waste biomass can be utilized to the accompanying techniques including; Anaerobic processing (AD), Hydrothermal carbonization, Pyrolysis, Gasification. Bio-energy frameworks will constantly be similarly little and must in this manner be actually and financially modest at a lot more limited sizes of activity than the cycle the power age enterprises are accustomed to applying.

Keywords: organic waste, proximate analysis, high heating values, waste to energy

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Chapter II – FULL PAPERS

Investigation of the Predictive Role of Primary School Teachers' Personality Types on Sustainable Development Awareness Levels

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Abstract

The aim of this study is to examine the predictive role of personality types of primary school teachers on their awareness levels of sustainable development and the differentiation of personality types and sustainable development awareness levels according to descriptive variables. In line with this purpose, the study was conducted with relational survey, one of the quantitative research methods. The study group of the research consists of 187 primary school teachers. Sustainable development awareness scale and personality types of scale were used as data collection tools in the study. The relationships between the dimensions determining the scale levels of the teachers were examined through Pearson correlation and linear regression analyses. T-test, one-way analysis of variance (Anova) and post hoc (Tukey, LSD) analyses were used to examine the differences in scale levels according to teachers' descriptive characteristics. When the correlation between the total scores of primary school teachers' sustainable development awareness levels, economic sustainability sub-dimension score, social sustainability sub-dimension score, and environmental sustainability sub-dimension score and the total scores and sub-dimension scores of personality types were examined, a low-level positive correlation was found. The total change in the total score level of sustainable development awareness is explained by 11.1% of the personality types of sub-dimension scores.

Keywords: sustainable development, personality types, primary school teachers

1. Introduction

Education can have many benefits in terms of sustainable development. It can help people develop skills such as critical thinking and problem solving, as well as strong communication and collaboration skills, which are essential for finding innovative solutions to complex problems. Education can also promote understanding and appreciation of different cultures and perspectives, as well as tolerance and understanding between different groups. This is especially important as we strive for a more sustainable and just future. Studies have shown that education can lead to environmentally friendly attitudes and behaviors and increase knowledge about environmental protection and nature conservation. This is particularly important in the context of climate change, as people who are educated about it are more likely to support policies and practices that mitigate its effects. In short, education is an effective way to promote sustainability and raise environmental awareness. By investing in education programs focused on sustainability, we can empower people to take action and make a positive impact on the world (Kruge, 2018; Stern and Kavalir, 2014).

There is evidence that education can have a significant impact on sustainable development. One study found that education can lead to the development of environmentally friendly attitudes and behaviors and encourage the adoption of more sustainable lifestyles. Another study found that educational programs focused on sustainability can increase knowledge,

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attitudes and behaviors related to environmental protection and conservation. This is particularly important in the context of climate change, as people who are educated about the issue are more likely to support policies and practices that address it. In general, research shows that education is an effective way to promote sustainability and raise awareness of environmental issues (Brouder, 2017; Krasny, Zaval, & Bekoff, 2013; Leiserowitz, Feinberg, & Maibach, 2016).

2. Literature Review

Sustainable development derives its epistemological underpinnings from the Neo-Malthusian theses underlying the "Limits to Growth" report put forward by the "Club of Rome" as a reaction to the humanitarian problems that could arise from population growth and the pressure on the planet's finite resources caused by the logic of unlimited economic growth (Meadows et al. 1972). Similarly, Garret Hardin's "Tragedy of the Commons" narrative, published in Science in 1968, in which rational shepherds using a particular pasture resulted in the total collapse of the commons for the sake of maximizing their self-interest, similarly points out how uncontrolled population growth and the selfish behavior of economic agents, accompanied by an unlimited desire to expand their own interests, pose a threat to the planet's finite resources (Hardin, 1968). By 1987, the "Brundtland Report", also known as "The Brundtland Report", or "Our Common Future", put the concept of "Sustainable Development" on the agenda of supranational institutions as a framework to address these Neo-Malthusian concerns shaped by the logic of uncontrolled population growth and unlimited economic growth (UN, 1987). Again, the Rio conference, which can be described as the process of transition from political discourse to the practice of environmental governance, on which the sustainable development framework agreed in principle, enabled all nations, which were now held responsible for the environmental destruction that would occur as a result of the threat to the planet's limited resources, to come together and meet on the common denominator of "our common future" (UN, 1992).

In its simplest sense, "Sustainable Development" is the reorganization of social production and consumption relations in a holistic manner, taking into account the resources that future generations will need, without placing stress on the economy, society, and the environment, which are defined as the three pillars of development. In this majority, it is envisaged to eliminate the environmental threats faced by the planet by transitioning from the logic of unlimited economic growth that shapes social production and consumption behaviors to a zero-growth process. Since 1980, the transition phase of industrial capitalism to the post-production process has paved the way for the sectorization of other production and consumption areas. In other words, the economic policies implemented in the real sector have also had their share to a great extent in other sectors. Therefore, the prediction that the wasteful use of the planet's finite resources will significantly reduce the living standards of future generations, despite the fact that the starting point was the curbing of the "unlimited growth" logic of the real sector, has since been discussed by various scholars in different disciplines and interdisciplinary studies such as economics, finance, health, transportation, service, and education sectors on the theme of our common future within the framework of sustainable development (Chouinard et al, 2011; Coiera and Hovenga, 2007; Litman and Burwell, 2006; Rajan, 2015; Resnick and Hall, 1998; Saidane and Abdallah, 2021).

Looking at the education sector, which is the subject of this research, relevant ministries, institutions, and working groups emphasize that education and learning processes can build human capital in line with the requirements of our age as long as they are sustainable. This is justified by the fact that education and training processes have become more comprehensive in the 21st century due to the increase in the use of intellectual and material items in education and training processes (MoNE, 2015; UNESCO, 2014). In parallel with these calls and

discourses, educational scientists have recently included sustainability studies in their research agenda (Gonzalez-Zamar et al. 2020; Płotka-Wasylka et al. 2021; Thomas, 2009).

This study aims to measure the awareness of sustainable development of primary school teachers, who can be considered as the main agents of the education sector, which has become an important production and consumption sector today, at the primary education level. Classroom teachers are valuable subjects of sustainability studies because they both organize interdisciplinary education and training processes and mediate education and training processes, which are the first step in raising the human capital of individuals between the ages of 6-11, which can be called future generations. On the other hand, the education and training processes mediated by primary school teachers are also significantly consistent and parallel with sustainable development goals. Goals such as quality education, proper selection of materials, gender equality, sensitivity to the non-human environment, environmentally sensitive use of resources and energy, minimization of inequality among individuals, and cooperation for a more prosperous society are quite similar to the principles that currently frame the education and training processes of primary school teachers. On the other hand, the personality types of primary school teachers are quite similar to these principles and goals in terms of their awareness of these principles and goals (Asif et al., 2020; Di Fabio and Saklofske, 2019; Leeuw et al. 2014).

2.1 Research Questions

In this study, it was aimed to investigate the Predictive Role of Primary School Teachers' Personality Types on Sustainable Development Awareness Levels and the differentiation of Personality Types and Sustainable Development Awareness Levels according to descriptive variables. The sub-problem questions are given below.

1. Do primary school teachers' personality types have a predictive role in sustainable development awareness?
2. Do primary school teachers' personality types differ in descriptive characteristics?
3. Do primary school teachers' awareness of sustainable development differ in descriptive characteristics?

3. Research Methodology

3.1. Research Design

This research was carried out according to the correlational survey model, which is one of the quantitative research methods. The correlational survey model is a quantitative approach that includes the use of self-report measures of a carefully selected sample group (Converse, 1987). This model is a flexible approach that can be used to examine a wide variety of fundamental and applied research questions.

3.2. Study Group

The participants of this research are primary school teachers) in Turkey. 187 primary school teachers from Malatya province have participated in the research. The scales used in the research were sent to the teachers online (Google Forms). An information letter was written to the teachres stating that they have the right to withdraw at any stage of the research. All necessary permissions were obtained before the study and ethical rules were complied with. The data of the research were collected in the fall term of 2022-2023. The descriptive characteristics of the teachers participating in the research are as in Table 1. The findings regarding the descriptive characteristics of the teachers are given below.

Table 1: Descriptive characteristics of the primary school teachers

Groups	Frequency (n)	Percentage (%)
Gender		
Male	50	26,7
Female	137	73,3
Education Status		
Bachelor's degree	156	83,4
Postgraduate graduate	31	16,6
Workplace		
Metropolitan	78	41,7
Province	44	23,5
District	42	22,5
Village	23	12,3
Faculty of Graduation		
Faculty of Education	168	89,8
Other Faculties	19	10,2
Work Type		
Teacher	168	89,8
Administrator	19	10,2
Grade Taught		
1	47	25,1
2	34	18,2
3	34	18,2
4	46	24,6
No pupils	26	13,9
Position Type		
Staff	158	84,5
Contracted	29	15,5
Seniority		
1-5	41	21,9
6-10	45	24,1
11-15	26	13,9
16-20	36	19,3
21 and over	39	20,9

According to gender, 50 (26.7%) were male and 137 (73.3%) were female; according to educational status, 156 (83.4%) were undergraduate graduates and 31 (16.6%) were postgraduates; according to the place of work, 78 (41.7%) metropolitan, 44 (23.5%) provincial, 42 (22.5%) district, 23 (12.3%) village; according to the faculty of graduation, 168 (89.8%) faculty of education, 19 (10.2%) other faculties; according to the type of position, 168 (89.8%) were teachers, 19 (10.2%) were administrators; according to the grade taught, 47 (25.1%) 1, 34 (18.2%) 2, 34 (18.2%) 3, 46 (24.6%) 4, 26 (13.9%) no pupil; According to position type, 158 (84.5%) are staff, 29 (15.5%) are contracted; according to seniority, 41 (21.9%) 1-5, 45 (24.1%) 6-10, 26 (13.9%) 11-15, 36 (19.3%) 16-20, 39 (20.9%) 21 and over.

3.3. Data Collection Tools and Validity and Reliability

In this research, the Sustainable Development Awareness Scale developed by Atmaca (20178 and the Personality Type Scale Based on Enneagram developed by Taştan (2019) were used as data collection tools. Before analysing the research variables, the scales used in the research were examined in terms of validity and reliability. In this study, the reliability of the Personality Type Scale Based on Enneagram was found to be Cronbach's Alpha=0.853 and the reliability

of the Sustainable Development Awareness scale was found to be Cronbach's Alpha=0.920. The data obtained in the study were evaluated in computer environment through SPSS 22.0 statistical program. Frequency and percentage analyses were used to determine the descriptive characteristics of the teachers participating in the study and mean and standard deviation statistics were used to analyse the scale.

The relationships between the dimensions determining the scale levels of the teachers were examined through Pearson correlation and linear regression analyses. Correlation coefficients (r) were evaluated as 0.00-0.25 very weak; 0.26-0.49 weak; 0.50-0.69 medium; 0.70-0.89 high; 0.90-1.00 very high (Kalaycı, 2006, p.116). T-test, one-way analysis of variance (Anova) and post hoc (Tukey, LSD) analyses were used to examine the differences in scale levels according to teachers' descriptive characteristics.

4. Results

The arithmetic mean, standard deviation, minimum-maximum levels and correlation relations for teachers' personality types and sustainable development awareness are given below.

Table 2: Personality types and sustainable development awareness score averages

	N	Mean	Sd	Min.	Max.
Sustainable Development Awareness Total	187	164,241	13,237	108,000	180,000
Economic Sustainability	187	58,182	5,031	39,000	65,000
Social Sustainability	187	42,230	3,851	27,000	45,000
Environmental Sustainability	187	63,829	5,847	42,000	70,000
The Perfectionist	187	4,627	0,762	2,500	6,000
The Helper	187	4,267	0,688	2,200	6,000
The Achiever	187	4,072	1,005	1,000	6,000
The Romantic	187	3,497	1,166	0,000	6,000
The Observer	187	4,127	1,219	1,000	6,000
The Loyalist	187	4,008	1,183	0,400	6,000
The Adventurer	187	4,462	0,855	2,400	6,000
The Challenger	187	3,182	1,135	0,000	6,000
The Peacemaker	187	4,670	0,698	2,750	6,000

Teachers' "sustainable development awareness total" mean 164,241±13,237 (Min=108; Max=180), "economic sustainability" mean 58,182±5,031 (Min=39; Max=65), "social sustainability" mean 42,230±3,851 (Min=27; Max=45), "environmental sustainability" mean 63,829±5,847 (Min=42; Max=70), "the perfectionist" mean 4,627±0,762 (Min=2. 5; Max=6), "the helper" mean 4,267±0,688 (Min=2. 2; Max=6), "the achiever" mean 4,072±1,005 (Min=1; Max=6), "the romantic" mean 3,497±1,166 (Min=0; Max=6), "the observer" mean 4,127±1,219 (Min=1; Max=6), "the loyalist" mean 4,008±1,183 (Min=0. 4; Max=6), "the adventurer" mean 4,462±0,855 (Min=2.4; Max=6), "the challenger" mean 3,182±1,135 (Min=0; Max=6), "the peacemaker" mean 4,670±0,698 (Min=2.75; Max=6).

The relationships between teachers' personality types and the dimensions determining their sustainable development awareness levels were analysed by correlation analysis. The results of the analysis are given below.

4.1. Results for Research Question 1

Table 3: Correlation analysis between personality types and sustainable development awareness scores

		Sustainable Development Awareness Total	Economic Sustainability	Social Sustainability	Environmental Sustainability
The Perfectionist	r	0,179*	0,108	0,255**	0,144*
	p	0,014	0,142	0,000	0,050
The Helper	r	0,122	-0,002	0,161*	0,171*
	p	0,098	0,982	0,028	0,020
The Achiever	r	0,163*	0,129	0,190**	0,134
	p	0,026	0,079	0,009	0,068
The Romantic	r	0,006	-0,044	0,016	0,042
	p	0,933	0,547	0,831	0,570
The Observer	r	0,082	0,035	0,136	0,068
	p	0,262	0,639	0,064	0,358
The Loyalist	r	0,078	-0,001	0,126	0,094
	p	0,290	0,988	0,087	0,199
The Adventurer	r	0,161*	0,102	0,242**	0,117
	p	0,028	0,163	0,001	0,111
The Challenger	r	-0,084	-0,117	-0,042	-0,062
	p	0,254	0,111	0,569	0,403
The Peacemaker	r	0,295**	0,217**	0,355**	0,246**
	p	0,000	0,003	0,000	0,001

*<0,05; **<0,01; Pearson correlation analysis

When the correlation analysis between the total sustainable development awareness, economic sustainability, social sustainability, environmental sustainability, the perfectionist, the helper, the achiever, the romantic, the observer, the loyalist, the adventurer, the challenger, the peacemaker, the perfectionist and the total sustainable development awareness scores were analysed; r=0. 179 positive very weak (p=0,014<0.05), between the perfectionist and social sustainability r=0.255 positive very weak (p=0,000<0.05), between the perfectionist and environmental sustainability r=0.144 positive very weak (p=0,050<0.05), between the helper and social sustainability r=0.161 positive very weak (p=0,028<0.05), between the helper and environmental sustainability r=0.171 positive very weak (p=0,020<0. 05), between the achiever and sustainable development awareness total r=0.163 positive very weak (p=0,026<0.05), between the achiever and social sustainability r=0.19 positive very weak (p=0,009<0.05), between the adventurer and sustainable development awareness total r=0.161 positive very weak (p=0,028<0.05), between the adventurer and social sustainability r=0.242 positive very weak (p=0,001<0. 05), r=0.295 positive very weak (p=0,000<0.05) between the peacemaker and sustainable development awareness total, r=0.217 positive very weak (p=0,003<0. 05), between the peacemaker and social sustainability r=0.355 positive very weak (p=0,000<0.05), between the peacemaker and environmental sustainability r=0.246 positive very weak (p=0,001<0.05). The correlations between the other variables are not statistically significant (p>0.05).

Table 4: The effect of personality types on sustainable development awareness

Dependent Variable	Dependent Variable	ß	t	p	F	Model (p)	R^2
Sustainable Development Awareness Total	Constant	128,188	14,821	0,000			
	The Perfectionist	0,062	0,725	0,470	3,568	0,000	0,111
	The Helper	0,067	0,836	0,404			
	The Achiever	0,156	2,105	0,037			

Dependent Variable	Dependent Variable	ß	t	p	F	Model (p)	R^2
	The Romantic	-0,032	-0,393	0,695			
	The Observer	-0,148	-1,560	0,120			
	The Loyalist	-0,045	-0,528	0,598			
	The Adventurer	0,123	1,206	0,229			
	The Challenger	-0,207	-2,554	0,011			
	The Peacemaker	0,298	3,782	0,000			
	Constant	50,220	14,950	0,000			
	The Perfectionist	0,037	0,423	0,673			
	The Helper	-0,041	-0,505	0,614			
	The Achiever	0,142	1,871	0,063			
Economic Sustainability	The Romantic	-0,068	-0,812	0,418	2,585	0,008	0,071
	The Observer	-0,159	-1,645	0,102			
	The Loyalist	-0,081	-0,942	0,347			
	The Adventurer	0,166	1,594	0,113			
	The Challenger	-0,196	-2,358	0,019			
	The Peacemaker	0,260	3,230	0,001			
	Constant	28,851	11,843	0,000			
	The Perfectionist	0,099	1,198	0,233			
	The Helper	0,055	0,709	0,479			
	The Achiever	0,150	2,092	0,038			
Social Sustainability	The Romantic	-0,072	-0,910	0,364	5,131	0,000	0,167
	The Observer	-0,126	-1,371	0,172			
	The Loyalist	-0,047	-0,569	0,570			
	The Adventurer	0,195	1,978	0,050			
	The Challenger	-0,160	-2,040	0,043			
	The Peacemaker	0,322	4,229	0,000			
	Constant	49,116	12,568	0,000			
	The Perfectionist	0,043	0,494	0,622			
	The Helper	0,150	1,842	0,067			
	The Achiever	0,132	1,746	0,083			
Environmental Sustainability	The Romantic	0,033	0,395	0,693	2,540	0,009	0,069
	The Observer	-0,115	-1,185	0,238			
	The Loyalist	0,000	-0,005	0,996			
	The Adventurer	0,007	0,066	0,948			
	The Challenger	-0,195	-2,354	0,020			
	The Peacemaker	0,238	2,959	0,004			
Linear Regression Analysis							

The regression analysis conducted to determine the cause-and-effect relationship between the perfectionist, the helper, the achiever, the romantic, the observer, the loyalist, the adventurer, the challenger, the peacemaker and total sustainable development awareness was found significant (F=3,568; p=0,000<0.05). The total change in the total level of sustainable development awareness is explained by the perfectionist, the helper, the achiever, the romantic, the observer, the loyalist, the adventurer, the challenger, the peacemaker by 11.1% (R2=0.111). The perfectionist does not affect the total level of sustainable development awareness (p=0.470>0.05). The helper does not affect the total level of sustainable development awareness (p=0.404>0.05). The achiever increases the total level of sustainable development awareness (ß=0.156). The romantic does not affect the total level of sustainable development awareness (p=0.695>0.05). The observer does not affect the total level of sustainable development awareness (p=0.120>0.05). The loyalist does not affect the total level of sustainable development awareness (p=0.598>0.05). The adventurer does not affect the total level of

sustainable development awareness (p=0.229>0.05). The challenger decreases the total level of sustainable development awareness (ß=-0.207). The peacemaker increases the total level of sustainable development awareness (ß=0.298).

The regression analysis conducted to determine the cause-and-effect relationship between the perfectionist, the helper, the achiever, the romantic, the observer, the loyalist, the adventurer, the challenger, the peacemaker and economic sustainability was found significant (F=2,585; p=0,008<0.05). The perfectionist, the helper, the achiever, the romantic, the observer, the loyalist, the adventurer, the challenger, the peacemaker explain 7.1% of the total change in economic sustainability level (R2=0.071). The perfectionist does not affect the level of economic sustainability (p=0.673>0.05). The helper does not affect the level of economic sustainability (p=0.614>0.05). The achiever does not affect the level of economic sustainability (p=0.063>0.05). The romantic does not affect the level of economic sustainability (p=0.418>0.05). The observer does not affect the level of economic sustainability (p=0.102>0.05). The loyalist does not affect the level of economic sustainability (p=0.347>0.05). The adventurer does not affect the level of economic sustainability (p=0.113>0.05). The challenger decreases the level of economic sustainability (ß=-0.196). The peacemaker increases the level of economic sustainability (ß=0.260).

The regression analysis to determine the cause-and-effect relationship between the perfectionist, the helper, the achiever, the romantic, the observer, the loyalist, the adventurer, the challenger, the peacemaker and social sustainability was significant (F=5,131; p=0,000<0.05). The perfectionist, the helper, the achiever, the romantic, the observer, the loyalist, the adventurer, the challenger, the peacemaker explain 16.7% of the total change in social sustainability level (R2=0.167). The perfectionist does not affect the level of social sustainability (p=0.233>0.05). The helper does not affect the level of social sustainability (p=0.479>0.05). The achiever increases the level of social sustainability (ß=0.150). The romantic does not affect the level of social sustainability (p=0.364>0.05). The observer does not affect the level of social sustainability (p=0.172>0.05). The loyalist does not affect the level of social sustainability (p=0.570>0.05). The adventurer does not affect the level of social sustainability (p=0.050>0.05). The challenger decreases the level of social sustainability (ß=-0.160). The peacemaker increases the level of social sustainability (ß=0.322).

The regression analysis conducted to determine the cause-and-effect relationship between the perfectionist, the helper, the achiever, the romantic, the observer, the loyalist, the adventurer, the challenger, the peacemaker and environmental sustainability was found significant (F=2,540; p=0,009<0.05). The perfectionist, the helper, the achiever, the romantic, the observer, the loyalist, the adventurer, the challenger, the peacemaker explain 6.9% of the total change in environmental sustainability level (R2=0.069). The perfectionist does not affect the level of environmental sustainability (p=0.622>0.05). The helper does not affect the level of environmental sustainability (p=0.067>0.05). The achiever does not affect the level of environmental sustainability (p=0.083>0.05). The romantic does not affect the level of environmental sustainability (p=0.693>0.05). The observer does not affect the level of environmental sustainability (p=0.238>0.05). The loyalist does not affect the level of environmental sustainability (p=0.996>0.05). The adventurer does not affect the level of environmental sustainability (p=0.948>0.05). The challenger decreases the level of environmental sustainability (ß=-0.195). The peacemaker increases the level of environmental sustainability (ß=0.238).

4.2 Results for Research Question 2

Table 5: Differentiation of personality scores according to gender

	Group	N	Mean	Sd	t	df	p
The Perfectionist	Men	50	4,487	0,731	-1,521	185	0,130
	Women	137	4,678	0,770			
The Helper	Men	50	4,188	0,663	-0,953	185	0,342
	Women	137	4,296	0,697			
The Achiever	Men	50	4,196	0,775	1,022	185	0,238
	Women	137	4,026	1,076			
The Romantic	Men	50	3,633	1,203	0,963	185	0,337
	Women	137	3,448	1,153			
The Observer	Men	50	4,310	1,251	1,242	185	0,216
	Women	137	4,060	1,205			
The Loyalist	Men	50	3,596	1,164	-2,931	185	0,004
	Women	137	4,158	1,158			
The Adventurer	Men	50	4,564	0,818	0,986	185	0,326
	Women	137	4,425	0,868			
The Challenger	Men	50	2,675	1,208	-3,821	185	0,000
	Women	137	3,367	1,052			
The Peacemaker	Men	50	4,470	0,765	-2,394	185	0,018
	Women	137	4,743	0,660			

Independent Groups T-Test

The loyalist scores of teachers according to gender show a significant difference (t(185)=-2.931; p=0.004<0.05). The loyalist scores of women (x̄=4,158) were higher than the loyalist scores of men (x̄=3,596). The challenger scores of teachers according to gender show a significant difference (t(185)=-3.821; p=0.000<0.05). Women's the challenger scores (x̄=3,367) were higher than men's the challenger scores (x̄=2,675). The peacemaker scores of the teachers differ significantly according to gender (t(185)=-2.394; p=0.018<0.05). The peacemaker scores of women (x̄=4,743) were higher than the peacemaker scores of men (x̄=4,470). The perfectionist, the helper, the achiever, the romantic, the observer, the adventurer scores of the teachers did not differ significantly according to gender (p>0.05).

Table 6: Differentiation of personality scores according to educational background

	Group	N	Mean	Sd	t	df	p
The Perfectionist	Bachelor's degree	156	4,584	0,778	-1,705	185	0,090
	Postgraduate graduate	31	4,839	0,649			
The Helper	Bachelor's degree	156	4,237	0,680	-1,350	185	0,179
	Postgraduate graduate	31	4,419	0,718			
The Achiever	Bachelor's degree	156	4,095	0,949	0,708	185	0,480
	Postgraduate graduate	31	3,955	1,260			
The Romantic	Bachelor's degree	156	3,421	1,197	-2,026	185	0,020
	Postgraduate graduate	31	3,882	0,923			
The Observer	Bachelor's degree	156	4,112	1,222	-0,372	185	0,710
	Postgraduate graduate	31	4,202	1,220			
The Loyalist	Bachelor's degree	156	3,967	1,175	-1,059	185	0,291
	Postgraduate graduate	31	4,213	1,223			
The Adventurer	Bachelor's degree	156	4,439	0,839	-0,845	185	0,399
	Postgraduate graduate	31	4,581	0,933			
The Challenger	Bachelor's degree	156	3,232	1,142	1,369	185	0,173
	Postgraduate graduate	31	2,927	1,081			

	Group	N	Mean	Sd	t	df	p
The Peacemaker	Bachelor's degree	156	4,643	0,723	-1,195	185	0,234
	Postgraduate graduate	31	4,807	0,547			

Independent Groups T-Test

The romantic scores of the teachers differ significantly according to their educational status (t(185)=-2.026; p=0.020<0.05). The romantic scores of graduate graduates (x̄=3,882) were higher than the romantic scores of undergraduate graduates (x̄=3,421).

The perfectionist, the helper, the achiever, the observer, the loyalist, the adventurer, the challenger, the peacemaker scores of the teachers do not differ significantly according to their educational status (p>0.05).

Table 7: Differentiation status of personality scores according to workplace

	Group	N	Mean	Sd	F	p	Difference
The Perfectionist	Metropolitan	78	4,665	0,856	1,062	0,366	
	Province	44	4,746	0,612			
	District	42	4,524	0,749			
	Village	23	4,457	0,702			
The Helper	Metropolitan	78	4,313	0,577	0,641	0,589	
	Province	44	4,327	0,737			
	District	42	4,181	0,787			
	Village	23	4,157	0,758			
The Achiever	Metropolitan	78	4,164	0,934	1,924	0,127	
	Province	44	4,250	1,002			
	District	42	3,800	1,178			
	Village	23	3,913	0,824			
The Romantic	Metropolitan	78	3,647	1,193	2,029	0,111	
	Province	44	3,186	1,157			
	District	42	3,397	1,250			
	Village	23	3,768	0,788			
The Observer	Metropolitan	78	4,404	1,038	4,356	0,005	1>3
	Province	44	4,011	1,182			4>3
	District	42	3,619	1,397			
	Village	23	4,337	1,258			
The Loyalist	Metropolitan	78	3,926	1,132	1,100	0,351	
	Province	44	4,250	1,014			
	District	42	4,043	1,363			
	Village	23	3,757	1,290			
The Adventurer	Metropolitan	78	4,490	0,823	0,938	0,424	
	Province	44	4,523	0,939			
	District	42	4,276	0,914			
	Village	23	4,591	0,654			
The Challenger	Metropolitan	78	3,167	1,144	2,550	0,057	
	Province	44	3,358	1,152			
	District	42	3,333	1,147			
	Village	23	2,620	0,910			
The Peacemaker	Metropolitan	78	4,731	0,728	1,645	0,180	
	Province	44	4,744	0,661			
	District	42	4,631	0,668			
	Village	23	4,391	0,686			

One-Way ANOVA

The observer scores of the teachers according to the place of residence show a significant difference ($F_{(3, 183)}=4,356$; $p=0,005<0.05$). The reason for the difference is that the observer scores of those whose place of residence is metropolitan ($\bar{x}=4,404$) are higher than the observer scores of those whose place of residence is district ($\bar{x}=3,619$). The observer scores ($\bar{x}=4,337$) of those whose place of residence is village are higher than the observer scores ($\bar{x}=3,619$) of those whose place of residence is district.

The perfectionist, the helper, the achiever, the romantic, the loyalist, the adventurer, the challenger, the peacemaker scores of the teachers do not show a significant difference according to the place of residence ($p>0.05$).

Table 8: Differentiation of personality scores according to faculty of graduation

	Group	N	Mean	Sd	t	df	p
The Perfectionist	Faculty of Education	168	4,590	0,765	-1,950	185	0,053
	Other Faculties	19	4,947	0,674			
The Helper	Faculty of Education	168	4,268	0,682	0,028	185	0,978
	Other Faculties	19	4,263	0,760			
The Achiever	Faculty of Education	168	4,049	1,009	-0,924	185	0,357
	Other Faculties	19	4,274	0,973			
The Romantic	Faculty of Education	168	3,502	1,137	0,162	185	0,872
	Other Faculties	19	3,456	1,439			
The Observer	Faculty of Education	168	4,103	1,219	-0,811	185	0,418
	Other Faculties	19	4,342	1,228			
The Loyalist	Faculty of Education	168	3,999	1,208	-0,297	185	0,766
	Other Faculties	19	4,084	0,965			
The Adventurer	Faculty of Education	168	4,438	0,831	-1,140	185	0,256
	Other Faculties	19	4,674	1,042			
The Challenger	Faculty of Education	168	3,198	1,134	0,576	185	0,566
	Other Faculties	19	3,040	1,167			
The Peacemaker	Faculty of Education	168	4,665	0,692	-0,268	185	0,789
	Other Faculties	19	4,711	0,774			

Independent Groups T-Test

The perfectionist, the helper, the achiever, the romantic, the observer, the loyalist, the adventurer, the challenger, the peacemaker scores of the teachers do not differ significantly according to the faculty of graduation ($p>0.05$).

Table 9: Differentiation of personality scores according to work type

	Group	N	Mean	Sd	t	df	p
The Perfectionist	Teacher	168	4,623	0,752	-0,189	185	0,851
	Administrator	19	4,658	0,872			
The Helper	Teacher	168	4,286	0,702	1,084	185	0,280
	Administrator	19	4,105	0,535			
The Achiever	Teacher	168	4,048	1,003	-0,972	185	0,332
	Administrator	19	4,284	1,023			
The Romantic	Teacher	168	3,499	1,173	0,058	185	0,953
	Administrator	19	3,483	1,137			
The Observer	Teacher	168	4,134	1,222	0,230	185	0,818
	Administrator	19	4,066	1,221			
The Loyalist	Teacher	168	4,027	1,161	0,683	185	0,496
	Administrator	19	3,832	1,391			
The Adventurer	Teacher	168	4,439	0,867	-1,083	185	0,280
	Administrator	19	4,663	0,721			

	Group	N	Mean	Sd	t	df	p
The Challenger	Teacher	168	3,194	1,142	0,416	185	0,678
	Administrator	19	3,079	1,093			
The Peacemaker	Teacher	168	4,670	0,696	-0,008	185	0,993
	Administrator	19	4,671	0,741			

Independent Groups T-Test

The perfectionist, the helper, the achiever, the romantic, the observer, the loyalist, the adventurer, the challenger, the peacemaker scores of the teachers do not differ significantly according to the type of task ($p>0.05$).

Table 10: Differentiation of personality scores according to grade taught

	Group	N	Mean	Sd	F	p
The Perfectionist	1	47	4,603	0,729		
	2	34	4,520	0,808		
	3	34	4,696	0,801	0,624	0,646
	4	46	4,739	0,715		
	No pupil	26	4,519	0,811		
The Helper	1	47	4,153	0,744		
	2	34	4,406	0,481		
	3	34	4,335	0,793	0,791	0,533
	4	46	4,226	0,742		
	No pupil	26	4,277	0,560		
The Achiever	1	47	3,962	1,020		
	2	34	4,265	1,090		
	3	34	4,006	0,894	0,504	0,733
	4	46	4,061	1,033		
	No pupil	26	4,123	0,988		
The Romantic	1	47	3,642	1,146		
	2	34	3,730	1,129		
	3	34	3,162	1,287	1,315	0,266
	4	46	3,500	1,133		
	No pupil	26	3,365	1,115		
The Observer	1	47	4,372	1,175		
	2	34	3,904	1,153		
	3	34	4,265	1,092	1,149	0,335
	4	46	4,076	1,331		
	No pupil	26	3,885	1,312		
The Loyalist	1	47	3,834	1,237		
	2	34	4,159	1,067		
	3	34	3,871	1,245	0,647	0,630
	4	46	4,122	1,081		
	No pupil	26	4,100	1,343		
The Adventurer	1	47	4,353	0,946		
	2	34	4,477	0,705		
	3	34	4,441	0,962	0,521	0,720
	4	46	4,470	0,863		
	No pupil	26	4,654	0,712		
The Challenger	1	47	2,926	1,027		
	2	34	3,382	1,088		
	3	34	3,162	1,215	0,992	0,413
	4	46	3,228	1,198		
	No pupil	26	3,327	1,161		

	Group	N	Mean	Sd	F	p
	1	47	4,585	0,692		
	2	34	4,735	0,699		
The Peacemaker	3	34	4,603	0,707	0,545	0,703
	4	46	4,685	0,716		
	No pupil	26	4,798	0,689		

One-Way ANOVA

The perfectionist, the helper, the achiever, the achiever, the romantic, the observer, the loyalist, the adventurer, the challenger, the peacemaker scores of the teachers do not differ significantly according to the grade taught (p>0.05).

Table 11: Differentiation of personality scores according to position type

	Group	N	Mean	Sd	t	df	p
The Perfectionist	Staff	158	4,636	0,769	0,398	185	0,691
	Contracted	29	4,575	0,738			
The Helper	Staff	158	4,244	0,692	-1,071	185	0,285
	Contracted	29	4,393	0,664			
The Achiever	Staff	158	4,080	1,018	0,256	185	0,798
	Contracted	29	4,028	0,948			
The Romantic	Staff	158	3,497	1,194	-0,013	185	0,989
	Contracted	29	3,500	1,019			
The Observer	Staff	158	4,062	1,226	-1,719	185	0,087
	Contracted	29	4,483	1,132			
The Loyalist	Staff	158	4,006	1,168	-0,031	185	0,975
	Contracted	29	4,014	1,284			
The Adventurer	Staff	158	4,446	0,877	-0,614	185	0,540
	Contracted	29	4,552	0,728			
The Challenger	Staff	158	3,214	1,132	0,893	185	0,373
	Contracted	29	3,009	1,158			
The Peacemaker	Staff	158	4,673	0,698	0,122	185	0,903
	Contracted	29	4,655	0,712			

Independent Groups T-Test
The perfectionist, the helper, the achiever, the romantic, the observer, the loyalist, the adventurer, the challenger, the peacemaker scores of the teachers do not differ significantly according to the type of position (p>0.05).

Table 11: Differentiation of personality scores according to seniority

	Group	N	Mean	Sd	F	p	Difference
The Perfectionist	1-5	41	4,594	0,805	1,160	0,330	
	6-10	45	4,648	0,605			
	11-15	26	4,455	0,745			
	16-20	36	4,542	0,886			
	21 and over	39	4,829	0,761			
The Helper	1-5	41	4,376	0,681	1,841	0,123	
	6-10	45	4,182	0,732			
	11-15	26	4,046	0,755			
	16-20	36	4,456	0,669			
	21 and over	39	4,226	0,573			
The Achiever	1-5	41	3,868	0,923	2,457	0,047	5>1 5>2
	6-10	45	3,880	1,141			
	11-15	26	3,992	1,124			
	16-20	36	4,189	0,894			
	21 and over	39	4,451	0,848			

	Group	N	Mean	Sd	F	p	Difference
The Romantic	1-5	41	3,724	1,141			
	6-10	45	3,637	0,951			
	11-15	26	3,135	1,090	1,318	0,265	
	16-20	36	3,472	1,170			
	21 and over	39	3,363	1,418			
The Observer	1-5	41	4,531	1,174			
	6-10	45	4,006	1,338			
	11-15	26	3,981	1,185	1,493	0,206	
	16-20	36	3,979	1,196			
	21 and over	39	4,077	1,129			
The Loyalist	1-5	41	4,029	1,257			
	6-10	45	3,982	1,210			
	11-15	26	3,815	1,394	0,251	0,909	
	16-20	36	4,106	1,134			
	21 and over	39	4,051	0,998			
The Adventurer	1-5	41	4,717	0,765			
	6-10	45	4,382	0,860			
	11-15	26	4,362	0,746	1,406	0,234	
	16-20	36	4,311	0,957			
	21 and over	39	4,492	0,886			
The Challenger	1-5	41	3,024	1,060			
	6-10	45	2,978	1,042			
	11-15	26	3,096	1,013	2,207	0,070	
	16-20	36	3,653	1,334			
	21 and over	39	3,205	1,124			
The Peacemaker	1-5	41	4,726	0,709			
	6-10	45	4,533	0,568			
	11-15	26	4,769	0,667	0,633	0,640	
	16-20	36	4,688	0,780			
	21 and over	39	4,686	0,773			

One-Way ANOVA

The achiever scores of teachers according to seniority show a significant difference ($F_{(4, 182)}=2,457$; $p=0,047<0.05$). The reason for the difference is that the achiever scores of those with a seniority of 21 and above ($\bar{x}=4,451$) are higher than the achiever scores of those with a seniority of 1-5 years ($\bar{x}=3,868$). The achiever scores ($\bar{x}=4,451$) of those with 21 or more years of seniority are higher than the achiever scores ($\bar{x}=3,880$) of those with 6-10 years of seniority.

The perfectionist, the helper, the romantic, the observer, the loyalist, the adventurer, the challenger, the peacemaker scores of the teachers do not differ significantly according to seniority ($p>0.05$).

4.3 Results for Research Question 3

Table 12: Differentiation of sustainable development awareness scores by gender

	Group	N	Mean	Sd	t	df	p
Sustainable Development Awareness Total	Men	50	163,760	12,742	-0,299	185	0,765
	Women	137	164,416	13,454			
Economic Sustainability	Men	50	58,240	4,578	0,095	185	0,924
	Women	137	58,161	5,202			
Social Sustainability	Men	50	41,900	4,082	-0,707	185	0,481
	Women	137	42,350	3,772			
Environmental Sustainability	Men	50	63,620	5,721	-0,294	185	0,769

Women	137	63,905	5,911

Independent Groups T-Test

Teachers' total sustainable development awareness, economic sustainability, social sustainability, environmental sustainability scores do not differ significantly according to gender (p>0.05).

Table 13: Differentiation of sustainable development awareness scores according to educational background

	Group	N	Mean	Sd	t	df	p
Sustainable Development Awareness Total	Bachelor's degree	156	164,231	12,938	-0,023	185	0,982
	Postgraduate graduate	31	164,290	14,880			
Economic Sustainability	Bachelor's degree	156	58,231	4,886	0,298	185	0,766
	Postgraduate graduate	31	57,936	5,790			
Social Sustainability	Bachelor's degree	156	42,180	3,829	-0,401	185	0,689
	Postgraduate graduate	31	42,484	4,016			
Environmental Sustainability	Bachelor's degree	156	63,821	5,674	-0,044	185	0,965
	Postgraduate graduate	31	63,871	6,752			

Independent Groups T-Test

Teachers' total sustainable development awareness, economic sustainability, social sustainability, environmental sustainability scores do not differ significantly according to their educational status (p>0.05).

Table 14: Differentiation of sustainable development awareness scores according to the place of work

	Group	N	Mean	Sd	F	p
Sustainable Development Awareness Total	Metropolitan	78	164,923	13,441		
	Province	44	162,114	13,066	0,878	0,453
	District	42	166,167	12,956		
	Village	23	162,478	13,470		
Economic Sustainability	Metropolitan	78	58,359	4,967		
	Province	44	57,341	5,417	0,995	0,397
	District	42	59,071	5,139		
	Village	23	57,565	4,198		
Social Sustainability	Metropolitan	78	42,282	4,165		
	Province	44	41,955	3,710	0,226	0,879
	District	42	42,571	3,683		
	Village	23	41,957	3,470		
Environmental Sustainability	Metropolitan	78	64,282	5,668		
	Province	44	62,818	5,508	0,962	0,412
	District	42	64,524	5,623		
	Village	23	62,957	7,339		

One-Way ANOVA Teachers' total sustainable development awareness, economic sustainability, social sustainability, environmental sustainability scores do not differ significantly according to the place of work (p>0.05).

Table 15: Differentiation of sustainable development awareness scores according to faculty of graduation

	Group	N	Mean	Sd	t	df	p
Sustainable Development Awareness Total	Faculty of Education	168	164,250	13,360	0,029	185	0,977
	Other Faculties	19	164,158	12,424			
	Faculty of Education	168	58,143	5,110	-0,314	185	0,754

Economic Sustainability	Other Faculties	19	58,526	4,376			
	Faculty of Education	168	42,220	3,904	-0,102	185	0,919
Social Sustainability	Other Faculties	19	42,316	3,449			
Environmental Sustainability	Faculty of Education	168	63,887	5,895	0,403	185	0,688
	Other Faculties	19	63,316	5,528			

Teachers' total sustainable development awareness, economic sustainability, social sustainability, environmental sustainability scores do not differ significantly according to the faculty of graduation (p>0.05).

Table 16: Differentiation status of sustainable development awareness scores according to type of work

	Group	N	Mean	Sd	t	df	p
Sustainable Development Awareness Total	Teacher	168	164,036	13,618	-0,629	185	0,402
	Administrator	19	166,053	9,270			
Economic Sustainability	Teacher	168	58,107	5,077	-0,603	185	0,548
	Administrator	19	58,842	4,682			
	Teacher	168	42,101	3,968	-1,362	185	0,052
Social Sustainability	Administrator	19	43,368	2,385			
Environmental Sustainability	Teacher	168	63,827	6,037	-0,010	185	0,988
	Administrator	19	63,842	3,891			
Independent Groups T-Test							

Teachers' total sustainable development awareness, economic sustainability, social sustainability, environmental sustainability scores do not differ significantly according to the type of work (p>0.05).

Table 17: Differentiation status of sustainable development awareness scores according to grade taught

	Group	N	Mean	Sd	F	p
Sustainable Development Awareness Total	1	47	166,723	11,581		
	2	34	164,824	14,301		
	3	34	161,706	11,869	0,958	0,432
	4	46	164,500	15,154		
	No pupil	26	161,846	12,673		
Economic Sustainability	1	47	58,894	4,673		
	2	34	57,971	5,184		
	3	34	57,471	4,769	0,819	0,515
	4	46	58,717	5,402		
	No pupil	26	57,154	5,174		
Social Sustainability	1	47	42,809	3,104		
	2	34	42,294	4,064		
	3	34	41,677	3,470	0,464	0,762
	4	46	42,065	4,449		
	No pupil	26	42,115	4,265		
Environmental Sustainability	1	47	65,021	4,980		
	2	34	64,559	6,364		
	3	34	62,559	5,716	1,334	0,259
	4	46	63,717	6,568		
	No pupil	26	62,577	5,217		
One-Way ANOVA						

Teachers' total sustainable development awareness, economic sustainability, social sustainability, environmental sustainability scores do not differ significantly according to the grade taught (p>0.05).

Table 18: Differentiation of sustainable development awareness scores according to position type

	Group	N	Mean	Sd	t	df	p
Sustainable Development Awareness Total	Staff	158	163,627	13,607			
	Contracted	29	167,586	10,585	-1,486	185	0,084
Economic Sustainability	Staff	158	58,032	5,255			
	Contracted	29	59,000	3,536	-0,953	185	0,219
Social Sustainability	Staff	158	42,019	3,969			
	Contracted	29	43,379	2,933	-1,758	185	**0,036**
Environmental Sustainability	Staff	158	63,576	5,919			
	Contracted	29	65,207	5,321	-1,384	185	0,168

Independent Groups T-Test

Teachers' social sustainability scores differ significantly according to their tenure type (t(185)=-1.758; p=0.036<0.05). The social sustainability scores of contracted teachers (x̄=43,379) were higher than the social sustainability scores of permanent teachers (x̄=42,019).

Teachers' sustainable development awareness total, economic sustainability, and environmental sustainability scores do not differ significantly according to the type of position (p>0.05).

Table 19: Differentiation of sustainable development awareness scores according to seniority

	Group	N	Mean	Sd	F	p	Difference
Sustainable Development Awareness Total	1-5	41	166,488	11,656			
	6-10	45	163,267	11,735			
	11-15	26	168,269	9,970	2,056	0,088	
	16-20	36	159,722	15,410			
	21 and over	39	164,487	15,295			
Economic Sustainability	1-5	41	58,585	4,243			
	6-10	45	58,511	4,326			1>4
	11-15	26	59,885	4,385	2,596	0,038	2>4
	16-20	36	56,028	5,843			3>4
	21 and over	39	58,231	5,701			
Social Sustainability	1-5	41	43,146	3,313			
	6-10	45	41,711	3,739			3>2
	11-15	26	43,577	2,318	2,823	0,026	1>4
	16-20	36	40,861	4,543			3>4
	21 and over	39	42,231	4,252			
Environmental Sustainability	1-5	41	64,756	5,380			
	6-10	45	63,044	5,912			
	11-15	26	64,808	4,472	0,913	0,458	
	16-20	36	62,833	6,597			
	21 and over	39	64,026	6,314			

One-Way ANOVA

The economic sustainability scores of teachers according to seniority show a significant difference (F(4, 182)=2,596; p=0,038<0.05). The reason for the difference is that the economic sustainability scores of those with 1-5 years (x̄=58,585) are higher than the economic sustainability scores of those with 16-20 years (x̄=56,028). The economic sustainability scores of those with 6-10 years (x̄=58,511) are higher than the economic sustainability scores of those with 16-20 years (x̄=56,028). The economic sustainability scores of those with 11-15 years

($\bar{x}$=59,885) are higher than the economic sustainability scores of those with 16-20 years ($\bar{x}$=56,028).

The reason for the difference is that the social sustainability scores of those with 11-15 years of experience ($\bar{x}$=43,577) are higher than the social sustainability scores of those with 6-10 years of experience ($\bar{x}$=41,711). Social sustainability scores of those with 1-5 years ($\bar{x}$=43,146) are higher than social sustainability scores of those with 16-20 years ($\bar{x}$=40,861). The social sustainability scores of those with 11-15 years ($\bar{x}$=43,577) are higher than the social sustainability scores of those with 16-20 years ($\bar{x}$=40,861). Teachers' sustainable development awareness total and environmental sustainability scores do not differ significantly according to seniority ($p>0.05$).

5. Conclusion

When the correlation between the total scores of primary school teachers' sustainable development awareness levels, economic sustainability sub-dimension score, social sustainability sub-dimension score, and environmental sustainability sub-dimension score and the total scores and sub-dimension scores of personality types were examined, a low level positive correlation was found. The total change in the total score level of sustainable development awareness is explained by 11.1% of the personality types sub-dimension scores.

The loyalist, the challenger and the peacemaker scores of the teachers according to gender show a significant difference in favor of women. The romantic scores of the teachers according to educational level show a significant difference in favor of postgraduates. The observer scores of the teachers according to the place of residence show a significant difference. The observer scores of the teachers whose place of residence is metropolitan and village are higher than the observer scores of the teachers whose place of residence is district. The achiever scores of teachers according to seniority show a significant difference. The reason for the difference is that the achiever scores of those with a seniority of 21 and above are higher than the achiever scores of those with 1-5 years and 6-10 years.

Social sustainability scores of teachers according to tenure type show a significant difference in favor of tenured teachers. Teachers' economic sustainability scores according to seniority show a significant difference. The reason for the difference is that the economic sustainability scores of those with 1-5 years, 6-10 years and 11-15 years are higher than the economic sustainability scores of those with 16-20 years.

Social sustainability scores of teachers according to seniority show a significant difference. The reason for the difference is that the social sustainability scores of those with 11-15 years are higher than the social sustainability scores of those with 6-10 years. The social sustainability scores of those with 1-5 years are higher than the social sustainability scores of those with 16-20 years. The social sustainability scores of those with 11-15 years of experience are higher than the social sustainability scores of those with 16-20 years of experience.

Considering the relationship between primary school teachers' personality types and their awareness of sustainable development, it is important for teachers to participate in lifelong education activities that support their personality types in order to ensure sustainable development. In conclusion, the reflections of education on sustainable development are multifaceted and can help to achieve sustainable development goals when education is designed by taking into account its effects on the environment, society and economy. Therefore, it is important to ensure that education is designed in line with sustainable development goals and that teachers have the necessary competencies and skills to achieve sustainable development goals.

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Sustainable Development Goals: COVID-19 Implications Toward SDGs Achievement

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Abstract

Although the world has become more aware of the negative environmental impacts when relying on fossil fuels as the prime sources of energy, the socio-economic development at global scale has resulted in greater energy demand. To address these issues, the United Nations (UN) have set the 17 Sustainable Development Goals (SDGs), with the ultimate ambition of reducing, by year 2030, the human impacts on the environment. The concept of sustainable development is developed from two key elements: sustainability and development, which are both interrelated.

In this prospect, several UN relevant reports declared that developed countries have a leap in socioeconomic pillars while have impediments in environmental pillars, add to that the negative spillover effect of developed countries on developing countries. Developing countries, on the other hand, still have major challenges in socioeconomic pillars. Beside these challenges, the COVID- 19 pandemic hindered the progress towards achieving the SDGs in all countries, developed and developing nations as well.

COVID-19 has had an impact on all three aspects of sustainable development: economic, social, and environmental. In fact, this pandemic revealed the fragility of the health system in different parts of the world, and the need to address this issue.

This paper gives a brief overview of the 17 SDGs and presents the negative impacts of COVID-19 pandemic on impeding the implementation of these goals. Analysis is carried out to examine to what extent the pandemic causes a drawback in the progress toward achieving 2030 Agenda.

Keywords: sustainable development, pandemic, COVID – 19

1. Introduction

The concept of sustainable development (SD) has emerged from two key elements: sustainability and development, which are both interrelated. Sustainability and development, according to economists, are indisputable (Klarin 2018). The term "development" is most commonly associated with an evolutionary process, in which people's ability grows as they adapt to changes and problems, create new structures, and strive to be creative (Mensah 2019). Sustainability, on the other hand, is the ability of humans to preserve an outcome, entity, or process across time. The Brundtland Commission Report of 1987 defined sustainable development as "development that meets the demands of the present without jeopardizing future generations' ability to meet their own needs.". Sustainable development has four dimensions: societal, environmental, cultural, and economic, all of which are interwoven rather than distinct. Due to persistent population increase and a scarcity of natural resources to meet human needs, sustainable development is gaining traction. SD is also regarded as an attempt to strike a balance between economic progress, environmental stewardship, and social well-being. As a result, and in order for any growth to be really sustainable, social, environmental, and economic ease of use must be factored into decision-making at all levels.

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The UN member states show great commitment to fulfill the 2030 agenda being enforced since 2015, when the sustainable development goals framework was initiated for the sake of the global population peace, prosperity and partnership. The main targets of these goals are two: The first is keeping global temperature increase within 1.5°C and the second, is leaving no one behind. However, the efforts exerted for SDGs achievement were not sufficient to put the SDGs on the track for complete accomplishment by 2030, and this even before the pandemic COVID-19 in early 2020 that made the situation even worse, since it affects this commitment and undermine the overall approach toward achieving the 17 SDGs that were adopted by the UN member states in 2015.

2. Literature Review

The Sustainable Development report of 2020, declared that the whole world faced the worst global health and economic crisis in a century due to COVID- 19 pandemic. The adverse effect of the pandemic is that it affected the whole world including the high- income developed countries and this has led to a global economic crisis with enormous job losses that impacted especially vulnerable people. According to the report, COVID- 19 will obstruct the ambition of achieving the 2030 agenda on time, expected that the world will suffer a long-term pandemic consequence [Sustainable development report 2021]. Asian countries that showed the most progress toward the SDGs achievement since 2015, handled COVID-19 in an effective way compared to other countries. The report recommended stronger partnerships to address the health, economic, social and environmental crisis by supporting mitigating strategies and share the best practices that accelerate the full implementation of the SDGs. Full cooperation between governmental and private sector can leverage the importance of the available real time data.

UN report of 2021, showed the catastrophic implications of COVID- 19, after two years of the pandemic, since it deepened the inequalities among countries. Again, the most vulnerable and poorest regions suffer greater risk of the virus infection with the lack of vaccination and health system integration, beside the economic collapse. Add to that the livelihood of 1.6 billion worker who were involved in informal jobs. Also, the world suffered the flop in the international tourism sector. The report described COVID- 19, as a mirror of the world insufficient social protection, lack in public health system, weak health coverage, thematic inequalities, environmental ecosystem degradation and severe climate change.

Partners for Review (2021 VNR) reports showed improvements in some areas, but there is still much work to be done. To fulfil the global commitments on sustainable development, efforts need to be ramped up and more resources, bold action, and new solutions will be required with less than ten years left to fulfil the 2030 Agenda. Countries can meet these promises and make up for the losses brought on by the pandemic by using the context provided by the follow-up and evaluation procedure. The VNR reports offer a crucial foundation for enabling a post-COVID recovery, which can aid in establishing an inclusive and smooth deployment of the SDGs.

Dr. Shulla and her group (Effects of COVID-19 on the SDGs), discussed crucial facets of the worldwide pandemic for achieving the SDGs. They showed how the pandemic's new conditions have altered the SDGs interdependency, with emphasis on impacts on SDG3, SDG4, SDG8, SDG12 and SDG13. They conducted a qualitative research technique and used moderated focus group discussion, to come out with a distinct pattern of SDG interconnectivity that can be linked to COVID-19 outcomes. Qualitative interpretations revealed that further spill- over effects may add challenges to the achievement of SDG 5, SDG 9, SDG 10, SDG 11, and SDG 17.

Bibliometrics, the meta-analysis approaches, were used by Wang (The impact of COVID-19 on sustainable development goals- A survey), to examine the publications that dealt with the

effect of COVID-19 on sustainability. The results demonstrated the insufficiency of the research depth, despite the broadness of the study scope. Although the epidemic presents more challenges to the sustainable development of developing countries compared to developed countries, research is primarily conducted in developed nations.

2.1 The Origin of SDGs Initiative

Despite the fact that the UN Global Goals were approved in 2015, their history may be traced back several decades. Rachel Carson, an American biologist, awakened the world to the environmental impact of chemical pesticides with her book "Silent Spring" in 1962, and inspired the global environmental movement. The Santa Barbara Oil Spill, which occurred in January 1969, discharged almost 15 million liters of oil onto the California shore, killing thousands of animals and destroying marine life. This accident, which at the time was the worst oil spill on record, became yet another wake-up call for the world to rethink of humanity's role in environmental preservation (Tavanti 2016). This resulted in the inaugural Earth Day (April 22, 1970), when 20 million people gathered to honor the Earth.

The Club of Rome, in partnership with the Massachusetts Institute of Technology (MIT), published "The Limits to Growth" in the same year. It was the first study to raise concerns about the sustainability of continuous human ecological progress, and it predicted that our civilization would most likely collapse before 2100 (Ghorbani 2020). In 1983, the UN established the "Brundtland Commission," to address the issue of unsustainable economic development. During the "Earth Summit," in 1992, the concept of sustainable development was established as a shared worldwide concept. However, in 2012, on the 20th anniversary of the Earth Summit, and the "Rio +20 conference," it became clear that the notion of sustainable development had not taken root or been implemented.

The United Nations states were working under a different set of goals at the time of the "Rio+20" conference, known as the Millennium Development Goals (MDGs). As a result, the concept gained traction and the MDGs were replaced by the Sustainable Development Goals (SDGs) set as target to be achieved by 2030. And over a course of three years, a list of roughly 300 proposed goals were debated, prioritized, and collected into 17 goals.

Finally, on September 25, 2015, at the UN Sustainable Development Summit, the member states endorsed those 17 goals, which are part of the wider commitment to the 2030 Agenda (UN report 2021). These SDGs are considered as an alarming call for real actions by worldwide countries toward a better and healthier future. In a further step, the "Paris Climate Agreement", became another international accord to combat global warming and human-caused climate change.

3. What are the SDGs?

The Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs) established and agreed on a specific global indicator framework as a practical starting point during the UN Statistical Commission's 47th session in March 2016. There are a total of 241 indicators specified in the final indicator proposal. However, because nine indicators repeated under two or three separate targets, the total number of individual indicators in the list is actually 230 (UN report 2021). Goal indicators have been disaggregated by income, sex, age, race, ethnicity, migratory status, handicap, and geographic location, and other characteristics.

3.1 The SDGs Pillars

The 17 SDGs can be grouped into three categories: social, economic and environmental.

Figure 1*: SDGs Pillar
Source: (https://meuresiduo.com/en/blog-en/understand-the-three-pillars-of-sustainability/).

3.2 SDGs Indices and Dashboards

The SDG Indices and Dashboards highlight nations' current performance and trends, using the same approach as prior years. The SDG Index of year 2021, includes data from 165 nations. However, due to inadequate data, the 2022 SDG Index only included 163 nations, two fewer than the preceding year (Cabo Verde and Vanuatu). To remedy a previous data gap, this version added a new indicator (for SDG 12).

The SDG Index is a ranking of each country's overall performance on the 17 SDGs, with each Goal receiving equal weight. The score indicates where a country stands in relation to the worst outcome (0), and the best possible outcome (100).

Data from internationally comparable sources were adopted to ensure the highest level of data comparability. For example, Finland, Denmark and Sweden are the top three Nordic countries in the SDG Index for 2022. Apart from Croatia, all of the top 20 countries are members of the OECD. Even OECD countries, however, face major obstacles in fulfilling a number of SDGs. The majority of the statistics have originated from international organizations with thorough and precise data integrity processes, such as the FAO, ILO, OECD, UNICEF, WHO, and the World Bank. Other data sources were drawn from less conventional statistical sources, like household surveys, networks and civil society organizations, and peer-reviewed articles.

The SDG dashboards display performance in terms of levels and trends, highlighting each country's strengths and weaknesses related to the 17 goals. The data for the two indicators on which the country performs the worst is used to calculate the dashboard ratings for each goal. The dashboards use the same set of indicators as the SDG Index and give population weighted averages for each region as well as income level. The OECD dashboards include more indicators than others due to higher availability of data, compared to less developed nations. UN report objective is to offer reliable statistics that can help nations identify their SDG priorities, providing a thorough evaluation of target distance based on the most recent data available for all 193 UN Member States. The report for this year includes 26 additional indicators specifically for OECD nations.

4. COVID- 19 Impacts on the SDGs Achievement

The pandemic has been a severe setback on sustainable development everywhere. Due to disparities in vaccine access and financing, concluding that inequalities between rich and poor countries have as a result grown dramatically. COVID-19 has had an impact on all three aspects of sustainable development: economic, social, and environmental.

4.1 Impacts of COVID- 19 on the SDGs

SDG1: End Poverty

COVID-19 has led to the first rise in extreme poverty in a generation, and this has impacted most the vunerable and disproprtianate groups. Records anounced that additional 119-124 million people were pushed back into extreme poverty in 2020. Global poverty rate is projected to be 7% in 2030 missing the target of eradicating poverty. In response to COVID-19, governments all over the world have implemented 1,600 short-term social protection measures.

Figure 2 shows the declined proportion of employed persons among different categories in 2019 due to COVID -19 which has caused further stress on poverty.
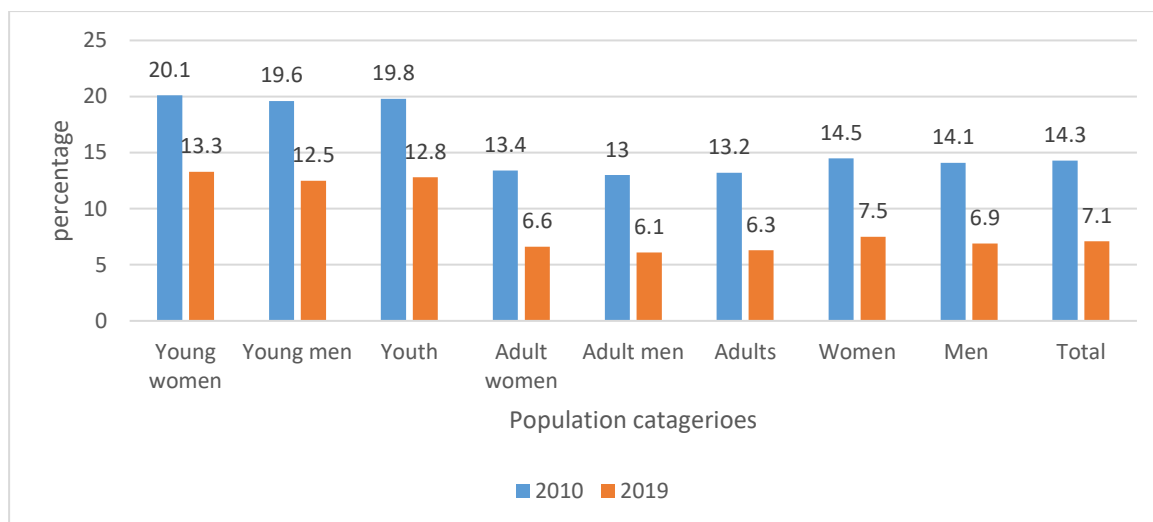
Figure 2: Porportion of employed poulation living below $ 1.9 aday.
Source: (United Nations report for sustainable development goals:2020)

SDG2: Zero Hunger

The global pandemic is exacerbating world hunger. In 2020, an additional 70-161 million people were anticipated to be hungry. Reduced global food supplies and commerce have resulted in food insecurity. During the lockdown, a drop in revenue and a reduction in food availability took place. Health records mentioned that 22% (149.2 million) of children under the age of 5 are stunted from growth. Also, 6.7% (45.4 million) of children under 5 suffer from malnutrition, compared to 5.7% (38.9 million) suffer from overweight. In 2020, the world's undernourished population reached 720-811 million, up from 650 million in 2019. According to UN estimates, 2.37 million people suffered hunger or lack of healthy balanced diet on a regular basis in 2020.

SDG3: Good health and wellbeing

COVID19 had impacted the health outcomes and mortality all across the world, and in many industrialized countries, and resulted in a reduction in life expectancy. Overburdening of health systems led to higher mortality from other causes. Disrupt global childhood immunization efforts were also recorded.

Figure 3, shows the disparity of having COVID-19 vaccines throughout the world. while Figure 4 indicates the fragility of the health systems around the globe even in developed countries.
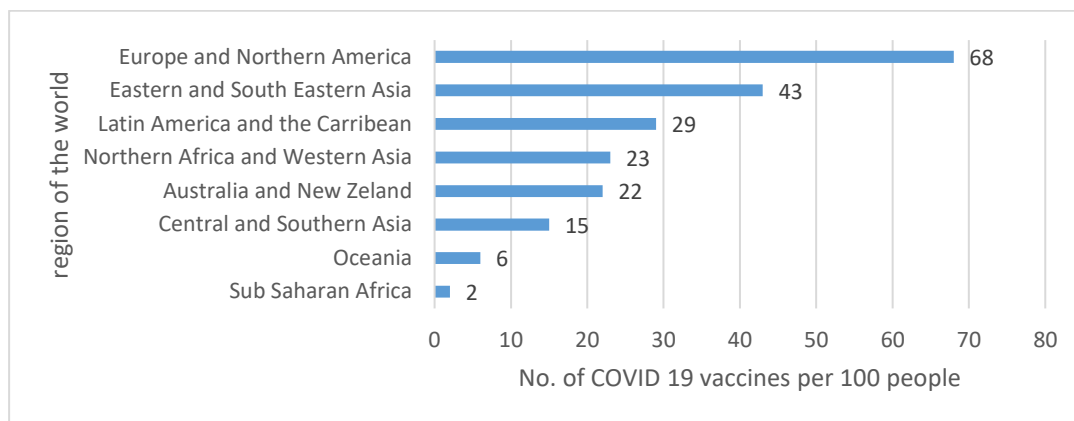
Figure 3: Number of COVID-19 vaccines administered per 100 people.
Source: (United Nations report for sustainable development goals:2021)

SDG4: Quality Education

COVID 19 reversed 20 years of materialized and anticipated educational progress due to the universities, schools and daycare closures. Human capital development is being lost. Shortage of distant learning facilities caused more educational disparities. In 2020, additional 101 million students, or 9% of all children in grades 1 through 8, failed to meet the required reading skill levels [*2021 Voluntary National Reviews- a snap shot of trends in SDG*]. Slow progress in school completion, with the potential for worsening the quality of education were also recorded.
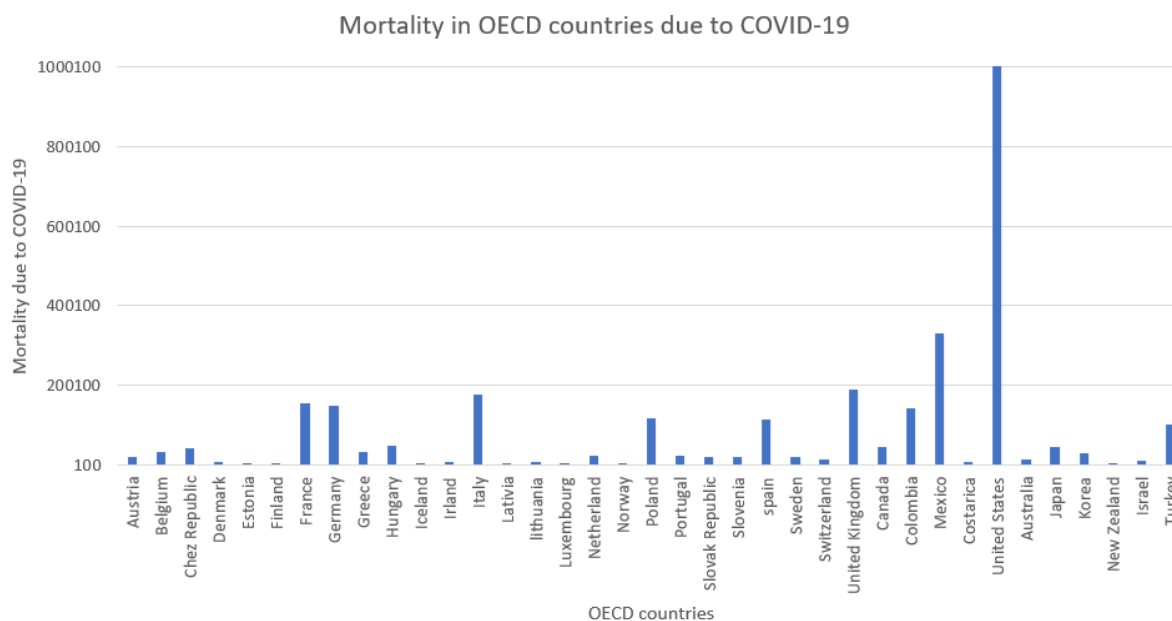
Figure 4: Mortality in OECD countries due to corona virus (2022)

Source: https://www.worldometers.info/coronavirus/countries-where-coronavirus-has-spread/

SDG5: Gender Equality

Gender parity in decision-making is critical for COVID- 19 response and recovery, but it remains a long way off. Violence against women continues at unacceptably high levels, and the pandemic is exacerbating the problem. It is reported that one in every three women (736 million) has experienced physical and/or sexual violence. Moreover, COVID- 19 will put up to ten million girls in danger of child- marriage over the next decade. The pandemic is

increasing the burden of unpaid domestic and care duties, forcing women out of the workforce.

SDG8: Decent Work and Economic Growth

A total of 255 million full-time jobs were lost as a result of the pandemic, as the drop in global real GDP per capita was 4.6 in 2020 compared to 2.2 in 2017. The pandemic directly impacted 1.6 billion unprotected employees in the informal economy. International tourists plummeted from 1.5 billion in 2019 to 381 million in 2020, with no rebound to pre-pandemic levels projected for at least four years. The pandemic also resulted in a rise in youth unemployment, (31.1 % of young women rate of youth uneducated employment compared to 14 percent young men), see Figure 5.
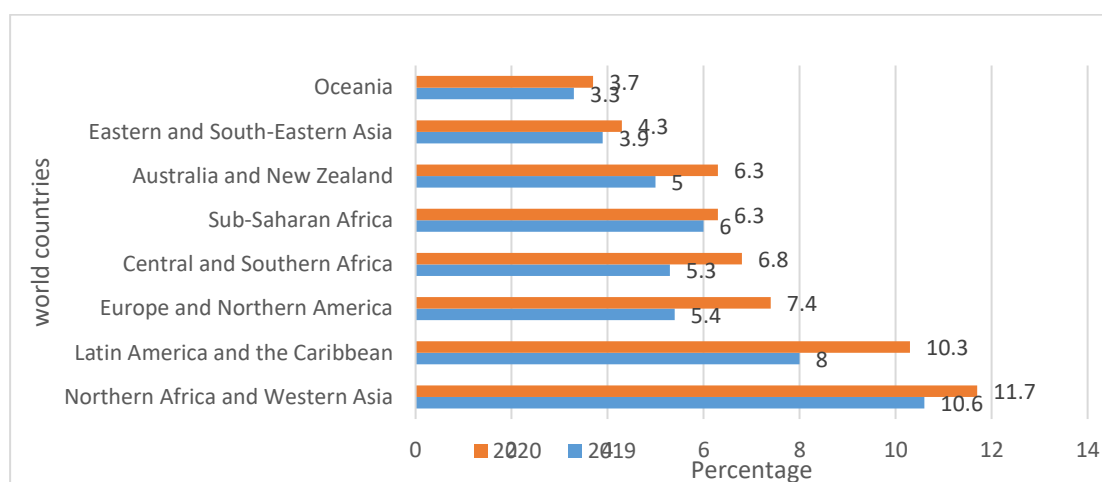
Figure 5: Unemployment rate in % in 2019 and 2020 due to the COVID -19 Pandemic.

SDG9: Industry, Innovation, and Infrastructure

COVID- 19 crisis brought global manufacturing production to a halt. Year 2020 was disastrous for air travel demand where air passengers total declined by 60% from 4.5 billion in 2019 to 1.8 billion in 2020. The aviation-related industries are the hardest hit, and as a result, certain businesses facing nationalization. It was noticed that the revival of the economy in late 2020 was fueled by the manufacture of medium and high-tech products. In almost 25 nations, about 300 million out of 520 million rural dwellers lack access to roads.

SDG10: Reduced Inequalities

The pandemic is expected to undo the progress made since the financial crisis of 2008 in reducing income disparity. As a consequence of COVID- 19, the average GINI (index measures the level to which the diversity of income or consumption among individuals or households within an economy) for emerging market and developing nations has risen by 6%. Disproportionately bad health and economic consequences for disadvantaged groups (such as refugees and migrants), particularly in countries with weak safety measures, have reached alarming levels. Loss of low-wage, low-skilled labor opportunities resulted from the pandemic. Finally, since 2010, the proportion of refugees in the world doubled (for every 100,000 people, 311 are refugees in 2020).

SDG11: Sustainable Cities and Communities

Slum dwellers' position got worse as a result of the pandemic. Aroundone billion slum dwellers reside in three sectors; eastern and south eastern, sub-Saharan Africa, and central and southern

Asia. Urban poverty and vulnerability rates inclined. Public transportation in many communities have been shut down and access to public and green spaces were also restricted. It has been reported that the average global share of urban area is assigned to streets and open public spaces (2020) is 16%, whereas it should be 30% streets and 10-15% open public spaces.

SDG13: Climate Change

The global average temperature in 2020 was 1.2° C higher than the pre-industrial baseline, and well below the targeted 1.5° C, as required by the Paris Agreement for 2030 agenda. National climate adaptation plans were developed and implemented in 125 of 154 developing countries but uncertainity was noticed about environmental investments. The slower economic growth may lower energy prices, which may enhance availability to energy but this would lessen incentives for renewables.

SDG16: Peace, Justice and Strong Institutions

Children's vulnerability to exploitation, such as human trafficking and child labor increased as a result of the epidemic. Reports showed that child labor reached around 160 million in 2020, the first increase in two decades. In 2020, 331 human rights defenders were assassinated in 32 nations, an 18 percent increase from 2019, and only 82 nations have maintained the autonomous national human rights institutions that met international norms in 2020. Moreover, increased government debt and deficits were noticed.

SDG17: Partnerships for the Goals

There are major disparities in access to vaccines and funding to support emergency expenditures and a long-term recovery among countries. International aid agencies may, as a result, be less sensitive to the needs of the poorest countries. International remittances and cross-border financing may be reduced [The COVID-19 Pandemic and the achievement of the SDGs]. Border closures played a role in iInternational trade slowdown. Remittances to low- and middle-income nations exceeded $540 billion in 2020, and this is defying expectations since the figure is1.6 % below 2019 level. Despite the urgency for connectivity during the pandemic, nearly half of the world's population, that is around(3.7 billion people, were still offline in 2020.

5. Conclusion

The 2030 Agenda has 17 interrelated SD goals, thus each goal's fulfilment will definitely have an effect on the other goals. As a result, incomplete implementation efforts that treat each goal alone and ignore these linkages are considered as a failure in achieving the 2030 Agenda. It is clear that none of the countries fully achieved the full 17 SDGs. Each country has a certain limitation in SDGs achievements and trends and hence ranking is assigned. The progress toward the achievement of 2030 agenda was halted by COVID- 19 that negatively impacted the progress of 2030 agenda fulfillment, since its effect reached all dimensions, social, economic and environmental. It was never going to be simple to achieve the (SDGs), and now it is even more challenging with the Pandemic consequences. These consequences will curb the efforts to achieve the set targets of the SDGs. More efforts, at global scale, will be needed to remedy the situation and to get various nations back on track for achieving totally or partially the set SDGs by 2030.

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Economic Freedom and FDI Inflows: Evidence from the New EU Members

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Abstract

FDI inflows have been suggested as a significant factor behind economic growth and development. This study investigates the interplay between economic freedom and FDI inflows in the new EU member economies through causality test over the 2000-2020 term. The panel causality analysis indicates a bilateral causality between economic freedom and FDI inflows. On the other side, the country level causality analysis uncovers a significant unidirectional causality from economic freedom to FDI inflows in Hungary, but a unidirectional causality from FDI inflows to economic freedom in Croatia, Czechia, Estonia, Lithuania, and Romania.

Keywords: economic freedom, FDI inflows, new EU members, panel causality test

1. Introduction

The globalization process has led the disappearance of economic borders among countries, trade globalization and the free movement of capital among the countries. Most countries in the world, especially developing countries, have tried to attract the foreign direct investments (FDI) owing to the insufficient domestic savings and integration with global economy. The countries with the highest economic freedom have generally attracted a large part of the foreign direct investments in the world, and in turn have caught a rapid trend of prosperity and economic development (Başar, 2021).

Foreign direct investments play an important role in economic growth and development through transfer of knowledge, know-how, and technology. Therefore, almost all countries, especially developing countries, have taken economic and fiscal measures to attract more foreign direct investments. In this context, factors underlying foreign direct investments are important given the influence of foreign direct investments on technological gap reduction and improvements in competitiveness. The related literature has documented many institutional, social, and economic factors such as economic growth, financial development, institutional quality, globalization, and openness as determinants of FDI inflows (Badri and Sheshgelani, 2017).

This study investigates the interplay between FDI inflows and economic growth in sample of the new 11 EU member states. The study aims to make a contribution to the limited related empirical literature by analyzing the aforementioned relationship in sample of the new EU members. The next part of the article reviews the empirical literature about the relationship between economic freedom and FDI inflows and the econometric analyses are applied and discussed. The study lasts with the Conclusion section.

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2. Review of Literature

In the empirical literature, the researchers have generally reached the conclusion that economic freedom is a significant determinant of FDI inflows. In this context, Bengoa and Robles (2003) analyzed the interaction among economic freedom, foreign direct investments, and economic growth in 18 Latin American countries over the 1970-1999 term and discovered a positive influence of economic freedom on foreign direct investments. Quazi (2007) also explored the interplay between economic freedom and foreign direct investments in seven east Asian economies for the 1995-2000 period and revealed a positive influence of economic freedom on foreign direct investments.

Pearson et al. (2012) analyzed the influence of economic freedom and economic growth on the foreign direct investments in the 50 states of the United States of America over the 1984-2007 period and uncovered a positive influence of economic freedom on foreign direct investments.

Panahi et al. (2014) examined the influence of economic freedom on economic growth in 13 Middle East and North African countries and found that economic freedom had a positive influence on economic growth.

Fofana (2014) investigated the influence of economic freedom components on foreign direct investments in 25 Western European countries and 26 Sub-Saharan African countries for the 2001-2009 duration and revealed that economic freedom was a significant determinant of foreign direct investments in the European countries, but not a significant determinant of foreign direct investments in the Sub-Saharan African countries.

Ajide and Eregha (2015) analyzed the influence of economic freedom and FDI inflows on economic growth 19 Sub-Saharan African countries for the 1995-2010 term and reached the conclusion that economic freedom positively influenced the economic freedom and suggested that improvements in economic freedom can contribute to the other sectors' except primary sector attraction of foreign direct investments.

Hossain (2016) examined the interaction among economic freedom, foreign direct investments, and economic growth in 79 developing countries for the 1998-2014 term and found that economic freedom had a positive influence on foreign direct investments. Zghidi et. al. (2016) analyzed the interplay between economic freedom and FDI inflows in the North African countries over the 1980-2013 duration and revealed that economic freedom fostered the investments by multinational corporations.

Kazemi and Saini (2017) examined the relationship among economic freedom, democracy, and foreign direct investments in 87 countries over the 1981-2010 period and uncovered a positive influence of economic freedom on foreign direct investments. Ghazalian and Amponsem (2019) investigated the interplay between economic freedom and FDI inflows in 120 developed and developing economies for the 1970-2015 term and revealed that economic freedom positively affected the FDI inflows.

Özcan and Akar (2020) examined the causal relationship between economic freedom and foreign direct investments in E7 economies over the 1996-2018 term through Dumitrescu and Hurlin (2012) causality tests and uncovered an insignificant causal interaction between two variables. Başar (2021) explored the relationship between economic freedom and foreign direct investments in MSCI economies (Brazil, China, Czechia, Hungary, India, Malaysia, Mexico, Poland, Russia, South Africa, and Turkiye) for the 2010-2020 period and disclosed a negative influence of economic freedom on FDI inflows unlike the related literature.

Çetenak ve Uzlaşır (2019) examined the causal relationship between economic freedom and foreign direct investments in 32 OECD countries through Dumitrescu ve Hurlin'in (2012)

causality test and uncovered a unidirectional causality from economic freedom to the foreign direct investments.

Çoban and Küsmez (2021) examined the relationship between some selected variables and FDI inflows in 26 OECD economies for the 1996-2019 duration through Dumitrescu and Hurlin (2012) causality test and discovered a unidirectional causality from economic freedom to the FDI inflows. Köstekçi (2022) also analyzed the influence of economic freedom on foreign direct investments in 37 OECD economies through cointegration and causality tests. The cointegration analysis indicated that economic freedom had a negative influence on foreign direct investments and the causality analysis denoted a significant causality from economic freedom to foreign direct investments.

3. Data and Method

In the econometric analyses, economic freedom (EFREEDOM) is represented by economic freedom index of Fraser Institute (2022) and FDI inflows (FDI) are proxied by FDI net inflows as percent of GDP by World Bank (2022). The availability of economic freedom index leads us to specify the study period as 2000-2020 and both series are annual.

Eviews 12.0 and Stata 16.0 statistical programs are utilized to implement the econometric tests and the mutual interplay between economic freedom and FDI inflows is examined with Emirmahmutoglu and Kose (2011) causality test. The summary statistics of FDI inflows and economic freedom are shown in Table 1. The mean of FDI inflows is 5.599% of GDP and the mean of economic freedom index is 7.432, but FDI infloes showed significant variations among the new EU member economies.

Table 1: Summary statistics of the series

Variables	Obs	Mean	Std.Dev.
FDI	231	5.599	10.784
EFREEDOM	231	7.432	0.504

4. Econometric Analysis

In the empirical analysis, presence of cross-sectional dependence between economic freedom and FDI inflows is analyzed with LM test, LM adj. test, and LM CD test, and the test results are given in Table 2. The null hypothesis of cross-sectional independence is rejected taking notice of probability values of three tests and the subsistence of cross-sectional dependence is revealed between two series.

Table 2: Cross-sectional dependence tests' results

Test	Test statistic	Prob.
LM (Breusch and Pagan, 1980)	156.7	0.0000
LM adj* (Pesaran et al., 2008)	23.21	0.0000
LM CD* (Pesaran, 2004)	10.11	0.0000

The presence of homogeneity is investigated with delta tilde tests of Pesaran and Yamagata (2008) and the test results are displayed in Table 3. The null hypothesis of homogeneity is accepted and a significance subsistence of homogeneity is discovered. As a result, the utilization of a causality test with cross-sectional dependence will lead us to obtain relatively more robust findings in view of the results of cross-sectional dependence test.

Table 3. Homogeneity tests' results.

Test	Test statistic	Prob.
$\tilde{\Delta}$	-0.163	0.871
$\tilde{\Delta}_{adj.}$	-0.176	0.861

The stationarity analysis of FDI and EFREEDOM is checked with Pesaran (2007) CIPS unit root test considering the cross-sectional dependency and test results are indicated in Table 4. The unit root test results uncover that EFREEDOM is I(0), but FDI is I(1).

Table 4: Unit root test's results

Variables	Constant	Constant+Trend
	Zt-bar	Zt-bar
FDI	-1.704**	-1.258
D(FDI)	-6.101***	-4.530***
EFREEDOM	-2.042**	-1.871**
d(EFREEDOM)	-5.660***	-4.883***

*** and ** indicates that it is respectively significant at 1% and 5% level.

The causal interplay between economic freedom and FDI inflows is analyzed with Emirmahmutoglu and Kose (2011) causality test and test results are shown in Table 5. The panel findings revealed a bidirectional causality between economic freedom and FDI inflows. The country level causality analysis uncovers a significant unidirectional causality from economic freedom to FDI inflows in Hungary, but a unidirectional causality from FDI inflows to economic freedom in Croatia, Czechia, Estonia, Lithuania, and Romania.

Table 5: Causality test results

Countries	EFREEDOM ↛ FDI		FDI↛ EFREEDOM	
	Test statistic	P value	Test statistic	P value
Bulgaria	5.822	0.121	0.962	0.811
Croatia	0.132	0.717	**3.021**	**0.082**
Czechia	0.139	0.709	**6.068**	**0.014**
Estonia	0.203	0.977	**9.023**	**0.029**
Hungary	**72.112**	**0.000**	4.231	0.238
Latvia	0.649	0.421	0.032	0.858
Lithuania	0.006	0.939	**4.208**	**0.040**
Poland	2.160	0.340	2.153	0.341
Romania	0.891	0.828	**9.451**	**0.024**
Slovak Republic	1.126	0.771	0.950	0.813
Slovenia	0.602	0.896	1.021	0.796
Panel	**79.026**	**0.000**	**41.173**	**0.008**

5. Conclusion

This study investigates the interplay between economic freedom and FDI inflows in the new EU member economies through causality test over the 2000-2020 term. The panel causality analysis indicates a bilateral causality between economic freedom and FDI inflows. On the other side, the country level causality analysis uncovers a significant unidirectional causality from economic freedom to FDI inflows in Hungary, but a unidirectional causality from FDI inflows to economic freedom in Croatia, Czechia, Estonia, Lithuania, and Romania. The findings of the causality analysis indicate that improvements in economic freedom can make a contribution to the FDI attraction.

The improvements in economic freedom positively affect the foreign direct investments, and also allow the countries to gain maximum benefit from foreign direct investments. Furthermore, the countries should provide financial incentives, take measures to improve the competitiveness and entrepreneurship, and provide an effective and efficient financial environment in order to increase FDI inflows.

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Human Development and Tax Revenues: Evidence from Turkiye

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Abstract

Human development is a significant indicator of economic development level and important for economic growth of a country. On the other side, tax revenues are the most important source of government expenditures and investments. Therefore, interplay between human development and tax revenues is important for the countries. This study investigates the interplay between human development and tax revenues in Turkiye through causality test over the 1990-2021 period. The causality analysis indicates that human development has a significant influence on tax revenues.

Keywords: human development, tax revenues, Turkiye, causality test

1. Introduction

Tax revenues are the main financing instrument of public investments and expenditures which are also important for economic growth and development. Therefore, determinants of tax revenues have been extensively investigated in the related empirical literature and many demographic, social, institutional, and economic factors have been documented as the significant factors underlying tax revenues (Piancastelli and Thirlwal, 2020; Ha et al., 2022).

Human capital is defined as the knowledge, skills, competencies and other qualities acquired in individuals or groups of individuals throughout their lives and used to produce goods, services or ideas under market conditions. The human development index (HDI) was formed to emphasize that people and their abilities should be the ultimate assessment, not economic growth alone, in assessing a country's economic development level. The HDI can also be used to question the national policies. Furthermore, the HDI can also be used to challenge national policy choices by asking how two countries with the same GDP per capita could achieve different human development outcomes (OECD,2017)

In this study, we focus on the interplay between human development and tax revenues in case of Turkiye. In this context, the study consists of five parts. In the second part, the empirical studies in the related literature are summarized and third part of the study presents the method and data set. The empirical analyses and their findings are discussed in the fourth part of the paper and the study lasts with the Conclusion.

2. Review of Literature

In the empirical literature, Moya (2011) analyzed the interaction between human development and taxes in 114 countries through regression analysis and reached the conclusion that there existed an insignificant relationship between human development and taxes.

Nwakanma and Nmandi (2014) investigated the relationship between tax revenyes and human development in Nigeria for the 1970-2010 term through regression analysis and revealed that that oil earnings tax, corporation income tax and VAT respectively had positive impact on

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economic development and human development, and discovered a negative relationship between corporate tax and human development index.

Kızılkaya et al. (2015) investigated the effect of tax revenues, government expenditures, and infrastructure (electricity consumption) on human development in 14 OECD economies over the 1998-2007 term and reached the conclusion that tax revenues negatively affected the human development, and there existed an insignificant relationship between tax revenues and human development. Furthermore, a unidirectional long-run causality from taxes to the human development was uncovered.

Dronca (2016) examined the relationship among fiscal freedom, government effectiveness, human development, and tax evasion in 28 EU members over the 1999-2010 and discovered a negative impact of fiscal freedom, government effectiveness, and human development on tax evasion.

Ofoegbu et al. (2016) explored the interaction between tax revenues and human development in Nigeria over the 2005-2014 period through time series analysis and discovered that tax revenues positively affected the human development.

Ibanichuka et al. (2016) analyzed the influence of value-added tax, corporate tax, and customs duty on human development index in Nigeria for the 1995-2014 duration and discovered a positive impact of these taxes on human development.

Saragih (2018) examined the impact of local tax revenues on human development level in Indonesia for the 2013-2016 duration and discovered a positive influence of local tax revenues on human development.

Mutiha (2018) investigated the impact of equity income, tax revenue sharing fund, general allocation fund and special allocation fund on the human development index in Indonesia over the 2013-2015 through regression analysis and found that regional resource income had a positive effect on human development, but tax revenue sharing funds, general allocation funds and special allocation funds had a negative impact on human development.

Ciğerci and Eğmir (2020) analyzed the influence of direct and indirect taxes on human development in Turkiye over the 1990-2019 period through Toda-Yamamoto (1995) causality test. Their causality analysis discovered a unidirectional causality from direct taxes to human development and from human development to indirect taxes. On the other hand, Singoro (2021) analyzed the interplay between human development and tax revenues in Kenya and discovered a positive influence of human development on tax revenues.

Maryantika and Wijaya (2022) examined the impact of corruption, government expenditures, and human development on tax revenues in ten provinces of Indonesia over the 2010-2019 duration through regression analysis and reached the conclusion that government expenditures, human development and economic growth had a positive influence on tax revenues.

3. Data and Method

The study investigates the causal relationship between human development and tax revenues in Turkiye. The human development (HDI) is represented by human development index of UNDP (2022) and tax revenues (TAXREV) are proxied by total tax revenues (Turkish Lira, billions) of OECD (2022). The study period is specified as 1990-2021, because both human development and tax revenues are available for the 1990-2021 period.

Eviews 12.0 statistical package is used to implement the econometric tests and the mutual interplay between human development and tax revenues is investigated through Toda and Yamamoto (1995) causality test. The summary statistics of human development and tax

revenues are shown in Table 1. The mean of human development index is 0.7174% of GDP and the mean of tzx revenues is 321.4969 billion Turkish lira, but tax revenues showed a significant variation during the 1990-2021 period.

Table 1: Summary statistics of the series

	HDI	TAXREV
Mean	0.717406	321.4969
Median	0.705000	171.7000
Maximum	0.842000	1654.600
Minimum	0.600000	0.100000
Std. Dev.	0.081941	407.6457
Skewness	0.201207	1.609578
Kurtosis	1.674764	5.146752
Observations	32	32

Toda and Yamamoto (1995) causality test is a modified version of traditional Granger (1969) causality test and tests the causal interplay among the variables without checking the cointegration relationship. First the optimal lag length p is specified in the VAR model, then the highest integration degree (d_{max}) of the variables is added to the p. At the next stage VAR model is estimated with the level values of the variables for the $p + d_{max}$ lag. The estimated VAR model is as follows:

$$Y_t = \alpha_0 + \sum_{i=1}^{p+d_{max}} \alpha_{1i} Y_{t-i} + \sum_{i=1}^{p+d_{max}} \alpha_{2i} X_{t-i} + u_t \qquad (1)$$

$$X_t = \beta_0 + \sum_{i=1}^{p+d_{max}} \beta_{1i} X_{t-i} + \sum_{i=1}^{p+d_{max}} \beta_{2i} Y_{t-i} + v_t \qquad (2)$$

At final stage the constraints are imposed on the coefficients obtained from the d_{max} and the significance of these constraints are tested by modified Wald test. The null hypothesis for the (1) numbered equation is that there is no causality from X to Y and the null hypothesis for the (2) numbered equation is that there is no causality from Y to X.

3. Econometric Analysis

In the econometric analysis, the stationarity of HDI and TAXREV is examined with ADF (1981) and PP (1988) unit root tests and test results are reported in Table 2. The findings denoted that all the variables were not stationary at their levels, but became stationary after first differencing.

Table 2: ADF and PP unit root tests

Variables	ADF	
	Constant	**Constant+Trend**
HDI	-0.078478	-1.734496
D(HDI)	-4.673883***	-4.579671***

Variables	ADF	
	Constant	**Constant+Trend**
TAXREV	0.985858	0.503790
D(TAXREV)	3.768432***	3.810205

*** indicates that it is significant at 1%

The causal interplay between human development and tax revenues is investigated by Toda and
Yamamoto (1995) causality test. In this context, first optimal lag length is determined as 1 as
seen in Table 3.

Table 3: Optimal lag length

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-167.0130	NA	268.2258	11.26753	11.36095	11.29742
1	**-36.14198**	**235.5679***	**0.056986***	**2.809465***	**3.089705***	**2.899116***
2	-32.90424	5.396230	0.060254	2.860283	3.327349	3.009701

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level); FPE: Final prediction error;
AIC: Akaike information criterion; SC: Schwarz information criterion; HQ: Hannan-Quinn
information criterion
The autocorrelation and heteroscedasticity problems are checked with LM tests and White
heteroscedasticity tests and no autocorrelation and heteroscedasticity problems are specified.
In the study, the highest integration level of the variables (d_{max}) is 1 and p is revealed to be 1.
Therefore, the regression model with 2 lags ($p + d_{max} = 1 + 1 = 2$) is estimated and the
findings of Toda and Yamamoto (1995) causality test are reported in Table 4. The findings
uncover a significant unidirectional causality from human development to the tax revenues. In
other words, human development has a significant influence on tax revenues.

Table 4: Results of Toda and Yamamoto (1995) causality test

Null Hypotheses	Chi-sq	Prob.
HDI does not Granger cause of TAXREV	**3.479641**	**0.0621**
TAXREV does not Granger cause of HDI	0.164816	0.6848

5. Conclusion

The tax revenues are important for government investments and expenditures. In this study, the
mutual interplay between human development and tax revenues is investigated in case of
Turkiye and the causality analysis reveals a unidirectional causality from human development
to the tax revenues. In other words, human development has a significant influence on tax
revenues. In this context, welfare, education, and health policies to improve the human
development also can affect the total tax revenues.

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Empirical Findings on Organizational Resilience and Sustainable Economic Growth in the Post-Covid Era

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Abstract

The fourth industrial revolution, the shift to a more service-based economy, and the Covid-19 pandemic have all helped to shape the new economic landscape of the 21st century. All of the aforementioned factors contribute to a business and organizational environment in which businesses and organizations are being asked to restructure their business models, change the way they operate and make decisions, and invest in human resources. Adaptability, flexibility, effective communication and decision-making leadership, innovation, and the ability to strengthen human resources and skills are thus characteristics of businesses that wish to continue operating and remaining viable. These elements make up the concept of organizational resilience, which is directly related to sustainability and is particularly important for achieving high rates of economic growth. The research question is whether organizations and firms in Greece during the Covid-19 period are governed by organizational resilience that will enable the country's sustainable economic growth. The survey was conducted using a questionnaire distributed to 156 employees from 62 firms, and correlations were performed based on the number of employees and the nature of the firms (national, multinational, etc.). It was discovered that economic organizations are governed by flexibility, adaptability, diffuse decision making, and individual and group accountability and discretion in terms of actions to achieve the organization's objectives, ability to acquire new resources and skills, and ability to identify new opportunities. However, they lack psychological security, social capital, meaning-making, and resourcefulness-learning. As a result, in order to support the country's long-term economic growth, steps must be taken to improve these dimensions of organizational resilience. On a theoretical level, this paper contributed to the filling of gaps in the literature concerning the relationship between organizational resilience and economic development, particularly in the Greek context. Furthermore, it is important to note that this study was conducted during the pandemic, after a year of attempting to adapt firms and organizations to the new reality in which the Covid-19 pandemic was a strong shock for firms and led to a decrease in economic recovery rates, highlighting the practical implications of using the current research, of which two points should be highlighted. The first is that not all organizational resilience dimensions received a high mean score, implying that economic organizations have significant room for further development of these aspects in order to achieve a high level of organizational adaptability that will benefit the economy by enhancing firm sustainability and continued operation while adapting to new conditions in the wider corporate environment. The second point to highlight is that businesses should prioritize social capital, meaning creation, and psychological security for their employees. Human resources are an organization's most valuable asset in adapting to the post-Covid-19 era, not only through their behavior, productivity, and efficiency, but also through their initiative, originality, and entrepreneurship. These elements are critical in ensuring the viability of businesses. The above components are essential in ensuring that businesses can continue to operate and contribute to economic growth.

As a result, in order to support the country's long-term economic growth, actions are required to improve these dimensions of organizational resilience. On a theoretical level, this paper contributed to the filling of gaps in the literature concerning the relationship between organizational resilience and economic growth, particularly in the Greek context. Furthermore, it is important to note that this study was conducted during the pandemic, after a year of trying to adapt organizations and businesses to the new reality in which the Covid-19 pandemic was a solid shock for firms and resulted in a reduction in economic recovery rates, showcasing the practical implications of using the current research, of which two points should be highlighted. In order to achieve a high level of organizational resilience that will support economic growth by enhancing firm sustainability and continued operation while adapting to new conditions in the larger business environment, economic organizations need to further develop these dimensions, as shown by the fact that not all of them received a high mean score. The second thing to underline is that businesses should pay particular attention to boosting social capital, giving work significance, and providing psychological security for workers. Future research could strengthen its findings by offering recommendations for particular economic sectors by extending its scope to include the analysis and

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comparison of different economic sectors. Similar comparative research on businesses in other EU nations as a whole and/or with a special emphasis on corresponding industry sectors would also produce very valuable findings that, when combined with an analysis of the effects of different variables (such as legislation, the economic climate, organizational structure and operation, etc.) on organizational resilience, could result in the formulation of pertinent practical implementation suggestions.

Keywords: organizational resilience, corporate governance, sustainable economic growth, Covid pandemic

1. Introduction

The term "organizational resilience" first appeared in academic literature in the 1980s (London, 1983). Since then, the concept has evolved and grown in significance in response to the increasingly intense competitive environment in which firms operate, as well as the constant changes and shifts in their external environment. This necessitates the development of characteristics and capabilities that will enable organizations to meet the challenges posed by the new environment, thereby increasing their chances of sustainability. (Walker et al., 2006; Bhamra&Dani, 2011; Ilmola, 2016; Vakilzadeh&Haase, 2020; Miceli, Hagen, Riccardi, Sotti&Settembre-Blundo, 2021). This can be achieved through the impact of organizational resilience on critical aspects of the organization: enhancing employee morale, productivity and performance (Alliger, Cerasoli, Tannenbaum&Vessey, 2015; Aronsson et al., 2017), taking advantage of opportunities presented in the wider environment (Sull, 2004; Lengnick-Halletal., 2011), recovery from a shock such as a global financial crisis (Martin&Sunley, 2015; Fukofuka, Fukofuka&Loke, 2017), faster and more efficient decision making (Peteraf et al, 2013), knowledge acquisition (Hedberg, 1981; Danneels, 2010), forming new habits and routines (Hine, Parker, Pregelj, &Verreynne, 2014), acquiring new and strengthening existing resources (Sull, 2004; Manfield&Newey, 2015), and preventing negative events (Duchek, 2020).

As a result, organizational resilience is linked to the ability of organizations to adapt to new conditions that emerge in the broader business environment and labor market in the event of a crisis or extraordinary event. In this light, organizational resilience has been linked to the concept of economic growth. (Duchek, 2020; Micelietal., 2021). Business sustainability leads to increased competitiveness (Cavaco&Machado, 2015; Gillespie-Marthaler, Nelson, Baroud, Kosson&Abkowitz, 2019; Gillespie-Marthaler, Nelson, Baroud, Kosson&Abkowitz, 2019; Annarelli et al., 2020) and innovation (de Carvalho, Ribeiro, SilvaCirani&Cintra, 2016) and hence economic growth. Furthermore, the acquisition of new skills and resources, the exploitation of opportunities, and the flexibility and adaptability of firms in the newly formed context allow them to continue and evolve, resulting in a positive impact on jobs and economic growth. (Marković, Farooq&Marković, 2017).

In the context of digital transformation and the fourth industrial revolution that is taking place; new demands are created in terms of human resources due to the fact that this industrial revolution is based on knowledge on the part of employees (Manda&Dhaou, 2019; Morgan, 2019). Significant transformations in terms of economic processes, working methods, the structure of labour relations, and employee training (Kim, 2019) create new challenges for organisations and employees alike. The rapid pace of technological, demographic, and socioeconomic change is transforming industries and business models, altering the skills required by employers, and shortening the lifespan of existing employee skill sets. In this new environment, business model changes frequently result in skill changes. (World Economic Forum, 2016).

Firms and organizations have faced significant challenges as a result of the Covid-19 pandemic and the accelerating fourth industrial revolution. On the one hand, businesses had to adapt to new operational realities (e.g., telecommuting, e-commerce, changing routines and practices, employee safety), while also motivating and supporting employees and improving their skills and morale. On the other hand, some businesses and organizations were required to develop strategies to ensure their survival (e.g. new distribution channels for products and services), while others were required to address obstacles that threatened their continued operation (e.g. problems in the supply chain). Changing practices, making decisions in a timely manner and based on constantly changing and updated data, digital transformation, changing consumer habits, and lack of liquidity were challenges for many businesses.

The day after the pandemic poses additional challenges in terms of how to keep the organizations going and their sustainability. In this broader context, economic growth, which is influenced by business operations, requires increased organizational resilience (Belzunegui-Eraso&Erro-Garcés, 2020; Buehler et al., 2020; Chanana&Sangeeta, 2020). In light of the above, and in particular the impact of the Covid-19 pandemic on economic growth, Baily (2020), among others, proposes training and retraining of workers, which is essential for a more productive and more inclusive economy.

Based on the aforementioned, the purpose of this research is to determine whether firms and organizations operating in Greece during the COVID-19 period are governed by organizational resilience elements that will enable the country's future economic growth. Financial institutions were chosen as a case study due to the unique role they play in the economy and the country's overall economic development.

This study is structured as follows: At the beginning, a comprehensive presentation of the relevant literature is made where the concept, dimensions and determinants of organizational resilience are presented as well as the findings of studies that have previously studied the relationship between organizational resilience and economic growth. The methodology followed in conducting this research is then presented, followed by the main findings. Finally, its main conclusions and its theoretical and practical contribution are summarized, followed by a critical commentary on its limitations and thoughts/suggestions for further study of the topic.

2. Literature Review

Resilience is an increasingly popular concept in both management practice and scientific research, encompassing organizational responses to adversity and reflecting the increasing complexity and interdependence of socio-economic, financial and technological systems, the associated challenges for businesses and the need for solutions to deal with unexpected or unpredictable changes (Miceli et al., 2021).

Resilience is generally understood as how effectively a system copes with adversity or critical situations (Bhamra&Dani, 2011). Resilience is seen as those qualities that enable an individual, community or organization to cope, adapt and recover from a disaster event (Riolli&Savicki, 2003). It is the ability of a system to absorb change (generally perceived in the form of sudden shocks) and still maintain its essential functionality (Walker et al, 2006). In the business context, organizational resilience is defined as the ability of an organization to effectively absorb a variety of shocks, develop specific situations and engage in transformational activities to take advantage of opportunities related to its survival (Lengnick-Hall et al., 2011).

There are numerous definitions and dimensions of resilience. Early conceptions focus on specific behaviors exhibited by resilient organizations, eventually leading to a typology of resilience behaviors based on the organizational communication mindset. Within the context of social transformation theory, a second group of researchers has gone on to supplement resilient

behavior with resilience resources. A third group of studies is strongly influenced by engineering resilience and is based on the theory of capacity for organizational resilience. Yet another group has proposed typologies as a conception of organizational resilience with opposite poles on the dimensions of resilience magnitude and system state desirability (Hillmann&Guenther, 2020). Hillmann and Guenther (2020) provide a typology on the basis of which the concept of organizational resilience can be understood: (1) Awareness and meaning making. (2) Stability, (3) Change, (4) Behaviour, (5) Development and (6) Performance

Based on the above, organizational resilience involves two dimensions. The first is the quality of individuals or organizations to perform as intended despite significant changes or difficult circumstances, while the second is the ability of the above to respond positively to failures or challenging events. On this basis, organizational resilience is defined as the ability to absorb stress and continue to operate the organization as intended, or the ability to recover from adverse events, or both of the above (Fukofuka et al., 2017).

As a result, dynamic capabilities should be developed to enable an organization to handle the resulting disruption and redirect itself to strategic renewal. Such capabilities must also be committed to organizational memory in the form of routines (or perhaps simple rules) in order to be available again in the event of a disruption (Danneels, 2010). This learning and institutionalization of capacity is similar to resilient reintegration as the organization learns to cope with such adversity and make this learning beneficially available in future incidents. Learning includes both the processes by which organizations adapt defensively to reality and the processes by which knowledge is used aggressively to improve the balance between organizations and their environment (Hedberg, 1981).

In addition, resilience refers to resource management, with an emphasis on cognitive frameworks for adapting to environmental conditions, reducing vulnerabilities by reducing the propensity for disruption (Lengnick-Hall et al, 2011) and learning mechanisms that serve as a means to integrate individual skills into collective actions (Levitt&March, 1988). Overall, none of these frameworks alone provide an empirically grounded basis for building strong resilience capabilities that can be applied to an organization across a range of conditions (Martin & Sunley, 2015).

Kantur and İşeri-Say (2012) propose a comprehensive framework for organizational resilience. In this model, the sources of organizational resilience identified are perceptual attitude, strategic competence and strategic action, with organizational resilience leading to organizational development.

Fukofuka et al. (2017) state that the determinants of organizational resilience are openness, trust, proaction and authenticity.

➢ "Openness" reflects the willingness of employees to express their ideas and their support from the organisation (Lather et al., 2010). Openness contributes to organisational resilience as it can improve communication, feedback and discussion (Choudry, 2011). Thus, an organization whose level of openness is high will experience improvements in the interaction of its members in terms of clarity, transparency, willingness to express ideas and risk-taking (Subrahmanian, 2012). Openness is also related to trust and proactivity, as well as authenticity, elements related to organizational resilience (Solkhe, 2013).

➢ "Trust" refers to the lack of hidden motives (Solkhe, 2013), as well as confidentiality in information sharing and use (Subrahmanian, 2012). Trust is based on mutual consensus between employees and management in an open climate. As trust increases, defensive and unproductive behaviors decrease. Therefore, the result of trust will lead to greater empathy, timely support, reduced stress and reduced and simplified forms and processes

(Subrahmanian, 2012). Thus, trust can create a supportive environment, with simplified routines, influencing organizational resilience.

➢ "Proaction" refers to the ability of employees to take initiative, prepare and take proactive measures (Subrahmanian, 2012). It essentially refers to anticipating future issues and taking appropriate actions to address them. This means that employees need to take the initiative in initiating processes (Choudhury, 2011), planning (Panchemia, 2013), and taking initiative and risks (Mittal&Verna, 2013). Having a high level of quality of proactive action goes beyond simply reacting to circumstances arising from the environment. When organizations possess this characteristic, having a positive attitude towards diversity promotes internal integration. Therefore, proactive action is critical for organizational success (Siddiqui et al., 2013). Proactive action is related to organizational resilience through improvisation and bricolage, as well as creating virtual role systems and authenticity.

➢ "Authenticity" enhances communication within the organization and reduces distortion between organizational actors (Suhrahmanian, 2012;   et al., 2013). Therefore, where authenticity exists, employees accept each other as they are. This is because there is trust (Lather et al., 2010; Solkhe, 2013). Authenticity is related to organizational resilience through interaction and a supportive environment.

Organizational resilience is both a static and dynamic state of an organization, and as such, it can change over time and depending on the nature and consequences of a specific crisis (Duchek, 2020). Rose and Krausmann (2013) distinguish between static and dynamic resilience. Static resilience refers to a system's ability to continue operating in the face of a shock and refers to the use of existing capital (productive capacity), whereas dynamic resilience refers to the accelerated rate of recovery from a shock and refers to the efficient use of resources to rebuild. Annarelli et al. (2020), appreciating that resilience is an inherent characteristic of systems, and therefore of organizations, cultivated by developing a relevant organizational culture, which in turn determines the characteristics of resilient systems, distinguish those factors that fall into these two categories as follows:

a) Static Characteristics which include continuous monitoring, anticipation ability, redundancy, simulation, initial vulnerability, focus on minor aspects and learning from mistakes

b) Dynamic Characteristics including internal communication and improvisational capabilities.

Based on these, Annarelli et al. (2020) distinguish seven dimensions of organizational resilience as follows: (1) Adaptability, (2) Reliability, (3) Agility, (4) Effectiveness, 95) Flexibility, (6) Recovery Level and (7) RecoveryTime

Finally, Akgün and Keskin (2014), based on the work of Lengnick-Hall & Beck (2005) and Lengnick-Hall et al (2011), define that organizational resilience capacity is composed by:

➢ Cognititive Resilience that includes a) conceptual orientation and b) constructive sense-making
➢ Behavioral Characteristics that include a) learned resourcefulness, b) original/unscripted agility, c) practical habits and d) behavioral preparedness
➢ Contextual resilience that includes a)psychological safety, b) Deep social capital, c) Diffused power and accountability and d) Broad resource networks

The global crisis that followed the spread of the Covid-19 pandemic emphasized the importance of economic sustainability and demonstrated that states, businesses, and organizations were unprepared for a global emergency such as a pandemic. This, in turn, highlighted the need to develop a rapid capacity to adapt to change by implementing effective actions to address the current situation as soon as possible. Organizations, in particular, were found to need to be

prepared to deal with the possibility of long-term negative effects on business, supply chains, human well-being, and the economy in general. As a result, improving organizational resilience is a critical component of business sustainability (Miceli et al., 2021).

Firms and organizations should take advantage of this critical moment to rethink their strategies and plans in response to the crisis in order to be well prepared for the challenges of the future by increasing their resilience. Therefore, organizational resilience can be hypothesized to lead to economic growth through the continued operation of organizations, i.e. the concept of sustainability (Miceli et al., 2021).

Therefore, disruptions and unexpected turbulence characterize the modern service industry and create greater challenges for organizations themselves in terms of their sustainability, which overall affects economic growth through competitiveness (Annarelli et al., 2020). In times of uncertainty, a commitment to sustainability is essential for organizations that want to be resilient. The two concepts, although different, share the same goal: achieving sustainable growth. A resilient development is one that adapts to changing conditions and can recover from extreme and adverse conditions. As such, resilience helps organisations cope with the complexity of change while maintaining the capacity to grow. The governance of these organizations should therefore focus on achieving organizational resilience based on sustainability, which includes economic growth (Cavaco&Machado, 2015; Gillespie-Marthaler et al., 2019).

The response to this challenge is the development of an organizational system aimed at increasing organizational resilience. Annarelli et al. (2020) investigated the impact of organizational resilience on the quality of services provided by similar organizations in this context. Deficiencies in resilience characteristics determine service quality losses. Some of the above-mentioned resilience-building actions, such as continuous monitoring, self-design capabilities, and predictive capacity, can add value to various business areas and functions, rather than simply contributing to resilience development.

According to Duchek (2020), organizational resilience can lead to economic growth following a crisis because it consists of recovery and adaptation to change while incorporating various capabilities. Rose and Krausmann (2013), on the other hand, emphasize that organizational resilience is linked to economic growth because resilience is perceived at three levels. The first is the microeconomic, which refers to individuals and businesses. The second level is the meso-economic, which refers to a specific industry or market. The third level is the macroeconomic level, which refers to the sum of all the entities mentioned above.

Another perspective on the relationship between organizational resilience and economic growth is provided by Marković et al (2017), who focus on the resilience of SMEs. SMEs create new jobs and contribute to the economic growth of any country. In globalization, firms are exposed to global economic shocks, which by their nature are unpredictable and affect their profitability. In order to be resilient, organisations need to rely on strong leadership, an understanding of the work environment and the ability to adapt and respond to rapid change. Consequently, achieving financial resilience should be one of the primary goals of implementing long-term development that promotes government macroeconomic policies. The authors stress that enhancing resilience to the risks of economic, social and environmental shocks should be a top priority and objective because risks to small and medium-sized enterprises can have serious consequences for entire economies. Accordingly, it is necessary to research and introduce new ways to improve organisations, implement change interventions and develop new best practice models to help businesses recover and adapt to changing conditions. Therefore, SMEs should increase their economic resilience as through this they influence the whole economy and economic growth.

In light of the fact that innovation contributes to resilience, de Carvalho et al (2016) examine the relationship between innovation and resilience by analyzing financial performance with EBITDA, ROE and ROA. A total of 10 companies were investigated in two groups, where the first was a group of 5 open-capital companies ranked in the ranking of the 50 most innovative companies in Brazil and the second as a group of 5 open-capital companies not listed in the ranking. An analysis was carried out in two stages: the first consisted of calculating the indicators selected in the four fiscal years - 2011, 2012, 2013 and 2014 - coinciding with a period after the 2008-2009 crisis. The second stage involved a comparison of indicators of the two groups of companies in the four established periods. The results show that innovative companies are able to maintain higher financial results than those non-innovative companies. Therefore, the high financial performance of innovative companies can contribute to further economic growth.

According to Price Waterhouse Coopers (2021) research on Greece, which examined the response of Greek family firms to the Covid-19 pandemic, it was found that this pandemic "was an excellent test of resilience for almost all firms, with family firms successfully responding to new market challenges". The research highlighted that the determinants of this effective business response to the pandemic were the existence of a corporate purpose and clear values, effective communication, and support for human resources (e.g. encouraging remote working, maintaining jobs as much as possible, providing support programs). At the same time, the survey also reflects the priorities of Greek family businesses that have emerged as a result of the pandemic, which are: 1) expansion of activities in new markets and on the basis of product/service differentiation; 2) formation of new schemes in the context of mergers and acquisitions; 3) digital transformation through the adoption of new technologies and innovation on the basis of research and development; 4) development of new business models on the basis of thinking and cooperation with other companies; 5) responsiveness to the needs of the market; 6) development of new business models on the basis of new business models; 7) development of new business models on the basis of new business models; 8) development of new business models on the basis of new ways of thinking and cooperation with other companies.

3. Methods and Results

In the current study, we used the Akgun and Keskin (2014) questionnaire and added an integrated approach in measuring organizational resilience of firms in Greece, as shown in Table 1. We used a two-stage methodology: first, we approached the firms and discussed the research topic, and then we used the specially designed Akgun & Keskin (2014) questionnaire (presented in Table 1 above) to those who agreed. More specifically, we approached 75 financial organizations in Greece at random, informing the person in charge of the research's purpose, ensuring the anonymity of the organization and the participants, and informing them that the data would be analyzed and presented as a group. The person in charge of each organization was then asked for help as to whether they could distribute the questionnaire internally via email. Following the agreement of the managers, the questionnaire was sent out by email with a covering letter of consent to survey participants to 250 employees. The questionnaires were sent out in the 1st ten days of March 2021 and participants had until 31 March 2021 to respond. The questionnaires were returned by email. Of the 250 employees of the 75 economic organisations sent the questionnaire, 156 questionnaires were answered by 62 economic organisations. The main characteristics of the sample are presented in Table 1 that follows, which shows that the majority of the participants are male (60.9%), with an average age of 44 years, residing in Attica (82.1%), graduates of higher education (77.6%).

Table 1: Sample characteristics

		N	%
Gender	Men	95	60.9
	Women	61	39.1
Age		44.6	8.5
Residence	Urban (Attica)	128	82.1
	Rural	28	17.9
Uninversity Degree	Yes	121	77.6
	No	35	22.4

The data were processed using the statistical program SPSS.21 based on the following 2 firm
characteristics, presented on Table 2 below::

Table 2: Firm characteristics

Firm Characteristics		N	%
No of Employees	11-50	48	30.7
	51-100	69	44.2
	101-500	39	25.1
Firm Type	Greek (non-multinational)	48	77.4
	Greek Multinational	6	9.7
	Non-Greek Multinational	8	12.9
	Total	**156**	**100.0**

The present study used the questionnaire of Ackun & Keskin (2014), to which 4 questions were
added to assess the impact of the Covid pandemic as presented in Table 3 below, which was
also used in the study.

Table 3: Questionnaire

Dimensions	Organisational Resilience Capacity	Ackun & Keskin (2014)	Added
Cognitive Resilience	Conceptual orientation	4	
	Constructive sense-making	6	
Behavioural resilience	Learned resourcefulness	2	1
	Original/unscripted agility	4	1
	Practical habits	5	1
	Behahavioral preparedness	4	
	Psychological safety	4	

Contextual resilience	Deep Social Capital	6	
	Diffused power and accountability	4	
	Broad resource networks	4	1
Total		**43**	**47**

Table 4 summarizes the survey's key findings, with higher mean scores found on the dimensions of pervasive authority and accountability, broad resource network, behavioral readiness, conceptual orientation, and prototypical flexibility, and slightly lower mean scores found on the dimension of psychological safety. These findings suggest that financial organizations in Greece are governed by resilience, with a focus on routine and practice transformation rather than human capital.

Table 4: Main findings

Dimensions	Organisational Resilience Capacity	N	Mean	Standard Deviation
Cognitive Resilience	Competence orientation	156	3.53	0.493
	Constructive sense-making	156	3.46	0.440
Behavioural resilience	Learned resourcefulness	156	3.49	0.810
	Original/unscripted agility	156	3.53	0.561
	Psychological safety	156	3.50	0.500
	Behahavioral preparedness	156	3.56	0.539
Contextual resilience	Practical habits	156	3.37	0.514
	Deep Social Capital	156	3.44	0.415
	Diffused power and accountability	156	3.60	0.536
	Broad resource networks	156	3.59	0.527

Regarding the individual questions, the highest scores were found on the following questions

(according to the classification presented in Table3 above):

➢ Q2: We have strong core values coupled with a sense of purpose and identity, which encourage us to frame conditions in ways that enable problem solving and action rather than in ways that lead to either threat rigidity or dysfunctional escalation of commitment in our organisation (M=3,70, STD =1,128),

➢ Q17: We monitor changes for smoother adjustment to the economy in the post-Covid era (M=3.70, STD =1.128),

➢ Q47: We create and maintain a climate of confidence in new pandemic adjustments (M=3.70, STD =1.142),

➢ Q16: We have a complex and varied action inventory that enables us to follow a dramatically different course of action from that is the norm in our organization (M=3,69, STD =1,138),

➢ Q40: Each member of the organization has both the power and the responsibility to ensure attainment of organizational interests in our organization (M=3,69, STD=1,155),

➢ Q42: We share decision-making widely (M=3,69, STD=1,067) highlighting the existence of both individual and group accountability, employee discretion to achieve organizational interests, changing organizational structures based on new information, distributed decision-making model and strengthening social capital.

Specifically for the Covid-pandemic effect, half of the questions are in the high scores mentioned above (Q17 and Q47), while performance on the remaining two was not particularly high:

➢ Q19: We absorb and utilize resources after the end of the pandemic (M=3.53, STD=1.132),
➢ Q13: We train human resources appropriately in the new post-Covid era (M=3.52, STD=1.172),

The Kruskal-Wallis non-parametric test was used to test the correlations. The results of the correlations based on the number of employees are depicted in Table 5 that follows, which shows that there are no statistically significant correlations between the dimensions of organizational resilience and the number of employees, which means that the size of the organization does not affect the views expressed by the respondents regarding organizational resilience.

Table 5: Kruskall-Wallis correlations of organisational resielience to the number of employees

Dimensions	Organisational Resilience Capacity	No of Emloyees	N	Mean	p-value
Cognitive Resilience	Competence orientation	11-50	48	54.15	0.503
		51-100	69	53.73	
		101-500	39	46.00	
		Total	156		
	Constructive sense-making	11-50	48	49.04	0.572
		51-100	69	51.49	
		101-500	39	57.12	
		Total	156		
Behavioural resilience	Learned resourcefulness	11-50	48	49.68	0.395
		51-100	69	49.85	
		101-500	39	58.96	
		Total	156		
	Original/unscripted agility	11-50	48	48.19	0.213
		51-100	69	49.93	
		101-500	39	60.96	
		Total	156		
	Practical habits	11-50	48	48.82	0.459
		51-100	69	51.04	
		101-500	39	58.20	
		Total	156		
	Behahavioral preparedness	11-50	48	48.85	0.707
		51-100	69	53	
		101-500	39	54.86	
		Total	156		
Contextual resilience	Psychological safety	11-50	48	46.65	0.223
		51-100	69	51.85	
		101-500	39	59.96	
		Total	156		
	Deep Social Capital	11-50	48	47.44	0.502
		51-100	69	53.71	
		101-500	39	55.68	
		Total	156		
	Diffused power and accountability	11-50	48	48.94	0.562
		51-100	69	55.73	
		101-500	39	50.14	
		Total	156		
	Broad resource networks	11-50	48	52.94	0.878
		51-100	69	52.75	
		101-500	39	49.38	
		Total	156		

The results of the Kruskal-Wallis test corrections of organizational resilience to firm type are presented in Table 6 below, which shows that there are no statistically significant correlations between the dimensions of organizational resilience and firm type, implying that ownership has no effect on the respondents' perceptions of organizational resilience.

Table 6: Kruskall-Wallis correlations of organisational resielience to the firm size

Dimensions	Organisational Resilience Capacity	Type of Firm	N	Mean	p-value
Cognitive Resilience	Competence Orientation	Greek (non-multinational)	48	48.20	0.483
		Greek Multinational	6	56.47	
		Non-Greek Multinational	8	52.86	
		Total	156		
	Constructive sense-making	Greek (non-multinational)	48	52.98	0.878
		Greek Multinational	6	49.73	
		Non-Greek Multinational	8	52.98	
		Total	156		
Behavioural resilience	Learned sesourcefulness	Greek (non-multinational)	48	50.21	0.136
		Greek Multinational	6	60.35	
		Non-Greek Multinational	8	45.72	
		Total	156		
	Original/unscripted agility	Greek (non-multinational)	48	57.19	0.233
		Greek Multinational	6	51.26	
		Non-Greek Multinational	8	45.10	
		Total	156		
	Practical habits	Greek (non-multinational)	48	56.62	0.313
		Greek Multinational	6	46.02	
		Non-Greek Multinational	8	51.55	
		Total	156		
	Behahavioral preparedness	Greek (non-multinational)	48	54.50	0.592
		Greek Multinational	6	52.87	
		Non-Greek Multinational	8	47.36	
		Total	156		
Contextual resilience	Psychological safety	Greek (non-multinational)	48	55.58	0.569
		Greek Multinational	6	48.66	
		Non-Greek Multinational	8	50.26	
		Total	156		
	Deep Social Capital	Greek (non-multinational)	48	53.01	0.744
		Greek Multinational	6	48.65	
		Non-Greek Multinational	8	54.09	
		Total	156		
	Diffused power and accountability	Greek (non-multinational)	48	52.24	0.784
		Greek Multinational	6	54.39	
		Non-Greek Multinational	8	49.09	
		Total	156		
	Broad resource networks	Greek (non-multinational)	48	54.64	0.167
		Greek Multinational	6	56.48	
		Non-Greek Multinational	8	43.29	
		Total	156		

4. Conclusion

The Covid-19 pandemic crisis and the political, economic and social disruptions it caused, radically changed the traditional framework for decision-making and the functioning of organizations and institutions. Businesses were and are being asked to manage short-term pressures against medium- and long-term uncertainties at every level. According to Hineetal (2014), organizational resilience is part of business activities (e.g. routines and further operational and dynamic actions) to respond to changes in the environment in which firms operate. Indeed, this separation of routines and functional/dynamic capabilities within resilience allows for the segmentation of actions towards creating robust adaptations at different levels of organizational effort. Under this approach, resilience is not just an option, but an essential quality element that must be developed so that firms can gain, upgrade and/or maintain competitive advantage through good, strategically coherent and sufficient resources by leveraging emerging challenges (Manfield&Newey, 2015). In particular, dynamic capabilities embody change where firms must make rational decisions based on the opportunities and resources they can attract and develop

Organizational resilience focuses on how businesses and organizations can become more resilient in the face of adversity. This represents a challenge as well as an opportunity for organizations to seek new actions (routines, functions) and possibly transform existing ones in response to the new conditions in the environment in which they operate. Organizational resilience, as a positive adaptation to adversity, perceives responses as resilient (more likely in the presence of trigger conditions) or inflexible (more likely in the absence of trigger

conditions). Re-adapting business models and strategies and integrating them in an uncertain environment necessitates more than a desire for renewal. Renewal in response to difficult situations can lead to a series of ever-changing short-term fixes for a host of emerging issues and crises, such as the COVID-19 pandemic.

A new approach is required to identify a new competency framework for business management, the production process, and so on (Erol et al., 2016). Sima et al. (2020) emphasize that, to successfully cope with the changes taking place in the context of the fourth industrial revolution, the main skills that need to be developed in individuals are creativity, experimentation, situation assessment, planning, organization and redesign. Other researchers add n the development of new personal skills related to information management, risk management, leadership, self-organization, and communication skills (Strauch, 2016; Kergroach, 2017). These elements, as discussed above, are elements of organizational resilience, on the basis of which the development and sustainability of firms is based and a high degree of economic growth can be supported.

According to the study's findings, financial organizations in Greece are characterized by organizational resilience, the dimensions of which are unrelated to the number of employees or the type of firm. It was also discovered that financial institutions in Greece place a greater emphasis on routine and practice transformation rather than human capital. Human capital, on the other hand, is a critical component for their continued development and growth in the context of organizational resilience (Alligeretal., 2015; Aronssonetal., 2017) and economic growth.

This study provided significant empirical evidence on organizational resilience in the Greek financial sector on a theoretical level. Furthermore, it is significant that this study took place during the pandemic, following a year of effort to adapt firms and organizations to the situation.

As far as the practical contribution of this research is concerned, two points are worth noting:

➢ The first is that in all dimensions of organisational resilience a high mean was not recorded. This means that economic organisations have considerable scope for further development of these dimensions in order to achieve a high level of organisational resilience that will support economic growth by enhancing the sustainability of enterprises and their continued operation, adapted to the new conditions in the wider business environment.

➢ The second is that particular emphasis should be placed by organisations on enhancing social capital, meaning-making and psychological safety of employees. The human resources of companies are their main asset that will enable these companies to adapt to new conditions (e.g. post-Covid-19 era, fourth industrial revolution) through their behaviour, productivity and efficiency, but also through initiative, creativity and innovation. These elements are important in order to keep businesses running, leading to economic growth.

This paper investigated the views of employees in financial organizations in Greece regarding their organizational resilience. In the future, it would be interesting to conduct a similar research in organizations operating in other sectors. Such a survey would also allow for comparison between different sectors of the economy, leading to conclusions and consequent recommendations that would focus on enhancing the organizational resilience of organizations in specific sectors. In addition, it will allow the creation of a more comprehensive picture of organizational resilience in Greece and the country's potential for achieving sustainable development.

A similar comparative study could also be conducted on companies in the same sector in different EU or Eurozone countries. A study of this type would allow researchers to investigate

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the impact of various factors (e.g., legislation, economic environment, organizational structure, and operation of organizations) on organizational resilience in the EU or Eurozone by sector.

These comparative studies may result in the development of practical recommendations and more specific proposals on how to improve organizational resilience of firms by sector and EU or Eurozone Member State.

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Challenges, Initial Steps, and Key Resources for the Digitization of SMEs in the Republic of Moldova

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Abstract

The COVID-19 pandemic has shown how important the digitization of SMEs is. Digitized businesses are much better prepared to face the economic and social challenges that a crisis can generate. Digitization helps companies become more efficient and diversified, accessing new markets and customers. This facilitates the competitiveness of SMEs, including large enterprises. Digitization drives innovation, promoting services that can help businesses grow and thrive. This can also make it easier for companies to deal with daily business challenges. This article presents an analysis of the barriers that stand in the way of the digitization of small and medium-sized enterprises, as well as how professional accountants can help SMEs in the Republic of Moldova to become digital. It explains: why digitization is important for SMEs, how accounting professionals can help SMEs to go digital and how national and European policymakers can support the digitization of SMEs.

Keywords: digitization, profession accounting, small and medium enterprises, audit, internal control

1. Introduction

Many SMEs in developed countries are already leaders in information and communication technologies (ICT). They operate in a highly digitized industry and are taking steps to digitize their business operations.

The presence of SMEs is very diverse. These include companies that individually develop new technologies and companies that are forced to adapt and follow the example of others. Top companies and developers have a need for a flexible environment to contribute to digital transformation. Those who follow the changes are SMEs using traditional business systems who may have difficulty understanding the relevance of digital transformation.

This article represents an analysis of the barriers that stand in the way of digitization, both of the sector private as well as public, in the Republic of Moldova. Below we start by presenting the objectives of the approach and the method of using available data sources for each of the two sectoral analyses: for the private sector and for the public sector.

A successful digital transformation will need SMEs. An important question that we can ask today is how can businesses use traditional systems to keep up with digitization. Many obstacles remain, as shown in a recent survey by Accountancy Europe (Figure 1).

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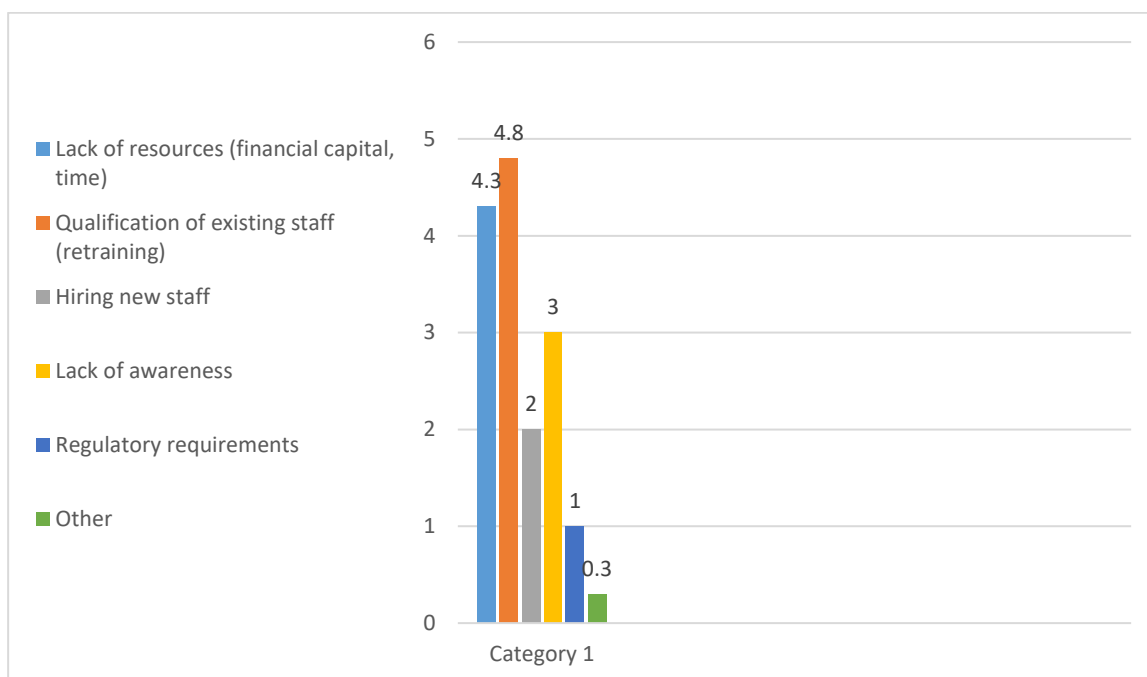
Figure 1: Obstacles to the digitization of SMEs

Source: Authors processing

The main obstacles to digitization were found to be the lack of resources, both financial and time, and the skills of existing staff. Lack of awareness of digitization and associated business opportunities was also a challenge.

SME entrepreneurs are experts in managing their own businesses. Many SMEs of different sizes are already on the road to digitization. This also includes some SMEs whose business models are not based on ICT, but which have already independently taken major steps to digitize their businesses.

However, many SME owner-managers pay more attention to the day-to-day activities of the company and do not consider the long-term digital strategy. The COVID-19 pandemic has further intensified this focus on keeping small businesses afloat. Now, more than ever, it can seem difficult for SME owner-managers to plan and implement changes that do not have an immediately obvious benefit. It is therefore up to experts in the wider SME ecosystem to advise, guide, and support SMEs toward a digital future.

Within this ecosystem, accountants, most of whom are small business practitioners, are particularly well-positioned to help. They can promote the digital transformation of business practices among their SME clients by providing advice on the first steps. This is relevant in the mod, particularly for those who have not yet taken or are not making efforts to take major steps towards digitization. Accountants can help digitization because:

➢ professional accountants are trusted advisors for SMEs;
➢ most SMEs in Europe already rely on accountants for services such as business planning, finance, and cash flow management, tax and tax compliance, accounting, and financial consultancy;
➢ SME owner-managers meet regularly with their accountants;
➢ SMEs rely on accountants to advise them and challenge assumptions about the performance of their activity.

As individual accountants or accounting firms may have hundreds of SME clients, they also have extensive experience in what works for businesses. Accountants thus understand the fundamentals that underlie the businesses they serve.

When it comes to digitization, accountants are ready to help SMEs by:

✓ using their understanding of the business to identify and assess risks and opportunities and advise on them;

✓ using their legal, compliance, internal control, and data knowledge to propose cost-effective and tailored digitization measures;

✓ signaling potential risks and benefits, even when the accountant's core competence does not allow him to help an SME with the specific digitization strategy;

✓ referring an SME owner-manager to specialist experts from the wider SME ecosystem as appropriate.

Accountants can support the digitization of SMEs in two major areas:

1) digitalization of accounting systems and data
2) digitization and transformation of the business model

Most accountants are not and should not strive to be IT experts. However, it is important for accountants to know what digital solutions, such as analytics or data cleansing tools, can help their clients' digital transformation and business. The actual implementation of the solutions can then be done by IT experts.

Accountants, especially small and medium-sized practices (SMBs), can gain this insight by first digitizing their own accounting practices. This is often the best way to understand how to help their SME customers go digital.

The management of any business or organization depends on the availability of information required for day-to-day operations. Electronic accounting and data digitization systems can make it easier to collect, make available and analyze this information in new ways.

Many accounting firms already use electronic accounting systems and data digitization. For SMEs, this can lead to better business planning, more effective reactions to changing circumstances, and improved predictions about their own business prospects.

Accountants' efforts to help SMEs digitize their operations and business processes can be identified in three steps:

- data collection
- data processing
- data analysis

For an SME, the first step towards digitization is ensuring the availability of reliable business data. The digitization of accounting provides SMEs with more detailed and increasingly accurate real-time data about their business performance.

Accountants can help SMEs to:

a) plan and improve data digitization in a cost-effective manner. Accountants can assess the business value of digitization measures. They can also ensure that new systems are seamlessly integrated into the business;

b) digitize accounting processes to meet new requirements such as real-time reporting, digital tax compliance, e-commerce, and e-invoicing or sales transactions and online payment platforms;

c) design internal processes and develop the digital skills of SMEs in areas such as cyber security, internal control, and financial statement systems;

d) supports legal aspects. This is necessary, for example, to establish Customer Relationship Management systems.

The next step towards digitized data collection is automatic and seamless data processing. This means that data collected from digitized accounting, customer transactions, and payments on different platforms are automatically integrated and clearly displayed in a central data system. Accountants can also help SMEs to:

1) centralize and integrate all SME data sources into merged datasets. This data includes physical as well as online transactions, payment information from banks and online payment platforms such as PayPal, and e-wallet payments;

2) set up key performance indicators (KPIs) and dashboards to evaluate data visualization, perhaps using software such as Microsoft Power BI. This enables better monitoring of cash forecasts, sales, revenue, expenses, and solvency of businesses. KPIs should be based on data from the past 3-5 years where possible;

3) encourage the transition from cash accounting to accrual accounting, if this is relevant for the business. Accrual accounting helps businesses manage balance sheets more efficiently. This transition is simplified by automatic record-keeping and data centralization.

Digitization, in the form of automation of data collection and processing, will eventually replace much of the traditional accounting and reporting services provided by accountants. This does not mean that SMEs will no longer need accountants. Digitization and automation will help accountants use their time to provide services related to business insight and data analysis.

Moreover, SME owner-managers may also need help interpreting and analyzing data for business planning purposes. This could include more accurate forecasts or timely interpretation of early warning indicators. This business planning may also include support for the establishment of additional internal controls or measures to mitigate potential future risks identified.

At this point, SMEs should already be digitized thanks to the automation of accounting systems and data. This will also make it possible to digitize other aspects of the enterprise.

The digitization of "data systems" presented above should help SMEs to move to an electronic economic activity model. This can mitigate solvency risks through better data forecasting and the use of an automated and centralized record of data, but by applying key performance indicators to develop more efficient planning of the economic activity. Also, the digitization of data systems can allow the company to carry out an economic activity suitable for e-commerce in areas such as VAT.

Accountants can play an important role in the transition to an electronic business model. They can explain the advantages of migrating online, helping owner-managers develop a business strategy in this environment. Emphasis could be placed on:

1. organizational education:

     - supporting the internal reorganization of the company and simplifying processes

     - promoting standardization and interoperability between systems and procedures

2. digitalization of fundamental business processes:

     - digitization of tax compliance systems, for example, to support the company to align with EU VAT rules for e-commerce

     - introduction of online monitoring of expenses and production costs

     - setting up online sales, e-invoicing, marketing, and customer support

3. improving the business model:

     - adopting an online customer relationship management system focused on quality, as part of an overall business plan

- encouraging companies to use online warehousing with the support of third-party logistics providers when necessary

- giving new use to the physical space of the enterprise, for example, the space intended for offices that is no longer necessary to be transformed into one for digitalized businesses.

2. Conclusion

In conclusion, we can mention that although political decision-makers are already making great efforts to encourage the digitalization of SMEs in the Republic of Moldova, we believe that the following priorities could be particularly useful:

I. Primarily education and training systems for a digital economy. These programs require updates to include basic and advanced digital, personal, and business finance skills. Schools must encourage adaptability and lifelong learning.

II. Financial instruments to cover the risks related to the digitization of SMEs, at a local and national level. Many SMEs struggle to find traditional financing to cover investments related to software and innovation.

III. Centralized digital expertise portals to provide SME entrepreneurs with free information and support on all aspects of digitalization, especially cyber risks. These portals should also help SMEs share best practices with digitization experts and other SME entrepreneurs.

IV. Bringing together experts from different SME backgrounds in innovation hubs to facilitate discussions on digitization challenges faced by SMEs, as well as to exchange best practices and recommendations from different countries.

V. Digitizing tax administration and company ledgers to simplify tax reporting and compliance through real-time reporting and automated tax returns

VI. Creation of a website for registration with local, national, and European regulatory authorities to enable SMEs to register with a one-stop shop for regulatory obligations.

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The Impact of Covid-19 Cases on Stock Prices in EU Countries with Developed Tourism Sector in Comparison to Financial Business

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Abstract

The aim of this paper is to analyse the relationship between stock prices and coronavirus cases in those countries where the tourism and financial sectors have a high share of national income, such as Croatia, Italy and Spain. The methods used are Breakpoint Unit Root Tests to determine whether a time series is stationary or not and ARDL cointegration technique for cointegration testing. We find that the number of covid-19's total cases negatively impacts the tourism and finance market in 3 EU countries.

Keywords: Covid-19, Coronavirus, stock prices, EU countries, ARDL

1. Introduction

Covid-19 not only harmed human health but also threatens the global markets causing economic recession across the world. China is not only considered as a country, where the virus developed but also it should be emphasized that many common products or spacers were made there but some of the factories in the country are not operating currently. Moreover, the world's most crowded tourist group, the Chinese, cannot go out of the country and visit popular touristic places. Covid-19 affected tourism very radically due to travel restrictions and prohibitions. The pandemic outbreak's impact on the global economy is estimated to be $ 1.1 trillion (The Guardian, 2020). The IMF, on the other hand, lowered China's growth rate to 5.6%. Production stopped due to the epidemic that started in China and therefore oil prices dropped due to low demand and surplus production in many sectors.

During the first phases of covid-19 pandemic, borders were closed the same as restaurants, museums, theatres, theme parks and airports were closed, even Tokyo Olympics was postponed. International tourist arrivals were down by a global average of -44% in the months January-April 2020. That's a massive fall from a global growth of 4% in 2019, with the downward trend likely to continue. Reduced revenues from tourism has have a broader impact and can reduce global GDP by 1.5% to 2.8% in 2021. Nowadays a more resilient and inclusive tourism model built on the principles of sustainability for people, planet, and prosperity is needed (UNWTO, 2021).

On the other hand, financial markets were also affected by covid-19. According to International Financial Corporation, the impact of the pandemic on new loan disbursements was most significant for the riskier micro, small, and medium-sized enterprises and retail segments. Diversification of funding sources, client liquidity, digital transformation and risk management have become strategic for many business entities. The pandemic and associated economic crisis

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led to a short-term drop in demand for credit causing the financial problems in banking sector (IFC, 2021). Credit risk of corporate and retail clients of the banks have increased and management and operational systems have changed. Digital transformation, robotics solutions, artificial intelligence, mobility, FinTech, cloud technologies have become essential concepts. Finally, high volatility in stock markets negatively influenced banks' valuation reflecting the poor condition of this sector (Latorre, 2020).

The aim of this study is to determine the effects of the number of covid-19 cases on the tourism and financial sectors and to compare both dynamic processes. Breakpoint Unit Root Tests and ARDL analysis are applied in this study for testing the hypothesis. The most important applications of dynamic models are related to testing the process of achieving long-term equilibrium and the existence of such a balance. The hypothesis of this study is that covid-19 has a significant impact on rates of return of selected companies and there is a difference between recovering processes related to covid number of cases depending on the sector and the country the companies are operating on.

The paper is organized as follows: the next section is the literature review. After that, data and methods are presented in Section 3. Then, empirical results are presented in section 4. Finally, conclusions of this study are presented in section 5.

2. Literature Review

There had been some studies related to other pandemics published before the covid-19 outbreak. Haacker (2004) analyzed the impact of HIV/AIDS on Government Finance and Public Services. Moreover Yach et al. (2006) presented economic consequences of the global epidemics of obesity and diabetes. Covid-19 has been more severe in the consequences and there are many new studies presenting its influence in the fields of economy, socio-economy, economic policies, stock prices, trade, health care and environment. Some of them are presented below in a brief overview illustrating the issue we would like to discuss.

Pata (2020) investigated the effects of the covid-19 pandemic on economic policy uncertainty in the US and the UK. Lau (2020) investigated the impacts of the trade war and the covid-19 epidemic on China - United States economic relations. Goswami et al. (2021) found that states with a better containment strategy, higher healthcare capabilities, and a relatively larger employment share of the primary sector have experienced smaller economic losses. Beyer et al. (2021) stated that without effectively reducing the risk of a covid-19 infection, voluntary mobility reductions would prevent a return to full economic potential even when restrictions are relaxed. Wang & Han (2021) found that the internal and external carbon emission indexes of most countries have decreased, which indicates that most countries are affected by the carbon reduction and energy consumption caused by the pandemic in the US. Acikgoz & Gunay (2020) stated that covid-19 had severe adverse effects on the employees, customers, supply chains and financial markets. De la Fuente (2021) explained a comprehensive policy strategy and specific proposals were needed to protect the effects of covid-19. Yoon (2021) focused on the unequal distribution of output and employment shocks across businesses, workers, and households, through which the macroeconomic implications of the pandemic crisis were derived for the Korean economy. As we can see there is a large variety of issues discussed in the papers related to covid-19, most of them focus on the influence of the pandemic on the markets.

Socio-economic impact of covid-19 was investigated in some studies. Paprottka et al. (2021) found for example that low GDP p.c. countries experienced a more significant negative economic impact. Measurable differences in the socio-economic impact and the adaptation of safety protocols between high and low GDP p.c. subgroups and between different world regions were present. Rasheed et al. (2021) analysed the short-long-term effects of covid-19 peak on the socio-economic and environmental aspects of Pakistan.

The impact of covid-19 on financial sector was examined in some studies. For instance, Gormsen & Koijen (2020) analysed the impact of coronavirus on stock prices and growth expectations. Ramelli & Wagner (2020) explored feverish stock price reactions to covid-19 the same as Just & Echaust (2021) who examined how the data on new cases and death announcements from 12 countries affected the US stock market.

The effect of covid-19 on environment was also investigated by the financial literature. Fezzi & Fanghella (2020) demonstrated that high-frequency electricity market data can estimate the causal, short-run impact of covid-19 on the economy. Wang & Zhang (2021) found that generally, the spillover effect of China's economic recovery on other countries' economic growth is much more than other countries' energy consumption. Mele & Magazzino (2021) explored the relationship between pollution emissions, economic growth and covid-19 deaths in India.

Other aspect treated by the literature is the impact of covid-19 on the health sector. Wang (2020) managed the cross-border risk efficiently during the epidemic prevention and control. Ogundepo et al. (2020) assessed multidimensional healthcare and economic data on covid-19 in Nigeria. Lasaulce et al. (2021), analysed the tradeoff between health and economic impacts of the covid-19.

According to studies in literature it has been documented that covid-19 negatively affects to many sectors. Our results also support the findings of the literature from a different point of view.

3. Data and Method

In this section, definitions about Breakpoint Unit Root Tests and Autoregressive Distributed Lag Cointegration Technique are presented, with the data set explained in the end of this point.

3.1. Breakpoint Unit Root Tests

In econometric studies, where time series analysis is used, Unit root tests are usually done to determine whether a time series is stationary or not to detect trends or seasonal effects. Unlike other unit root tests, breakpoint unit root tests also detect structural breaks.

The first unit root to consider structural breaks analysis began with Perron (1989). Later, Zivot & Andrews (1992), Lumsdaine & Papell (1997), Perron (1997), Bai & Perron (1998), Ng & Perron (2001), Lee & Strazicich (2003 - 2004), Kapetanios (2005) and Carrion-i-Silvestre et al. (2009) developed alternative tests that can perform unit root analysis in the presence of structural breaks (Altay & Yilmaz, 2016).

These tests, called new generation or second-generation unit root tests, are also divided into two groups among themselves. According to Bai and Perron (1998), Kapetanios (2005) and Carrion-i-Silvestre et al. (2009) one can perform unit root analysis under multiple structural breaks in series, while in other test methods, unit root analysis can be performed up to one or at most two structural breaks.

3.2. Autoregressive Distributed Lag (ARDL) Cointegration Technique

The ARDL multifunctional model developed by Pesaran & Shin (1998) and Peseran et al. (2001), can be used as an alternative to the cointegration tests that examine other long-term relationships (Belloumi, 2014). ARDL approach to cointegration or bound procedure for a long-run relationship, irrespective of whether the underlying variables are I(0), I(1) or a combination of both (Nkoro & Uko, 2016). In the ARDL model, long-term prediction results are more important than other methods (Harris & Sollis, 2003). In addition, it is one of the important

advantages of the fact that the number of data is low and can give the best results (Duasa, 2007). For ARDL model;

$$Y_t = \partial_0 + \partial_1 X_t + \partial_2 Z_t + e_t \tag{1}$$

A model equation in the form of

$$\Delta y_t = \partial_0 + \sum_{i=1}^{p} \beta_i \Delta y_{t-i} + \sum_{i=0}^{p} \delta_i \Delta x_{t-i} + \sum_{i=0}^{p} \lambda_i \Delta z_{t-i} + a_1 y_{t-1} + a_2 x_{t-1} + a_3 z_{t-1} + u_t \tag{2}$$

$$\Delta y_t = \partial_0 + \sum_{i=1}^{p} \beta_i \Delta y_{t-i} + \sum_{i=0}^{p} \delta_i \Delta x_{t-i} + \sum_{i=0}^{p} \lambda_i \Delta z_{t-i} + u_t \tag{3}$$

As seen in equations above, Ə, β, α and λ represent the parameters, while e represents the error terms in the equation. In this method, the best model should first be decided among the ARDL models (Peseran et al., 2001), (Erdogan & Dayan, 2019).

ARDL models helps to identify the dependent variables (endogenous) and the independent variables (exogenous) (Shakil et al., 2018). These models focus on the exogenous variables and selecting the correct lag structure from both the endogenous variable and the exogenous variables (statsmodels.org, 2021). In this study, the number of covid 19 cases was defined as the exogenous variable and the stock prices as the endogenous variable.

There are several tests of ARDL that can be implemented. Ramsey Reset Test, Breusch-Godfrey Serial Correlation LM Test, Heteroskedasticity Test, Bounds Test, CUSUM Tests, cointegrating form and long-run coefficients is the basic conditions of the model (Nkoro & Uko, 2016).

After making necessary transformations in ARDL model equivalents, unlimited and limited ARDL model equations, also called Bounds test, are estimated. H0: $\alpha 1 = \alpha 2 = \alpha 3 = 0$ F test is performed for the hypothesis. Estimated F account value, Peseran et al. (2001) the null hypothesis (H0) is rejected and the alternative hypothesis (H1) is accepted. In this case, it is assumed that there is a long-term co-integrated relationship between the variables y, x, z, and so, it is decided that a regression model can be created with variables that are stationary at different levels (Shrestha, 2006), (Erdogan & Tatar, 2021).

This bound F-statistic is carried out on each of the variables as they stand as endogenous variable while others are assumed as exogenous variables (Nkoro &Uko, 2016).

In ARDL analysis, the CUSUM test is used to determine the model's parameter stability and structural breaks (Brown et al., 1975).

3.3. Data sources

As it was previously states, in this research, the effect of covid-19 on the financial and tourism sectors of EU countries with a high touristic and financial sectors' returns is examined. The selection has been made according to the European Union members' financing and tourism contribution to GDP. These countries are Croatia, Italy and Spain.

3 selected tourism and 2 selected financial companies traded in the stock market in each country are included in the analysis. According to the results of the analysis, some companies have been eliminated. These companies are included in this study listed in the Table 1 according to the test results.

Table 1: Variable information and data sources

Variable	Definition	Country	Sector	Date	Number of Observations	Source
IKBA	Istarska Kreditna Banka Umag	Croatia	Financial	02/25/2020-06/17/2021	83	finance.yahoo.com
Total Cases IKBA	Total Cases in Croatia	Croatia	-	02/25/2020-06/17/2021	83	ourworldindata.org
PLAG	Plava Laguna D.D.	Croatia	Tourism	02/25/2020-06/18/2021	131	finance.yahoo.com
Total Cases PLAG	Total Cases in Croatia	Croatia	-	02/25/2020-06/18/2021	131	ourworldindata.org
GVI	I Grandi Viaggi	Italy	Tourism	01/31/2020-06/23/2021	355	finance.yahoo.com
Total Cases GVI	Total Cases in Italy	Italy	-	01/31/2020-06/23/2021	355	ourworldindata.org
AMS	Amadeus	Spain	Tourism	01/31/2020-06/23/2021	357	finance.yahoo.com
Total Cases AMS	Total Cases in Spain	Spain	-	01/31/2020-06/23/2021	357	ourworldindata.org
BBVA	BBVA Bank	Spain	Financial	01/31/2020-06/23/2021	357	finance.yahoo.com
Total Cases BBVA	Total Cases in Spain	Spain		01/31/2020-06/23/2021	357	ourworldindata.org

Source: Own study

Company names are abbreviated as shown in the table. The number of daily covid-19 cases in each country was matched with the stock release days. The number of covid-19 cases was matched with the days when the stock market data was published. Weekends and holidays could not be taken because there is no stock market data for these days. Therefore, separate analyzes were made for each variable.

4. Empirical Results

In this section the empirical result of the research is presented. Breakpoint unit root tests and ARDL results of this study are presented in this section. Table 2. expresses unit root tests of variables.

Table 2: Breakpoint unit root tests of variables

Variable	Break Type	ADF test@	Lag Length	Max Lag	Breakdate	t -statistic	p - value	Remark
Total_Cases_ IKBA	Innovational outlier	1st Difference	0	11	08/04/2020	-6.802998	< 0.01	I(1)
IKBA	Innovational outlier	Level	0	11	03/27/2020	-6.310382	< 0.01	I(0)
Total_Cases_ PLAG	Innovational outlier	Level	0	12	10/22/2020	-4.536807	0.0391	I(0)
PLAG	Innovational outlier	Level	3	12	05/20/2021	-5.241619	0.0155	I(0)
Total_Cases_ GVI	Innovational outlier	Level	9	16	10/16/2020	-4.542700	0.0385	I(0)
GVI	Innovational outlier	1st Difference	0	16	06/08/2020	-20.13912	< 0.01	I(1)
Total_Cases AMS_BBVA	Innovational outlier	1st Difference	14	16	03/15/2021	-4.936055	0.0396	I(1)
AMS	Innovational outlier	Level	0	16	03/03/2020	-4.931381	0.0402	I(0)

Variable	Break Type	ADF test@	Lag Length	Max Lag	Breakdate	t -statistic	p - value	Remark
BBVA	Innovational outlier	Level	0	16	03/09/2020	-4.540269	0.0483	I(0)

According to Table 2 all prices and total cases are stationary at level "I(0)" or 1st Difference "I(1)". Unit roots are present and all p-values are less than 5%. A stationary time series is one whose properties do not depend on the time at which the series is observed (Hyndman & Athanasopoulos, 2018).

In this part each company's stock prices and total cases of covid-19 will be analyzed separately.

Table 3: Main results of ARDL and short-run coefficients of variables and total cases of Covid-19

Dependent Variable: IKBA
Method: ARDL
Maximum dependent lags: 7 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): TOTAL_CASES
Selected Model: ARDL(7, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
IKBA(-1)	0.398911	0.116937	3.411336	0.0011
IKBA(-2)	0.087572	0.126012	0.694953	0.4895
IKBA(-3)	0.287205	0.131597	2.182465	0.0326
IKBA(-4)	0.139184	0.137883	1.009437	0.3165
IKBA(-5)	-0.029100	0.124782	-0.233205	0.8163
IKBA(-6)	-0.076536	0.113322	-0.675381	0.5018
IKBA(-7)	-0.231634	0.100664	-2.301056	0.0246
TOTAL_CASES	3.41E-05	7.44E-06	4.583966	0.0000
C	539.7817	111.3400	4.848050	0.0000
R-squared	0.914309	Akaike info criterion		10.25702
Adjusted R-squared	0.903922	Schwarz criterion		10.53512
F-statistic	88.02560	Hannan-Quinn criter		10.36806
Prob(F-statistic)	0.000000	Durbin-Watson stat		1.841356

Dependent Variable: PLAG
Method: ARDL
Maximum dependent lags: 4 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): TOTAL_CASES
Selected Model: ARDL(4, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
PLAG(-1)	0.601021	0.085422	7.035933	0.0000
PLAG(-2)	0.341428	0.100727	3.389620	0.0009
PLAG(-3)	0.148735	0.100958	1.473231	0.1433
PLAG(-4)	-0.300383	0.084413	-3.558489	0.0005
TOTAL_CASES	1.44E-05	3.49E-06	4.136170	0.0001
C	286.4877	63.42658	4.516840	0.0000
R-squared	0.899780	Akaike info criterion		9.980362
AdjustedR-squared	0.895639	Schwarz criterion		10.11473
F-statistic	217.2694	Hannan-Quinn criter.		10.03496
Prob(F-statistic)	0.000000	Durbin-Watson stat		2.026600

Dependent Variable: GVI
Method: ARDL
Maximum dependent lags: 8 (Automatic selection)
Model selection method: Akaike info criterion@ (AIC)
Dynamic regressors (4 lags, automatic): TOTAL_CASES
Selected Model: ARDL(3, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
GVI(-1)	0.981779	0.053332	18.40875	0.0000
GVI(-2)	0.068252	0.075043	0.909509	0.3637
GVI(-3)	-0.101552	0.052429	-1.936932	0.0536
TOTAL_CASES	5.54E-10	1.47E-10	3.773558	0.0002
C	0.041228	0.010914	3.777496	0.0002
R-squared	0.970199	Akaike info criterion		-4.100067
Adjusted R-squared	0.969855	Schwarz criterion		-4.045186
F-statistic	2824.200	Hannan-Quinn criter.		-4.078227
Prob(F-statistic)	0.000000	Durbin-Watson stat		2.000729

Dependent Variable: AMS
Method: ARDL
Maximum dependent lags: 9 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): TOTAL_CASES
Selected Model: ARDL(8, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
AMS(-1)	0.951255	0.053768	17.69177	0.0000
AMS(-2)	0.096144	0.074403	1.292202	0.1972
AMS(-3)	-0.175470	0.074383	-2.358993	0.0189
AMS(-4)	0.156755	0.074383	2.107395	0.0358
AMS(-5)	-0.170456	0.074381	-2.291677	0.0225
AMS(-6)	0.091842	0.074205	1.237681	0.2167
AMS(-7)	0.108321	0.074189	1.460071	0.1452
AMS(-8)	-0.118963	0.052377	-2.271295	0.0238
TOTAL_CASES	2.77E-08	7.65E-09	3.616110	0.0003
C	2.779551	0.655672	4.239241	0.0000
R-squared	0.961328	Akaike info criterion		3.749381
Adjusted R-squared	0.960301	Schwarz criterion		3.859842
F-statistic	936.3290	Hannan-Quinn criter.		3.793353
Prob(F-statistic)	0.000000	Durbin-Watson stat		2.001614

Dependent Variable: BBVA
Method: ARDL
Maximum dependent lags: 8 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Selected Model: ARDL(8, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
BBVA(-1)	0.950548	0.053578	17.74123	0.0000
BBVA(-2)	0.070370	0.073192	0.961448	0.3370
BBVA(-3)	-0.078378	0.072525	-1.080700	0.2806
BBVA(-4)	0.063731	0.072747	0.876068	0.3816
BBVA(-5)	0.051546	0.073024	0.705878	0.4807
BBVA(-6)	-0.191403	0.072988	-2.622402	0.0091
BBVA(-7)	0.250146	0.073607	3.398381	0.0008
BBVA(-8)	-0.155189	0.052120	-2.977553	0.0031
TOTAL_CASES	2.79E-09	6.44E-10	4.332096	0.0000
C	0.097914	0.026977	3.629478	0.0003

R-squared	0.987974	Akaike info criterion		-1.606044
Adjusted R-squared	0.987655	Schwarz criterion		-1.495584
F-statistic	3094.389	Hannan-Quinn criter.		-1.562073
Prob(F-statistic)	0.000000	Durbin-Watson stat		1.983012

*Note: p-values and any subsequent tests do not account for model selection.

As shown in the Table 3 coefficients are statistically significant.

The effect of IKBA variable 1, 3 and 7 times delayed on total cases is statistically significant. The R^2 value is 0.914309, which means that 91.43% of the variation in IKBA can be explained by total cases jointly. This value is very high for estimation.

The effect of PLAG variable 1, 2 and 4 delayed on total cases is statistically significant. The R^2 value is 0.899780. It means 89.97% of the variation in PLAG can be explained by Total Cases jointly. This value is very high for estimation.

The effect of GVI variable 1 and 3 delayed on total cases is statistically significant. The R^2 value is 0.970199, which means that 97.01% of the variation in GVI can be explained by Total Cases jointly. This value is very high for estimation.

The effect of AMS variable 1, 3, 4,5 and 8 delayed on total cases is statistically significant. The R^2 value is 0.961328, which means that 96.13% of the variation in AMS can be explained by total cases jointly. This value is very high for estimation.

The effect of BBVA variable 1, 6, 7 and 8 delayed on total cases is statistically significant.

The R^2 value is 0.987974, which means that 98.79% of the variation in BBVA can be explained by Total Cases jointly. This value is very high for estimation.

All the P-values of F-statistics is 0.0000, which indicates that all models are fit.

Table 4: Diagnostic test results of variables

Variable	Ramsey Reset Test			Breusch-Godfrey Serial Correlation LM Test		Heteroskedasticity Test: Breusch-Pagan-Godfrey	
	F tests	df	P Value	F tests	P Value	F tests	Prob. F
IKBA	3.858557	1, 65	0.06	1.169502	0.3171	1.850886	0.0831
				Obs R-squared	Prob. Chi-Square	Obs R-squared	Prob. Chi-Square
				2.644376	0.2666	13.74300	0.0887
Variable	Ramsey Reset Test			Breusch-Godfrey Serial Correlation LM Test		Heteroskedasticity Test: Breusch-Pagan-Godfrey	
	F tests	df	P Value	F tests	P Value	F tests	Prob. F
PLAG	0.686408	1, 120	0.4090	1.631227	0.20	1.613454	0.1615
				Obs R-squared	Prob. Chi-Square	Obs R-squared	Prob. Chi-Square

Variable	Ramsey Reset Test			Breusch-Godfrey Serial Correlation LM Test		Heteroskedasticity Test: Breusch-Pagan-Godfrey	
				3.388871	0.1837	7.938055	0.1597
	F tests	df	P Value	F tests	P Value	F tests	Prob. F
GVI	0.057257	1, 346	0.8110	0.226611	0.7973	0.968291	0.4249
				Obs R-squared	Prob. Chi-Square	Obs R-squared	Prob. Chi-Square
				0.461811	0.7938	3.885604	0.4217
Variable	Ramsey Reset Test			Breusch-Godfrey Serial Correlation LM Test		Heteroskedasticity Test: Breusch-Pagan-Godfrey	
	F tests	df	P Value	F tests	P Value	F tests	Prob. F
AMS	3.618658	1, 338	0.0580	0.481663	0.6182	1.117716	0.3493
				Obs R-squared	Prob. Chi-Square	Obs R-squared	Prob. Chi-Square
				0.994785	0.6081	10.05773	0.3458
Variable	Ramsey Reset Test			Breusch-Godfrey Serial Correlation LM Test		Heteroskedasticity Test: Breusch-Pagan-Godfrey	
	F tests	df	P Value	F tests	P Value	F tests	Prob. F
BBVA	.010253	1, 338	0.9194	1.680137	0.1879	1.005626	0.4351
				Obs R-squared	Prob. Chi-Square	Obs R-squared	Prob. Chi-Square
				3.445571	0.1786	9.075317	0.4304

According to Table 4, Ramsey Reset Test's P-Value of IKBA is 0.06, P-Value of PLAG is 0.4090, P-Value of GVI is 0.8110, P-Value of AMS is 0.0580, P-Value of BBVA is 0.9194. These values are more than the critical significance level (5%). Therefore, this ARDL models are properly specified.

Breusch-Godfrey Serial Correlation LM Test's P values for IKBA are 0.3171 and 0.2666, P values for PLAG are 0.20 and 0.1837, P values for GVI are 0.7973 and 0.7938, P values for AMS are 0.6182 and 0.6081 , P values for BBVA are 0.1879 and 0.1786.These values are more than 0.05. Therefore, it proves the residual obtained from the ARDL models are free from serial correlation.

Heteroskedasticity Test: Breusch-Pagan-Godfrey's P values for IKBA are 0.0831 and 0.0887, P values for PLAG are 0.1615 and 0.1597, P values for GVI are 0.4249 and 0.4217, P values for AMS are 0.3493 and 0.3458, P values for BBVA are 0.4351 and 0.4304. These values are more than 0.05. Therefore, there is no Heteroscedasticity problem for all this models.

Table 5: Bounds test results of variables and total cases of Covid-19

Test Statistic	Value	k
F-statistic (IKBA)	11.34667	1
F-statistic (PLAG)	11.04567	1
F-statistic (GVI)	9.206990	1
F-statistic (AMS)	11.34667	1
F-statistic (BBVA)	11.02968	1
Critical Value Bounds		
Significance	I(0) Bound	I(I) Bound
10%	4.04	4.78
5%	4.94	5.73
2.5%	5.77	6.68
1%	6.84	7.84

According to the Table 5, bounds test coefficients of all variables were above the upper limit of critical values. This suggests that there is a long-term mutual cointegration between all variables and total cases.

Table 6: Cointegrating and long run form results of variables and total cases of Covid-19

ARDL Cointegrating And Long Run Form
Dependent Variable: IKBA
Selected Model: ARDL(7, 0)

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(IKBA(-1))	-0.176692	0.110506	-1.598934	0.1146
D(IKBA(-2))	-0.089120	0.111694	-0.797894	0.4278
D(IKBA(-3))	0.198085	0.113276	1.748689	0.0850
D(IKBA(-4))	0.337270	0.115406	2.922452	0.0048
D(IKBA(-5))	0.308170	0.105100	2.932166	0.0046
D(IKBA(-6))	0.231634	0.100664	2.301056	0.0246
D(TOTAL_CASES)	0.000034	0.000007	4.583966	0.0000
CointEq(-1)	-0.424397	0.087291	-4.861870	0.0000

Cointeq = IKBA - (0.0001*TOTAL_CASES + 1271.8788)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
TOTAL_CASES	0.000080	0.000008	9.716401	0.0000
C	1271.878825	14.352448	88.617553	0.0000

ARDL Cointegrating And Long Run Form
Dependent Variable: PLAG
Selected Model: ARDL(4, 0)

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(PLAG(-1))	-0.189780	0.083924	-2.261337	0.0255
D(PLAG(-2))	0.151648	0.086065	1.762014	0.0806
D(PLAG(-3))	0.300383	0.084413	3.558489	0.0005
D(TOTAL_CASES)	0.000014	0.000003	4.136170	0.0001
CointEq(-1)	-0.209199	0.045754	-4.572307	0.0000

Cointeq = PLAG - (0.0001*TOTAL_CASES + 1369.4491)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
TOTAL_CASES	0.000069	0.000012	5.887912	0.0000
C	1369.449108	20.016058	68.417523	0.0000

ARDL Cointegrating And Long Run Form
Dependent Variable: GVI
Selected Model: ARDL(3, 0)

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GVI(-1))	0.033300	0.052254	0.637262	0.5244
D(GVI(-2))	0.101552	0.052429	1.936932	0.0536
D(TOTAL_CASES)	0.000000	0.000000	3.773558	0.0002
CointEq(-1)	-0.051520	0.012629	-4.079428	0.0001

Cointeq = GVI - (0.0000*TOTAL_CASES + 0.8002)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
TOTAL_CASES	0.000000	0.000000	4.837670	0.0000
C	0.800224	0.045733	17.497829	0.0000

ARDL Cointegrating And Long Run Form
Dependent Variable: AMS
Selected Model: ARDL(8, 0)

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(AMS(-1))	0.011828	0.052475	0.225401	0.8218
D(AMS(-2))	0.107972	0.052491	2.056935	0.0405
D(AMS(-3))	-0.067498	0.052523	-1.285122	0.1996
D(AMS(-4))	0.089256	0.052525	1.699313	0.0902
D(AMS(-5))	-0.081200	0.052540	-1.545482	0.1232
D(AMS(-6))	0.010642	0.052384	0.203157	0.8391
D(AMS(-7))	0.118963	0.052377	2.271295	0.0238
D(TOTAL_CASES)	0.000000	0.000000	3.616110	0.0003
CointEq(-1)	-0.060573	0.013359	-4.534062	0.0000

Cointeq = AMS - (0.0000*TOTAL_CASES + 45.8880)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
TOTAL_CASES	0.000000	0.000000	4.320044	0.0000
C	45.887952	2.127706	21.566870	0.0000

ARDL Cointegrating And Long Run Form
Dependent Variable: BBVA
Selected Model: ARDL(8, 0)

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(BBVA(-1))	-0.010823	0.052386	-0.206603	0.8364
D(BBVA(-2))	0.059547	0.052112	1.142678	0.2540
D(BBVA(-3))	-0.018831	0.051859	-0.363119	0.7167
D(BBVA(-4))	0.044900	0.051830	0.866301	0.3869
D(BBVA(-5))	0.096446	0.051793	1.862143	0.0634
D(BBVA(-6))	-0.094957	0.051877	-1.830419	0.0681
D(BBVA(-7))	0.155189	0.052120	2.977553	0.0031
D(TOTAL_CASES)	0.000000	0.000000	4.332096	0.0000
CointEq(-1)	-0.038628	0.009022	-4.281707	0.0000

Cointeq = BBVA - (0.0000*TOTAL_CASES + 2.5348)

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
TOTAL_CASES	0.000000	0.000000	5.937586	0.0000
C	2.534762	0.234462	10.810972	0.0000

Table 6. shows ARDL Cointegrating And Long Run Coefficients. The term represented as CointEq(-1) is negative for all variables with an associated coefficient estimate of -0.424397 for IKBA, -0.209199 for PLAG, -0.051520 for GVI, -0.060573 for AMS and -0.038628 for BBVA. All coefficients range from 0 to 1 and they are statistically significant at 5%.

This implies that for IKBA about 42.43% of any movements into disequilibrium are corrected for within one period. Thus, deviations in the short run will be balanced after 2.38 periods.

This value implies that for PLAG the speed of adjustment towards long-run equilibrium is 20.91%. Deviations in the short run will be balanced after 5 periods.

This implies that for GVI about 5.15% of any movements into disequilibrium are corrected for within one period. Deviations in the short run will be balanced after 20 periods.

This value implies that for AMS the speed of adjustment towards long-run equilibrium is 6.05%. Deviations in the short run will be balanced after 16 periods.

This implies that for BBVA about 3.86% of any movements into disequilibrium are corrected for within one period. Thus, deviations in the short run will be balanced after 33 periods.

According to Long Run Coefficients table, all variables of total cases is statistically significant at 5%.

Variable: AMS

Variable: BBVA
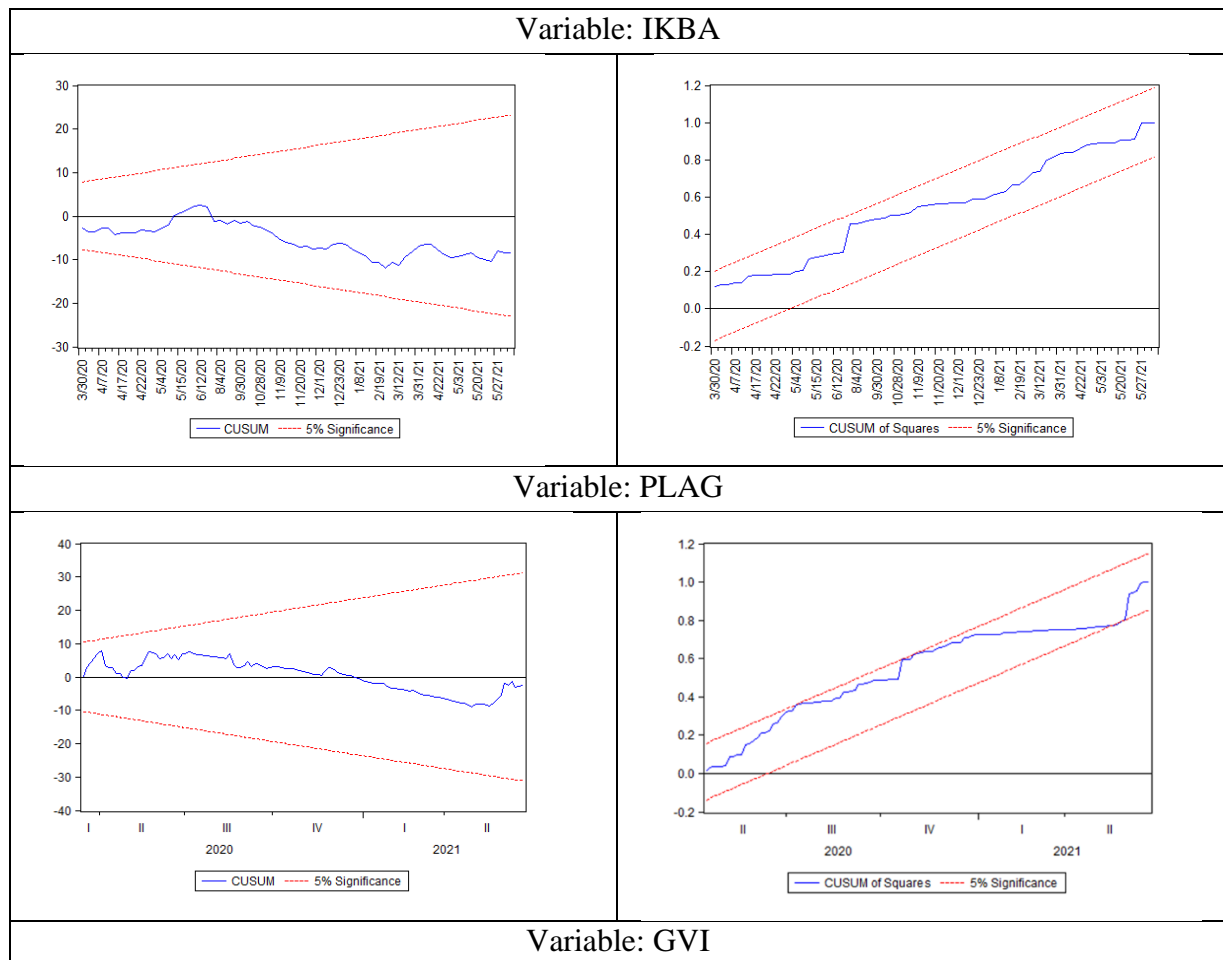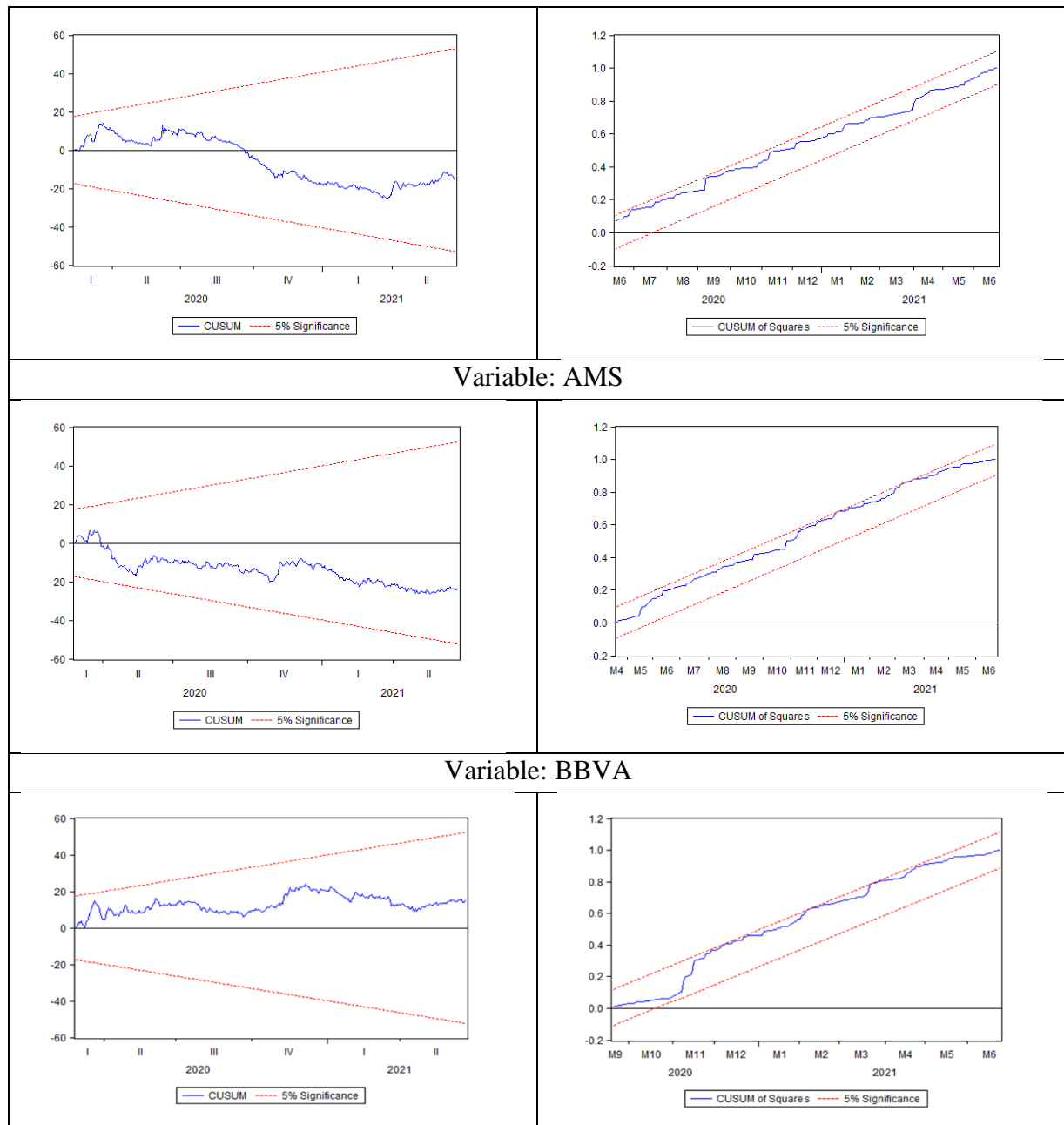
Figure 1: CUSUM and CUSUM of squares tests of variables and total cases of Covid-19

The fig. 1. shows that the blue line runs between the red lines in the CUSUM and the CUSUM of squares graphs. Therefore, it means all models are stable at a 5% significance level.

The results indicate that covid-19 affected both tourism and financial sectors.

Table 7: Deviation balance of variables

Variable	Periods	Country	Sector
IKBA	2.38	Croatia	Financial
PLAG	5	Croatia	Tourism
GVI	20	Italy	Tourism
AMS	16	Spain	Tourism
BBVA	33	Spain	Financial

According to Table 23, deviations in the short run will be balanced after 2.38 periods in IKBA variable and 5 periods in PLAG variable. These periods are short by other companies in Italy

and Spain. This result shows that the tourism sector in Croatia recovers longer than the financial sector.

The only one variable GVI analyzed in Italy is in the tourism sector. Deviations in the short run will be balanced after 20 periods. This period is also quite long by other companies in Croatia and but short in AMS variable in Spain.

On the other side, deviations in the short run will be balanced after 16 periods in AMS variable and 33 periods in BBVA variable. AMS variable recovers shorter than GVI in Italy but longer than IKBA and PLAG variables in Croatia. Contrary to the results in Croatia this result shows that the financial sector in Spain recovers longer than the tourism sector. BBVA variable recovers itself in the longest time according to market recovery time.

5. Conclusion

Covid-19 number of cases influenced the exchanges and rates of return around the world. Most of the research results related to the beginning of pandemics reported the negative reaction of markets but withing the time passing the situation have changed. There are sectors that gained on pandemics comparing to others. For instance, Nasdaq Composite Index can be the example of a high growth in the time of pandemic. In the study presented in this paper, the influence of covid-19 number of cases of selected companies' stocks returns representing touristic and financial sectors in countries with high tourism share in their GDP is analyzed.

The dynamic models can examine the equilibrium of the market and the time that is necessary to achieve the balance after the information, like the number of new covid-19 cases announcement, influence the market. According to this study 5 companies representing touristic and financial sectors in Croatia, Italy and Spain were selected. The findings show that the number of total cases impacted the tourism and financial markets. There was a difference in the recovery time between sectors and countries recognized. The results indicate that the short-term deviations in the ARDL model with Bounds coefficient and Error Mode values were balanced after minimum 2.38 and maximum 33 periods and there was a difference in the recovery time between sectors and countries.

These results corroborate the findings of a great deal of the previous work in. This finding is consistent with that of Goswami et al. (2021) who found larger employment dependence on secondary and tertiary sector have suffered significantly larger economic losses due to covid-19. These results reflect those of Yoon (2021) who also found that in the financial and manufacturing sectors, output and employment have changed in an opposite direction during the covid-19 pandemic. Additionally, Rasheed et al. (2021) reported Pakistan's struggling tourism sector is likely to encounter an economic loss of approximately 6 million US$ in 2020. According to Ramelli & Wagner (2020) the virus situation in China improved relative to the situation in Europe and in the United States, investors perceived those companies more favorably again. Just and Echaust (2021) found that the numbers of covid-19 cases and deaths reported in China are negatively correlated with these reported in other countries.

In the literature there are few studies with the ARDL model applied, especially when the covid-19 issue is taken into consideration. We expect that this study can influence future analysis in the field of dynamic analysis of market processes. Future study, with the same method, can be applied in different sectors and countries to recognize the recovery time of the systems.

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Efficiency Analysis of BIST Industrial Companies in Terms of Corporate Sustainability

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Abstract

The information disclosed to the public as a requirement of corporate sustainability leads to reduced operating costs, increased profitability and brand credibility due to reputation, and thus positive benefits for the enterprise. In addition to the many benefits that enterprises will gain as a result of corporate sustainability, enterprises that adopt this management approach increase their recognition and gain relative trust in the eyes of consumers and investors. For sustainability in the globalizing world, enterprises need to be in constant competition with their competitors and achieve the most output with the least input. Thus an enterprise increases its profitability, efficiency and effectiveness with minimum input and maximum output. This study analyzes the data of the service sector enterprises traded in the BIST Sustainability Index for the years 2019-2021 and measures their efficiency using the Data Envelopment Analysis BCC Method. The study uses leverage ratio, return on assets ratio and price earnings ratio as input variables and utilizes sustainability index as output variable. According to the BCC model, four companies were efficient in 2019, hence an efficiency ratio of 44.4%. In 2020, two companies were efficient, decreasing the efficiency ratio to 22.2%. Five enterprises are efficient in 2021, and the efficiency ratio increases to 55.5%. The DMUs with an efficiency value below the average efficiency level have to improve by more than 18.7% in order to become efficient. On the other hand, DMUs with above-average efficiency values will become efficient with improvements at lower rates.

Keywords: corporate sustainability, BIST Sustainability Index, Data Envelopment Analysis

1. Introduction

Changing and evolving production and marketing activities today are not only based on profitability, but also on the concept of "*Sustainability*", which entered the economics and finance literature as a new concept after the 1960s. This concept, which is addressed as *"Corporate Sustainability"* at the level of enterprises, reveals that enterprises with the sole focus of profitability will fail to survive in the long term, because the long-term value can only be created through corporate sustainability (López et al., 2007:308).

With the rapidly developing technology, new production methods have been put into practice, increasing production volumes to incredible dimensions. However, throughout this progress, enterprises have acted by focusing only on profitability, without thinking about the future, and as a result, the ecological environment and the social environment have been negatively affected (Tomšič et al., 2015:605). Uncontrolled use of natural resources, irreparable damage to the ecological environment caused by new production methods, income inequality, and global poverty have begun to pose a risk to the survival of future generations and their ability to cater to their needs (Shrivastava and Addas, 2014:23). The concept of sustainability, which emerged as a solution to this situation, refers to the best management of today's ecological, social and economic environments, taking into account the needs of future generations (Hummel and Schlick, 2016: 456).

The concept of sustainability is the process of prudent use of all resources as a social orientation (Abdi et al., 2020:3). In this way, all social stakeholders can use these resources more cautiously and act more consciously. At the same time, the negative impacts on nature and the

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environment caused by the development activity triggered by technological development can be mitigated faster and more effectively with the joint action of all stakeholders (Figge and Hahn, 2004:175).

The concept of corporate sustainability, which emerged from the concept of sustainability, focuses on the need to address the social and ecological environment as well as the economic environment in achieving the financial objectives of enterprises as a requirement of a new management approach (Qureshi et al., 2020:1202). The concept also requires enterprises to consider the benefits of all stakeholders. This idea, which argues that only in this way can enterprises create value in the long term, will enable enterprises to be better prepared for possible risks and opportunities by better analyzing their economic, social and ecological environment (Garvare and Johansson, 2010: 738). As a result, enterprises will be better able to diversify risk and gain an advantage over their competitors by gaining reputation both in the eyes of consumers and investors.

Today, the importance of corporate sustainability is better understood and various international initiatives have been established and many practices have been implemented to encourage enterprises to implement this concept. One of these practices is the creation of "Sustainability Indices" by capital market regulators by grouping the companies that stand out in the field of corporate sustainability practices under a single index. Thus, enterprises are both audited on corporate sustainability and differentiated from other enterprises more easily (Searcy and Elkhawas, 2012; Cheung and Roca, 2013; Oberndorfer et al., 2013).

It is a combination of three different phenomena (social responsibility, environmental responsibility and economic viability) that need to be brought together to create long-term value, which not only drives the management of the tangible and physical environment and natural resources, but also enterprise processes and enterprise behaviors (Ameer and Othman, 2012:63). As such, the concept of sustainability, which goes beyond mere process management, started to be used in a wide range of fields from biology to finance, architecture to social services.

The concept of sustainability is of interest in the finance literature and is closely related to the approach of risk minimization and return maximization that forms the basis of classical finance theories (Figge and Hahn, 2004:175). In particular, the fact that investors consider all kinds of environmental, economic and social factors and make decisions for the future accordingly or establish their decision mechanisms under this approach constitutes the link between the concept of sustainability and the finance literature. As with all systems, sustainability is as important as profitability for financial systems and stakeholders (Hartzmark and Sussman, 2019: 2791). In today's modern financial world, many supervisory and regulatory bodies operate to ensure the sustainability of financial markets and investors and protect the interests of enterprises and investors (Lourenço et al., 2012:419).

In addition, corporate sustainability aims to provide accurate, comparable and reliable information to the stakeholders (Ziegler and Schröder, 2010:851). This will give enterprises a competitive advantage both in attracting consumers and in raising funds for their operations. The main objective of sustainability is to manage economic, social and environmental risks in order to generate returns for investors in the long term (Hussain et al., 2018:413).

The purpose with the concept of corporate sustainability is to present a picture of the current situation and future of the enterprise, to show the methods and tools by which the enterprise competes with its competitors and how it complies with legal regulations and standards (Yu and Zhao, 2015:293). The aim here is to create a successfully managed business identity in the eyes of customers and investors, irrespective of whether the enterprise has strong growth or

relatively stable growth (Cunha and Samanez, 2013:22). Enterprises operating in developed markets and leading the way in corporate sustainability have a competitive advantage along five different dimensions (Lo and Sheu, 2007; López et al., 2007; Nakai et al., 2012).

• Strategy: In a globally integrated business world, they leverage reputation and brand loyalty for long-term benefits,

• Financials: By offering transparency for shareholders and investors, they can achieve the financial returns and open communication necessary for strong economic growth,

• Customer and Product: They ensure increased customer loyalty through long-term strategies and ecological and technological developments in line with customer demands,

• Governance and Social Stakeholder: They can create added value by involving enterprise stakeholders in enterprise processes,

• Human Aspect: Thanks to the importance they attach to employee rights and working conditions, they can minimize operating costs by gaining the advantage of finding qualified personnel.

2. Literature Review

In their study, Altın (2010) determined the efficiency of the enterprises traded in the ISE (Istanbul Stock Exchange) Industrial Index using DEA. In the study, current ratio, liquidity ratio, cash ratio, financial leverage ratio and financing ratio were used as input variables, while return on assets ratio and total market capitalization were used as output variables. According to the results of the study, 12 enterprises were efficient while 18 enterprises were not.

Ziegler (2012) analyzed the impact of inclusion in the Dow Jones Sustainability World Index (DJSI World) on corporate financial performance. The analysis was based on panel data for European firms included in the DJ Stoxx 600 Index between 1999 and 2003, applying fixed and random effect models. Inclusion in DJSIWorld was reported to have had a negligible impact on the return on assets for Anglo-Saxon European countries, but a positive impact for Continental European countries.

Oberndorfer et al. (2013) analyzed the effects of the inclusion of German businesses in the Dow Jones STOXX Sustainability Index (DJSISTOXX) and the Dow Jones Sustainability World Index(DJSIWorld) on stock performance. The results of the analysis show that a firm's inclusion in DJSIWorld has a negative impact on its stock performance, while its inclusion in DJSI STOXX has no significant advantage.

Russo and Mariani (2013) investigated the impact of inclusion in and exclusion from the FTSE4Good index on the profitability of an enterprise. The study, which covers enterprises that were included in and deleted from the FTSE4Good sustainability index between 2008 and 2011, concluded that exclusion from the sustainability index has a negative impact on the profitability of an enterprise.

Fettahoğlu (2014) utilized the data of 16 companies traded on the ISE and published sustainability reports in the period 2009-2011 to determine the relationship between financial performance and social responsibility performance of companies. As a result of the analysis using multiple regression analysis method, it was concluded that there is a significant relationship between social responsibility components, leverage ratio, and asset turnover ratio, and that there is a difference in earnings per share in terms of support for arts and culture.

The Charlo et al. (2015) study grouped 32 companies included in the Spanish Sustainability Index (FTSE4Good IBEX) as "socially responsible" and 55 companies not included in this index as "socially non-responsible" companies and investigated whether the financial performance of the companies grouped as "socially responsible" differs from the financial ratios of the companies grouped as "non-socially responsible" using discriminant analysis. Obtained results show that socially responsible companies included in the sustainable index earn higher profits at the same level of risk and are more sensitive to market changes, leverage levels and company size.

Santis et al. (2016) examined the financial and economic performance of companies listed in the Corporate Sustainability Index in Brazil compared to the performance of companies listed in the Sao Paulo Stock Exchange Index. In the study, profitability and liquidity ratios for the period 2012 and 2013 were calculated and cluster and non-parametric statistical analyses were used specifically to verify possible trends, similarities or differences observed in each group of enterprises. As a result of the analysis, it was determined that the inclusion of enterprises in the corporate sustainability index does not cause any change in financial performance.

Özdemir and Pamukçu (2016) examined the sustainability reports of enterprises registered in the sustainability index published in Borsa Istanbul since 2014. It was observed that the enterprises in the index have been preparing reports for a long time without interruption. This indicates that enterprises share their social, environmental and governance performances with their investors as clearly and openly as financial reporting. It was concluded that the number of enterprises publishing sustainability reports would increase in the future, and that trust in these enterprises would also increase and play an important role in investments.

Çıtak and Ersoy (2016) examined the stock return rates and Market Value / Book Value ratios of the companies included in the Borsa Istanbul Sustainability Index. The 15 enterprises included in the BIST 30 index and registered in the sustainability index were compared with the remaining 15 enterprises that were not included in the sustainability index.

Akyüz and Yeşil (2017) examined the financial performance of enterprises operating in the manufacturing sector and included in the BIST sustainability index. In the study, ratio analysis was conducted with the data obtained from the annual activity reports of 19 companies registered in the sustainability index, which include financial statements and corporate information for the period 2011-2015. The analysis revealed that the financial performance of İhlas Ev Aletleri A.Ş. is unfavorable compared to other enterprises.

Ünal and Yüksel (2017) investigated the relationship between financial performance and stock returns of banks in the BIST Sustainability Index. The data for the years 2015, 2016 and 2017 were analyzed with the Promethee Method, one of the multi-criteria decision-making methods. Akbank A.Ş. ranked first in terms of financial performance during the periods of the study. However, Akbank's financial performance was not reflected in its stock returns except for 2016. Moreover, correlation analysis revealed that there was no statistically significant relationship between financial performance and stock returns.

Yıldırım, Kocamış and Tokur (2018) aimed to compare the financial performance of nine enterprises selected among the enterprises included in the BIST Sustainability Index in the first quarter before and two quarters after their inclusion in the index. The performance differences of the enterprises between the periods were determined with the help of 10 financial ratios (Asset Turnover, Return on Assets, Return on Equity, Net Profit Margin, Operating Profit Margin, Financial Leverage, Debt and Current Ratio) and measured using the t-test statistical technique. As a result of the study, they observed that the financial performance of these enterprises increased positively after being included in the index and that there were significant

differences in asset turnover, financial leverage and return on equity performance indicators before and after index inclusion.

In his study, Ecer (2019) aims to analyze the corporate sustainability performance of five private capital banks serving in Türkiye with the data obtained from the Banks Association of Türkiye and the sustainability reports of the banks. The author determined five economic, six social and six environmental dimension indicators available in sustainability reports as criteria and used the ARAS method in the analysis process by determining the criteria weight scores with the Entropy method. According to the findings of the study, the most important dimension in determining the sustainability performance of privately owned banks is the social dimension. The study also revealed that the proposed model (Entropy-ARAS integrated model) is an efficient model that can be used to determine the corporate sustainability performance of banks.

Sak and Dalgar (2020) analyzed 16 quarterly data of 35 non-banking companies in the BIST Sustainability Index between 2013 and 2016 using the Driscoll-Kraay robust estimator and found a statistically significant positive effect of corporate sustainability practices on the financial performance of companies.

Keskin et al. (2020) examined the variables that differentiate between sustainable and non-sustainable companies by using market-based (alpha, beta, volatility) and accounting-based (ROA, ROE, ROA, ROA, ROA, PBT, PD/DD, leverage, size) variables included in 174 observations of a total of 55 companies (23 companies outside the financial sector and 32 companies in the BIST Sustainability Index) traded in the BIST100 between 2016 and 2018. The results of the discriminant analysis indicated that size, leverage, volatility and PD/DD significantly affect the relationship between sustainability and performance, and that larger companies attract investors because they are more sustainable and therefore have

lower stock volatility, and thus they are able to more easily obtain finance resources.

3. Conceptual Framework

3.1. The Purpose and the Importance of the Study

High performance is among the goals of managers and operators in every enterprise. Therefore, companies have to evaluate their performance and compare it with their competitors. In order to measure the performance of enterprises, it is important to evaluate each of the sub-dimensions of performance separately. When an enterprise is more productive, effective, profitable, effective, innovative, creates high quality and can offer a high quality of life to its employees compared to its competitors, this indicates that the enterprise performs at a high level. An enterprise needs to carry out efficiency measurement to see whether it is effective compared to rival businesses in their fields of activity and what they need to do to become effective. The purpose of corporate sustainability is to provide accurate, comparable and reliable information to stakeholders. It is also instructive to evaluate the effectiveness of the companies included in the BIST sustainability index within themselves. The aim of this study is to determine, using DEA, the efficiency of companies which operate in the service sector and were included in the sustainability index during the pandemic period of 2019, 2020, 2021.

3.2. Sampling and Data

The study aims to determine the efficiency ranking of service sector companies includedin the BIST sustainability index (XSURD). The study sample consists of 9 companies in the service sector that are also included in the sustainability index and for which complete data are available. These companies are MGROS, TCELL, TTKOM, AKSEN, THYAO, PGSUS, ZOREN, AKENR and ANELE. The XUHIZ (BIST Services) index, which includes companies

which operate in the service sector and are listed in the Borsa Istanbul market, has been calculated since 27.12.1996.

The most important part for measuring the efficiency of enterprises is to determine the number of decision units and input and output variables. In order for the DEA method to have a strong segregation ability, the number of inputs and outputs should be high. The number of decision units (number of enterprises) is determined according to the number of inputs and outputs. There are two constraints taken into account when determining the number of decision units. The first constraint is that the number of decision units should be at least (h + k + 1) if the number of inputs selected is h and the number of outputs is k. The other constraint is that the number of decision units should be at least twice the number of variables (Bussofiane et al., 1991: 3). Considering the second of these constraints, three input and one output variables were determined since the number of enterprises included in the study was nine. In determining the input and output variables, studies in literature were utilized and the most commonly used variables were used. Thus, 2x(3+1)=8, which is suitable for DMU=9.

Input variables: Leverage Ratio, Return on Assets, Price/Earnings Ratio

Output variable: Sustainability Index

4. Method and Findings

In its simplest definition, efficiency is defined as the minimum level of resource utilization necessary to perform the desired operations in a given system (Tangen, 2005:41). Efficiency is an indicator obtained by comparing the actual utilization of input elements or production resources with standards determined by certain techniques. The efficiency value can be determined by the formula given below (Erpolat, 2011:29):

$$\text{Efficiency} = \frac{\text{Standard Performance}}{\text{Realized Performance}}$$

An efficiency value of 1 calculated according to the above formula indicates that the activities are performed efficiently, a value below 1 indicates that the activities cannot be performed efficiently, and a value greater than 1 indicates that the efficiency is greater than the standard performance.

Data Envelopment Analysis (DEA), an efficiency measurement method, is a "data-driven" approach used to evaluate the performance of a set of similar entities, called Decision Making Units (DMUs), that produce multiple outputs using multiple inputs (Cooper et al., 2000:86). This analysis was first developed by Charnes et al. (1978). DEA, which is one of the most frequently used nonparametric methods, is a linear programming-based analysis method used to measure the relative efficiency of decision units when multiple inputs and outputs are available. (Boussofiane et al., 1991:3). DEA is a static form of analysis that performs horizontal cross-sectional analysis using one-period data of decision units. DEA has two basic models, input-oriented and output-oriented (Cooper et al., 2004:94).

DEA divides the DMUs into two main groups, namely relatively efficient and inefficient units. Relatively efficient DMUs form the efficiency boundary. Inefficient DMUs are tried to be rendered comparable to efficient DMUs. A reference set is created for each of the inefficient DMUs and the improvement rates are determined. In this way, inefficient DMUs can develop policies by taking into account the reference set and improvement rates in order to become efficient (Tangen, 2005:43).

In 1984, Banker, Charnes and Cooper developed the BCC (Banker - Charnes - Cooper) model, which is used in the case of variable returns to scale and measures technical efficiency by taking

into account the assumptions of increasing and decreasing returns to scale. The BCC model examines the maximum output combination that can be achieved with a given input combination. Since the objective of this study is to increase the score value of the sustainability index, this model is preferred.

The input-oriented BCC model is a model that determines how much input variables should be reduced in order to obtain this output level in the most efficient way without changing the output level under the assumption of variable returns to scale (Erpolat, 2011:82). The formulation of the input-oriented BCC model is as follows (Cooper et al., 2000:88):

$$Enb \frac{uy_0 - u_0}{vx_0}$$

$$Enb \frac{uy_j - u_0}{vx_j} \leq 1 \ (j=1,...,n)$$

$$v \geq 0,$$

$$u \geq 0,$$

$u_0 \cdot Free$

Enb: Maximization

x_0 : Input values of studied ($_0$) decision unit

y_0 : Output values of studied ($_0$) decision unit

v: Input multipliers vector

u: Output multipliers vector

In this model, efficiency solution is created in two stages. In the first stage, θ_B should be minimized and in the second stage, input deficiencies and output surpluses should be maximized. In the model, the objective function must be equal to 1 for any DMU to be efficient (Cooper et al. 2000:89).

The study presents BCC model efficiency results for 2019, 2020 and 2021. For 2019, MGROS, TCELL, THYAO and AKENR were found to be efficient in terms of total efficiency, technical efficiency and scale efficiency scores. The efficiency rate obtained was 44.4%. For the 2020 pandemic period, only TCELL and AKENR were found to be efficient in terms of total efficiency, technical efficiency and scale efficiency scores. In 2020, the effectiveness rate decreased to 22.2%. For 2021, MGROS, TCELL, THYAO, ZOREN and AKENR were efficient in terms of total efficiency, technical efficiency and scale efficiency scores. The efficiency rate for 2021 increased to 55.5%.

Table 1: BCC efficiency results

DMU	2019			2020			2021		
	Total Efficienc y Score	Technical Efficienc y Score	Scale Efficienc y Score	Total Efficienc y Score	Technical Efficienc y Score	Scale Efficienc y Score	Total Efficienc y Score	Technical Efficienc y Score	Scale Efficienc y Score
MGRO S	1	1	1	0.993	0.871	0.889	1	1	1
TCELL	1	1	1	1	1	1	1	1	1
TTKO M	0.974	0.812	0.913	0.941	0.910	0.919	0.933	0.915	0.910
AKSEN	0.832	0.785	0.801	0.760	0.734	0.712	0.804	0.791	0.782
THYAO	1	1	1	0.886	0.859	0.840	1	1	1
PGSUS	0.754	0.615	0.703	0.736	0.658	0.703	0.672	0.589	0.655

DMU	2019			2020			2021		
	Total Efficiency Score	Technical Efficiency Score	Scale Efficiency Score	Total Efficiency Score	Technical Efficiency Score	Scale Efficiency Score	Total Efficiency Score	Technical Efficiency Score	Scale Efficiency Score
ZOREN	0.737	0.682	0.641	0.725	0.717	0.688	1	1	1
AKENR	1	1	1	1	1	1	1	1	1
ANELE	0.744	0.689	0.712	0.811	0.790	0.767	0.851	0.746	0.722

The DMUs with an efficiency value below the average efficiency level have to improve by more than 18.7% in order to become efficient. On the other hand, DMUs with above-average efficiency values will become efficient with improvements at lower rates.

Table 2: Potential improvement ratios for inefficient DMUs

DMU	2019			2020			2021		
	LR	RoA	P/E	LR	RoA	P/E	LR	RoA	P/E
MGROS	1	1	1	23.1%	3.6%	2.5%	1	1	1
TCELL	1	1	1	1	1	1	1	1	1
TTKOM	12%	9%	2%	35%	4.4%	3%	27%	3.4%	2.7%
AKSEN	31%	7%	9%	29%	5.7%	4%	28.1%	3.9%	4.1%
THYAO	1	1	1	25%	2%	3%	1	1	1
PGSUS	27%	4.6%	2.6%	32%	3%	4.7%	26.4%	2.8%	3%
ZOREN	34%	5.1%	3.7%	29%	4%	6%	1	1	1
AKENR	1	1	1	1	1	1	1	1	1
ANELE	22%	3.7%	4.1%	36%	5.2%	4.8%	25.2%	3.7%	4.2%

LR: Leverage Ratio, RoA: Return on Assets, P/E: Price/Earnings Ratio

In order to be efficient, these DMUs should reduce their input variables at the highest possible level and increase their outputs at the rate calculated according to the intensity of the reference DMUs. For example, if TTCOM reduces its input variables LR by 12%, RoA by 9%, and P/E ratio by 2% for 2019, it will become as efficient as the reference DMUs. For 2020, it can become effective if it reduces the LR variable by 35%, the RoA variable by 4.4%, and the P/E ratio by 3%. For 2021, it should reduce the LR variable by 27%, the RoA variable by 3.4%, and the P/E ratio by 2.7%. In general, inefficient companies should reduce input variables by an average of 18.7%. Then the sustainability index of output variables will increase and companies will approach the efficiency boundary.

5. Conclusion

Today, the concept of sustainability, which is no longer only related to the environment, refers to the fact that businesses are a stakeholder that considers the benefit of society and produces solutions to potential problems on behalf of society and the environment. This concept, which is important for all companies, helps economy to grow reliably and mediates the transfer of value to other stakeholders. The most important reason for this is that our age is the age of communication and consumers' desire and demand for access to information on many issues forces companies to become accountable enterprises. Any development related to an enterprise spread very quickly throughout the world and investors can be informed about such developments instantly. As a result, enterprises try to provide corporate sustainability as a trust service to their customers and investors.

The aim of this study is to determine the efficiency of companies in the service sector, which are also included in the sustainability index, for the pandemic period of 2019, 2020 and 2021,

using DEA. According to the results obtained with the BCC method, in 2019, total efficiency, technical efficiency and scale efficiency scores were obtained as efficient for MGROS, TCELL, THYAO and AKENR and the efficiency ratio was determined as 44.4% in this year. For total efficiency, technical efficiency and scale efficiency scores, in 2020 only TCELL and AKENR were found to be efficient. In 2020, the effectiveness rate decreased to 22.2%. For 2021, MGROS, TCELL, THYAO, ZOREN and AKENR were found to be efficient for total efficiency, technical efficiency and scale efficiency scores and the efficiency ratio increased to 55.5%. The negative effects of the pandemic period were manifested by a decline in the number of influential companies.

Corporate sustainability enables an enterprise to communicate information about its current activities and risks to its stakeholders in its internal and external environment, as well as allowing it to better identify the opportunities it faces. As a result, it is aimed to create a competitive advantage by drawing an accountable and responsible business image. As a result of the information disclosed to the public as part of corporate sustainability, operating costs decrease, profitability and brand reliability due to reputation increase, creating positive benefits for the enterprise. The main objective should be to ensure that the majority of companies traded on BIST are included in the sustainability index. Corporate sustainability benefits enterprises in many different areas:

- With the environmental sustainability approach, the importance given to the use of raw materials has increased in order to use natural resources effectively. Also, recycling activities improve production efficiency and increase business profitability by ensuring that the resources generated as a result of production are re-included in the production process.
- Aforementioned activities increase the brand value and social reputation of enterprises which are sensitive to their social and ecological environments.
- Enterprises which gain competitive advantage in this context will be more effective in finding qualified employees and will also increase employee loyalty.
- Similarly, they will be more preferable in the eyes of consumers, who are the immediate environmental components of the enterprise, because they are a enterprise that is compatible with its ecological and social environment.
- Enterprises which implement corporate sustainability practices will have high credibility in the eyes of financing institutions and will also be recommended to their customers by investment companies.
- At the same time, since the principle of corporate governance is an integral part of corporate sustainability, enterprises managed with corporate governance principles will have lower capital costs, a stronger financial structure and will be able to manage potential risks more effectively.

In future studies, data from following years can also be used to determine and compare the efficiency of companies in the longer term. In addition, the scope of the study can be expanded by comparing the efficiency of enterprises included and excluded in the BIST Sustainability Index.

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Leadership in Changing Context. Case Study: Elderly Residential

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Abstract

This work summarized the analysis and understanding of the satisfaction and motivation levels of Residential Structure for Elderly People team organization. Team's opinion and involvement are questioned, to understand the various factors in an individual and institutional context. Based on the leadership effect, with a focus on motivational factors, these will exert a more positive dynamic in the team sphere. Through empirical data, based on quantitative methods, this investigation focusses on the leadership style that the Institution exerts on the team as well as its understanding of it. Was verify that the degree of motivation, satisfaction and balance is evident in the responses of the team, considering that the leadership style is democratic, a participatory leadership in an open and motivating way that encourages participation. The employees describe the existence of union at work and have the leader as an example to follow.

Keywords: change, leadership, team, motivation

1. Introduction

With this research, we intend to make a leadership analysis about the role of the Technical Directorate of the Residential Structure for Elderly People (ERPI) in a context of a pandemic caused by SARS-CoV-2 virus in Portugal, in which the institutions were closed. Through a questionnaire to employees, it is intended to understand the influence of management and humanization in the functioning of the organization.

Leadership is a very important factor for the functioning of a team, as well as for its evolution and performance. The objective of this study is based on the concept of Leadership, the importance of how it is interconnected with Communication and Motivation, contextualized with the characterization of the institution, its mission, its values, its capacity, and the dynamics of the team.

The relevance of the topic lies in the experience and relationship between the institution's leadership, the work team and its impact. Organizations, in their leadership, focus on behavioral change, centred on the environment and on attitudes towards people and this is an added value for the success of the quality of the Institution and employee relationship.

According to Chiavenato, "the name organizational climate is given to the internal environment existing among the organization's members. The climate is closely related to the degree of motivation of its participants" (Chiavenato, 2003, cit in Reis 20018:63). For Reis (2020), Leadership is inevitably a potentiator in the effect of change, which has an influence on the activities of a group or individual, this can lead to transformation and knowledge and consequently leads to the competence of actions in the performance of actors.

A balanced team depends on two factors: "motivation" and "communication", these are accompanied by an efficient leader, who intervenes as a regulatory and encouraging element, involving his team in tasks (Reis & Silva, 2018). In this sense, and for the reasons described above, having an emotional involvement and establishing interpersonal relationships between

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the leader and the employee will facilitate the work management and the general well-being of the Institution (Reis, 2020).

There is still a lot to be done in the culture of human resources management in institutions and in senior care teams. In this area, it is urgent to optimize the work of employees, a significant change in the scope of working conditions is essential.

Reis (2020) states that "the object of study must be carried out in a specific area, demonstrating its scientific relevance" (Reis, 2018:64).

The objective of this study is to know the level of Leadership of ERPI, through the analysis of the emotions transcribed by the members involved in the investigation.

The approach of the present Leadership study resulted in the following question: "Is the role of the leader in ERPI considered satisfactory and relevant to the functioning of the team, is this influenced by organizational management"? Starting from the previous question, this one launches the following general objective: to analyse and understand the degree of satisfaction of the Direct Action Assistants with the Institution's Leadership.

Serrano (2008) describes the objectives as purposes that are intended to be achieved with the execution of an action, these must be clear, realistic and relevant. For Reis (2020), the general objectives are the synthesis of the results that are intended to be achieved and the contribution that the research will provide.

The specific objectives are considered in detail through different points that are intended from the general objective. The specific objectives are: To know the level of satisfaction and motivation of employees; Infer determinant results of teamwork; Understand which requirements are considered relevant in the management and motivation of the team.

The structure, called Avós de Azeitão Senior Residence, has been in existence since 2013. The private institution has a capacity for 20 users, with a multidisciplinary team of 15 members, represented by the Technical Director, Doctor, Nurse, General Manager, General Coordinator, Sociocultural Animator, and 9 direct action helpers.

ERPI consists of a family project, with the aim of providing complementary services to elderly people, accessible and appropriate to their social context. Its mission focuses on valuing the elderly. It provides a family and peaceful environment, respecting the special needs and care of this older group. It contributes to greater stability, ensuring everyone's independence, with a feeling of interaction and self-esteem for a dignified aging process.

This institution works with other entities, namely the Emergency Unit that welcomes individuals in a "homeless" situation, a work that results from a huge psychological effort by the team in general. This resident public, with clear integration and adaptation difficulties, problems and various needs, suffer from changes that cause significant distress to the person and this interferes with their daily life, with effects that can be lasting or temporary. Machado Pais, scientist and social researcher, refers to the "homeless" situation as a social reality that involves lives, and these give substance to the social representations that portray this same reality. These choose the street as their home, paying the price of a misfit world of different social classes (Pais, 2016).

Nowadays, we are faced with a reality of life that appears unclear and without great certainty. In times of a pandemic, the adaptation of ERPI to the new operating reality has been troubled, with constant changes and implementation of operating rules and increased protection in the elderly care.

Carvalho (2020) considers that it is not easy to implement the protection measures and aging policies applied by the EU (European Union), he adds that at the level of elderly people living in nursing homes, where there were a high number of deaths due to the fragility of available resources for the individual protection of each user and caregivers, made these people vulnerable to COVID19. Carvalho also describes this situation as an "unimaginable human tragedy" (Carvalho, 2020:342).

Due to the implementation of the contingency plan and measures to prevent COVID19, the global appeal is social isolation, which is accompanied by the awareness and confrontation of elderly people with their reality and what is left for them to live.

There are few human resources at a professional level dedicated to the area of care for the elderly. This is considered a poorly paid profession and a very heavy activity, both physically and psychologically, where there is a great deficit in the training of employees. Today, the elderly arrives at institutions with greater problems of dependence and cognitive disorders, increasingly, there is a greater incapacity to meet the basic needs of this heterogeneous population.

Carvalho (2020) also adds the thought of Scheil-Adlung (2015), where he alerts to the existence of a small number of employees in the sector of formal care for the elderly. Also describing, what Dominelli (2013) defended, employment in this sector is poorly paid, the organizing institutions where they work do not offer them due contractual conditions, nor do they have other basic rights, making it an unattractive and undervalued job. The European Commission (2018) describes how a job with a high risk of physical and emotional stress can lead to professional burnout, where there is a lack of career development (Carvalho, 2020, in Teixeira, et al.).

Institutions undergo changes in their operating model, both with the protection of the team in direct contact with elderly, and in compliance with the rules related to individual protection. The team's schedule, too, undergoes major changes, called intervention modality, the aforementioned "Mirror Schedule", another cause of stress, this one caused by fatigue (Carvalho, 2020 in Teixeira S. et al.).

The treatment and well-being of users is essentially carried out by the team directly, therefore, a concern focused on people's satisfaction and motivation, for the continuity of service quality provided in the institution. In these circumstances, it is difficult to maintain an emotionally stable team, each member has its management in the daily experience with suffering, and it is not possible, sometimes, to manage emotions, preventing the necessary self-regulation for their personal balance and well-being in professional performance (Reis & Silva, 2020).

Facing the pandemic represented a huge challenge for institutions, as well as the risks and uncertainties associated with the daily life of the elderly. It is up to the manager, not just a leader, to focus on the employees well-being, assuming their involvement as a mediator of performance, participation and development (Reis, 2020).

2. Leadership and Its Importance

Reis (2020) describes Leadership as a potentiating agent of change, which inevitably influences through communication a set of specific results of the objectives to be achieved, in a given individual or group. Within the enormous diversity of its description, leadership has four fundamental elements in common, the group, influence, motivation, and objectives. These communication allies achieve the desired results. Part of the motivating leader is to believe in the company's proposal and to act on the employees potential.

As Reis (2020) says, a leader has to truly know his team, their convictions and motivations, they go through several stages of evolution in their professional maturity.

Successful leadership requires interaction, boundaries, and respect for the team. The Leader has an important role, he needs to be aware of and close to the needs and degree of interest and fears of each employee. These, in turn, have different perceptions of a given context and must be involved in decisions that affect them. There must be skill and care in the way the leader respects each person individually, always seeking to improve the form of communication and motivation, framing the emotional component. Thus, it is understood that a good result in leadership also requires a good team (Reis, 2020).

Chiavenato adds, leadership is necessary in all types of human organization, whether in companies or in each of their departments (Chiavenato, 2003:122). In the opinion of Bento and Ribeiro (2013), leadership also can consciously and voluntarily influence others, with enthusiasm and convey confidence to achieve the intended goals.

Following the thinking of some authors, leaders have a set of very specific characteristics, which are: physical (energy, presentation), personality (aggressiveness, empathy, self-confidence), social (administrative and interpersonal skills) and, finally, task-related (initiative and persistence).

3. Motivation and Communication Importance

In general, motivation is described as a driver of a certain action, through the behavior of the individual, it can be understood as a stimulus with influence, as long as it is positive (Silva & Reis, 2020). The importance of "motivation" results from enormous benefits for employees and the organization. Motivation is related to responsibility and performance, implicitly, this is linked to desires, goals, impulses and needs.

Communicating for Tavares (2019) consists of choosing the right words, with rigor and clarity in order to convey confidence and assertiveness, facilitating the understanding of the words spoken to the listener's reception, creating an engaging emotional empathy.

The biggest organizational challenge is people management, a fundamental part for the success of its development.

Reis (2020) refers to organizational management as a plan structured by all actions in order to contribute to the functioning system. It enables the production with commitment of the organization's members, creating a set of operations that guarantee the success of the institution, in order to achieve previously outlined and planned goals and objectives. These must be adequate and organized, effectively meeting the objectives and stakeholders. The management function aims to promote the improvement of results, with the creation of a collaborative, motivated and conducive environment for people's self-development. Seen as a work model, guided by a policy of values of the institution itself, influencing the team as a whole.

4. Methodology

The methodology used was quantitative, through a questionnaire with 18 questions, five of which are open questions.

According to Campenhoudt and Quivy (2019), a questionnaire is a set of open and closed questions, for knowledge or awareness of a problem. The purpose of the questionnaire is the in-depth understanding and correct interpretation of common phenomena, which for whatever reason are interpellated.

The universe of the study is made up of all the members of the multidisciplinary team of the "Residência Sénior Avós de Azeitão". The sample of the universe consists of 10 female team

members, aged between 32 and 56 years old. They all perform the same function and the same training in the area of the elderly. It is intended to know their opinions regarding leadership in the ERPI organization, as well as their satisfaction.

Universe can be understood as a "set of people or elements to which the results are intended to be generalized and who share a common characteristic" (Coutinho, 2015, 89).

A sample is considered to be a set of subjects with the same characteristics as the original population. The sample does not mean that it is made up of individuals, it could also be of documents, etc. (Coutinho, 2011).

From the analysis of the questionnaire, it is possible to know the figure of the leader, his style of behavior, and the context in which he is inserted, his influence and performance with the Senior Residence team.

The choice of instruments that were used to obtain the data aims to obtain the maximum information necessary to understand the research in practice, to obtain better results in response to the objective and intended (Reis, 2018).

The techniques used were: field research, analysing the motivation of the professional team and systemic observation, through the analysis of answers.

The answers to the questionnaire address leadership, motivation, communication and the influence on the management and humanization of its operation.

5. Results

According to the research carried out at ERPI, Residência Sénior Avós de Azeitão, within the scope of the intervention and regarding the questionnaires applied to the 10 employees of the institution, all respondents are female, with 10% of the employees between 25 and 32 years old, 40 % of employees between 33 and 40 years old, 20% between 41 and 48 years old and 30% between 49 and 56 years old.

As for the level of education of the participants in the questionnaire, 30% have the 3rd cycle of basic education, 40% have secondary education and 30% have higher education.

Most of the professionals have been with the institution for more than six years, with three employees having worked at ERPI for less than one year. All respondents are professionals in the line of daily intervention, the group consists of a general coordinator and nine assistants in direct care for the elderly, the ten respondents all collaborated in direct action to the elderly, with their certain features.

The surveyed team unanimously consider that the institution's leader is the Technical Director, justifying being accessible, a good listener, communicating in an empathic and fair, clear and objective way. These refer that the leader conveys an excellent working environment in the institution.

The collaborators unanimously affirm their total agreement in building a fairer world and meeting what they feel, enjoy their activity and prioritize helping and caring for elderly people with more or less difficulties, developing a cohesive work and in team.

Regarding the means necessary for the collaborators to carry out their duties, opinions are unanimous in total agreement, with access to creativity, their participation in opinions, perks and benefits, professional development and a good working environment between the team and the organization's management.

The evaluation of the collaborators to the Technical Director was totally unanimous, fully agreeing on the involvement of their work, in the transmission of well-being with the team and

relationship with the hierarchical members. Her influence on the satisfaction of the professional team is positive, considering it a pride to work with the Technical Director.

In the opinion of the interviewed employees, they characterize a leader as an element open to good communication, transmitting ideas in a clear and objective way. With quick decision-making capacity, tranquillity, and security. Knowing how to delegate tasks, being able to hear the opinion of your team, in adversity knowing how to delegate fairly, working together with the team, giving priority to honesty and respect.

The Institution's Leadership is considered by the employees, a positive Leadership, it communicates in a simple way, seeks to innovate; act according to the situation; knows how to listen; creates empathy and competence.

The existence of comfort and physical well-being in the workplace, the employees unanimously responded to total satisfaction, as well as the working hours, which are also considered satisfactory.

Employees consider themselves satisfied and totally satisfied with the value of their monthly remuneration, in accordance with their responsibilities. It is with total satisfaction and recognition by the collaborators, the care provided to the elderly at ERPI, feeling the recognition of their work, dedication, and effort, as caregivers and employees of the institution. The surveyed employees are satisfied and totally satisfied with the planning framework of the functions to be performed in their work activity.

The feeling of work motivation and recognition by the Management is total, according to the respondents, there is a good relationship between the team as a whole, which allows for general motivation, even in the confinement phase. The employees covered by the study consider the institution a stable place of work, with a feeling of general well-being in their daily lives, which gives them great stability in their jobs.

Respondents describe the leader as present in the institution. All respondents responded positively to all items regarding the role of the Technical Director in her work and in motivating the team. In the first paragraph, which concerns communication in a complex way, all the collaborators put the option "no". In the remaining paragraphs that encompass the questions: the leader communicates in a simple way; seeks to innovate; act according to the situation; knows how to listen; creates empathy; is competent to lead, all team members answered the option "yes", reinforcing once again the positive role that the leader has in the institution and towards his team.

Table 1: SWOT analysis

Strengthens:	Weaknesses:
- Training in the area of continuous health with the ERPI nursing team. - Health and hygiene training at work with Servinecra and GeryHigiene. - The entire effective team belongs to the institution's staff. - Above average salary. - Motivated team, available for activities. - A different team member every day of the week in the fun activities.	-Team tired. - Need to resume normal hours. - Physical and psychological wear and tear of team members. - Integration of "homeless" people, with difficult adaptation, aggravates team wear. - Need for a male member, greater physical strength for support in extreme cases. - Due to time incompatibility, lack Playful activities between the team in the

- Team united, flexible, available, dynamic, used to different pressures and positions in work articulation.	outside. - Emotional stress.
Opportunities: - Professional team with adequate training motivated - Capacity and excellent results - Cohesive and versatile team.	Threats: - High physical wear. - High Emotional Stress. - Clinical low risk.

The SWOT Analysis consists of the assessment of the competitive position in different analyses

and tools used, these are based on empirical work, means of more detailed analysis and summary, composed of two variables, this analysis results from the strengths and weaknesses. This analysis results from observation and aims to clearly describe the risks to be taken into account and the problems to be solved (Reis, 2020).

6. Final Considerations

The present investigation, carried out at ERPI, with the theme "Leadership of ERPI in a changing context", focuses on the impact of leadership on the performance of the institution's leader. Recent leadership theories demonstrate that a leader's behaviors can be learned, changed, and improved. A leader, with his qualities and distinctive characteristics, must, above all, be tolerant, with quick decision-making, emotional maturity, with enthusiasm and conviction of his ideals. He must develop the necessary skills so that consensus can be reached in guiding the team and in achieving positive results.

The approach of the present Leadership study that results in the question about the role of the leader in ERPI, the respondents consider total satisfaction, this with relevance to the good functioning of the team, they also refer to the influence of the hierarchy and organizational management for the good general functioning.

The Technical Director is considered by the team to be the leader, justifying being accessible, a good listener, communicating in an empathic and fair, clear, and objective way, transmitting an excellent working environment between the team and the Technical Management. The satisfaction of the professional team is very positive and there is recognition for their work, dedication and effort, as employees of the Institution. They mention that the general well-being in their day-to-day life gives them great stability in their jobs, and that the institution's leadership is a great influence for the good functioning and commitment of the work group.

It is concluded with the investigation, that the degree of motivation, satisfaction and balance is evident in the responses of the ERPI team, considering that the leadership style is democratic, a participatory leadership in an open and motivating way that encourages the participation of team. The collaborators refer to the Institution as a stable job, describe the existence of union at work and have the leader as an example to follow.

Following the SWOT analysis, it considers ERPI with potential, it has a motivated professional team capable of achieving excellent results, distinguishing team as strong, cohesive and versatile. However, due to the consequences of physical and psychological exhaustion, added to emotional stress, this team has great weaknesses, running the risk of potential absences due to clinical needs.

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A New Reality Arising from SARS-COV-2 Coronavirus Pandemic: Portuguese Private and Public Higher Education Institutions

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Abstract

The objective of this research study is to assess the level of satisfaction and performance of Portuguese students in public and private higher education due to the Sars-Cov-2 pandemic. To achieve the proposed objectives, a questionnaire was prepared using Google Forms for Portuguese public and private universities. The data obtained were analysed using the SPSS Statistics software. Students from private universities pointed out the difficulty of managing the response time to the overload of work as the biggest weakness of online teaching, while students from public universities mentioned taking the tests online. For Portuguese students from public universities, the main strength was the improvement of digital knowledge, while for students from private universities, they highlighted the availability of professors to accompany them, during and after classes. Private and public school students very clearly expressed a preference for face-to-face teaching, especially in areas where learning most requires the teaching of practical classes, namely health, computing, mathematics, and statistics.

Keywords: online teaching, performance, students, universities

1. Introduction

The teaching/learning process in higher education with the SARS-COV-2 coronavirus pandemic has undergone profound changes using online techniques. Online classes at universities can have several challenges, such as: a) little psychological support for teachers; b) low quality of teaching (due to the lack of planning of activities on digital platforms); c) work overload attributed to teachers; d) students' lack of motivation; and e) limited (or non-existent) student access to necessary technologies (Gusso, et al., 2020).

Many students indicate that communication and accessibility were considered the biggest problems, caused by the unavailability of technological resources or internet access.

Students were not prepared to be separated from classes and were concerned about the impact of confinement on their learning outcomes and performance.

Regarding student satisfaction, it was significantly higher in traditional classes compared to online sessions (Chaudhuri, et al., 2020).

Most students were dissatisfied with virtual teaching, considering that their academic performance is worse than before the pandemic and that their results were negatively affected.

2. Methodology

According to the records of the Director-General for Education and Science Statistics, in 2020, 396,909 students were enrolled in higher education.

The questionnaire using Google Forms consists of a set of questions that aim to define the general perspective that students have about online teaching and their perception of their performance.

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The sample of this study is 2,227 for a population of 369,909, which corresponds to a confidence level of 95% with a margin of error of approximately 2%. In this way, it is considered that we are dealing with a representative sample of the population under study, making it possible to infer the results (Taherdoost, 2017).

For data obtained, the standard SPSS Statistics 21 software was used (Kudryavtsev & Shestakov, 2021) and parametric tests were performed for independent samples (Marôco, 2014).

3. Results

A total of 2,227 valid responses were obtained, 59.1% of which were female and 40.9% were male. As for the marital status of the respondents, 90.1% are single and only 5.5% selected the married option. Regarding professional status, 70.5% of respondents are only studying by choice and 14.8% of respondents are employed.

As for the typology of the institution they attended, 52.0% are enrolled in private universities and 48% in public universities.

As for the area of education/training of the course they attended, most respondents are in business sciences, humanities, and health.

To gauge student satisfaction, they were asked to indicate the main challenges and evaluate the online teaching experience.

Students who indicated they had a worse experience with online teaching are students from more practical areas of study such as Health, Informatics, Mathematics and Statistics.

As for the main weaknesses, there is an emphasis on conducting online tests and difficulty in managing the response time to work overload. As for the main weaknesses of online teaching, students highlight the improvement of digital knowledge and the availability of teachers to accompany students after classes.

In most areas of study, the preferred modality is b-learning or face-to-face, with the exception of areas of health and veterinary sciences that mostly choose for face-to-face modality. As for theoretical classes, there is a preference for the e-learning modality, in which the areas of humanities, business sciences and social services stand out. The same is true for practical classes, but in this case, at the opposite extreme, the preference for face-to-face classes in the areas of health, veterinary sciences, computing, mathematics, and statistics stands out.

To assess student performance during the period in which classes were taught online, during the confinement period, students were asked to indicate their overall assessment of their performance in online assessments compared to online assessments. face-to-face assessments and to indicate whether from face-to-face to online teaching there was any change in the grades of theoretical, theoretical-practical and practical curricular units. Most students consider that their overall performance was better in face-to-face teaching (66%).

4. Conclusion

In an evaluation of the online teaching experience by area of education, students in areas where practical teaching is essential indicated that they had a worse experience with this teaching modality than those in the study areas of health, information technology, mathematics, and statistics.

For most students, the main challenge of online teaching was the use of synchronous communication through the zoom, microsoft teams or other platforms and also the challenge of using asynchronous communication on the moodle platform.

The most preferred modalities were b-learning or face-to-face in most areas of study, with the exception of health and veterinary sciences, whose majority of students opted for the face-to-face modality.

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Paradigm Change in University Education Format in Portugal

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Abstract

This investigation aims to investigate the performance and satisfaction of university students in Portugal in the context of Sars-Cov-2 pandemic, in the academic year of 2020/2021. A questionnaire was applied to assess the students' level of satisfaction with the teaching modalities: e-learning, b-learning and face-to-face. The data obtained were analysed using the SPSS Statistics software. In an evaluation of the online teaching experience by area of education, the students who indicated that they had a worse experience with this type of education were those in the study areas of health, computing, mathematics and statistics, environmental protection and physical sciences, in areas where practical teaching is essential. The preference of all students for face-to-face teaching was expressive, but it was found that, above all, those in the areas of health, computing, mathematics, statistics, etc., that is, in the areas where learning most requires practical classes teaching, that these were preferred to theoretical-practical or theoretical ones, also mentioning that they had a worse experience with this type of teaching, which is in line with what was expected.

Keywords: university, teaching, learning, pandemic

1. Introduction & Theoretical Framework

With SARS-COV-2 coronavirus pandemic, teaching/learning process had to take place through online techniques in Higher Education Institutions and caused profound changes in the university context. Most of the students did not have a computer, which is why many of them connected to classes by cell phone during synchronous classes. Many students indicate that communication and accessibility were considered the biggest problems, caused by the unavailability of technological resources or internet access.

Students were not prepared to be separated from classes and psychologically and were concerned about the impact of confinement on their learning outcomes and performance.

Regarding student satisfaction, it was significantly higher in traditional classes compared to online sessions (Chaudhuri, et al., 2020).

Online classes at universities can have several challenges, such as: a) little psychological support for teachers; b) low quality of teaching (due to the lack of planning of activities on digital platforms); c) work overload attributed to teachers; d) students' lack of motivation; and e) limited (or non-existent) student access to necessary technologies (Gusso, et al., 2020).

The vast majority of students prefer face-to-face teaching, considering that their academic performance is worse than before the pandemic and that their results have been negatively affected. In general, students were dissatisfied with virtual teaching, namely with the assessments.

2. Methodology

The objective of this investigation is to investigate the performance and satisfaction of university students in Portugal in the academic year 2020/2021, due to Sars-Cov-2 pandemic and measure the level of student satisfaction regarding the teaching modalities: e-learning, b-learning and classroom.

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The population of this study refers to all university students and according to the records of the Director-General for Education and Science Statistics, in 2020, 396,909 students were enrolled in higher education.

To achieve the proposed objectives, a questionnaire was developed using Google Forms. This questionnaire was carefully designed to ensure that there were no dubious or unclear questions and, in order to facilitate data processing, closed responses were chosen (Minnaar & Heystek, 2016).

The first section of the questionnaire is made up of sample characterization questions, the second section is made up of a set of questions that aim to define the general perspective that students have on online teaching and their perception of their performance during the course in academic year 2020/2021 in which classes took place mostly in e-learning and/or b-learning format. The third section of the questionnaire consists of a set of questions that allow the assessment of students' satisfaction with the three teaching formats (e-learning, b-learning and face-to-face) comparing the suitability of each format to different areas of university education.

The questionnaire was sent to the main universities in the country and was available between September 1, 2021 and March 18, 2022.

In a first phase, between August 15 and 30, the questionnaire was sent to some students, randomly and different universities and academic degrees. Based on the answers obtained from this pre-test, an experimental data analysis was carried out in order to correct eventual errors and adapt the questions and answer options.

The option for primary data through the collection of responses to the questionnaire created, is related to the fact that we are facing a new reality resulting from the sars-cov-2 pandemic and which changed the paradigm regarding the teaching format. While research through questionnaires has clear advantages, special attention must be paid to the adequacy of the questionnaire prepared to the intended objectives and subsequent data processing methodology, the guarantee of selecting a representative sample of the population under study, among other aspects (Young, 2015).

As mentioned, the sample of this study is 2,227 for a population of 369,909, which corresponds to a confidence level of 95% with a margin of error of approximately 2%. In this way, it is considered that we are dealing with a representative sample of the population under study, making it possible to infer the results (Taherdoost, 2017).

To analyse the data obtained, the SPSS Statistics 21 software was used and, given the size of the sample, it is possible to assume that the data follow an asymptotically normal distribution (Kudryavtsev & Shestakov, 2021). Data analysis was performed using parametric tests for independent samples (Marôco, 2014).

3. Sample Characterization

A total of 2227 valid responses were obtained, with 1317 female respondents (59.1%) and 910 male (40.9%). The distribution of respondents by gender is less equitable as 79% are between 18 and 24 years old, 11.4% are between 25 and 34 years old, 5.2% are between 35 and 44 years old and only 4.4% are between 45 and 54 years. As for the marital status of the respondents, the majority (90.1%) is single and only a small part selected the option married (5.5%), union (3.9%) or divorced/legally separated (0.4%).

Regarding the professional situation, most respondents are only studying by choice (70.5%) and 14.8% of respondents are employed on a full-time basis and 9.9% on a part-time basis. Only 1.8% are self-employed on a full-time basis and 0.2% on a part-time basis. Finally, 2.9% of respondents are unemployed.

As for the respondent's nationality, the results obtained are in line with expectations, where 1859 (83.5%) are of Portuguese nationality. The second most frequent nationality is Brazilian, corresponding to 233 students (10.5%). Information was also collected on students from other countries with Portuguese as an official language, namely: Cape Verde (1.9%), Angola (1.1%), Mozambique (1.7%) and São Tomé (0.2%). Finally, some respondents come from China (0.4%), Holland (0.2%), Italy (0.2%) and Russia (0.2%).

As for the typology of the institution they attended, 1159 students (52.0%) are enrolled in private universities and 1068 in public universities (48.0%). Most of them (79.7%) are attending a degree, 15.8% are enrolled in a master's degree, 3.8% in a doctorate and only 0.7% are attending postgraduate studies. As can be seen, there is no significant difference in the distribution of students in terms of the course and institution where they are enrolled.

Finally, respondents were asked to indicate the area of education/training of the course they attended. To this end, they were given the chance to select an option from among 22 available. The education area options are in accordance with the course indexes defined by the Director-General for Higher Education (2021).

4. Results

In order to analyse students' satisfaction with online teaching, compared to face-to-face teaching, questions were asked about students' behavior/feelings during the period of confinement, questions about the conditions they had to attend online classes and about the functioning of the institution in which they are enrolled, questions about strengths and weaknesses of online teaching and about their preference regarding the typology of classes.

For each question, independence tests were performed using the chi-square test, with null hypothesis and it was found that there is no association between the variables, with a significance level of 0.05. The tests carried out cross-reference the responses obtained, differentiating the results by gender, age, course, course area, year, and type of institution.

To assess student satisfaction, it was asked to: Evaluate the online teaching experience in the year 2020/2021; Indicate the main challenge, main strength and main weakness of online teaching; Indicate how you would like to have classes in the next academic year, Indicate the preference for the teaching modality in theoretical-practical classes, in theoretical classes and in practical classes; Describe the predominant feeling during confinement classes; Describe the behavior during the period of suspension of classes/confinement and Evaluate the functioning and pedagogical organization during the period of confinement.

Initially the students were asked about their behavior and feelings during the time when the classes were given in an online format and they had to stay in confinement. In general terms, most students (about 44.6%) stated that they only left the house for short walks close to home, or they said they had not left the house, even for small walks, having carried out and studied with colleagues via zoom/ microsoft teams or another online platform (about 38.9%).

The independence tests performed rejected the null hypothesis for the gender and institution type subsamples. The results suggest that female respondents showed a more cautious behavior, claiming to have not left home during confinement. On the other hand, male respondents claimed to have left home, not only to meet classmates, but also for other purposes.

When analyzing the behavior of students, differentiating by type of institution, students from public universities claimed to have been more rigorous in their behavior during confinement, with most leaving home only to carry out homework group and/or study. Students from private universities said they behaved differently, with most leaving home not only to meet with classmates, but also for other purposes.

Evaluating the predominant feeling during the confinement period, several hypotheses were given for each student to select the one that best described their feeling. The $\chi 2$ tests did not lead to the rejection of the null hypothesis, with no differences in the subsamples. The majority of students actually felt some psychological effects resulting from confinement, with 1576 of the 2227 students (about 70.8%) having felt anxiety/stress and in some cases having resorted to psychological counselling.

Statistical tests on the question relating to the general assessment made to the experience resulting from online teaching led to the rejection of the null hypothesis for the subsample by area of study.

Students who indicated that they had a worse experience with online teaching are students from the areas of study of Health, Informatics, Mathematics and Statistics, Environmental Protection and Physical Sciences, that is, more practical areas.

Then, to better understand how students characterize online teaching, several hypotheses were given, and students should select the one they considered most correct to describe the main challenge, weakness, and strength of this teaching modality. The statistical tests performed led to the rejection of the null hypothesis for the type of institution subsample, indicating that there is a differentiation between public and private universities.

It is possible to verify that the main challenge of online teaching, from the perspective of students from private universities, is the use of synchronous communication, while students from public universities consider that monitoring the interactions of students and professors is more challenging.

As for the main weakness, there is a clear emphasis on the difficulty in managing the response time to the overload of work, in the opinion of students from private universities and this aspect is in line with the need to spend many hours in front of the computer, which was also identified as a weakness. In turn, students from public universities highlight taking online tests as the main weakness of this type of education.

Regarding the strengths of online teaching, students highlight the availability of teachers to accompany students during and after classes. In turn, students from public universities highlight the improvement of digital knowledge.

Students were also asked about the functioning and pedagogical organization of the course they attend, during online classes during confinement. The independence tests lead to the rejection of the null hypothesis for the institution type subsamples.

Regarding independence by type of institution, it is possible to verify that the greatest discrepancy of opinions is in relation to the adequacy of the online teaching methodology in the different curricular units of the course. In this case, the results suggest that students from private universities share the opinion that, during the period of confinement, online classes were adequate, as well as teaching activities were adequate to the time available.

To assess students' satisfaction, they were also asked to indicate which teaching modality they preferred for each type of class (theoretical, theoretical-practical and practical). The independence tests performed led to the rejection of the null hypothesis for the study area.

Regarding theoretical-practical classes, there are no differences as marked as in other types of classes. However, it is noteworthy that in most areas of study the preferred modality is b-learning or face-to-face, with the exception of health and veterinary sciences areas that mostly opt for face-to-face mode.

Regarding theoretical classes, there is a clear preference for the e-learning modality, in which the areas of humanities, business sciences, social services and social and behavioral sciences stand out. The same is true for practical classes, but in this case the preference for face-to-face classes in the areas of health, veterinary sciences, life sciences, engineering and related techniques, computing, mathematics, and statistics stands out.

To assess student performance during the period in which classes were taught online, during the confinement period, students were asked to indicate their overall assessment of their performance in online assessments compared to online assessments. face-to-face assessments and to indicate whether from face-to-face to online teaching there was any change in the grades of theoretical, theoretical-practical and practical curricular units.

The independence tests performed do not lead to the rejection of the null hypothesis for any of the subsamples, thus there is no evidence of differences by gender, year, age, course, area of study or type of institution.

As mentioned, students were asked to make a global assessment of their performance, where they should take into account not only the grade obtained in the different curricular units, but also the knowledge and skills they consider to have acquired. As can be seen, most students consider that their overall performance was better in face-to-face teaching (66%).

Finally, to assess their performance in the different types of curricular units, they were asked to indicate how the grades of the theoretical, theoretical-practical and practical curricular units evolved in the transition from face-to-face teaching to online teaching. The independence tests carried out led to the rejection of the null hypothesis for the institution type subsamples.

The results show that students from private universities improved their performance in theoretical curricular units, while students from public universities felt no difference in performance between face-to-face and online teaching.

Regarding the performance in the theoretical-practical curricular units, the conclusion is identical to the conclusion of theoretical curricular units.

The results refer to the practical curricular units and, in this case, it appears that the students at private universities indicated that they had maintained curricular units grades, in the transition from face-to-face teaching to online teaching. On the other hand, students from public universities indicated that they had lowered their classification of curricular units.

5. Conclusion

Summarizing what was previously mentioned, the following points should be fundamentally considered:

1. As for the behavior and feelings of the students during the time when the classes were taught in an online format, which forced them to stay in confinement, it was found that about 44.6% only left home for small walks and 38.9% did not leave under any circumstances, having studied with colleagues via Zoom, Microsoft Teams or another platform. Therefore, the majority did not leave the house or went out on short journeys, 44.6% and 38.9% respectively, with appreciable compliance with the confinement, 83.5%. However, analysing the gender, the female students were more prudent and 59.1% comply with confinement than male students, 40.9%.

2. Taking into account the behavior of students by type of institution, it was found that students from public universities had a behavior slightly more compliant with confinement 52.0% than those from private universities 48%. As for the predominant feeling during the confinement

period, most students responded that they felt anxiety / stress and the need for psychological assistance, representing 1576 of the 2227 students in the study (about 70.8%).

3. In an evaluation of the online teaching experience by area of education, the students who indicated that they had had a worse experience with this type of education were those in the study areas of health, computing, mathematics and statistics, environmental protection and physical sciences, that is, and as was to be expected, in areas where practical teaching is fundamental.

4. For 61.4% of students from private universities, the main challenge of online teaching was the use of synchronous communication through the zoom, microsoft teams or other platforms and also the challenge of using asynchronous communication on the moodle platform (60.2 %). These percentages were lower for students from public universities, respectively 38.6% and 39.8%. For 51.3% of students from public universities, the main challenge was the global monitoring of the interactions of all students and professors. This percentage was lower for students from private universities, 48.7%.

5. About the main weakness of online teaching, 72.3% of students from private universities clearly stand out, referring to the difficulty of managing the response time to the overload of work to be carried out, which, in turn, time, implies the need to spend many hours in front of the computer (72.2%). In private universities these figures were, respectively, 27.7% and 27.8%. Students from public universities (68.2%) highlighted the performance of online tests (in electronic tutoring) as the main weakness of online teaching. In private universities this figure was 31.8%

6. As for the strengths of online teaching, 67.9% of students from private universities highlighted the availability of professors to accompany them, during and after classes, and 60.0% of students from public universities indicated the improvement of knowledge digital.

7. Regarding the evaluation of the functioning and pedagogical organization of the course, it was found that 73.6% of students from private universities considered that the teaching methodology in e-learning is suitable for the contents of the various curricular units and an equal percentage (73.6 %) of public universities considered the exact opposite.

8. It was also asked which teaching modality the students preferred for each type of class (theoretical, theoretical-practical and practical), and no major differences were observed in relation to theoretical-practical classes as in other types of classes. The most preferred modalities were b-learning or face-to-face in most areas of study, with the exception of health and veterinary sciences, whose majority of students opted for the face-to-face modality. For theoretical classes, there is a clear preference for the e-learning modality, in which the areas of humanities, business sciences, social services and social and behavioral sciences stand out. As for practical classes, there is a clear preference for the face-to-face modality, with emphasis on the areas of health, veterinary sciences and related techniques, informatics, mathematics and statistics, which naturally coincides with the answers in point 3, that is, in the areas that require a more practical teaching is greater is the preference for face-to-face classes.

9. As for the evaluations of classes taught online, the general preference goes to face-to-face teaching, 66%, with online teaching obtaining the remaining 34%.

10. Finally, regarding the general assessment of the grades obtained in the curricular units, results indicated that students from private universities improved their performance in the transition from face-to-face teaching to online teaching, while those from public universities did not feel any difference between the two modalities. Looking now by type of classes taught, in theoretical-practical curricular units the results were identical both in public and private universities, in the case of practical curricular units, students from private universities

maintained their grades in this transition while those from public universities decreased their respective classifications, which seems to confirm what was mentioned in point 7.

In short, we can highlight some differences between behavior and feelings in university students during the academic period in which online classes were taught. Students from private universities stated that the biggest challenge they had to overcome was that of asynchronous communication through the platform (point 4) and the biggest weakness of this teaching was managing the response time.

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Accessible Tourism: Is it a Niche Market for Sustainable Tourism?

Betül Garda[1]

Abstract

The economic crisis has become more and more unpredictable with chaos caused by the Covid-19 epidemic in world markets where destructive competition conditions prevail. However, this period also includes extraordinary opportunities for countries and businesses that have developed an organizational structure suitable for change in their external environment. It should not be thought that businesses that appeal to the whole world should have a wider product range. The narrow product range, which is in direct proportion to the width of the market, brings success in the fight against the crisis.

In this context, accessible tourism emerges as a niche market. Accessible tourism is a specific tourism area focused on the rights of persons with disabilities, those over 65 years of age and families with children to have a satisfactory and quality holiday. According to the records, the rate of individuals who need accessibility or who have become disabled in various classes is 15% of the world's population and 12.6% of Turkey's population. This ratio shows that there are 10 million 500 thousand disabled individuals in Turkey and approximately 1 billion disabled people worldwide. These figures show that this market is of a size that cannot be ignored, in the bottleneck that the tourism industry has entered due to COVID-19.

For this reason, the concept of accessible tourism was briefly introduced in the study, and the importance of utilizing accessible tourism opportunities in the post period of COVID-19 was examined. Document analysis method was used to emphasize the accessible tourism potential. The study is meaningful and important in terms of guiding future research.

Keywords: COVID-19, accessible tourism, niche market, tourism for all

1. Introduction

The COVID-19 outbreak was initially detected in those found at the seafood and animal market in the Chinese province of Wuhan. Then it quickly spread to other provinces of China and other world countries due to national and international travels (WHO, 2022).

Major restrictions such as the closure of restaurants and cafes, the suspension of buses and flights, the postponement and cancellation of hotel reservations within the framework of the fight against the COVID-19 epidemic have caused the tourism industry to temporarily suspend and even come standstill. Currently, it is quite difficult to assess the long-term economic, behavioral, or social consequences of the Covid-19 pandemic. The year of the epidemic has shown that at the level of national socio-economic systems, neither the state, the economy, nor sectors, nor households have plans to be implemented in emergencies such as epidemics. As a result of strict quarantine measures, travel restrictions have been introduced to many popular destinations of the tourism industry in the framework of combating the Covid-19 virus (Sarfraz, Ozturk, & Shah, 2022).

The economic crisis has become more and more unpredictable with chaos caused by the Covid-19 epidemic in world markets where destructive competition conditions prevail. However, this period also includes extraordinary opportunities for countries and businesses that have developed an organizational structure suitable for change in their external environment. It should not be thought that businesses that appeal to the whole world should have a wider

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product range. The narrow product range, which is in direct proportion to the width of the market, brings success in the fight against the crisis (Richter, et al., 2022). As the Organization for Economic Cooperation and Development (OECD) stated, with the impact of COVID-19, the world has become conscious to consider environmentally friendly investment models and specific sustainable solutions that also consider the problems of local governments (Nygrén, 2019).

In this context, accessible tourism emerges as a niche market (Huh & Singh, 2007). Accessible tourism: It is a specific tourism area focused on the rights of persons with disabilities, those over 65 years of age and families with children to have a satisfactory and quality holiday. According to the records, the rate of individuals who need accessibility or who have become disabled in various classes is 15% of the world's population and 12.6% of Turkey's population. This ratio shows that there are 10 million 500 thousand disabled individuals in Turkey and approximately 1 billion disabled people worldwide. These figures show that this market is of a size that cannot be ignored, in the bottleneck that the tourism industry has entered due to COVID-19 (Cizel, Sönmez, & Akıncı, 2012).

2. Methodology

2.1 Research Objective and Importance

The aim of the study is to examine accessible tourism opportunities in the post-COVID-19 period by document analysis method. Considered as one of the top 3 industries in the world, tourism needs to consider creating a positive visitor experience, which is an important factor in tackling the great stalemate it is in in the post-COVID-19 era. Therefore, all factors that contribute to a positive visitor experience, especially accessibility, should be considered. The accessible tourism market, consisting of all disabled, over 65 and families with children, is a niche market with special needs and where differentiation strategies can be applied. In this context, various suggestions will be made that can contribute to the evaluation of accessible tourism potential. The study is meaningful and important in terms of contributing to future scientific research and the development of the tourism sector.

2.2. Material and Method

Tourists with disabilities and senior citizens with specific access requirements do not constitute a homogeneous group. They are not significantly different from other tourists in terms of travel motivations. However, some special requirements need to be considered. A hotel without recreational and cultural facilities for people with different access needs cannot attract disabled tourists and their companions, no matter how good the quality of accessibility and usability. The same would be true of an accessible museum or monument that cannot be reached by suitable means of transport or that does not have adequate nearby accommodation facilities for tourists with certain access requirements. In the current global crisis period, niche markets such as accessible tourists are of utmost importance in reviving the sector. Therefore, in the tourism sector, a comprehensive touristic supply chain should be created in which each tourist can easily access all elements of the supply chain (reservation systems, accommodation, transportation, etc.).

This research is qualitative research. In the first part of the research, the definition of accessible tourism and its standards are conceptually discussed. In addition to tourism literature, special booklets, reports and publications of the World Tourism Organization and the Turkish Ministry of Tourism were used as secondary data sources. In the last part, suggestions are made for the development of accessible tourism, which is a niche market.

3. Accessible Tourism Concept

Disabilities can be classified as; vision, hearing, orthopedic, Dawn Syndrome, mental disability, different mental development, disability due to accidents, paralysis and similar reasons, those who are considered permanent disabilities such as schizophrenia, severe muscle diseases, diabetes and heart diseases, and old age (Yıldız, Yıldız, & Karaçayır, 2017, p. 64). In this manner, accessible tourism is the opportunity for individuals with mobility, sight, hearing and mental disabilities, the elderly and families traveling with their children to obtain the right to benefit from touristic products in an independent, egalitarian, and respectable manner (Darcy & Dickson, 2009, p. 34).

According to the European Accessible Tourism Network ENAT, the points to consider for accessible tourism are (UNWTO , 2020):

- Barrier-free Destinations: infrastructure and facilities follow accessibility standards.

- Transportation: by air, land and sea, all travelers can travel hassle-free

- High-quality services: trained personnel, to make presentations with a respectable and egalitarian approach, sign language must be used in target destinations, there must be entrance cards or documents prepared with alphabets for the visually impaired.

- Activities, exhibitions, attractiveness: making it suitable for everyone's participation.

- Marketing, reservation systems, websites, and services: making them accessible to everyone

The World Tourism Organization (WTO) recommends organizing tourism infrastructure elements in certain qualities in target destinations for accessible tourism. These are listed as follows (World Health Organization, 2007);

- Parking Areas: vehicle parking areas and passenger drop off/unload areas should be specially designed for the use of disabled individuals in accommodation facilities, the closest places to museums and archaeological sites, and this should be emphasized with signs.
- Communication: It is necessary to be able to use sign language in the target destinations, to have entrance cards or documents prepared in alphabets for the visually impaired, and to have personnel trained in all these procedures.
- Marking: There should be functional signage warning signs designed to be easily used by disabled people, and sign roads should be placed on walking paths so that visually impaired people can follow their paths.
- Horizontal Movements: There should be paths or corridors that are wide enough for disabled people to use, such as corridors, walking paths, visiting areas.
- Vertical Movements: The use of elevators should be widespread in places with vertical walking distances. If it is impossible to use an elevator, there must be disabled ramps or support bars on the stairs. Thus, disabled individuals will be able to move easily in areas where up-down or down-up displacements are obligatory to participate in tourism activities.
- Transportation: For disabled people to travel comfortably in tourism destinations, public transportation vehicles should be designed ergonomically for the use of these individuals. In addition, there should be parking spaces suitable for the use of disabled individuals in accommodation facilities, museums, and historical sites.

- Accommodation: The physical structure of the accommodation facilities should be suitable for the use of disabled people. Entrances should be designed to meet the needs, considering all types of disabilities. There must be elevators designed in such a way that disabled people can easily access and use them for movements between floors. There should be signs in the corridors to facilitate access to the rooms and the elevator.

- Food and beverage services: A certain number of restaurants or tables must be designed for the use of the disabled, and menu cards prepared in braille alphabet must be available.

- Attractions: In touristic areas such as museums and ruins, there should be elevator facilities to facilitate horizontal and vertical mobility, audio guides for the visually impaired, and visual guides for the hearing impaired.

- General services: Services such as payphones, information offices, check-in desks should be designed in such a way that all disabled people can reach them, and they should be used.

3.1. General Assessment of Accessible Tourism

According to WTO and World Bank data (2007), there is a linear relationship between aging and disability. Older people (over 65) who are not considered "disabled" very often have similar difficulties in carrying out their daily activities. Therefore, they are often among those with specific access needs, thereby greatly increasing the number of people with disabilities. In 2019, the ratio of the elderly population in Turkey to the total population was determined as 8.8% and 8.5% in the world (Dünya Sağlık Örgütü, 2011).

United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), for persons with disabilities worldwide; It is a legally binding document that sets minimum standards for a range of civil, political, social, economic, and cultural rights, guaranteeing full and equal enjoyment of all human rights and fundamental freedoms by persons with disabilities. It is also the first comprehensive human rights treaty to which the European Union is a party. UNCRPD was adopted at the United Nations Headquarters in New York on 13 December 2006 and opened for signature on 30 March 2007. 82 countries have ratified the Convention and 44 countries have ratified the Optional Protocol. The Republic of Turkey ratified the UN Convention on the Rights of Persons with Disabilities in 2007 and signed an additional optional protocol with individual application in 2014. With this convention, the governments of the countries bear their responsibilities regarding disability in the international sense (European Commission, 2011).

After the disability law is enacted, financial and social supports such as 2022 salary, pension for the needy, home care assistance are provided to the disabled. In addition to exemptions such as tax reductions for the disabled, SCT exemption in vehicle purchases, MVT exemption in motor vehicles, property tax exemption, VAT exemption in special vehicles and equipment, special discounts from the private sector and public institutions, discounts on airlines and intercity transportation, accessibility must be ensured to use its rights (T.C. Aile ve Sosyal Hizmetler Bakanlığı, 2022).

Mandatory quotas and special education rights implemented by governments in the public and private sectors regarding the employment of disabled people have increased the employment of qualified disabled people. Therefore, the fixed income level of the disabled has greatly increased and their needs have diversified. For example, the tendency to go on touristic trips and participate in cultural and social activities has increased. In this context, developing accessible tourism or 'tourism for all' opportunities has become a mandatory duty of governments.

Accessible tourism can be realized with the existence of facilities and activities where everyone can travel, vacation, stay, and benefit from social and cultural places with free and equal opportunities without assistance. Offering hotel, hospital, and similar facilities only for the disabled includes discrimination.

Due to the aging population, the number of people with certain access requirements who have the capacity to travel is increasing. Therefore, this situation also increases the demand for an accessible environment, transportation, and services. In developed countries, most of the elderly population has a substantial income and desire to travel. Because their travel spending tends to be higher than normal due to reduced standard expenses and reduced propensity to save. As many disabled and elderly people are no longer active in the workforce, they could travel throughout the year, which will reduce the seasonality of demand in many destinations and spread it throughout the year (Richter, et al., 2022).

The goal of accessible tourism is to ensure that all individuals who go on a touristic trip can receive quality service collectively, regardless of disability. For example, tours organized by tour operators for people with disabilities do not match the format of the concept of accessible tourism. There are two important issues that need to be resolved to create accessible tourism conditions. The first of these is to apply architectural accessibility standards in all facilities so that the orthopedically disabled, visually, hearing and speech impaired people can benefit comfortably. Drawings that do not comply with accessible architectural design standards should not be approved by the competent authorities. The second is to serve disabled guests, patients and their families with personnel who have received correct communication and presentation training' to achieve high service quality. Trained staff will make the guests who they care about feel valued and will increase the level of satisfaction and create a positive impression about the facility and therefore the country (Vila, Darcy, & González, 2015).

In this respect, it is extremely important for disabled tourists, people over the age of 65 and families with children to access explanatory information on accessible conditions on the web pages of destinations or accommodation facilities. This is essential for the increase in market share to be achieved because of satisfactory and quality leisure time. Therefore, the lack of such information can also be considered as a major barrier to accessibility. Especially families with children need more detailed information about the accessibility of holiday destinations, hotels, or recreational facilities. As a result, it is very important for develop an independent, egalitarian, and respectable tourism understanding that the information needed for all these groups can be found publicly, not only in social media environments of special interest groups, but also in standard media (Huh & Singh, 2007).

3.2. Market Size and Economic Value

According to the World Health Organization (WHO) data, there are approximately 1 billion disabled people in the world. In this case, approximately 15% of the world's population has a physical, mental, or sensory disability. There is a close relationship between aging and disability. Older people over 65 who are not considered disabled very often have similar difficulties in carrying out their daily activities. As such, they are often among those with specific access requirements. If necessary, steps are taken to improve the accessibility of the elderly, it will emerge as an important potential tourist mass that can provide high benefits to host countries and destinations. This important potential becomes even more evident when we consider that the population is aging rapidly. In 2015, there were 617 million people aged 65 and over in the world, constituting 8.5 percent of the world's population, while in 2019 this rate was 9.3% with 703 million 711 thousand. The elderly population is expected to increase by more than 60 percent in just 10 years: In 2030, there will be approximately 1 billion elderly people worldwide and 12% of the total population will be elderly individuals. The share of the

elderly population will continue to increase in the next 20 years: by 2050, there will be 1.6 billion people aged 65 and over, representing 16.7% of the total world population (Dünya Sağlık Örgütü, 2011).

While the number of elderly people aged 65 and over in the total population in Turkey was 6 million 495 thousand 239 in 2015, it increased by 22.5% in the last five years and reached 7 million 953 thousand 555 people in 2020. Thus, while the proportion of the elderly population in the total population was 8.2% in 2015, it increased to 9.5% in 2020. In 2020, 44.2% of the elderly population was male and 55.8% was female (Cizel, Sönmez, & Akıncı, 2012). According to the population projections, it is predicted that the proportion of the elderly population will be 11% in 2025 and 12.9% in 2030. While this rate was 16.3% in 2040, it will be 22.6% in 2060 and 25.6% in 2080 (Türkiye İstatistik Kurumu, 2018).

Of the 10 million 500 thousand disabled and disabled elderly people living in Turkey, only 1 million 700 thousand need support from the Ministry of Family. Therefore, at least 8 million of the disabled population have the same income level as the rest of the society, and around 50 thousand new disabled vehicles are purchased in Turkey every year. These vehicles are exempt from taxes such as SCT and MVT (T.C. Kalkınma Bakanlığı, 2018). Even if we start out only from those who buy these vehicles, the potential for disabled people who cannot benefit from tourism services due to lack of accessibility is quite high.

According to the results of the research published in 2014 by the European Commission to obtain consistent data on the current and potential future demand of accessible tourism in Europe; In 2011, the disabled, pregnant women with mobility difficulties and the population over 70 years old in the EU were 138.6 million (approximately 27% of the total population at that time), 35.9% of them were disabled people aged 15-64 and 64.1% is the elderly population of 65 and over. Recent research has determined that this number has reached 150 million in Europe. 70% of this population travels. Considering that they mostly travel with accompanying person, the potential number traveling in Europe is thought to be around 130 million people. Approximately 783 million of the population with access needs regardless of disability have travelled in the EU, resulting in a total gross added value contribution of approximately 356 billion Euros and employment of approximately 8.7 million people. Driven by an aging population, which is much higher in Europe than elsewhere, demand is expected to increase by 10% to approximately 862 million trips per year, equivalent to an average annual growth rate of 1.2%. However, the overall potential is much greater: if it were possible to significantly increase the accessibility of tourism-related facilities, then up to 1.231 million trips could be made per year, equivalent to 43.6% growth. If accessibility is significantly improved, the overall economic contribution of EU tourists with specific access needs is expected to increase by around 36% versus the current contribution (Growth from Knowledge GfK, 2014).

While the expenditures of disabled travellers in Australia are 1.3 billion Dollars, it is stated that most of the 60 million disabled population in the United States benefit from tourism facilities and the purchasing power of this segment exceeds 200 billion Dollars. It can be ensured that this market participates more in touristic travels with architectural arrangements to be made in hotel businesses. Of the 60 million disabled people in China, 25 million can work. In Japan, this figure is 6 million, 4 million of which are in working condition and are consumers. While disabled tourists spend 2.5 billion Euros in Germany, disabled tourists spend 80 billion Euros in Europe. It is estimated that between 7% and 8% of international tourist travellers have a disability, and this group directly contributes to the growing Gross Domestic Product (GDP) (Darcy & Dickson, 2009). The numbers show us how high the accessible tourism potential is.

Accessible tourism services should be of a quality that meets all user needs and should be sufficient to meet the increasing demand. In 2014, the European Commission analysed the

websites of European tourism stakeholders to determine the amount and types of information available on accessible tourism offers with a research team, including members of ENAT across Europe (ENAT, 2014). The aim is to compare the stock of accessible tourism services offered in Europe with the overall supply of tourism services. As a result of this analysis, accessibility information schemes (AIS) were created for the current supply, and many suppliers with accessible services were brought together. Then, through the specially designed Pantou.org web tool, individual records of suppliers providing accessible services were kept, and suppliers and services that provided accessibility information of tourist attractions, collected from defined sources, were identified. Examples of this are hotels.com and handistrict.com (UNWTO, 2013). There are 313,286 accessible tourism services across EU Member States (EU-28). Available Accessibility Information Schemes (AIS) has listed 224,036 accessible facilities and services. Accessible tourism services constitute approximately 9.2% of the total tourism services supply in Europe. Demand for accessible services is 37% of the total travel market. Accordingly, there is a significant gap of 27.8% in the accessible service supply (t-guide.eu, 2014).

4. Conclusion and Recommendations

More scientific research is required to benefit from Accessible Tourism, which is a niche market for the solution of sectoral problems, especially due to COVID-19. For example, when a search is made with the keyword "accessible tourism, disabled tourism, accessible tourism, accessible tourism, tourism for everyone" in TR Directory, an outstanding database in Turkey, from 1960 to the start of the COVID-19 pandemic, the number of studies is only 24. In the period of -19, it was seen that 17 more research articles were added. (TÜBİTAK ULAKBİM, 2022). A total of 55 master's and doctoral theses were written between 1987 and 2019 with the keyword of disabled tourism. (Aksöz, 2020). Increasing the number of research is important in terms of emphasizing the importance of the subject and attracting the attention of the sector to the subject. In addition, it would be beneficial to increase research in terms of guiding businesses that are interested in accessible tourism.

In addition, the following are important details that will increase the effectiveness of accessible tourism:

- Tourists with disabilities and senior citizens with specific access requirements do not constitute a homogeneous group. They are not significantly different from other tourists in terms of travel motivations. However, some special requirements need to be considered. Journey preparation plays a very important role for this group. Most important are recommendations from relatives and friends, as well as their own travel experiences. While brochures and other print media are still very important, it is clear enough that the Internet, with its numerous research opportunities, is a very important source of information. Many tourists with disabilities, older guests and families with children seek to obtain certain information on accessible conditions that are important to them. Therefore, the lack of such information can be considered a major obstacle. Especially families with children want more detailed information about the accessibility of resorts, hotels, or recreational facilities. It is very important for all groups that such information can be found not only on special interest platforms, but also in standard media

- For many tourists, the unconsciousness of the service personnel and the lack of knowledge about the guest's needs is a frequently mentioned problem. This also applies to accommodation facilities. Inadequate service and lack of physical accessibility are

equally important barriers. A tourist destination is an integrated system of tourist sites and services, and a set of resources that encourage potential tourists to make the necessary effort to travel to and stay in that area. It is the urgent need for trained personnel who understand their needs and know how to properly engage with them. Accessible tourism requires a professional service that should be planned in all its aspects.

• In a successful tourism destination, it is necessary to transform issues such as access to existing natural resources, historical and social values, and architecture to meet the increasingly complex and diversified needs of the tourist. Helping to create an accessible destination, this combination will create a chain of tourism services that not only highlights ideal products and services, but also the complementary relationships between them. In fact, it is not enough to have stunning landscapes, crystalline waters, and gorgeous shores. To attract tourists, it is necessary to provide accommodation, food and beverage, entertainment, recreation, sports, culture, and a satisfying array of other products to suit different demands.

• All the services and attractions that make up a destination are certainly much broader and more comprehensive than one might think. It should be kept in mind that each element of the chain affects and depends on the others. If one of the links in this chain is weak, the possibility of a quality and satisfactory presentation may be jeopardized. An unsatisfied customer will not use our service again, but most importantly, it will be a "negative" sound for our product at a time when end users' opinions are changing. For this reason, creating accessible tourism standards is important for all country tourism. A single tourist service cannot directly control all elements of the chain. However, it is vital that public institutions and private sector work in coordination in all strategic choices during the taking and implementation of measures for the development of a tourism destination.

• A hotel without recreational and cultural facilities for people with different access needs cannot attract disabled tourists and their companions, no matter how good the quality of accessibility and usability. The same would be true of an accessible museum or monument that cannot be reached by suitable means of transport or that does not have adequate nearby accommodation facilities for tourists with certain access requirements. Therefore, destinations should create a comprehensive tourism supply chain for all products and services, where all elements of the supply chain (reservation systems, accommodation, transportation, etc.) are easily accessible.

It should also be noted that a tourism destination that adequately meets the needs of disabled, children and elderly visitors with certain access needs leads to an increase in the service quality of the whole country and provides a good experience and improves the quality of daily life not only for the disabled, but also for all other visitors. For example, A ramp built to support a staircase leading to the entrance of a facility such as a hotel, restaurant, museum, or store is essential for the orthopedically handicapped but also makes access to the building more convenient for all individuals moving with a stroller or wheeled luggage. A hotel room large enough to allow the wheelchair user to move around is a comfortable room for everyone. A menu or information brochure written in large font and in contrasting colours

makes it easy for everyone to read, not just the visually impaired. When seating is provided along a pathway in a park or historic venue, it makes the visit more comfortable for everyone.

In the fight against the economic crisis caused by the COVID-19 epidemic, diversifying touristic products and turning to niche markets are among the most effective methods. In this context, providing the necessary structural and service elements for disabled individuals to participate in tourism activities without any difficulty, like healthy individuals, is the first condition for countries to benefit from accessible tourism in the tourism sector. The recommendations developed within this framework are listed below: Government officials and politicians should encourage tourist businesses to invest in accessible tourism. In this context, the economic and social benefits of accessible tourism should be emphasized; accessibility standards and legislation should be harmonized; investment incentives should be prepared for accessible facilities.

- Special working units should be established at regional and national level, especially through public-private partnerships, for the coordination and continuity of accessible services.

- The transfer of any information within the scope of accessibility should be done through professional networks. Guaranteed service categories and price lists offered by accessible destinations should be made accessible from anywhere in the world.

- For strategic planning, access needs and travel expectations of different countries and market groups should be determined first. Then, an inventory should be created by analysing the current situation in terms of infrastructure, services, and facilities. Later, a continuous feedback mechanism should be established to determine the priorities of the current and potential market to make six-month and one-year long-term planning to improve the current situation. Finally, effective marketing and advertising programs should be prepared by considering the accessibility features of the destinations.

- Continuous in-service training should be given to the personnel about accessible tourism. Thus, the quality of services will be guaranteed, and the satisfaction level of the market will be increased.

- As much resources as possible should be allocated for the strategic development of accessible tourism. In the created service chain, importance should be given to the balance of duty, authority, and responsibility.

- Specific accessibility information should be added to general tourism promotion and marketing programs. Necessary improvements should be made by considering the positive or negative feedback obtained from the current market while creating marketing strategies.

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Marketing in Faith Tourism

Betül Garda[1]

Abstract

Belief has been one of the reasons that led people to travel since the early ages. Many travelers move to visit places they consider sacred. These trips are considered within the scope of faith tourism. For this reason, religiously important works such as mosques, churches and monuments have an invigorating quality in tourism.

Faith tourism has a rising trend in world markets. Turkiye has important religious attractions. In this respect, it is important to market Turkiye's faith tourism potential. For this purpose, the Ministry of Culture and Tourism has developed various projects, which started in 1993 with the inventory of the works of the three major monotheistic religions that have survived to the present day. Among the studies carried out to develop faith tourism, which is accepted as an important type of Special Interest tourism, important targets are also included in the 2023 study of the Turkiye Tourism Strategy.

Due to the fact that the tourism product is a composite product, it is necessary to complement the attractions with infrastructure and superstructure elements such as accommodation and transportation and give importance to their promotion. In this context, the aim of the study is to evaluate the attractiveness of faith tourism in Turkiye in terms of marketing.

Keywords: faith tourism, tourism marketing, faith tourism potential in Turkiye, Christianity, Jewish, Islam

1. Introduction

Faith tourism is considered as a tourism event consisting of travel and accommodation that occur for reasons such as visiting places considered sacred for a religion, participating in, or watching religious ceremonies, performing the pilgrimage worship, which is a part of religious duties (Kozak, Kozak, & Kozak, 2001). In other words, faith tourism is the trips of tourists from different religions for various religious reasons such as visiting places that are considered sacred, performing prayers as required by their religious beliefs (Hacıoğlu, 2011).

Tourists who follow certain beliefs can also be seen as an important part of the type of tourism called "special interest tourism" in the tourism industry. In addition, faith tourism is among the tourism types that are least affected by economic instability in tourism (Ayaz & Eren, 2020). The rapidly growing faith tourism market affects all areas of the travel and accommodation tourism market. Tour operators, travel agencies, hotels, tourism organizers and other suppliers strive to exploit this high touristic potential (Usta, 2001).

Destinations such as Rome, Jerusalem and Mecca have been important destinations for faith tourism since the Middle Ages. In the 19th century, faith tourism started to become more widespread with mass tourism movements. For example, faith tourism participants, which were 4.4 million people in 1994, increased to 14.7 million people in 2006 (Wright, 2007). According to the World Tourism Organization (UNWTO), faith tourism is one of the most important tools to promote sustainable development. In this context, faith tourism primarily raises awareness of the common heritage of humanity and provides resources for its preservation. It also contributes to local development and creates a cultural understanding (Griffin & Raj, 2017).

Countries with pilgrimage centers earn significant economic income. For example, the most important source of income for Saudi Arabia after oil is the Muslims who go to the country for pilgrimage. It is also one of the leading destinations for faith tourism in Israel. Jerusalem,

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Greece, Geneva, and the German Reform Areas are other regions that attract heavy religious tourism travelers.

2. Methodology

2.1 Research Objective and Importance

The aim of the study is to examine the important issues to be considered in faith tourism marketing in a theoretical framework. Cultural and historical belief centres are one of the demand-creating and sustainable factors for an ideal tourism structure. Religion, which has been among the reasons for people's travel since the first ages, is an important value in terms of tourism marketing. In this context, various marketing suggestions will be made that can contribute to the evaluation of the potential of faith tourism in Turkiye. The study is meaningful and important in terms of contributing to future scientific research and the development of the tourism sector.

2.2. Material and Method

Since ancient times, people have travelled for various reasons. Among these reasons, faith is accepted as one of the important travel motivations both in the past and today (McKercher, Ho, & Cros, 2005). In this context, pilgrimage centres have been a tourism product used for a long time in terms of tourism. The uniqueness and no competition of belief centres creates a suitable basis for the differentiation strategy in terms of marketing (Uygur, 2007). For this reason, belief is an important attraction factor in Turkiye for the diversification of the tourism market.

This research is qualitative research. In the first part of the research, the definition and importance of faith tourism is discussed conceptually. In addition to tourism literature, special booklets, reports and publications of the World Tourism Organization and the Turkish Ministry of Tourism were used as secondary data sources. In the last part, strategies and tactics that can be used in faith tourism marketing are examined and suggestions are made for the development of faith tourism in Turkiye.

3. Turkiye's Faith Tourism Potential in terms of Marketing Value

In terms of faith tourism, Turkiye also has an important potential. Anatolia, first of all, is home to ancient civilizations. Then, in the early periods of Christianity the apostles and the Jews in the Middle Ages took refuge in Anatolia, which led to the construction of many synagogues and churches. In the Seljuk and Ottoman periods, allowing freedom of belief was instrumental in the protection of these works. In other words, most of the important holy places for the Christian and Jewish world are located within the borders of Turkiye. According to the inventory prepared by the Ministry of Culture and Tourism (2022), there are 167 Islamic, 129 Christian and 20 Jewish places of worship and religious artifacts today. In terms of Islamic values, structures that can create an attractive element in faith tourism are located in cities such as Istanbul, Bursa and Edirne. This situation is related to the fact that the mentioned provinces were the capitals of the Ottoman Empire in the past. Another place where Islamic structures are concentrated, and Islamic culture comes to the fore is Konya. The fact that this place was the capital of the Anatolian Seljuk State in the past has been effective in the concentration of religious tourism attractions in Konya (Tapur, 2009).

The territory of Turkiye is an important destination for Christianity. There are many buildings belonging to, apart from the main centers mentioned, 92 churches, 1 basilica, 2 cathedrals, 15 monasteries and 2 chapels, which are thought to be attractive for faith tourism, were also included in the inventory records within the scope of the Ministry's Faith Tourism Project. Some arrangements have been made so that the attractions can be used in tourism. This 17 of the churches are located in Aksaray and 13 of them are in Nevşehir. However, the potential in

Aksaray has not been evaluated as much as in Nevşehir. Christian era structures are also quite common in Istanbul. Among these identified structures, six churches in Istanbul are used as mosques today (T.C. Kültür ve Turizm Bakanlığı, 2022). In the early periods of Christianity, the apostles and important religious leaders lived in Anatolia, causing the religion to spread from these lands. Izmir-Ephesus, the first of the first seven churches in the world and seen as the focal point of the spread of Christianity, is accepted as the place where the Virgin Mary spent her last days and died. Demre M.S. Living in the 4th century, St. It is where Nicholas (Santa Claus) lives and is the bishop. In Iznik, which is among the places considered as a pilgrimage center, M.S. In 325 and 381 years, two important consuls that gave direction to Christianity were convened. According to the Bible, there is one of the 7 Holy Churches in Manisa Akhisar. The routes of the Apostles' proselytizing journeys were prepared in Hatay-Antakya. Mersin-Tarsus is important because it is the birthplace of St. Paulus. The 5th Consul meeting was held in Istanbul, one of the four largest Orthodox centers in the world (Sargın, 2006).

Turkiye is also a sacred country for Jews. The religion and history of Judaism, which is the first of the monotheistic religions, is Hz. It starts with Abraham. Hz. Abraham and his descendants lived in Şanlıurfa, known as the "City of Prophets" (Sargın, 2006). The names of many places within the borders of Turkiye are mentioned in the Torah. At the beginning of these places are the Tigris and Euphrates rivers, Mount Ararat, and Harran. In addition to these values, within the scope of the Faith Tourism Project of the Ministry of Culture and Tourism, eight in Istanbul, three in Bursa, and three in Izmir, Manisa, Ankara, Gaziantep, Edirne determined there is a total of sixteen synagogues (T.C. Kültür ve Turizm Bakanlığı, 2022).

4. Faith Tourism Marketing in Turkiye

Marketing activities for faith tourism in Turkiye first started with the foreign tourist visitor trend survey conducted by the Turkish Statistical Institute (TUIK) in 1965. According to the results of this survey, after the declaration of St. Peter's Church and the Virgin Mary's house as a place of pilgrimage, the rate of religious travellers who came to Turkiye in 1965 is 76% (45,080 people).

In the inventory study carried out in 1993 by taking the opinions of the relevant institutions and organizations throughout Turkiye, among the works in Turkiye (T.C. Kültür ve Turizm Bakanlığı, 2022);

- Religiously important and widely visited,

- Important for Art History,

- The first and interesting example of its kind due to its architectural feature,

- Located at an easily accessible point and included in tour programs by Travel Agencies

- Certain and important centres have been identified.

The committee formed within the scope of this project determined nine centres that are important for Christianity. These (T.C. Kültür ve Turizm Bakanlığı, 2022);

- Hatay-Center: St. Pierre Memorial Museum

- Mersin-Tarsus: St. Paul Memorial Museum

- İzmir-Selçuk: House of Virgin Mary

- Antalya-Demre: St. Nicholas Church

- Bursa-İznik: Hagia Sophia Mosque

- Manisa-Sard: Sard Synagogue

- Manisa-Alaşehir: Alaşehir Church

- Manisa-Akhisar: Akhisar Church

- Isparta-Yalvaç: Pisidia Ancient City

- Nevşehir-Derinkuyu: Orthodox Church

- Denizli-Pamukkale: Laodicea Ancient City

In addition to these destinations, deficiencies in the holy places of great importance in terms of Islam have been identified in cities such as Istanbul, Şanlıurfa, İzmir, Bursa, Edirne, Gaziantep, Siirt, Mardin and Bitlis. Efforts have been initiated to meet various infrastructure needs such as road construction, landscaping, and lighting.

Between 1995-1998, religious tourism tours were organized with the participation of many tour operators, members of the press and experts on the subject, with the project named TUR 95, 96, 97. Moreover, faith tourism has been tried to be introduced to the public with similar studies organized by various organizations, including local governments and universities (Okuyucu & Somuncu, 2013).

Within the scope of the state project called "Anatolia 2000", studies were initiated to protect the important visitor centres of the three great monotheistic religions and to prepare a "Map of Faith Tourism". The aim is for Turkiye to have a share profit in the celebrations of the 2000th birth of Jesus. Also, to promote the potential of faith tourism, promotional and marketing meetings were organized by the Ministry of Tourism with the participation of the local and foreign press and officials from other institutions.

While Turkiye was in the seventh rank in international tourist arrivals in 2010, it rose to the sixth rank in 2011. Turkiye, which was in the 10th rank in international tourism revenues in 2010, fell to the twelfth rank in 2011 (Okuyucu & Somuncu, 2013).

As a result of the decline of mass tourism in the COVID-19 period, types of tourism related to spiritual motivations such as cultural and religious tourism has become increasingly popular. The increase in initiatives on this subject in Turkiye will undoubtedly contribute to the increase in prices and, accordingly, the increase in quality (TÜRSAB, 2020).

Mass tourism in Turkiye, on the other hand, has increased the use of historical, spiritual, and religiously attractiveness areas such as culture, heritage, and faith tourism in tourism. The fact that visitors coming to Turkiye for religious pilgrimages come through travel agencies and tour companies instead of individual programs is, in a sense, one of the positive contributions of mass tourism to faith tourism. In 2022, 60% of the visitors coming to Turkiye for religious and pilgrimage purposes came through travel agencies and tour operators (T.C. Kültür ve Turizm Bakanlığı, 2022).

In the post-COVID_19 era, it is a new consumer expectation that is perceived as a basic need as well as personal safety, benefit-price relationship, and ease of purchase. Now, consumers wait for basic needs to be met before considering their psychological needs, such as a great customer experience or the needs of other people. This situation has brought the personalized service element to the fore in the touristic product. For the development of faith tourism, accommodation and transportation businesses should take these issues into consideration.

5. Conclusion and Recommendations

In the post-COVID-19 period, the effectiveness of special interest tourism types in the tourism sector is increasing. Changing conditions in this period necessitate an effective integrated marketing communication. Destinations with a strong image and infrastructure, with sufficient touristic investments and differentiated touristic products are now in more demand. The fact that faith tourism is not seasonal can be considered as an opportunity for the development of touristic activities spread over 12 months in the post-COVID-19 period for Turkiye.

Faith is a spiritual phenomenon that is considered a fundamental reason for travel. There are supply sources related to all kinds of religions in Turkiye. Therefore, it is of great importance to make the necessary arrangements to protect these resources and open them to touristic visits. In addition, it is necessary to develop and promote transportation opportunities to these attraction centres.

There are many important attractions in terms of monotheistic religions in the east and southeast of Turkiye. In these areas, problems such as terrorism, instability in neighbouring countries and infrastructure are the leading factors in the development of tourism. These areas are also economically backward and relatively high in poverty. Identifying areas with tourism potential in these areas and bringing them into tourism can at least contribute to poverty reduction and economic development. If faith tourism attractions in these areas are carefully marketed, new job and other economic opportunities for local people can be created.

With the cooperation of the Ministry of Culture and Tourism and the private sector, infrastructure and superstructure deficiencies should be eliminated in all faith centers. Promotional films and documentaries about these centers should be shot and broadcast in the countries where the target market is located.

Incentives should be given to attract tourism investors to destinations where faith centers are located. Within the scope of faith tourism, places suitable for the worship and rites of the relevant religions should be built. In addition, these centres should be supported with resting facilities, restaurants, and recreation areas. Expert guides on religious tourism should be trained, travel agencies and tour operators should be encouraged to organize specific faith tourism tours. As a result, the potential of faith tourism will be evaluated with the strategies to be developed by the state and local governments, as well as specific tactics to be applied by the private sector.

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Effectiveness of Environmental Policies: Evidence with a Non-parametric Model

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Abstract

The carbon tax serves as a price instrument that encourages a transition to cleaner production by imposing additional costs on emitters in proportion to their emissions (Carattini et al., 2019; Haites, 2018). Carbon tax is levied on fossil fuels and related products such as coal and gas based on their carbon content to reduce fossil fuel consumption and carbon emissions. The ETS is a market-based measure with greater flexibility, as the price of carbon can fluctuate with the supply and demand for carbon emission allowances (CEAs) (Deng et al., 2018; Qian et al. al., 2018). In addition, the ETS having the merit of strictly limiting projected emissions below a given level, it is now widely adopted by the European Union, Switzerland, Australia, New Zealand, Korea from the south, etc. (Caciagli, 2018), way to achieve temperature goals of 1.5 C or 2 C (Fang et al., 2021; Tang et al., 2015). In order to provide evidence for the countries which must introduce the tax, we estimate the real mitigation effects of the carbon tax on the countries of the European Union of the 25 and the 28 i.e. before and after the entry into force. entry into force of the Kyoto Protocol.

Keywords: Emissions Trading System (ETS), industrialized economies; ATE, ATET, CO_2 emissions, carbon market

1. Introduction

Global CO2 emissions have been soaring at an unprecedented rate in the 21st century, leading to irredeemable damage to our planet's ecosystem, which is why we are experiencing uninvited climatic backlash. The increasing trend in CO2 emissions has been mostly attributed to the unbounded consumption of fossil fuels across developed and developing nations. According to a recent estimation by International Energy Agency (IEA, 2022), the world will behold an addition of another 300 million tonnes of CO2 emissions in its atmosphere in 2022. This upsurge in the emissions level after the pandemic can be attributed to uncontrolled economic activities worldwide, an act to avoid a prolonged recession. The emissions trend has been mostly the same before and after the pandemic (Ray et al., 2022; Sikarwar et al., 2021), indicating how we are strongly married to fossil fuel consumption. The recent scholarship in the domain of thwarting the level of emissions has advocated several options to dwindle the level of emissions. However, there is no "one size fits all" type of solution, given that countries vary based on their internal policies, their progress towards urbanization and industrialization, and their level of technological forwardness. Apart from these scenarios, the energy consumption pattern and the availability of natural resources can also significantly sway the decisions to control the level of emissions (Hossain et al., 2022a). A meticulous analysis of the postulated suggestions to curb the level of emissions divulges some homogeneity in the scholarship. At one point, most studies have advocated for the transition to renewable energy sources to lessen consumption-induced CO2 emissions (see Hossain, 2020; Hossain, 2021; Ben Jebil et al., 2019). However, this solution seems unattainable for many low-income nations of the world, given that the transition requires an investment of billions of dollars in the form of infrastructural amelioration and technological forwardness. Against this backdrop, advanced nations and nations with eye-catching industrialization should have multiple options to mitigate the adverse effects of emissions.

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According to the United States Environmental Protection Agency (EPA, 2022), the European Union (EU) is the third most significant emitter of GHGs after the USA and China. Most of the EU member nations are highly efficient in industrial production, which makes these nations the most economically complex countries in the world (OEC, 2022)[3]. Due to the history of exorbitant GHG emissions in the atmosphere, the policymakers of the EU member nations have adopted several groundbreaking initiatives to condense the emissions level. Technological innovation has been touted by many recent scholars as a panacea for environmental degradation, especially for the most industrialized nations of the world (Hashmi and Alam, 2019; Khan et al., 2022). Apart from this, some scholars have also suggested following an energy mix ratio with more renewables and fewer non-renewables to boost environmental integrity (see Hossain et al., 2022b). However, it has been substantiated that these above-mentioned policies perform even better if workable policies are attached. Keeping this in mind, the industrialized EU nations have taken some policy initiatives to dwindle their emissions level. In 2008, the EU set the objective of reducing GHG emissions by more than 20% by 2020. In 2019, emissions had already fallen by more than 28%. When signing the Paris Agreement, the European Union also set itself the objective of reducing its emissions by 40% by 2030 compared to 1990 levels and carbon neutrality by 2050 through the European Green Deal. The carbon tax and the Emissions Trading System (ETS) are the two central policies to curb GHGs and make it possible to achieve their objectives (Cao et al., 2019). The carbon tax is a direct environmental tax, proportional to the quantities of carbon dioxide ($CO2$) emitted during the production and use of a resource, good or service, which encourage a transition towards cleaner production (Rontard and Hernández, 2022; Zhang et al., 2022). The ETS is a market mechanism that can reduce GHG emissions. It is based on the "cap and trade" principle (Qian et al., 2018). ETS is widely adopted by European Union, Switzerland, Australia, New Zealand, South Korea, etc. (Caciagli, 2018).

The ETS has remained the most effective instrument compared to the carbon tax in stimulating innovation in low-carbon technologies (Teixidó et al., 2019). If the ETS encourages companies to reduce their emissions, it also encourages them to innovate and improve their productivity (Cui et al., 2021). The European Union Emissions Trading System, which aims to limit and reduce emissions by effectively sharing them across national borders and member states, is the central instrument of the European Union's climate protection policy. Many existing empirical studies expose the theoretical mechanisms and realities of the effects of ETS on carbon emissions. The ETS was introduced in 2005 to reduce greenhouse gas emissions efficiently and sustainably. The EU ETS is the first formal trading system where the top emitters within the EU can buy and sell their carbon emissions allowances. This trading framework works like a traditional market where the main commodity is carbon, and the EU ETS has been able to put a price tag on it. Contemporary scholarship has widely argued that if the price is low in a carbon market, it adumbrates that the ETS successfully dwindles the carbon footprint (Bayer and Aklin, 2020). ETS also boosts the innovation of green technologies, given that the high emitting firms find it costly to buy additional allowances from other firms (Li et al., 2022; Teixidó et al., 2019).

Li et al. (2021) suggested that jointly energy efficiency and industrial structure have a potential positive influence on the synergistic effect of emissions reductions. Considering the complex mechanism of ETS, industrial structure, energy consumption structure, and economic development are all defined as conduction pathways. According to Gao and Wang (2021), the ETS is an effective instrument to stimulate structural adjustment in highly polluting industries and eliminate lagging production capacities. In the mainstream literature, the role of the ETS in lessening historical emissions has been highly commended, making it one of the successful market interventions at the government level to control emissions at the firm level. Most

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[3] OEC stands for The Observatory of Economic Complexity

empirical studies in this strand endorse ETS as a boon for environmental sustainability among
highly industrialized countries (Hu et al., 2020; Jin et al., 2020; Wang et al., 2021).

From the analysis of the earlier studies, it becomes discernible that the mechanism through
which the ETS works is beneficial for environmental sustainability. Earlier studies have also
corroborated that the ETS does not curb economic activities (Dechezleprêtre et al., 2018; Hou
et al., 2019) and therefore assists in attaining a steady state economic growth. However, some
articles claim that the ETS forces firms to reduce their productivity to meet their total emissions
allowances (see Chen et al., 2021). The firm-level traits can also vary significantly, as do their
total emissions levels. Thus, the success of the ETS also bestows on the magnitude of the
reduction of the emissions level within a specific firm. The amount of research in this domain
is still very scant, and this is where this paper will contribute the most to the literature. Overall,
we claim our novelties on the following grounds. 1) There is no denying the ETS's charisma to
boost environmental integrity among the EU member nations. It has also been justified that the
ETS can foster green economic growth, a new political and economic intervention towards
environmental sustainability. However, it is also imperative to know the magnitude and
dimension of the reduction of the consumption of energy and the volume of total emissions
after the policy intervention. Anterior studies have ignored the role of energy and carbon
intensity in the domain of the ETS. To fill these gaps, this article proposes some innovations in
the existing literature. We present a comparative analysis of the industrialized economies
implementing environmental policies. To this end, the study examined the relationship between
energy intensity, carbon intensity, population, GDP and carbon emissions for the sample
industrialized economies. The other innovation is the use of Average Treatment Effect (ATE)
estimates, Average Treatment Effect on Treated (ATET) estimates, and Potential
Outcome Means (POM) to effectively determine the percentage reduction in CO2 emissions.
2) Over decades, industrialized economies have struggled to improve their energy strategies.
While these efforts may be important for energy security; however, if the carbon emissions
intensity does not get compromised, the world will suffer in the long run. This study addresses
this dual problem, and the findings of this study can be seen as a way forward to achieve some
of the Sustainable Development Goals (SDGs), notably goals 7, 8, 11, 12 and 13, given that if
the ETS induced CO2 emissions reduction history is known to firms, they could adjust their
production mechanism accordingly, which will ensure sustainable production and consumption
of goods and services. 3) Our third contribution is methodological. Most of the previous studies
have harnessed the computable general equilibrium model to assess the effectiveness of the
ETS in dwindling CO2 emissions (see An et al., 2021; Jiang et al., 2022; Pang and Timilsina,
2021), which poses a problem of flawed assumptions, making it difficult to work. Against this
milieu, we have harnessed the Average Treatment Effect (ATE), Average Treatment Effect on
Treated (ATET), and Potential Outcome Means (POM) estimates, which are not tricky yet
generate robust and replicable findings.

The rest of this article is organized as follows: Segment 2 delineates the empirical literature
review, Section 3 describes the methodology adopted in the study, and Segment 4 focuses on
the results and discussion. Lastly, Segment 5 sheds the empirical limelight on the conclusion
and policy implications.

2. iterature Review

As mentioned above, the prime focus of this study is to unravel the efficacy of the ETS
intervention with more accurate and efficient estimation strategies and be more specific about
the reduction of historical emissions induced by the ETS approach in the context of our selected
nations. The literature on the execution of the ETS tool in controlling the atmospheric carbon
footprint and on the effectiveness of the ETS intervention in green industrialization has been

enriched in the last few decades. Apart from the "transition to renewables" approach, the ETS method has been applauded by many scholars in the scholarship. In this particular section, we will shed some empirical light on the development of the ETS-based literature so far and unearth the existing gaps that we can address through this paper.

The ETS-based scholarship has different dimensions. One of the significant dimensions is the comparison between the ETS scheme and the environmental taxation policy. Both of these methods have their independent working directory and have managed to substantially impact the carbon emissions decisions at the firm and household levels. In his paper, Haites (2018) noted that the ETS intervention is evolving continuously through political, economic and social shocks and predetermined institutions. Contrary to this, the carbon tax has not witnessed much evolution, and it lacks an institutional framework to document its overall efficacy in mitigating historical emissions. In a different study, Chen et al. (2020) unraveled that eco-tax and the "cap and trade" both are boons for green innovations; however, the authors also postulated that the ETS is more effective in lessening the total global emissions compared to the environmental taxation scheme. Moreover, Zhang et al. (2020) also commented that the ETS intervention is superior to the conventional environmental taxation system. The authors claimed that the ETS package provides some unique features that the eco-tax system does not provide. According to the authors, the pricing system of the carbon footprint and the mechanism of how the allowances work vary significantly in the case of the ETS. In another study, Hu et al. (2020) documented and juxtaposed the impressions of the carbon tax and the ETS among the Chinese manufacturing industries. The authors unearthed that the ETS can surpass the environmental taxation system regarding emissions reduction among Chinese industries. Homogenous observation has also been revealed by Zhang et al. (2022) in the case of China. Contrarily, few other studies supported the opposite. For instance, Hájek et al. (2019) postulated that environmental taxation is more capable of curbing environmental pollution than the EU ETS approach in the case of the selected EU nations. Jia and Lin (2020) also commented that the carbon tax policy is superior to the EU ETS approach in China, at least in the long run, given that the ETS only works well within the specific industries that follow the ETS principles.

The second strand of literature broadly discusses the efficacy of the ETS in limiting the carbon footprint, especially among the world's most industrialized economies. After the initiation of the EU ETS scheme, many other nations with growing interest in the industrial revolution also adhered to this policy intervention to their emissions reduction goals. Interestingly, the inclusion of this policy intervention significantly assisted these nations in meeting their NDC targets. For example, Tang et al. (2021) studied the consequence of the ETS policy intervention on the emissions reduction goal in China, taking the reference of 273 Chinese cities. The authors deployed the Propensity Score Matching-Difference-in-Difference (PSM-DID) approach to disclose the empirical relationship. The authors claimed that the ETS could condense the level of atmospheric pollutants significantly. In a different paper, Lin and Huang (2022) scrutinized the impressions of carbon trading on environmental integrity in China. The article deployed the DID method and harnessed panel data from 30 Chinese provinces from 2005 to 2019. The authors concluded that carbon trading is genuinely effective in mitigating China's historical emissions. However, the authors also highlighted that it's not the market mechanism and structure; instead, the government intervention played the most significant role in affecting the ETS policy. Gao et al. (2020) scrutinized the effect of the ETS on production and consumption-induced emissions. While juxtaposing the impacts of the ETS on the reduction of emissions, the authors argued that the ETS is most effective in limiting production-induced emissions compared to consumption-induced emissions. Furthermore, Chen and Lin (2021) evaluated the impression of Chinese ETS (CETS) on the emissions mitigation behavior among the targeted firms, where the authors revealed that CETS is an effective tool for controlling the emissions

level and is adequate to meet the NDCs. In addition, Liu and Sun (2021) and Peng et al. (2021) also noted similar findings in the case of China. Regarding the studies among the EU nations, Bayer and Aklin (2020) postulated that EU ETS is tacit in attenuating toxic atmospheric elements. Through an accurate estimation, the authors claimed that the EU ETS successfully curbed 1.2 billion tonnes of CO_2 between 2008 and 2016 among the EU member nations. Additionally, Efthymiou and Papatheodorou (2019) integrated the EU ETS scheme in the aviation sector and highlighted that EU ETS could ameliorate the aviation sector-induced emissions significantly. The above analysis depicts that most of the earlier studies have assessed the overall effect of EU ETS or CETS on atmospheric CO_2 emissions; however, they ignored the magnitude of the total reduction of the CO_2 emissions, which is crucial to determine if the countries are on the right track or not to meet their own NDC targets and the Paris Agreement. We have addressed this critical gap in the literature through this paper.

The third domain of scholarship broadly focuses on the overall benefits of the EU ETS scheme apart from the CO_2 emissions directory. The extant literature has already substantiated that the EU ETS or the CETS are efficacious in curtailing the carbon footprint. An extension from this viewpoint covers other areas, such as the effect of the EU ETS or CETS on green innovation, renewable energy technology development and total factor productivity (TFP). For example, Liu and Zhang (2021) contributed to the extant literature by unveiling that the CETS is potent in boosting China's renewable energy technology development. For the top emitters like China and the EU, innovations in renewable energy technology can be a panacea and complimentary solution towards the most awaited green deals. In their study, the authors claimed that CETS boosts energy generation from hydropower and solar sources. Some studies have also assessed the consequence of CETS on the TFP. For example, Xiao et al. (2021) noted that the CETS as a policy intervention could boost the TFP at the firm level, increasing the profit level by curtailing the total cost. The ETS furthers the GDP growth and can supplement the green growth strategy of many nations. Much atmospheric pollution happens due to economic activities, determining if a specific country is going through a recession, economic depression or stagflation. Therefore, policies are required that can solve the dual problem; that is, we need approaches that can attain environmental sustainability without thwarting concurrent economic growth. In this regard, Springer et al. (2019) noted that CETS fed economic transition helps curb the overall emissions level in China. Apart from the apparent progress, the main issue so far is the estimation framework of the effect of ETS. Most of the prior studies in the extant scholarship have deployed the computable general equilibrium (CGE) models to capture the impact of ETS on CO_2 emissions. The main issue with the CGE models is that there are too many of them to choose from, and each one varies significantly from another. Therefore, in this paper, we have endeavored to deviate from the mainstream estimation strategy and have introduced new innovative ways of estimating the specific effects of ETS on CO_2 emissions.

Overall, our thorough literature review delineates the following: we found that the extant scholarship has mostly covered the overall effects of ETS on CO_2 emissions, the literature on the specific effect of ETS on CO_2 emissions is still very nascent (i.e., the number of studies assessing the overall percentage decrease of CO_2 emissions due to ETS policy intervention is minimal), the number of studies on the impression of ETS on the carbon emissions intensity is minimal, and methodologically most studies have deployed the complex CGE models. Against this backdrop, this article addresses these observed research gaps, and we believe it will undoubtedly enrich the mainstream literature.

3. Research Methodology

3.1 Model and Data

The model is based on the variables CO2 (variable explained) and the treatment variable t. The model assumes that the variable explained CO2 and $CO2_0$ when t=0 and $CO2_1$ when t=1. Algebraically, we say that:

$$CO_2 = (1 - t)CO2_0 + tCO2_1 \qquad (1)$$

We can also process it as:

$$CO2_0 = x'\beta_0 + \epsilon_0 0 \qquad (2)$$

$$CO2_1 = x'\beta_1 + \epsilon_1 0 \qquad (3)$$

Where $x' = [gdpc, pop, ci, ei]$, β_0 and β_1 are coefficients to estimate, ϵ_0 and ϵ_1 are terms of error that are not related to x' (unobservable error term), $x\beta_t$ is a predictable component.

The treatment assignment process is:

$$t = \begin{bmatrix} 1 \ if \ w'\gamma + \tau > 0 \\ 0 \qquad otherwise \end{bmatrix} \qquad (4)$$

Here, t_i is a dummy variable taking the value 1 if a country adopts a carbon-tax policy, and 0 if not. $w'\gamma$ is a predictable component and τ is an unobservable error term.

From equations (1), (2), (3) and (4), we have estimated the following model based on the work of Daskalakis et al. (2009), Kaya (1989), and Lin and Jia (2019).

$$CO_2 = x'\beta + \alpha t + \epsilon_i \qquad (5)$$

Where $x' = \{pop, gdpc, CO2ec, ecgdp\}$ is a vector of covariates. The name conventions of the designated variables are as follows: $CO2_{ec}$ denotes the carbon dioxide emissions, $gdpc$ is the GDP per capita derived by dividing the gross domestic product by population, $ecpib$ indicates the energy intensity (IE), $ecgdp = ec/gdp$, CO2ec is the carbon intensity, which is estimated as $CO2ec = CO2/ec$, t_i stands as the treatment, β and α are coefficients to be estimated, and ϵ_i are error terms.

Three endpoints are often used to measure treatment effects: the mean effect of treatment (ATE), the mean effect of treatment on treatments (ATET), and the means of potential outcomes (POM). In this section, we define each of these terms and enter the notation and parameters used. In the case of binary processing, the two potential results for each individual are $CO2_{0i}$ and $CO2_{1i}$. Here, $CO2_{0i}$ indicates the obtained the result if i do not get the treatment, and $CO2_{1i}$ is the result that would be obtained if i gets the treatment. $CO2_{0i}$ and $CO2_{1i}$ are outputs of the random variables $CO2_{0i}$ and $CO2_{1i}$. Throughout this entry, i denotes the achievements of the non-subscriber correspondent random variables.

The parameters of interest summarize the distribution of the unobservable treatment at the individual level effect $CO2_1 - CO2_0$. When setting parameters, t indicates random processing, t_i is the processing received by individual i, $t = 1$ denotes the processing level and $t = 0$ is the control level. Given this rating, we can now define our parameters of interest.

ATE is the average effect of treatment in the population:

$$ATE = E(CO2_1 - CO2_0) \qquad (6)$$

POM treatment level t is the average potential outcome for this treatment level:

$$POM_t = E(CO2_t) \qquad (7)$$

ATET: is the average effect of treatment among those receiving treatment:

$$ATET = E\left(CO2_1 - CO2_0 \,\middle|\, t = 1\right) \tag{8}$$

The estimation of ATE, ATET and POM is made by four estimators: regression adjustment
estimator (RA), inverse-probability weights (IPW), IPW regression adjustment (IPWRA),
augmented IPW (AIPW).

RA estimators

$$S_{ra,i}\left(X_i, \hat{\theta}\right)' = S_{ra,e,i}\left(X_i, \hat{\theta}, \hat{\beta}\right)', S_{ml,om,i}\left(X_i, 1, \hat{\beta}\right)' \tag{9}$$

IPW estimators

$$S_{ipw,i}\left(X_i, \hat{\theta}\right)' = S_{ipw,e,i}\left(X_i, \hat{\theta}, \hat{\gamma}\right)', S_{tm,i}(Z_i, 1, \hat{\gamma})' \tag{10}$$

IPWRA estimators

$$S_{ipwra,i}\left(x_i, \hat{\theta}\right)' = S_{ra,e,i}\left(x_i, \hat{\vartheta}, \hat{\theta}\right)', S_{ml,om,i}\left\{x_i, w_i(j), \hat{\beta}\right\}', S_{tm,i}(Z_i, \hat{\gamma})' \tag{11}$$

AIPW estimators

$$\begin{aligned} S_{aipw,i}&\left(x_i, z_i, \hat{\theta}\right)' \\ &= \left[S_{aipw,e,i}\left(x_i, z_i, \hat{\theta}\right)', S_{aipw,tm,i}(z_i, \hat{\gamma})', S_{aipw,om,i}\left\{x_i, w_i(t), \hat{\beta}\right\}'\right] \end{aligned} \tag{12}$$

3.2 Sample, Treatment and Control Countries

- ***Treatment country***

The EU ETS, launched in 2005, was the world's most extensive carbon credit trading system.
In 2009, it covered over 10,000 installations in the energy and industrial sectors, collectively
responsible for almost half of the EU's CO2 emissions and 40% of total greenhouse gas
emissions. It puts in place a limit on emissions and a carbon market, allowing each company to
buy or sell emissions allowances. Companies that make efforts are thus rewarded, while those
that have exceeded their emissions ceilings have to buy emissions allowances from more
virtuous environmental companies and are penalized. In our study, we have considered the
countries that have joined the EU ETS policy intervention. These nations are Finland,
Luxembourg, Austria, France, Germany, Malta, Slovakia, Belgium, Hungary, Norway,
Slovenia, Denmark, Ireland, the Netherlands, Sweden, Spain, Italy, Portugal, the Czech
Republic, Estonia and Lithuania.

- ***Control country***

The countries of control are the industrialized economies. According to the classification of the
UNCTAD, these nations are Andorra, the Republic of Korea, British Virgin Islands, French
Polynesia, Iceland Curaçao, Netherlands Antilles, Taiwan, Aruba, United Arab Emirates, Israel,
Qatar, Australia, Japan, San Marino, Bahrain, Kuwait, Russian Federation, Singapore, Belarus,
Greenland, Malaysia, Switzerland, Liechtenstein, Bermuda, Guam, New Caledonia, Trinidad
and Tobago, Canada, Cayman Islands, New Zealand, United States of America.

4. Preliminary Results and Analysis

4.1 Covariate Balance Summary Test

The covariate balance summary test outcomes are presented in Table 1 below. The perfectly
balanced variables must have a variance ratio of 1 and a standardized difference of 0. The
following table gives us a summary of the balance between the variables of the model.

Table 1: Covariates balance summary test

	Standardized differences		Variance ratio	
	Raw	Matched	Raw	Matched
gdpc	-1.206572	-0.6744462	0.3594598	0.4173549
Pop	0 .4973298	0.2939451	0.601862	0.9344856
CO2ec	0 .4074235	-0.1285771	1.610285	0.792858
Ecpib	-1.389036	-0.8220764	0.0188104	0.0325258
		Raw	Matched	
Number of observations		53	53	
Treatment observations		22	19	
Control observations		31	33	

Note: The result indicates that the covariables are balanced. We took 19 countries for the treatment against 33
countries as control.

4.2 Common Support

The common support is the area where the two groups are superimposed on all propensity score
values (Heckman, LaLonde and Smith,1999). The common underpinning of the propensity
score ensures that it is possible to find at least one participant in the control group with the same
characteristics (propensity score) for each individual in the treated group (see the work of
Bryson et al. (2002)). The use of the propensity score is adequate only for individuals located
in this area. A wide scope of common support and a balanced score. The common support area
is quite extensive here, a sign of good comparability of groups since it ranges between
[0.43588892 and 0. 99882935] for the quota system. Below and beyond these limits, there is
no counterfactual effect. The propensity score has been estimated for all countries, but countries
not included in the common support area are excluded from the analysis.
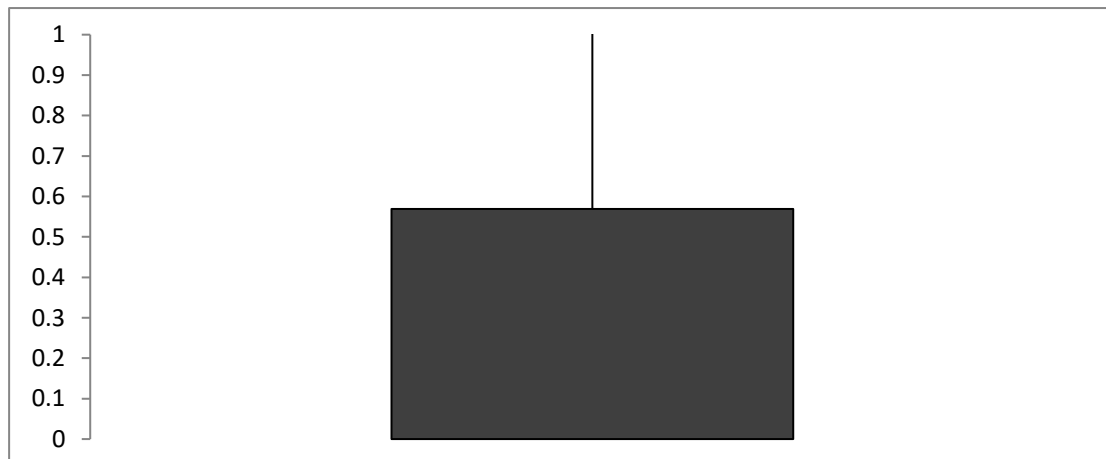
Figure 1: Common support

4.3 Propensity Score Matching

Propensity Score Matching (PSM) refers to matching countries in the treated and control groups
with similar or similar propensity score values and excludes unpaired countries. Matching
methods attempt to match each treated country with one or more untreated countries whose
observable characteristics are as close as possible. The objective of matching is to construct a
control group compared to the treated group to expect an unbiased estimate of the effect of

treatment on a treated individual by controlling for selection bias (see Abadie and Imbens (2005); Caliendo and Kopeinig (2008)). Before matching, many countries in the control group may have a higher propensity score than those in the treatment group. Since the propensity score is the probability of belonging to the treated group, given the selected characteristics, countries with a propensity score close to 1 are likelier to belong to the treated group. The following figure shows the propensity score distribution before and after the match. The distribution is symmetrical, indicating that the match made the countries of the two groups comparable. The results of the matching operation breed two groups: treated countries and control countries with a similar propensity score distribution, as shown in Figure 2.
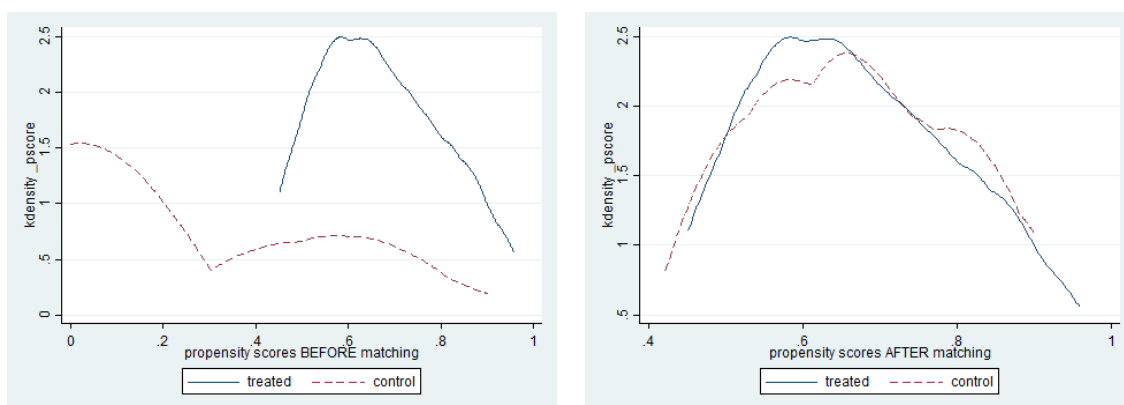
Figure 2: Epanechnikov kernel density

4.4 Analysis and Discussion of the Findings

The estimation results from different approaches [(RA), (IPW), (IPWRA), (AIPW)] on the system of GHG emissions allowances delineate and corroborate a positive and significant impact on the stimulation of the reduction of CO_2 emissions.

Table 2: Results from the ATE estimates

	RA	IPW	IPWRA	AIPW
ATE (1 vs 0)	-0,1281	-0,0684	-0,1281	-0,1326
	[-6.01]	[-7.31]	[-6.17]	[-9.39]
POmean	0,0868	0,0921	0,0879	0,0913
	[9.21]	[9.96]	[9.73]	−

Note: t-statistics are in the parentheses.

The average emissions rate would vary between -6.84% and -13.26% if all countries adopted the quota system. However, the average emissions rate would vary between 8.68% and 9.21% if no country adopted the quota system. This result seems very interesting and proves that ETS as an instrument is effective in reducing CO_2 emissions.

Table 3: Results from the ATET estimates

	RA	IPW	IPWRA	AIPW
ATET	-0,028	-0,0454	-0,026	-0,1326
	[-2.85]	−	[-3.05]	[-9,39]
POmean	0,0554	0,0727	0,053	0,091
	[5.71]	[13,81]	[5,56]	−

Note: t-statistics are in the parentheses.

The ATET is the difference between the results of the treaty countries if they adopt the quota system and if they do not adopt the quota system. The results (see Table 3) demonstrate a decrease in an interval ranging from -2.6% to -13.26%, less than an emission average of 5.3% to 9.1% if these countries had not applied the ETS. Our results confirm the work of Bayer and Aklin (2020), for which EU ETS reduces carbon emissions even though permits were cheap. EU ETS saved about 1.2 billion tonnes of CO_2 between 2008 and 2016 (3.8%) compared to a world without carbon markets, almost half of what EU governments promised to reduce under their Kyoto commitments. Emissions reduction in the sectors covered by the EU ETS was higher. Ellerman and Feilhauer (2008) calculate an emission reduction of more significant than 3% for Germany.

Overall, by creating a market for GHG emissions, an ETS sends a clear price signal on carbon. This means that the costs of GHG emissions-such as the impact on public health, the charges of extreme weather conditions or the extinction of animals and plants - are made visible and integrated into the price of goods and services. In an ETS, the government sets a clear reduction target by capping the volume of emissions emitted by specific sectors of an economy. This ensures that the goal and the environmental benefits are met. With a steadily decreasing cap, an ETS also offers a predictable downside path and sends a long-term signal for businesses and investments. Governments can decide to auction their allowances to companies. Income from these sales can be reinvested in several ways, such as funding climate change programs or compensating low-income households.

ETS will lead to a decrease in GDP with the increase in the price level of ETS; this decrease in GDP is due to the production of energy industries which remain the most sensitive to the price of ETS than other industries. GDP will decline further as the price level of ETS increases. A higher ETS price will lead to a greater reduction in CO_2 emissions, but economic costs cannot be ignored. In addition, low ETS prices will weaken the carbon market's ability to curb emissions. (Lin and Jia, 2019). An ETS offers excellent flexibility to companies regarding how they can meet their obligations. Companies can reduce their emissions and/or buy excess allowances from other companies. Often governments allow companies to accumulate allowances that will be used later. In many systems, companies can use national or international offset credits from reduction projects in sectors not covered by the GHG allowance trading system. These choices mean that the costs associated with complying with the emissions cap of the ETS are minimized, not only for the company but for society as a whole.

In recent years, the economic crisis has led to a drop in emissions and a drop in demand for emissions allowances. Together with other factors, this has caused the carbon price to drop and a sizeable surplus to build up in the system. The objective of the EU is to reduce their emissions by 40% by 2030, and the sectors targeted by this policy are obliged to lessen their emissions by 43% compared to 2005. Beginning in 2021, the reduction will rise from 1.74% to 2.2 % per year, thus leading to an additional curtailment in emissions of approximately 556 million tonnes by 2030. However, changes must be undertaken to accomplish these directories. The following measures can be considered: a review of the system for allocating free quotas, targeting the sectors which are most exposed to the risk of relocating their production outside the EU (this concerns around fifty sectors), a significant number of allowances can be allocated free of charge for new installations, more flexible rules to align better free allocations with data relating to the production and an update of all the benchmarks used to measure performance in terms of emissions - to take into account the technological progress made since 2008. The total number of emissions allowances will plummet further in the future, and many changes need to be undertaken: an update of all the benchmarks used to measure performance in terms of emissions, a revision of the system for allocating free quotas, targeting the sectors most exposed

to the risk of delocalization, and relaxation of the rules to better align free allocations with data relating to production.

5. Conclusion and policy implications

Automation, industrialization and high-end production capabilities undoubtedly breed economic amelioration, a most aspired concept in mainstream economics. However, economic amelioration exerts certain negative externalities that can be deleterious for us, the environment on which we rely and, overall, the entire planet. The fossil fuel-fed economic growth has already claimed an unprecedented rise in the world's atmospheric temperature, also known as global warming. Substantial research has been done on how to mitigate the negative externalities of industrialization, given that the level of CO2 emissions is constantly on the rise. The extant scholarship is teeming with mostly objective measures (i.e., renewable energy technology, energy mix restructuring); however, there are several subjective measures, which are primarily policy-oriented. The Emissions Trading System (ETS) is one of those measures that can negotiate production-induced CO2 emissions effectively.

Developed countries have implemented a series of environmental regulations to protect the environment, among them the Emissions Trading System (ETS) which is one of the most important initiatives to face the different environmental challenges. . Based on the data used, we used a PSM model to estimate the effects of the ETS on the reduction of CO2 emissions. The results show that the ETS as an environmental policy is effective in reducing emissions, which vary between -6.84% and -13.26% among the main industrialized countries, compared to emissions in other countries, which vary between 8.68% and 9.21%. Based on our findings, we can further substantiate that the ETS is effective in reducing CO2 emissions and is highly recommended. We also recommend the following policies, which will be essential for the long-term development of a global ETS.

First, our results suggest that the allowance trading system effectively promotes energy transition and the reduction of regulated emissions in the pilot countries. The experiences of the quota trading system provide a global reference and inspiration for the use of market-oriented environmental policies to deal with environmental challenges. It also ensures that the market will play a key role in allocating resources and guiding the reforms of the market-based mechanism. As a result, these countries must extend their experiences to other regions in order to develop an international carbon market. These countries should also consider other policies and regulations such as trading in water rights and trading in energy rights.

Secondly, the ETS has been found to work best in areas with high enforcement of environmental regulations, showing that law enforcement and enforcement is very important for effective implementation of the ETS. emissions trading system. In order to benefit from the benefits of the ETS Governments should put in place a legal framework to improve the effective functioning of the carbon emissions trading system in order to sanction companies in the event of non-compliance. Independent and transparent reporting of CO2 emissions should be implemented and monitoring of pollution sources should be improved to obtain accurate information on pollutant emissions.

Third, as a result of the direct effects of the ETS on the adjustment and modernization of the industrial structure, the reduction of emissions and the improvement of energy efficiency. Governments should incentivize and encourage businesses to develop and adopt clean, zero-carbon technologies by optimizing carbon prices and capping emissions.

Our study provides a benchmark for the use of ETS-based environmental policies to achieve sustainable economic and environmental development, and the adoption of cost-effective policy tools to reduce carbon emissions.

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'Sustainable Societies' and the Methodology of Modern and Contemporary East Asian History

Ken'ichiro Higuchi[1]

Abstract

Sustainability can be defined as 'the structures and processes that enable the continuation of the current functioning of society into the future'. The issue of sustainability is not limited to individual aspects, such as environmental and energy problems; it pertains to whether human activities in general, including economy, politics and culture, can be sustained into the future. What must not be forgotten is that sustainability is no longer self-evident and that human beings must achieve it through cooperation.

What is the role of history and related disciplines in this regard? First, it is to provide useful insights for questioning our way of life and re-examining our civilisation and values to solve various problems. Second, it is to properly preserve current cultural resources in case they are needed in the future.

Traditional historical studies attempt to clarify historical facts objectively and empirically. However, historians' sources and research objectives are often influenced by some political objective or social context; they thus cannot escape from subjectivity. Furthermore, some people suffer misfortune in the face of 'objective' and 'empirical' historical facts, irrespective of their intentions and efforts. For example, we should not ignore that the various issues surrounding the historical perceptions of Japan and other East Asian countries, such as China and Korea, are not only about 'the facts', but also about the different memories and feelings on both sides that stimulate parochial nationalism.

Based on this awareness, this presentation will provide an overview of various issues in modern and contemporary East Asian history and consider modern and contemporary historical methodologies that contribute to a sustainable society.

Keywords: East Asian history, records and memories

1. Sustainability Concept and Historical Studies

Sustainability can be defined as 'the structures and processes that enable the continuation of the current functioning of society into the future'. The issue of sustainability is not limited to individual aspects, such as environmental and energy problems; it pertains to whether human activities in general, including economy, politics and culture, can be sustained into the future. What must not be forgotten is that sustainability is no longer self-evident and that human beings must achieve it through cooperation.

What is the role of historical studies and the related disciplines in this regard? First, it is to provide useful insights for questioning our way of life and re-examining our civilisation and values to solve various problems. Second, it is to properly preserve current cultural resources in case they will be needed in the future.

Traditional historical studies attempt to clarify historical facts objectively and empirically. However, historians' sources and research objectives are often influenced by some political objective or social context; they thus cannot escape from subjectivity. Furthermore, some people suffer misfortune in the face of 'objective' and 'empirical' historical facts, irrespective of their intentions and efforts. For example, we should not ignore that the various issues surrounding the historical perceptions of Japan and other East Asian countries, such as China

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and Korea, are not only about 'the facts', but also about the different memories and feelings on both sides that stimulate parochial nationalism.

Based on this awareness, this presentation introduces recent debates over historical perceptions in East Asia, particularly in Japan and South Korea and considers the methodologies of modern and contemporary history that contribute to a sustainable society.

2. Victimhood Nationalism (?)

Professor Im Jihyun's work entitled Victimhood Nationalism (2021) is one of the recent bestsellers in South Korea. This idea of Victimhood Nationalism is an expansion of Zygmunt Bauman's "Hereditary Victimhood," which refers to the inheritance of prior victimhood and the notion that one is prone to violence despite the lack of daily violence. In other words, it is thinking of oneself as a victim based only on the fact that one connects with a history marred by violence, although not actually being a victim of violence.

The author of this book, Professor of History Im Jihyun, focuses on the conflicts between Germany and Poland over the Holocaust and the conflicts between Japan and South Korea regarding the topic of Japan's colonialization of the Korean peninsula (1910-1945) and the issue of comfort women of the wartime. And he believes that the composition of the conflicts resulting from the "victimhood memory" recalled after the conclusion of the Cold War unites these difficulties.

Professor Im explains: Later generations inherit the historical memory of our ancestors' victimization and saw themselves as victims of a tragedy. They then serve as the moral and political rationale for the nationalism of today. A victim-conscious nationalism evolves when the victims who were forced to suffer an embarrassing death are remembered as noble victims who freely sacrificed their life for their nation and their people. (Interview with Professor Im, Mainichi Shimbun, 7 November 2021.)

3. 'Facts' and 'Memories' of History

The position of the Japanese Government of on the historical issues between Japan and South Korea is as follows: Japan and the Republic of Korea have built a close, friendly and cooperative relationship based on the Treaty on Basic Relations between Japan and the Republic of Korea and other relevant agreements that the two countries concluded when they normalized their relationship in 1965. The Agreement on the Settlement of Problem concerning Property and Claims and on Economic Co-operation between Japan and the Republic of Korea (the "Agreement"), which is the core of these agreements, stipulates that Japan shall supply to the Republic of Korea 300 million USD in grants and extend loans up to 200 million USD (Article I), and that problem concerning property, rights and interests of the two Contracting Parties and their nationals (including juridical persons), as well as concerning claims between the Contracting Parties and their nationals, are "settled completely and finally," and no contention shall be made thereof (Article II). As such, the Agreement has provided the basis for the bilateral relationship up until now. (Press Releases, Statement by Foreign Minister Taro Kono, 19 July, 2019, Ministry of Foreign Affairs of Japan)

In short, the position of the Japanese government (and many Japanese individuals) is:

---the colonial rule issues between Japan and Korea have been "completely and finally" resolved by the international treaty.

---Japan has also paid Korea a substantial quantity of money for this "settlement".

---therefore, it is unjustifiable for the Korean government and people to continue to bring up past concerns.

However, if the sentiment of many Koreans is 'victimhood nationalism,' then efforts to resolve (or heal) this "victimhood" should also be made by both Japan and Korea., because the resolution by international law and the resolution of the issues of collective and emotional memory of the certain groups are of two different dimensions.

Regarding the disagreement between Japanese and South Korean historical conceptions, we must reaffirm that historical "facts" are not under dispute. The significance of historical facts is self-evident, however, still there remains the matter of interpretation. That is one reason why Japan and South Korea often accuse each other of "historical distortion".

It is the reproduction of memories and recollections that encourages subjective interpretations and widens the chasm between individuals. They are frequently more persuasive than objective and intellectual theories and discourses due to their emotive aspect, which moves people's hearts, and their strong party nature.

Necessary is to re-examine how we deal with memories. Some people say, those memories are "stereotypes," however, historians still should face with them, EVEN IF they might be stereotypes, or no, BECAUSE they might be.

4. Previous Efforts and the Author's Suggestions

In reality, neither government has handled these disparities incompetently.

There have frequently been two suggestions.

---the initiative to create standardized history textbooks. It has been attempted in both the public and private sectors, but without success. Even the greatest accomplishment in a partnership when both parties have contradictory and mutually unsettling interpretations of history has been restricted to "writing both sides of the argument."

---the interaction of the young people who are unconscious of the past, which also has its limitations; the young people who participate in such exchanges are always only a part of the whole, and the young people with whom they contact are not necessarily free from their own country's historical perspective. And most importantly, that leaving things to the existence of "young people" in the abstract would not address the problems.

One of the reasons behind the unsuccessful development of common history textbooks is the situation of neglecting efforts to understand each other's emotional memories and their remembered histories.

One possible suggestion from the author (and what the author actually started) in response is this: to create the common digital archives and share the memoirs and testimonies of the people who experienced colonial and/or war time. Each nation should gather the collective and emotional memories of its people, share them with other nations, and use them for education and research.

For instance, the author is now conducting research on a woman named Kazu Mochizuki (1927-1983). She is a Japanese woman who lost her mother in China, grew up as an orphan in severe conditions, and raised over 130 orphans in extreme poverty in South Korea following the Korean War. And actually, Kazu's memoirs detail the agony, tragedy, and accomplishments of her prior half-life, yet her life is hardly discussed or even known generally now.

In fact, numerous private records, including memoirs, letters, and photographs by the actual parties involved, both published and unpublished, remain unexamined between Japan and South Korea. One of the primary reasons for this is that such intimate records and revelations cannot be cleansed of the concerns of misremembering and insufficient evidence, which may also explain why Kazu's memoirs are seldom read nowadays.

Digital archiving technology has significant potential in this case. This is due to the fact that digital archiving technology permits cross-searching of documents, annotation by specialists, and access to and discussion of materials from a variety of perspectives. In other words, history specialists who believe private documents include factual inaccuracies may bring their evidence and discuss it.

5. Conclusion

Importantly, an evaluation of the "past" can only be made in the context of the actual lives of the people involved. To "face the past" is to comprehend the reality of the individuals involved and consider how they felt and thought.

Both the Japanese, who attempt to explain everything through international legal solutions, and the Koreans, who believe they can inherit a sense of victimhood, must first "agree" on this, in order to maintain sustainable discussions on East Asian history.

Acknowledgements

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Sustainable Development Goals and Good Practises with Implementation of SDG's Strategy in Slovenia

Aleksandar Kešeljević[1]

Abstract

Global Sustainable Development Agenda 2030 and EU regional initiatives set the broader context for the EU member states, which should develop and implement its own sustainable development strategy. In the article we present how to include global SDGs in the preparation of the national development strategy based on Slovenia's experience (2014-2018). We will present main challenges regarding financing (program budget) SDG and some good practices (Government project office) that have arisen in formulation of the national strategy. We also explain why certain reforms and measures (green tax reform) were not implemented.

Keywords: sustainable development, green tax reform

1. From Global SDG's Agenda to Slovenıan National Development Strategy

Sustainable development is a relatively old concept, originating back to Meadow's report (1972) on the limits to growth. Sustainable Development Agenda 2030, adopted by world leaders at the UN in 2015, is a significant milestone for the national countries. At its core are 17 Sustainable Development Goals (SDGs) comprising 169 targets apply to individual countries. Countries have committed themselves to fulfilling their purpose: reshaping the world by eradicating poverty and reducing inequalities, and keeping the planet within its' carrying capacity. The long-term survival and well-being of people depends on our actions during life, subject to planetary constraints. Actions must be premised on the rule of law, human rights and the fundamental principle of the 2030 Agenda that we will not leave anyone behind.

Slovenia adopted the 2030 Agenda in order to work together with other countries in dealing with the key global challenges. However in spite of global (UN) and regional (EU) commitments the nation state still remains the dominant player and of key importance for boosting transition towards green economies. Global and regional initiatives set the broader world context within which every government develop and implement its own sustainable development strategy.

The Slovenian government (2014-2018) developed a long-term vision, strategic goals and priorities. The new Slovenian development strategy 2030 (2017) was adopted in December 2017. Vision was elaborated through transparent and inclusive approach stressing the universality of the 2030 Agenda. The vision of Slovenia was created with the input of different people from all parts of the country through a series of interactive events at which discussed the kind of future people want.

Strategic goals have been overall consistent with SDG goals and constitute a basis for designing the priority tasks and measures to be implemented. Strategic priorities have been needed for the attainment of the strategy's main goals by operating on interdependent policy areas. The strategic orientations for achieving Strategy's 12 development goals (Table 1) are the following five: (1) an inclusive, healthy, safe and responsible society, (2) learning for and through life, (3) a highly productive economy that creates added value for all, (4) well-preserved natural environment, (5) high level of cooperation, competence and governance efficiency.

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Table 1: Mapping strategic goals with SDGs

Slovenian Development Strategy Goals	Highly relevant SDGs	Fairly relevant SDGs
Goal 1: Healthy and active life	Health (3)	Poverty (1), Education (4), Gender Equality (5), Economy (8), Inequality (10), Cities (11), Sustainable Production (12)
Goal 2: Knowledge and skills for high-quality life and work	Education (4)	-
Goal 3: A decent life for all	Poverty (1), Inequality (10)	Food (2)
Goal 4: Culture and language as fundamental factors of national identity	-	Education (4), Economy (8)
Goal 5: Economic stability	Economy (8)	Infrastructure (9)
Goal 6: Competitive and socially responsible corporate sector	Infrastructure (9)	Economy (8), 12
Goal 7: An inclusive labour market and high-quality jobs	Economy (8)	-
Goal 8: Low-carbon circular economy	Energy (7), Sustainable Production (12), Climate (13)	Food (2), Economy (8), Infrastructure (9), Cities (11), Sustainable Production (12), Oceans (14)
Goal 9: Sustainable and effective management of natural resources	Food (2), Water (6), Climate (13), Oceans (14), Biodiversity (15)	Cities (11)
Goal 10: Trustworthy legal system	Institutions (16)	-
Goal 11: Safe & globally responsible Slovenia	Institutions (16), Implementation (17)	Poverty (1), Climate (13)
Goal 12: Effective management and high-quality public services	Institutions (16)	-

National framework has to be consistent with international SDG commitments. For example, Slovenian development strategy (2017) has 12 strategic goals and the 2030 SDG Agenda 17. The table 1 maps the national strategy goals with the SDGs, differentiating between levels of relevance.

The national development strategy is articulated around strategic priorities and goals. The OECD assisted the Slovenian government. For each phase a working group composed of OECD experts, national policy experts and policymakers was established as for example for comprehensive situational assessment, analyzing global megatrends and developing a vision for the country and its translation into strategic priorities, goals and strategic projects. National governments can support the international community goals through mobilisation of public resources and by efficient implementation of the strategic projects. After explaining how successful has been Slovenia in implementing SDG we will explain aspects of financing and project management in the third chapter.

2. How Successful are EU and Slovenia in Implementing SDG?

EU has made in the last decades respectful progress toward sustainable development goals in fostering peace, access to justice and trust in institutions. Significant progress has been also in reducing poverty and social exclusion and in improving the health situation. The most problematic goals, which show movements away from sustainable development objectives are affordable and clean energy and specially life on land. The negative assessment is mainly due to increases in EU's energy consumption and also ecosystems and biodiversity are under pressure from human activities.

Positive trends were observed for climate mitigation and support to climate action. On the other hand, the assessment for the past five years is negatively affected by the intensifying climate impacts Europe is facing. The greenhouse gas emissions reduction target is based on past

progress and therefore does not include projections of future emissions based on planned legislation and policy measures. Even more so now due to Ukraine crisis (EU, 2021).

Figure 1: Overview of EU progress towards the SDGs over the past 5 years, 2021 (Data mainly refer to 2014–2019 or 2015–2020)
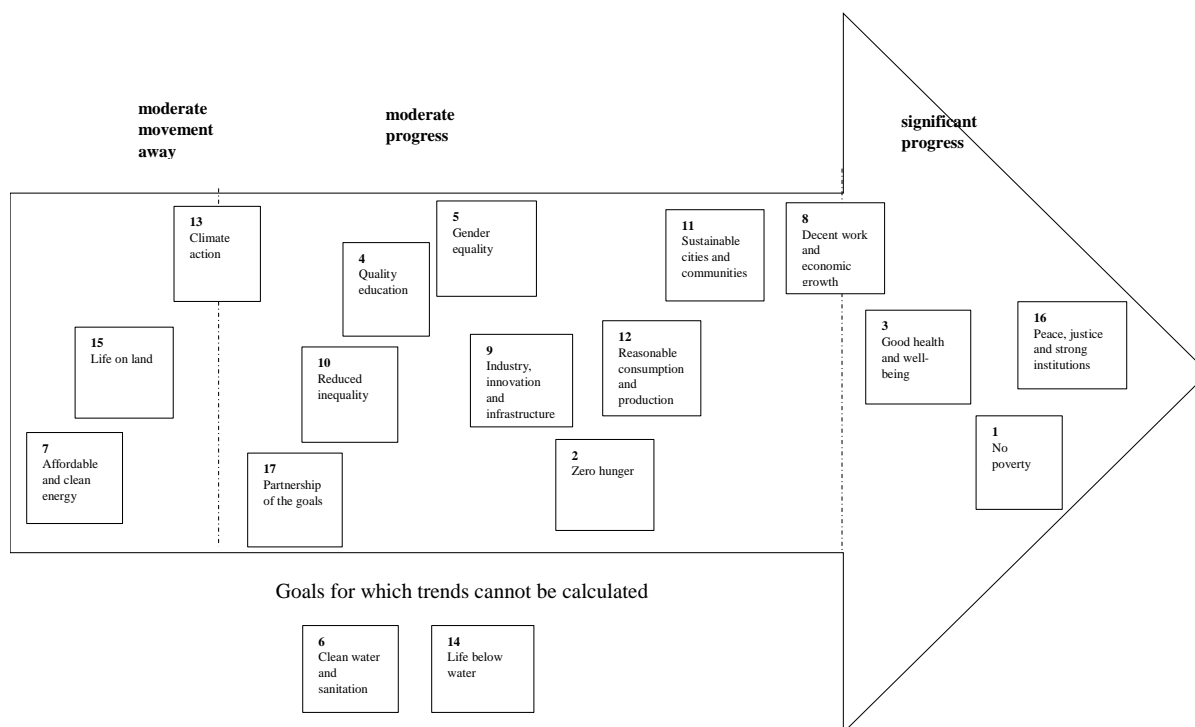
There are big differences in EU in achieving sustainable development goals. Based on the report published in 2021/2022, the average index score of EU countries was 79.7 (standard deviation is 3.3), where Finland had the highest score of 86.5 and was ranked 1st amount 165 countries form over the world. On the other side, the worst performing country in EU was Bulgaria with 2022 SDG score of 73.8 and was ranked 42nd in the world. The analysis between old and new EU members revealed that new EU members are not so successful in achieving sustainable development goals, since their average SDG score was 78.4 (standard deviation was 3.3), while average score of old EU countries was 81 (standard deviation was 2.8).

The best performing new EU countries are Slovenia (80.0) and Estonia (80.6), while the worst performing old EU country is Luxemburg with score of 75.7 (Sustainable Development Report, 2022). However, as Koman et al. (2020) show, the median new EU member has made bigger progress towards the SGD's. Based on the last report published in 2022 Slovenia ranks 15th amount 165 countries form over the world in achieving sustainable development goals. The 2021 SDG Index scores of Slovenia was 80.0 and had only 6.5 points lower score compared to best performing country Finland.

The Table 2 shows that Slovenia achieved their social development goals in 3 areas (SGD 1 – no poverty, SGD 8- decent work and economic growth and SGD 17 -Peace, justice and strong institutions). Interestingly, Slovenia is facing major challenges in achieving their goals also in 3 areas (SGD 2 – zero hunger, SGD 12 - responsible consumption and production and SGD 13 - climate action).

Table 2: SGD dashboard 2021 (levels and trends) in Slovenia

SGD		level	trend
No poverty	1	A	OT
Zero hunger	2	MC	MI
Good health and well-being	3	C	MI
Quality education	4	C	MI
Gender equality	5	C	MI
Clean water and sanitation	6	C	MI
Affordable and clean energy	7	C	MI
Decent work and economic growth	8	A	OT
Industry, innovation and infrastructure	9	SC	OT
Reduced inequalities	10	C	MI
Sustainable cities and communities	11	C	OT
Responsible consumption and production	12	MC	NA
Climate action	13	MC	S
Life below water	14	SC	S
Life of land	15	C	OT
Peace, justice and strong institutions	16	A	OT
Partnership for the goals	17	SC	MI

Notes:
levels: A=SDG achievement, C=challenges remain, SC=significant challenges remain, MC=major challenges remain
trends: OT=on track, MI=moderately increasing, S=stagnating, D=decreasing
NA= data not available
Source: Sustainable Development Report, 2021/2022.

3. Linking Sustainable Policies to Budget and Government Project Office

One of the biggest challenges for the government was to integrate SDG into the budget. The state budget must reflect the chosen sustainable long term goals. The implementation of the Strategy should be thus based on the medium-term fiscal framework. In order to fully meet sustainable commitments the program budget should be introduced. Slovenian government was not able to establish this goal. It could serve as a basis for a comprehensive process of planning that would enable the governments designation of priority tasks also in the time of fiscal constraints.

Experience from Slovenia and some other countries (Finland) show that developing a strong medium-term dimension in budgeting process beyond the traditional annual cycle is a real challenge due to short-sighted of many politicians. Governments should introduce an action plan with concrete projects at the very beginning of budget planning. The primary goals is to adjust especially the expenditures budget structure in accordance to SDG's. Due to the limited public funds and many projects the selection ranking mechanism has to be establish.

Slovenian government (2014-2018) had identified ten key strategic projects to be implemented in line with the SDG strategy. Government project office reported to the Government on all projects in progress (consolidated report) and drew attention to projects that were behind schedule. It also collected initiatives of ministries and other bodies on new possible projects.

The project office was not a legal-formal organizational construct. It was simply a way of working or a way of approaching the management of interdepartmental projects. The tasks of the project office were to monitor the performance of project managers, take care of the project information system, ensure methodologically uniform implementation of projects draw attention to bottlenecks, maintain a knowledge base (archive of project documentation, examples of good practices, database of errors) and implementation of a uniform methodology. Project office assisted the project promotion, in inter-ministerial coordination and monitoring the implementation process (information transfer, coordination, costs). Office has additionally trained future project managers and members of their teams by mentoring members and project managers.

One of the key projects of the government in 2014-2018 was "Complete renovation of state, municipal and private buildings". In Slovenia, as much as 81% of the housing stock needs energy rehabilitation. Comprehensive renovation must include energy, earthquake, fire, functional, sanitary and other forms of renovation that improves the technical properties of buildings and living/working conditions. This will increase the lending activity of commercial banks with the use of EU funds. As many Slovenian companies were heavily indebted after the Big Recession, we could only strengthen the demand of households that were still below average indebtedness. Energy rehabilitation of older buildings means greater energy efficiency (energy saving) and higher consumption at the level of households and the state (EU funds) of construction and the wood processing goods and services (economic goal). At the household level lower heating costs has created certain financial savings through which has enabled repayment of borrowings.

Another important project was the "Green tax reform" in order to stimulate a faster structural transformation of the Slovenian economy and its sustainable development. In it, instead of good things (labor, capital), the state gradually taxes bad things (pollution), thus reducing labor costs, increasing cost competitiveness and at the same time reducing environmental pressures. It also makes sense to gradually reduce environmentally harmful subsidies, considering the country's fiscal capabilities and considering the time that companies need to adjust. All in all, the purposeful use of the collected tax revenues should be upgraded to ensure a lower tax burden on labor. In Slovenia, there was a certain potential for increasing revenues by expanding the tax bases for non-energy taxation (green taxes). Due to the current fiscal problems, the tax system must support a sustainable orientation in a fiscally neutral way. In the following subchapter, let's look at the green tax reform project in a more detail.

4. Limitations for the Green Tax Reform ın Slovenia in 2015

The EU plays a leading role in the world in the field of introducing green taxes and green tax reform. The main goal of the green tax reform is for the state to start taxing bad things (pollution, use of natural resources) instead of good things, such as work, income and capital (Bousqet, 2000). The goal of all countries that implemented a comprehensive green tax reform was to simultaneously reduce social contributions (fiscal neutrality) while increasing green taxes, thus increasing the competitiveness of their own economy. The aim is to improve the situation, both in an environmental and economic sense (Ekins, 2009; Glomm et al, 2008; Siegmeier e tal., 2015; De Miguel e tal., 2015; Freire-Gonzales, 2018). In relation to GTR we have also started using the term "double dividend". The table below shows data on the share of revenues from green taxes for the period from 1995 to 2020 in new and old EU member states.

Table 3: Revenues from green taxes in new and old EU member states 1995-2020 (in % GDP)

	1995	2000	2005	2010	2015	2020
EU 27	2.58	2.57	2.54	2.36	2.45	2.24
Average Old member states	2.88	2.83	2.82	2.55	2.57	2.33
Slovenia	4.11	2.89	3.16	3.61	3.88	2.95
Average New member states	2.17	2.60	2.70	2.65	2.78	2.50

Source: Eurostat, 2022.

From the table above, we can conclude three things regarding the position of Slovenia in 2014. Firstly. In most EU member states, tax revenues from green taxes amount to between 2.5% and 3% of GDP. Secondly, despite the growing trend of environmental awareness in the EU, the share of revenues from green taxes has been falling since 1999 (from 2.6% in 1999 to 2.4% in 2020). Thirdly, the share of green taxes in GDP is decreasing in the old member states (from 2.9% to 2.3%) and increasing in the new ones (from 2.2% to 2.5%). Fourthly. The share of revenues from green taxes in Slovenia was among the highest in Europe in 2015.

There are various reasons for the declining share of green taxes in EU. Countries are increasingly using other instruments in addition to green taxes as part of their environmental policy. On the other side the decrease in the share of collected revenues from green taxes in Old member states indicates that the political project of the green tax reform from the 90s has been congested. As a reult, many environmentalists in these countries are now calling for a new green tax reform. At the same time, the relatively high tax rates in Slovenia limited the room for implementation of the green tax reform. Other limitations are presented bellow in order to understand why additionally the green tax reform was not implemented. When introducing a green tax reform, it is necessary to be aware of certain limitations.

Firstly. Analyzes show that C02 taxation has had beneficial environmental effects, but green taxes have generally been regressive, placing the greatest burden on those with lower incomes (Verde et al., 2009; Kešeljević, Koman, 2014). Effectively addressing regressivity is crucial in gaining wider public support for the implementation of green tax reform. Countries generally use two measures, exemption of certain groups from taxation (ex-ante) (eg. lower tax rates) or transfers to affected groups (ex-post).

Secondly. Cost increases due to higher green taxes can lead to a drop in competitiveness, reallocation of production factors and loss of market shares. Exemptions do not encourage restructuring towards a more energy efficient industry and undermine the polluter pays principle. It is important to correctly assess the impact of the tax on the competitiveness of an individual sector, which depends mainly on the exposure to international competition and on the energy intensity of the sector. All countries that implemented a green tax reform neutralized the negative effects through the targeted use of revenues collected through green taxes (eco-subsidies) or through the reduction of income tax/social contributions with the aim of increasing competitiveness, GDP and employment (Hoerner, Bosquet, 2001; Kešeljević. Koman, 2014).

Thirdly. Sokolovska (2020) emphasizes the limited potential of the green tax reform. Green taxes represent a relatively small share in the state's revenue structure, so to compensate for the loss of income tax, their drastic increase would be needed. There is a limited future potential of the GTR, because it envisages the replacement of a wide base tax with a narrow base tax. Another reason lies in the fact that the green tax rate in Slovenia is above EU average and this leaves litlle room for further increases and for further environmental tax reforms.

Fourthly. The effectiveness of green taxes can be increased if green taxes are introduced together with other instruments (eco-subsidies, labels). Often subjects are not aware of what they are buying from the point of view of environmental impact, so various labels that warn consumers about environmentally harmful consumption and production can help much more.

Fifthly. The experience of countries shows that predictability and gradualness in the introduction of green taxes increase the likelihood of the implementation of the green taxes. This way gives enough time for adjustments and at the same time shows the government's clear intention regarding the future direction. People also do believe promises if the funds collected from a certain tax title will be spent on environmental programs. It is necessary to make a plan for spending funds and redirecting funds to environmentally friendly projects.

Additionally we compared two scenarios. Baseline scenario where the green tax (carbon tax) is not introduced and a projection that assumes the introduction of an annual carbon tax in the amount of 15 euros/tCO2 (or 55 euros/tC). All other assumptions remain the same as in the baseline scenario. The comparison between the two projections was carried out for some key economic (average wages, population consumption, exports, gross domestic product, employment), energy (average fuel prices, energy demand) and environmental variables (greenhouse gas emissions, emissions according to users). We expected that the gross domestic product would fall due to lower household consumption.

In the following, we show the impact of the introduction of a carbon tax in the amount of 15 euros/tCO2 (or 55 euros/tC) on population consumption. It can be seen from the figure below that, in the case of the introduction of an additional annual carbon tax, the consumption of the population would relatively fall the most in the first year, namely by 0.45% compared to the baseline scenario in which the carbon tax was not introduced. Higher average fuel prices lead, in principle, to a decrease in real incomes, which reduces household consumption, which in turn will also decrease aggregate demand and cause a drop in GDP. The difference between the two scenarios is expected to be greatest at the beginning of the period, and then gradually decreases. The reasons can be found in the time lag, as customers need a certain amount of time to change their consumption habits and operating patterns.

Figure 2: The impact of the introduction of a carbon tax on population consumption (comparison with the baseline scenario).
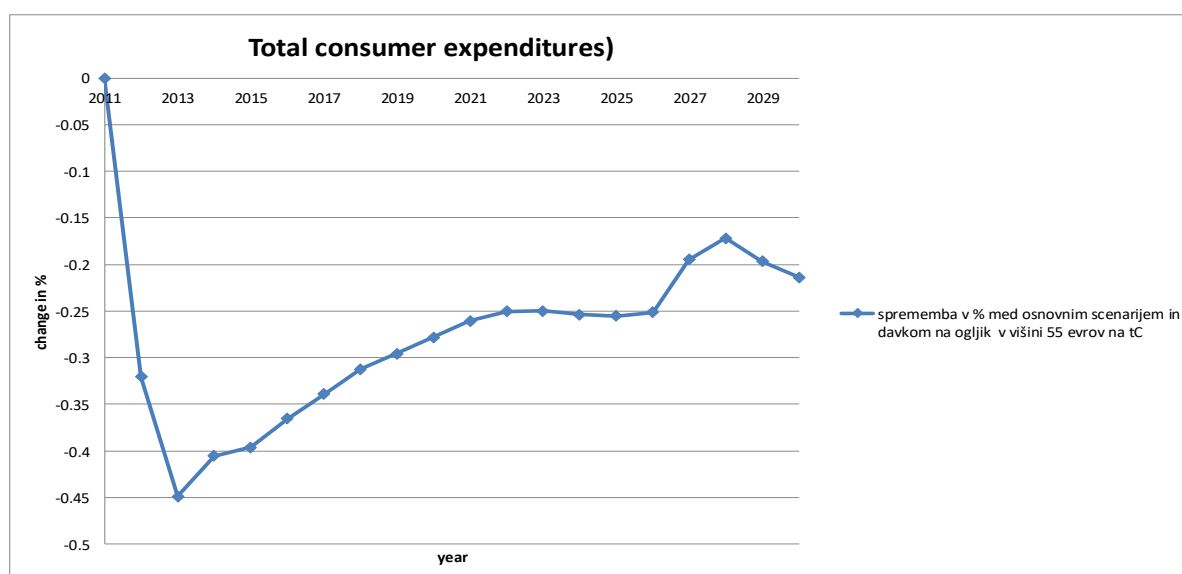
Source: E3ME simulation.

In the following, we are interested in analyzing how a carbon tax of 15 euros/tCO2 (or 55 euros/tC) affects the gross domestic product. The figure below shows that in the event of the introduction of an additional annual carbon tax, Slovenia's gross domestic product would decline the most in the first year, namely by 0.3% compared to the baseline scenario in which the carbon tax was not introduced. The latter is in line with expectations. Higher average fuel prices lead to a decrease in real incomes. The latter leads to a decrease in household consumption, which will reduce aggregate demand and cause a decline in gross domestic product. As a result of higher prices, the export competitiveness of the Slovenian economy would decrease, which further affects the decline in GDP. At the same time, the data show a relatively small impact of the introduction of the mentioned tax on the change in GDP. Later, the difference between the two scenarios gradually decreases, which is in line with expectations and theoretical findings, as buyers need time to change their habits and patterns.

Fıgure 3: The impact of the introduction of a carbon tax on GDP (comparison with the baseline scenario).
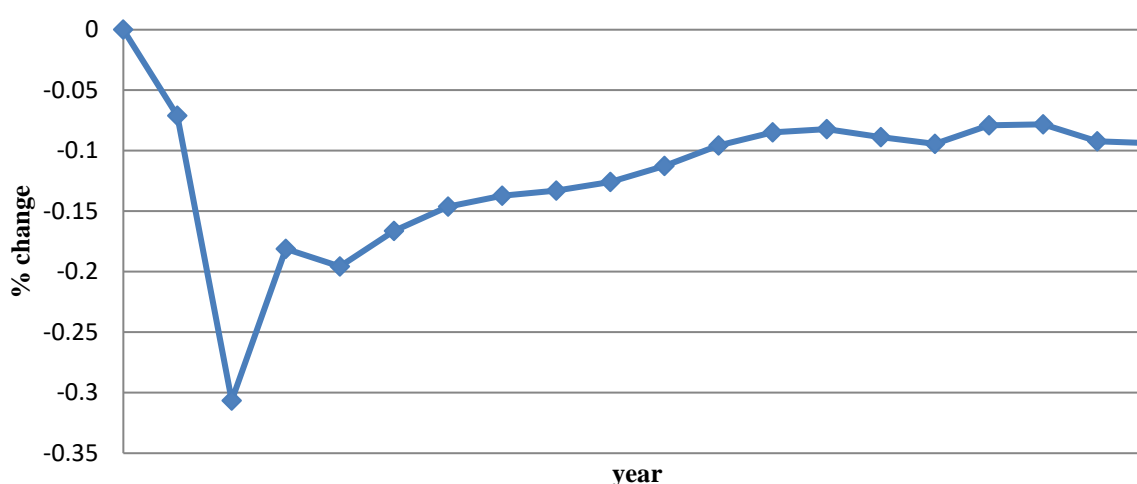
Source: E3ME simulation.

Many believe that green taxes are more effective than other environmental instruments due to recycling. Other environmental instruments do not allow the collection of revenues and their intended use, so their effectiveness is correspondingly lower, and social costs are higher. At the industry level, green taxes may increase costs, but if labor costs are relieved, labor-intensive industries in particular may benefit. In this case, there is a redistribution of the tax burden from companies and sectors according to their energy and labor intensity.

We also analysed different forms of recycling in order to identify the optimal fiscal instrument (annual CO2 tax of €15 per ton C02) for achieving high economic wellbeing. It seems that reduction of employee's social contributions has more favourable effect on the consumption, industry output, employment and GDP than reduction of employer's social contributions.

5. Conclusion

While developed countries like Slovenia are positioned to achieve SDGs by 2030, the less developed countries, lag far behind. Therefore, it is important to learn from good practices that were implemented in developed countries, as for example in Slovenia.

Slovenian government established a good starting position in more than a decade long tradition of policy making through sustainable oriented development. The vision of Slovenia was created with the input of different people from all parts of the Slovenian society. The Slovenian strategy includes five strategic orientations and twelve development strategic goals that are mapped to

each SDG. The biggest challenge for Slovenian government was to integrate sustainability goals with the traditional annual cycle. In order to make priorities Slovenian government (2014-2018) also identified ten key strategic projects to be implemented in line with the SDG strategy. The project office manages these interdepartmental projects and assisted in inter-ministerial coordination and monitoring of the implementation process.

One of the most important projects was the "Green tax reform" in order to stimulate a faster structural transformation of the Slovenian economy and its sustainable development. The main goal of the green tax reform is to tax bad things (pollution) instead of good ones (income). The aim is to improve the situation, both in an environmental and economic sense (double dividend). Our analysis showed a relatively small impact of the green tax on the change in GDP.

Among limitations why green tax reform was not implemented is the share of revenues from green taxes in Slovenia, as one among the highest in Europe in 2015. We analysed different forms of recycling in order to identify the optimal fiscal instrument for higher economic wellbeing. It seems that reduction of employee's social contributions has more favourable effect on the consumption, employment and GDP than reduction of employer's social contributions.

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The Singapore Convention and the European Reality

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Abstract

Over the last few decades, international trade has been the target of several initiatives concerning the harmonization of its regulations. Several international entities have decisively contributed to greater predictability and security in international trade relations. We are referring to the United Nations Commission for International Commercial Law (UNCITRAL), the UNIDROIT Institute and many other institutions that, although in a sectoral way, have made efforts in the same direction. Parallel to this movement, there has been another, no less important, related to the resolution of disputes arising from this type of international private relations. We cannot fail to emphasize the role of international arbitration, which has greatly contributed to the dynamics of international trade and to the consolidation of some of its rules. In the last 3 years, after the changes caused by Covid-19, there was a need for greater focus on Alternative Conflict Resolution means. In this context, mediation gained a prominent role due to its procedural simplicity, given the self-compositional nature of it, facilitating dialogue between the parties, and a more easily achievable result. However, it is important to bear in mind that this means has revealed, over time, little demand in international trade, due to the lack of harmonized international rules that enhance the extraterritorial effectiveness of the reached mediation agreements. In the wake of this concern, the United Nations Convention on International Arrangements Resulting from Mediation emerged, adopted by the United Nations General Assembly in December 2018 and signed in Singapore on 7 August 2019. Such regulation has not been peacefully accepted, mainly by Europe, given the existence of Directive 2008/52/EC of the European Parliament and of the Council of 21 May 2008 on certain aspects of mediation in civil and commercial matters. To date, no EU State has signed that instrument. We will analyze the two instruments, seeking to highlight the weaknesses of the Convention in the face of European skepticism regarding the solutions advocated therein. We will use the deductive method from the analysis of these instruments, enumerating the main dilemmas of the Singapore Convention.

Keywords: international trade, dispute settlement, mediation agreements, transnational effectiveness

1. Introduction

The internationalization's increase of foreign private relations, especially commercial ones, gave rise, from an early age, to changes in the form of dispute resolution. In parallel with the phenomenon of economic relations' globalization, there was also the globalization of conflicts.

Soon, the need to overcome the obstacles of state justice soon was felt, due to the lack of celerity of the state judicial machine and the little adequacy of the discipline enshrined in national laws. Alongside this realization, alternative proposals emerged, both in terms of the resolution of disputes themselves, as well as in terms of their substantive discipline.

We must emphasize, especially in the last four decades, the exponential development of arbitration as a "normal" way of settling conflicts in international trade. The characteristics of this alternative means to the state courts, which is in fact, the only truly alternative, due to the jurisdictional function recognized to the arbitrators and the force attributed to the respective arbitration verdict, gained particular emphasis.

Arbitration then started to be seen as a substitute for the judicial route, with almost all international contracts having an arbitration clause.

Alongside its success, the significant growth of the number of cases, some of great complexity, became inevitable, giving rise to some procedural slowness.

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Many of the issues submitted to arbitration, especially international arbitration, often require precise technical knowledge, execution of diligences located in different places, also implying an overload of documentary evidence analysis, in the hearing of witnesses and experts, among other procedures. All of this definitely contributes to an extension of the deadlines provided for in national voluntary arbitration laws, as well as in the arbitration regulations of the various institutions that administer them (Stromberg, 2007).

It is also important to mention the high costs of arbitration for the parties involved. In addition to the administrative and procedural costs, which are very high in institutionalized international arbitration, especially if we pay attention to the amounts paid *ab inicio*, we must also add the fees of the parties' lawyers, experts, technical assistants and the arbitrators' remuneration. All these factors have made arbitration an inaccessible mechanism, especially for small and medium-sized companies, for less complex disputes. It is urgent to speed up other mechanisms for out-of-court settlement of disputes, due to either its neutrality or the low adaptability of national laws on international contracting[2], and, therefore, the need to apply *lex mercatoria*[3], soft law[4] rules or even the use of equity and balance of interests at stake.

This opens the way for other forms of out-of-court dispute resolution (Stipanowich, 2010), namely mediation (Esplugues, 2018). It is a flexible extrajudicial means of conflict resolution, that operates in the parties involved domain, which is particularly fast, informal, inexpensive and facilitates dialogue and the continuity of contractual relations (Strong, 2014), (Esplugues Mota, 2020).

Even though the parties have the power of the mediation procedure, the mediator, as a third party, chosen by them, will make use of communication and conflict management techniques capable of triggering dialogue, helping them search for fair and balanced solutions (Herrera, 2017).

We cannot fail to mention that this instrument has gained some prominence, in the internal scope, with special emphasis on the scope of family and consumption relationships, also assuming, in some legal systems, a focus on labor relations.

Regarding to international trade, its contribution has proved to be insignificant, although, given the international commercial environment, it presents itself as a challenge for its operators, pacifying their relations and compromising the parties, avoiding contractual fractures. For this purpose, we cannot fail to mention the recent transformation of China, with its growing tendency towards large investments in Latin America, especially through the creation of the

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[2] The lack of adaptability of national laws to the regulation of international commercial contractual relations and the little flexibility of the judicial courts regarding the applicable law contributed to the success of arbitration and to the solidification of the uses and customs of international trade, although by market sector, calling early attention, especially after the First World War, to the need for a harmonized discipline for this type of relationship, which increasingly demanded predictability and legal certainty.

[3] By *lex mercatoria*, we should understand a set of customs and good practices, developed spontaneously, applied by the operators of international trade, operating in a sectorial way, overcoming, especially in the international context, the lack of adaptability of state source norms. It emphasized the importance of the principle of autonomy of will in international contracts, demanding the solution of conflicts through equity and amicable composition. See Goldman, B. (1964) Frontieres du Droit et Lex mercatoria. *In* : Archives of Philosophie du Droit, v. 9, no. 9, p. 177-192 ; Gaillard, E. (1995) Trente ans de Lex Mercatoria pour une application sélective de la méthode des principes généraux du droit. In: Journal du Droit international, n. 1, p. 05-30.

[4] S*oft law* comprises, in its modern sense, all flexible, non-binding rules arising from instruments created by international bodies with the aim of harmonizing the discipline of some aspects of international contracting. Due to their clarity and objectivity, they are used by international trade operators, arbitrators and all those who work in this context, constituting a neutral normative body that is adaptable to the dynamics of this type of relationship. No less true, it also ends up influencing national legislators in the framework of normative production in the context of their legislative activity.

Belt and Road Initiative (BRI)[5]. This has proven to be of great importance, both for companies that will benefit from greater flexibility, efficiency and lower costs, as well as for States that can improve access to justice, facilitating the application of mediated agreements (Ross, 2020).

2. Cross-border Mediation in the European Union (EU)

Directive 2008/52/EC of the European Parliament and of the Council of 21 May 2008, related to certain aspects of mediation in civil and commercial matters, aims to promote the use of mediation and ensure that parties who do so can rely on a predictable legal framework (Recital 7 of the Directive). It essentially aims to harmonize some aspects of mediation in Member States, promoting greater access to justice and dissemination of this means, also contributing to the proper functioning of the internal market (Matefi, 2015), (Palao, 2021).

Its scope is confined to cross-border disputes and should not prevent Member States from also applying its provisions to internal mediation procedures (Recital 8 of the Directive). Specifically, it applies to cross-border disputes, in civil and commercial matters, in which at least one of the parties has its domicile in a Member State other than the Member State of all the other parties on the date on which they decide, by agreement, to have recourse to the mediation or where mediation is court ordered.

The agreements effectiveness reached through mediation will depend on voluntary compliance by the parties or, if this does not happen, of the established by law for forced execution.

However, the parties may want their agreement to be enforceable, namely, when the time factor affects the fulfillment of the agreed obligations and for reasons of legal certainty, among others (Hopt and Steffek, 2013).

The enforceability of agreements established through the mediation procedure is of particular importance in the context of cross-border relations, *maxime* commercial ones. As we know, failure to comply with an agreement can lead to arbitration or the filing of a lawsuit with all the harmful implications for the relationship between the parties.

In order to avoid resorting to these modes of justice, which presuppose, above all, a dispute, with the ensuing course of a process, with all the required procedural guarantees, with their own procedures, culminating in the delivery of a sentence, and with the time factor interfering in contractual relations (breaking, in most cases, the trust between the parties involved), the Member States, fulfilling the Directive goals, transposed it into their domestic law. However, in view of their respective national specificities, they consecrated, in accordance with their legislative policy options, the possibilities for the agreement reached in mediation to be endowed with enforceability.

EU thus allowed the parties to obtain, through the expression of their will, an effect similar to that of a judicial or even arbitration decision (Article 6, paragraph 1 of the Directive). This effect is not attributed *ex lege*, and Member States must provide for and ensure the procedures to be carried out, be it homologation or notarial acts, or even the conversion of the agreement into an arbitration decision (Lopes and Patrão, 2021). Member States must only prevent such effects if the content of the agreement is contrary to domestic law, including private international law or every time their law does not provide for the enforceability of the content of the agreement (recital 19 of the Directive).

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[5] Several countries and international organizations have signed cooperation agreements with the BRI, which has a structure based on the principle of "seeking common benefits, in which all participants discuss economic development plans and policies along with economic cooperation measures. In January 2015, the first ministerial meeting of the China-Latin America Forum took place, formalizing the general cooperation between China and Latin America.

It should also be added that, due to the legislative policy options of the States, direct enforcement may be established. We note, however, that most Member States have not consecrated it, apart from Portugal[6] and Hungary (Lopes and Patrão, 2021).

Because it is a Directive, the Member States were able to implement with a certain amount of flexibility the rules to be adopted in their domestic law, indicating the entities and the way to attribute enforceable effectiveness to the agreement reached in mediation.

In fact, in this wake, article 6, paragraph 2 of the Directive provides that " *(t)he content of the agreement may be made enforceable by a court or other competent authority in a judgment or decision or in an authentic instrument in accordance with the law of the Member State where the request is made.*", whereas the content of the agreement reached, if declared enforceable in one Member State, must also be recognized and declared enforceable in the other Member States, in accordance with the applicable Community or domestic law (recital 20 of the Directive).

In short, the EU legislator embodied the possibility of intervention by an authority, not necessarily a judicial one, so that the agreement obtains enforceability.

In the EU context, there is still a question about the applicability of Regulation (EU) nº 1215/2012 of the European Parliament and of the Council of 12 December 2012 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters (Brussels I bis) to the agreements reached through mediation.

This instrument, in its article 39, provides that "(*a) judgment given in a Member State which is enforceable in that Member State shall be enforceable in the other Member States without any declaration of enforceability being required*". As the EU legislator opted for the term decision[7], term decision, it could be thought that the possibility of executing the mediation agreement would be excluded whenever it was not endowed with enforceability through a verdict, decision, or authentic act of a court. In fact, these possibilities are listed in article 6, paragraph 2 of the Directive.

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[6] In this regard, see article 9 of Law no. 29/2013 of 19 April, which establishes the general principles applicable to mediation carried out in Portugal, as well as the legal regimes for civil and commercial mediation, mediators, and public mediation.
Principle of Enforceability
1 - The mediation agreement is enforceable, without the need for judicial approval:
a) Concerning a dispute that may be the subject of mediation and for which the law does not require judicial approval;
b) In which the parties have the capacity for its conclusion;
c) Obtained through mediation carried out under the terms of the law;
d) The content of which does not violate public order; and
e) In which a conflict mediator registered on the list of conflict mediators organized by the Ministry of Justice has participated.
2 - The provisions of sub number e) of the previous number are not applicable to mediations carried out within the scope of a public mediation system.
3 - 3 - Qualifications and other requirements for inscription on the list referred to in sub number e) of number 1, including national mediators from member states of the European Union or the European Economic Area from other member states, as well as the service of the competent Ministry of Justice for the organization of the list and the form of access and dissemination thereof, are defined by an order issued by the member of the Government responsible for the area of justice.
4 - A mediation agreement obtained through mediation carried out in another Member State of the European Union that complies with the provisions of sub numbers a) and d) of number 1 also has executive force, if the legal system of that State also gives it enforceable force.
[7] This means, as provided by article 2, paragraph a) that a « *'judgment' means any judgment given by a court or tribunal of a Member State, whatever the judgment may be called, including a decree, order, decision or writ of execution, as well as a decision on the determination of* costs or expenses by an officer of the court»

However, the Brussels I bis Regulation provides in Article 58 that *"(a)n authentic instrument which is enforceable in the Member State of origin shall be enforceable in the other Member States without any declaration of enforceability being required. Enforcement of the authentic instrument may be refused only if such enforcement is manifestly contrary to public policy (ordre public) in the Member State addressed"*. If we pay due attention to the notion of authentic instrument that this Regulation provides in its article 2, paragraph c), we find that " (…) a *document which has been formally drawn up or registered as an authentic instrument in the Member State of origin and the authenticity of which: (i) relates to the signature and the content of the instrument; and (ii) has been established by a public authority or other authority empowered for that purpose"*, can, under the Brussels I bis Regulation, be executed an agreement established through mediation as long as the enforceability has been attested by a competent authority other than a court.

It is important to remember that the arbitration mechanism is expressly excluded from the scope of the Brussels I bis Regulation (recital 12). Which is, of course, understandable given the autonomous regulation of arbitration, whether nationally or internationally. We refer to the domestic laws of the States on voluntary arbitration, the Model Law on International Commercial Arbitration (2006 version) of the United Nations Commission on International Trade Law (UNCITRAL) and with regard to the recognition and enforcement of foreign arbitral awards to the New York Convention, 1958.

There are, however, those who believe that the removal of arbitration from the Regulation should cover all means of extrajudicial dispute resolution.

Due to the legislator's silence on the Brussels I bis Regulation, the possibility of its application to agreements obtained through the mediation procedure seems evident to us, although restricted to the means listed in article 6, paragraph 2 of the Mediation Directive. We are talking about the attribution of enforceability derived from a verdict, decision, authentic act of a court or other competent entity.

If the parties, under a certain national law that provides for the direct enforceability of the mediation agreement[8], intend to execute it, we understand that this situation does not fulfill the presuppositions enshrined in the Brussels I bis Regulation to be executed, as it will not be either a decision or an authentic instrument.

In short, the Directive's main goal was, as we have already stated, the implementation of mediation in the Member States. To achieve this goal, some rules were created, of which the training of mediators and the guarantee of high-quality mediation should be highlighted, and in what concerns the subject, the possibility of agreements obtained through mediation being declared enforceable if both the parties so request (as stipulated in each member state) as well as the confidentiality of the mediation.

3. United Nations Convention on International Settlement Agreements Resulting from Mediation - "Singapore Convention on Mediation"

United Nations Convention on International Settlement Agreements Resulting from Mediation, also known as the Singapore Convention on Mediation, hereinafter referred to as the Singapore Convention, applies to international transaction agreements resulting from mediation, with the purpose of ending disputes arising from commercial relationships, thus facilitating international trade.

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[8] It should be noted that Portugal and Hungary, in Europe and Brazil, in South America, have established the possibility of attributing enforceability to agreements reached in mediation, underlining the autonomy and responsibility of the parties (Lopes and Patrão, 2021).

The mediation *modus operandi* brings important advantages to the context of international trade, preventing the breach of contractual relations between the parties, reducing the transaction costs involved, *e.g*., economic, financial, and legal, and contributing to social pacification (Wolski 2013), (Moschen, 2021).

The Singapore Convention presents itself as a harmonized legal framework, capable of promoting a balanced and effective solution to disputes, binding the parties that approve and ratify it.

Undoubtedly, mediation is a flexible extrajudicial means of dispute resolution, given the empowerment of the mediation procedure by the parties, in which they are predisposed to achieve a result, the mediation agreement.

We cannot fail to emphasize the poor results of mediation in the context of international trade relations, especially due to the absence of a harmonized regime for the effectiveness of mediation agreements. This climate contributed to underpinning the purpose of UNCITRAL and culminating in the elaboration and approval of the Singapore Convention. Its mentors aspired to follow in the footsteps of the 1958 New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards, given its profoundly facilitating character towards the development of arbitration. In this sense, they wanted the new Convention (Singapore) to increase the use of mediation, especially due to the ease of execution of the agreements reached.

However, there is no beauty without but, and, as we will see, this new instrument has some problems that will compromise its acceptance and general approval.

Undoubtedly, it established a drastic change, if we compare with the objective outlined by the EU Directive. The protagonists of a written mediation agreement, which has elements of extraneity, under the terms of article 1, paragraph 1 of the Convention, can now benefit from a delocalized title endowed with direct enforceability in the States that ratify it (Esplugues Mota, 2020).

Let us see the main characteristics of the Convention: it allows, as we have already stated, that the parties who reach a mediation agreement can benefit from a uniform instrument to enforce the terms of that agreement in other States, similar to the New York Convention in terms of recognition and enforcement of foreign arbitral awards. It is important that the State where the agreement is to be implemented has signed and ratified the Convention. It should also be said that the mediation agreement reached must fall within the scope of the Convention; in other words, which does not fit into the provision of the negative delimitation listed in its article 1, paragraphs 2 and 3, namely consumer relations, family law, inheritance law and labor law. Nor can it be applied to settlement agreements approved by a judicial body or reached during a judicial process, through a judgment and to agreements incorporated in an arbitration decision and executed as such.

Article 1, number 1 requires that we are dealing with an international mediation agreement, which, in the Singapore Convention's view, means that at least two of the parties involved must have their establishments in different places; or the State in which the agreement's parties have their establishments is different from the State in which a substantial part of the obligations arising from the settlement agreement is performed; or the State in which the agreement's parties have their establishments is different from the State which has a closer connection with the object of the agreement transaction.

That the mediation agreements arising from international commercial relations have been concluded in writing, this requirement being comprehensive, encompassing electronic means, provided that it is possible to access their content, article 2, paragraph 2.

Whenever one of the parties to the settlement agreement[9] intends to enforce the same, it must provide the competent authority of the State, party to the Singapore Convention, and where it intends to execute it, the settlement agreement signed by the parties and provide evidence that it has reached an agreement. of mediation, namely by displaying the mediator's signature on the settlement agreement; a document signed by the mediator stating that the mediation was actually carried out; a certificate issued by the institution that administered the mediation; and if it is not possible to present this evidence, it may show any other that the competent authority deems acceptable, Article 4, number 1.

Under the terms of article 3, paragraph 2, it is also possible for one of the parties to the settlement agreement to invoke this same agreement as a means of defense to demonstrate that the matter has already been decided.

In the wake of its purpose, the Convention, in its article 5, and similarly to the New York Convention, lists the reasons for non-application, providing the executing entity with some flexibility as to its interpretation (Stute and Wansac, 2021).

4. The Crux of the Effectiveness of International Mediation Agreements

It seems obvious to us that it will not be enough to promote mediation through the possibility of executing mediation agreements cross-border. It is necessary to think about bringing the conditions of execution of the agreements closer together. Without verifying this premise and given the vagueness of the Convention, namely when verifying the requirements established for mediation in the country of origin of the agreement, the absence of a seat for mediation, among other shortcomings, great success is not expected for the applicability of this instrument.

One of the main criticisms leveled at it has to do with the intrinsic nature of mediation. Being a voluntary mechanism, in which the parties are predisposed to reach an amicable solution, it is highly unlikely that they will not comply with what they have agreed (Lo, 2014).

However, if the mediation agreement is not complied with, the central problem of its effectiveness arises.

We cannot forget that the overwhelming majority of States enshrine requirements for a mediation agreement to become enforceable. And everything gets even more complicated when this agreement must be executed in another legal system different from the one where it was reached.

In Latin American countries, the admissibility of the direct enforcement of the mediation agreement or the recognition of the effect of *res judicata* (Esplugues Mota, 2020).

The great diversity of regimes established by States for a mediation agreement to be executed, whether by homologation sentence, notarial act, act of a competent authority, among others, ends up having an impact both on costs and on legal predictability and certainty. (Esplugues Mota, 2020).

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[9] The Singapore Convention indiscriminately uses the terms transaction and mediation interchangeably, so we will use them as well. Both presuppose an agreement by which the subjects of a dispute decide to put an end to it, forgiving some of their rights, for the sake of pacifying their relations.

Contrary to the EU Directive, the Singapore Convention focuses solely on implementation, dispensing with any initial control in the agreement's country of origin (Fernández-Samaniego, 2022). It thus allows the party to directly execute the transaction agreement in the courts or by any other competent authority in the country, by hypothesis, where the assets are located.

The Singapore convention manages to erect the mediation agreement reached between the parties to a delocalized title endowed with executive force in its signatory countries (Mehrabi and Sheikhattar, 2019), (Esplugues Mota, 2020), (Moschen, 2021).

It should not be said that the distance from the place where the agreement is reached is completely irrelevant, that its physical location is not expressive, *e.g.*, in online mediation.

After all, mediation is born out of a contract (the parties' agreement to submit their dispute to mediation) and culminates in a contract (mediation agreement reached). Even if the mediation does not take place in a physical location, the parties must be obliged to indicate which law governs the agreement and the jurisdiction to be considered.

The security and predictability of solutions are an attribute of both legal systems and the parties themselves, who are bound by a contract, and which claims those characteristics (UNCITRAL, Report of Working Group II, 2015).

The Singapore Convention also offers no guarantees as to the possible outcome of the challenge of the agreement in the State of origin. If we pay attention to the reasons stated in article 5, we will easily conclude the fragility of the preclusive effect on the request or even on the execution of the agreement reached.

Furthermore, the Convention, in article 8, allows the signatory parties to make reservations, thus diminishing the effectiveness of the cross-border enforcement that it seeks to achieve.

In view of the regime established by the Convention, we can easily say that it is limited to provide general guidelines for a mediation agreement to be executed.

Some skepticism can also be denoted about the need for the mediator's signature, a requirement mentioned in article 4, paragraph 1, sub paragraph b). This may not take place because the mediator refused to sign the agreement or a document certifying the mediation, or there is no mediation administrator. All this can hinder the proving of the agreement. However, it remains to be asked whether the presence of the mediator changes the premises of mediation and whether it has repercussions on the legal nature of the agreement reached?

Undoubtedly, this agreement has a contractual nature, depending strictly on the parties' autonomy of will. The mediator's presence, in his role as a facilitator of communication, does not alter its nature in any way.

In fact, there are several ways of attributing effectiveness to the agreement reached, as mentioned above. However, the Singapore Convention intends to transform the agreement into a title that can be executed, not worrying about the regularity of the mediation - from the clause that foresees it as a way of resolving disputes, normally inserted in the contract, through the process and procedure of mediation, whether it takes place in an institution that manages it or not, with the requirements for exercising the profession of mediator established by the States in their domestic law, with the nature of the disputes that can be the subject of mediation, especially under the law of the place where it took place, the law of the effective or fictional headquarters, and, finally, with the regularity of the agreement itself, result reached by the parties.

It should be noted that the guiding principles of mediation are widely disseminated, and these too can, if violated, jeopardize the validity and effectiveness of the agreement reached.

In short, no importance is attached to recognition and enforcement. The Convention clearly demonstrates the evasion of recognition, which presupposes, as we know, the existence of an enforceable title, in this case, a mediation agreement reached and certified in the country of origin, that the agreement alone cannot aim. In other words, a simple agreement between the parties cannot be considered, without further ado, as an enforceable title. This will always depend on the regime established in the agreement's legal systems of origin, and, subsequently, on the States in which it is invoked. It will be a way of controlling its content, its veracity, certifying the obligations assumed therein.

We can conclude that, under the Singapore Convention, the relocated title shows a greater enforceability than the one attributed to a foreign arbitral award, which, for this purpose, needs to be recognized and enforced under the terms of the New York Convention (Esplugues Mota, 2020).

Since the Singapore Convention has not been ratified by any Member State, although it has established a rule for the participation of regional economic integration organizations, article 12, the problem of its signature and compatibility with the regime established by the EU Directive is posed and discussed.

It has been argued that the Convention should be bloc signed by the European Union, although member states reveal very different positions.

It should be noted the EU importance in the context of international trade and, consequently, the need to resolve disputes arising therefrom. EU is the largest single market in the world.

According to the report by the Queen Mary University of London, Paris, Geneva, Stockholm, and London (before Brexit) were, at the time, the preferred seats of world arbitration, with New York, Singapore and Hong Kong being the remaining cities. (International Arbitration Survey: The Evolution of International Arbitration, 2018).

It was concluded that the method of choice for resolving disputes in international trade is arbitration, although in conjunction with other ADRs, *maxime* mediation.

In view of the World and European scenario, we can say that the ratification of the Singapore Convention by the EU would imply the existence of two legal regimes, although at different levels, the European and the Singapore one, the latter being more flexible. It does not seem credible to me to adopt a regime for sub-community measurement agreements and another for extra-community ones, jeopardizing legal harmony in terms of international mediation.

We believe that the parties' confidence in the institute of international mediation will always involve guaranteeing the effectiveness of the agreement reached, a design that, given the Convention, is weakened.

5. Conclusion

Currently, two paths are outlined for the execution of agreements reached through international mediation.

The European Union Directive 2008/52/EC on Mediation and the Singapore Convention on International Settlement Agreements Resulting from Mediation.

In the EU, the Directive applies to cross-border disputes in civil and commercial matters in which at least one of the parties is domiciled in a Member State other than the Member State of any of the other parties at the date on which they decide, by agreement, to resort to mediation or where mediation is ordered by a court.

The main goal of this legal instrument is to encourage the use of mediation in the Member States.

Alongside this European instrument, it should be noted that there is a set of regulations aimed at replacing the conflict rules of the Member States to harmonize the regulation of international private relations.

In terms of international commercial mediation, the Brussels I bis Regulation is particularly relevant, given its material scope of application, civil and commercial matters, regardless of the jurisdiction's nature, applying to cross-border enforcement, allowing the execution of a mediation agreement reached, whenever it is approved or certified by a competent authority under the terms prescribed in the instrument itself. The direct effect of the agreement is excluded from this possibility.

Article 6 of the Directive does not prevent a Member State from allowing the direct execution of a mediation agreement reached in any state. This will depend on the options of the domestic legislator of each State.

One of the Singapore Convention main goals is to give the parties confidence in the mediation process and ensure the direct execution of mediation agreements in any of its signatory States.

In this context, there is no provision for any control in the agreement's country of origin.

The adoption of the Singapore Convention by the EU will provide for two different regimes, although the scope of the Convention is narrower than that of the Directive.

At this point, only the regime of both instruments in commercial matters will be significant, specifically the international mediation commercial agreements.

A mediation reached can be more efficient, in terms of time and costs, than arbitration or judicial procedures and its self-compositional form will provide for the continuation of commercial relations between the parties, but it will always demand legal certainty.

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Meaning and Formulation of Strategy in the Post Covid-19 World

Aleksander Pabian[1]

Abstract

Strategy is a complex reaction process that allows to create and maintain satisfactory relationships between the goals of the company and its resources, and the changing conditions arising in the environment, so as to achieve the highest possible efficiency. For years, developing a good strategy was considered a decisive factor in a company's ability to succeed in the market. However, in the unpredictable conditions of the COVID-19 pandemic, many companies on the market had to start acting „in the dark", resigning from strict adherence to the assumptions of strategic plans and adapting to dynamic changes in the environment on an ongoing basis. However, as the results of research show, after this difficult period there is again the need to act in a systematic, planned and thought-out manner (in accordance with the strategy). Managers' opinions also helped to evolve the right strategy formulation model, in the new (but in fact well-known), post-pandemic reality - coincident with the circumstances occurring before Covid-19.

Keywords: strategy, Covid-19, pandemic, plans' formulation

1. Introduction

The issue of strategy in enterprise management is addressed by many authors [Verbake, 2009, p. 15]. Nowadays, strategy is defined in terms of a comprehensive action plan that sets directions and indicates how resources should be allocated in order to implement organization's mission and achieve its goals while maintaining a competitive advantage [Schermerhorn, 2008, p. 130]. Approach to strategy has changed over the years. In the 1950s and 1960s, strategy was understood as a long-term plan. The process of its formulation was systematized and formalized and it was possible to distinguish the main stages within it. It was supported by techniques for defining goals, developing programs, operational plans and budgets. Such a planning approach to strategy survived until the mid-1970s. In the following decade, it lost its importance, but still occupied a prominent place in strategic management (especially in large corporations).

Criticism of the planning approach contributed to the emergence of an alternative trend of thinking about strategy. Starting from the late 1960s, strategy was understood as a coherent pattern of decisions and actions, evolving in the course of the company's operation. In the meantime, it has been shown that the organizational reality is not so rational and strategy is the result of intentional and emergent, self-created strategic activities. In the 1980s, the term strategic position evolved, which influenced the perception of strategy through the prism of the company's ability to achieve a competitive advantage. In the 1990s, two main concepts became popular: core skills and competing based on ability. The organization began to be perceived primarily as a set of assets (resources) and skills. Their configuration into key competencies and the way to best use them became the essence of strategic thinking. The beginning of the new century forced a new look at strategy [Chybalski, Zakrzewska- Bielawska, 2012, pp. 46-47]. Globalization, the rapid pace of changes taking place in the environment, technological progress, and the accelerated development of knowledge have meant that the strategy focuses less on detailed plans and more on striving for success.

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Nowadays, strategy is still one of the most important management instruments, having a decisive impact on achieving proper results by a company [Kaplan, Norton, 2010, pp. 1-5]. As the researchers emphasize, "strategy help us define our business, gives it a set of values, and gives it purpose […]. It provides a roadmap for business, shows destination and identifies useful stopping points along the way" [Shaw, https://businessdoctors.co.uk/the-importance-of-a-business-strategy/, reading: 15.11.2022). A well-thought-out, designed and executed strategy provides the impetus for commercial success, while a weak or misunderstood strategy can lead to the collapse of the enterprise [Kourdi, 2009, p. 9]. As Sun Tzu, the author of The Art of War emphasized centuries ago: "strategy is the great work of the organization. In situations of life or death, it is the Tao of survival or extinction. Its study cannot be neglected".

In this context, it is not surprising that the formulation of a good strategy has been considered for years as a factor determining the possibility of a company's success on the market. However, in the unpredictable conditions of the COVID-19 pandemic, many companies on the market had to start acting spontaneously, as if „in the dark". They had to resign from strict adherence to the assumptions of strategic plans and adapt themselves to dynamic changes in the environment resulting from the spread of the pathogen. The results of the research conducted by the author show, however, that after a difficult period of spreading the pathogen, companies' managers see again the need to return to planned activities, carried out in a systematic and thoughtful manner in accordance with the strategy. Their opinions have also helped to evolve the right strategy formulation model, in a new (but in fact well-known) post-pandemic reality - coincident with the circumstances occurring before Covid-19.

2. Method

The research gap was revealed by a bibliographic and factual query, which showed that there are not many studies that can clearly confirm the usefulness of the strategy as a tool leading to the achievement of the assumed goals of companies in post-covid realities [Żurakowski, 2004, p. 56]. No new publications indicating the proper structure of the strategy formulation process in the new circumstances were found as well. The query that led to such conclusions was conducted in accordance with the principles of a systematic literature review, i.e. one that focuses on a clearly formulated research question and uses the described scientific methods of identification, evaluation and synthesis of all sources relevant to the question guiding cognitive effort. Unlike traditional reviews, systematic one follows specific standards (see more on this topic: [Tranfield et. al., 2003, p. 207]).

In order to verify the revealed research gap, a survey was conducted in the form of an interview ("it consists in asking the respondent a certain number of questions aimed at solving the research problem" [Pabian, Gworys, 2008, p. 31]). It was a personal F2F interview in the form of discussions with entrepreneurs (unstructured, directed interview[2]). It was held with representatives of the management staff of 10 large, polish companies (they occupied senior level of management - such people are usually responsible for the strategy planning and execution). It was recognized that talking with them could help in conducting an in-depth analysis of the predicted regularities. In addition, this can contribute to the exploration of new phenomena, empirical grounding of additional, previously unconsidered theses, which, if necessary, may become the subject of further research.

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[2] It concerns more general issues, about which, leading person asks in the form of open questions, the order and form of which depends on the situation. "The interviewer's behaviour is highly individualized and tailored to the interviewer". Compare: [Chomczyński, 2007, p. 119].

The managers of the surveyed companies believe that a properly formulated strategy is of great importance for the functioning of their companies in the post-covid world (five of them clearly declare its impact on the operations of their companies). In response to the question, if the role of strategy is the same for every enterprise, it was emphasized that its importance may vary and depends on the nature of the company, i.e. the industry in which it operates, its size, needs, resources, etc. Generally, it was concluded that after Covid-19, strategic plans should be drawn up again and every key issue for the company's operation should be taken into it. It was also asked how to formulate a strategy to gain a competitive advantage in a changing, post-pandemic environment in order to meet the expectations of stakeholders. The discussion with the managers made it possible to define the strategy formulation model, which is presented in the further part of this article.

3. A Model for Formulating a Strategy in the Post-covid Period

Respondents' opinions show that only a properly developed strategy is an extremely important management tool. This fact proves the need to pay a special attention to the process of formulating strategy. It cannot take an ill-considered or spontaneous form. This is in line with the opinions of researchers who emphasize that creating a strategy, regardless of its level or type, should be considered in terms of a serious challenge, which takes the form of a sequence of strictly defined activities [Harvard Business School, 2005, p. XVI]. These activities form a series of logically consecutive stages, the implementation of which, as a consequence, measurably increases the chances of achieving success and gaining a competitive advantage on the market.

Another research conclusion is that for each company, the starting point for developing a general concept of operation, the implementation of which provides the organization with an advantage on the market (and thus *de facto* strategy [Webber, 1996, p. 245]), should be recognition of company's potential as well as internal, inhibitory factors and identification of opportunities and restrictions imposed by the environment. In other words, managers responsible for strategy must, among other things: get to know the company's resources in detail (the usage of which can be included in the plan), analyse the organization's culture, management style, values professed by employees and so on. It is no less important to determine the impact of external factors that may support the implementation of activities or destroy them. This necessity results from the fact that the strategy cannot be detached from reality.

Finally, the conversation with entrepreneurs shows that the way a strategy is formulated is determined by its type[3]. At the same time, however, it is possible to successfully distinguish certain stages that seem to be common to the process of formulating each strategy. Its creation requires making conscious and rational decisions. In this context, one should start by analysing company's mission[4], which in turn is a precise expression of its vision (long-term intentions and aspirations of the organization) [Obłój, 2007, p. 389]. This is due to the fact that the mission is usually the main carrier of the company's strategic goals [Talbot, 2003, p. 15]. In turn, the strategy is a specific plan for their implementation (Fig. 1).

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[3] The dynamics of management processes and the rapid changes taking place in the environment of enterprises result in a great variety of strategies being used. Modern economic literature treats them extensively. Indeed, one of the results of a reliably conducted library query may be the creation of a list of strategies being developed at individual (and non-identical) levels of management. Compare: [Kramer, 2004, p. 183].

[4] Mission is defined in different ways. Some authors limit themselves to stating that this is a kind of formulation explaining why a given economic entity exists. See more: [Pakroo, 2011, pp. 37-38].
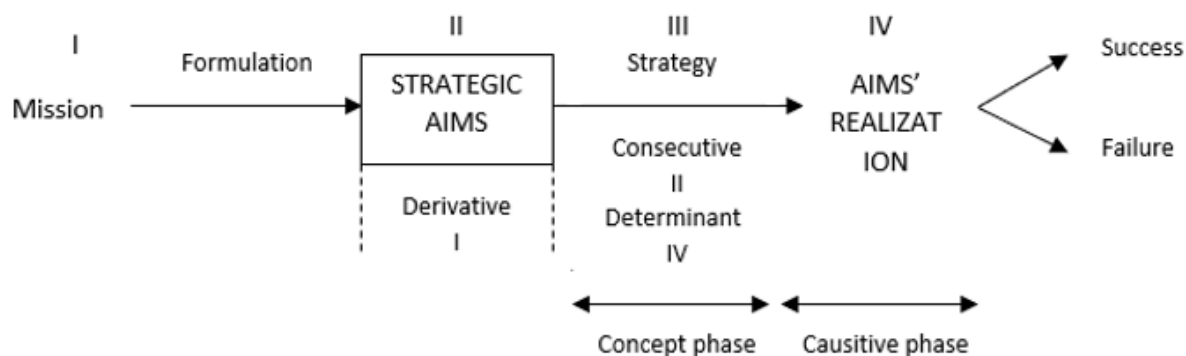
Figure 1: Relationship between mission, goals and strategy.
Source: Own elaboration bvased on: G. Walker. *Modern competitive strategy*. McGraw-Hill Irwin. New York 2004.

Therefore, it is not possible to formulate company's strategy without knowing its mission and the strategic goals generated on its basis. Some researchers are even of the opinion that the mission should be considered in terms of a factor, of key importance, in creating a strategy [My Strategic Plan, https://ctb.ku.edu/en/table-of-contents/structure/strategic-planning/vision-mission-statements/main, reading: 01.12.2022].

After analysing and defining what the organization wants to achieve, the concept phase should follow, which aim is to create a plan for the implementation of intentions. It should consist of two basic categories of activities, following each other in time chronology. The first one is diagnosing. Examining what's going on - what variables are involved and how they relate to each other - is very important, especially since strategic issues tend not to be clear and simple, but rather complex and opaque [De Wit, Meyer, 2007, p. 82]. This part of the strategy formulation process should include two categories of detailed activities:

- diagnosis of the organization on its own, i.e. verification of factors influencing the functioning of the unit, located within it (management style, culture, values, etc.) and possessed resources (financial, intelectual, material). The functioning of an organization on the market depends on the resources it has and they are the base used to achieve its goals [Marzec, 2015, p. 79].

- External verification - diagnostics of the macro-environment (general environment) and micro-environment (closer environment) of the organization. First term means a set of external factors that affect the company and result from its operation in a specific country or region, in a given climatic zone, in a specific political, cultural, technological or legal system. "A feature of the macro-environment is that it very strongly determines the company's ability to operate and develop" [Gierszewska, Romanowska, 2009, p. 23]. Hence, the analysis of the macro-environment is extremely important due to its significant impact on the functioning of the company on the market. On the other hand, the micro-environment consists of the company's external stakeholders - any person or group who stay in constant contact with the company and can influence a given organization (or is affected by this organization) [Molendowski, Polan, 2007, p. 87]. These include, among others, competitors, media, customers, suppliers. The micro-environment affects the company, but in this case there is a feedback loop, i.e. the company can also influence the environment, study it and predict its behaviour [Miłek, 2009, p. 62].

Implementers of the diagnostic phase have access to many methods useful from the point of view of analysing the environment (Delphi method, gap analysis, map of strategic groups, scenario methods) as well as the interior of the organization (strategic balance, value chain analysis, strategic benchmarking, etc.). Integrated techniques are also available to analyse company against the background of the environment (SWOT, experience curve, strategic positioning, etc.).

Internal and external diagnosis should precede activities related to devising a strategy. A manager who is already aware of the goals he wants to achieve and knows the potential of the organization under his control (as well as the opportunities / limitations imposed by the environment), can start developing so-called: variants. This activity consists in preparing several variants - solutions to a specific task or goal, i.e. versions of the strategy. Sometimes it can happen that managers immediately like a particular idea of operation, so developing strategic options ends up with one, unrivalled proposal. However, many managers like to consider various approaches to a given strategic problem, creating many possible variants. They can take a variety of forms, from very general descriptions to detailed strategic plans specifying goals, actions, tasks, division of responsibilities, resource allocation, following steps and performance measures.

Subsequently, the evolved solutions should be carefully evaluated to determine whether their implementation makes sense. Each strategic option should be assessed in case of [Gliński et. al., 1996, pp. 5-6]:

– convergence with other strategies,

– temporality,

– feasibility of the strategy - a necessary condition that a strategic option should meet,

– compliance with the company's mission and strategic goals, what was already emphasized,

– flexibility to the changing environment,

– acceptability by stakeholders,

– ensuring a competitive advantage.

However, the strategic variants should first of all be verified in terms of expected benefits. This is the stage of self-assessment, where decision-makers should look more closely at the strategy variants they have developed and accept the one they consider the best in the whole pool. At the same time, however, during the diagnosis of individual options and the selection of the most advantageous, they are often exposed to pressure from various stakeholders of the subordinate entity.

4. Conclusion
Enterprises are not detached from the "demands of time". The modern reality in which organizations operate is characterized by many conditions that force them to constantly adapt, and this means meeting new requirements, using innovative solutions, implementing new technologies, etc. A particular challenge for companies has recently become the coronavirus pandemic. Many of the companies had to resign from strict adherence to their strategic plans during its course, adapting to the dynamic changes caused by the expansion of the pathogen. However, according to entrepreneurs, it is now necessary to return to acting in a thoughtful and systematic manner, which is to be served by a properly formulated strategy. However, it should be remembered that formulating a strategy is only the beginning. Next ones are implementation

of strategy by all employees of the company and measurement of its effectiveness. However, the author decided to devote a separate study to this topic.

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An Analysis of Norm Diffusion Pathways in the Process of EU Accession Negotiations: The Case of Turkey's Harmonization with EU's Water Policy and Transforming Policy Networks

Vakur Sumer[1]

Abstract

European Union's (EU) Water Framework Directive (WFD) is the umbrella legislation for achieving 'good status' for water bodies in Europe, thus reducing the risks associated with polluted waters across the continent. As a country conducting accession negotiations with the EU, Turkey is obliged to transpose and implement the WFD. Harmonization with the WFD is a complicated task, as official EU reports have revealed.

This paper argues that the process of WFD harmonization has been unfolding itself in Turkey in three successive norm diffusion pathways, each corresponding to a different stage in the harmonization process, as well as to a different policy network, i.e. the networks established among stakeholders in policy-making and policy-implementing agencies in the negotiation process. In such a framework, the three norm diffusion pathways can be listed as 1- contact, 2-contagion, and 3-conformance.

In the *contact* phase, Turkish and EU officials established initial networks of dialogue, and determined the terms of negotiations in somewhat sterile conditions, with almost no public involvement. The main carrier of the process is thus elites (EU-related hydrocracy). First joint projects (involving the EU and negotiating country) focusing on "capacity building", "gap analysis", "twinning" fall within this stage of harmonization. During the second phase -*contagion*- the transposition occurs. After finalization within the ministerial bureaucracies, the WFD legislation would now be brought to Parliament for a thorough discussion and approval. In this phase, the general public becomes more involved in the process, particularly via the help of media. After the legislation proposals appear in the official website of the Parliament, media organs start to play significant role in publicizing the issue. However, it is still the elites, albeit widened, are the main agents of change. The third phase is the *conformance*. In this stage of harmonization, the real implementation of the WFD should be anticipated. Since water quality management is a complex task involving a great number of stakeholders, such as industries, farmers, households etc., the successful implementation of the WFD would rest upon the society at large.

Through the process of implementation, while the elite role would be diminishing in comparison to other stakeholders, the process is getting a more multi-actored one, along with an expansion of the ways of interaction. All these changes imply a transformation of the networks associated with the making and implementation of the WFD-related policies (See the diagram for a visualization). With regard to most of the harmonization process, which is the conformance, the policy network would no longer be confined to bureaucratic or political elites; rather on the quite contrary, the achievement of the WFD rules is highly dependent on the quality of the expansion and transformation of the network.

Keywords: Water Framework Directive, European Union, Turkey, norm diffusion, water management, acquis communautaire

1. Introduction

Water management has been one of the most significant issues in EU accession negotiations. One of the reasons for this is the demanding costs of implementation. A different reason is associated with the complexity of water policy that it inherently entails. Water policy stands right at the intersections of a manifold of interests which generally seem too time-consuming - if not impossible- to converge to an acceptable minimum degree. Thus, it is generally very difficult to achieve a consensus-like situations, a *modus operandi,* among a diversified array of stakeholders operating at multiple levels of water management. Turkish case has proved that it

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is not an exception to this. After nearly two decades following the announcement of candidacy, Turkish water management policies basically remains at odds with those prevailing in the EU.

The "Directive 2000/60/EC of the European Parliament (EP) and of the European Council of 23 October 2000, namely the Water Framework Directive (WFD) establishing a framework for Community action in the field of water policy", also known as the Water Framework Directive, is regarded as an umbrella legislation at the EU level which is made to transform the patchwork style EU legislation in water sector into a coherent whole. Despite aiming a holistic make-up, or perhaps just because of this, it is also crippled with a number of "gaps" in forms of extensive exclusions, escape clauses, etc.

It might be useful to clarify at this point that not all Member States of the EU are perfectly following the EU norms of water policy. The issue of "implementation" has long been one of the challenges that water policy of the EU faces. It is important to note that water policy in the EU was not quite successful in yielding desired results. In the words of Commission, current status of EU waters is "worse than expected" (European Commission 2007). As Christoph Demmke (2001) asserted, hardly any water related directive has been completely implemented and applied by the Member States. As the Commission shows, there has always been a level of difference among Member States, in terms of implementation, with regard to water related Directives. This means while some of Member states were better in implementing water related Directives, some were lagging behind (European Commission 2007). Overall, there are considerable gaps in implementation at the Community level, even with regards to those water related Directives that have been adopted a decade ago or more.

The declaration of Turkey as a candidate country for the EU, in December 1999, in the framework of Helsinki European Council, triggered a new wave of changes in Turkey's water management policies. With Helsinki decision, the goal of EU membership of Turkey has been formalized by the EU. The status of Turkey vis á vis the European Union has been brought to a new level. Turkey, from then on, has to be bound to the EU with stronger links and with a more institutionalized setting. Accordingly, the EU prepared an "Accession Partnership" document which had been responded by preparation of a "National Program" by Turkey. Furthermore, the European Commission would begin to draft annual "Progress Reports"- as it does for each candidate country- in order to evaluate the current level of alignment with the EU *acquis*.

2. Norm Diffusion

Norms can be defined, inter alia, as ''collective expectations about proper behavior for a given identity''(Katzenstein, 1996). Norms are not static, they are dynamic: they are ''exported'', but also ''imported'', i.e. diffused. So what is diffusion, in essence? A broad but good definition of diffusion might be that diffusion occurs "when government policy decisions in a given country are systematically conditioned by prior policy choices made in other countries'' (Simmons, Dobbin and Garrett, 2006).

Diffusion across nation-states is a subset of a more general scholarly debate around "diffusion". There is a growing literature on different routes how norms are diffused across different national boundaries. Gilardi's work (2012) on the transnational diffusion provides a decent review of the literature on different perspectives, including both international relations and other social sciences disciplines.

Concerning the norms and their diffusion, there is a wide range of topics ranging from general policy frameworks (such as neoliberal approaches) to concrete models, and from specific policy tools to tax rates. Norm diffusion mechanisms are a set of coherent explanations that make sense of how political decisions reached in previous periods in different countries

systematically determine political decisions in another country. Diffusion mechanisms can be divided into four broad categories. These are coercion, competition, learning, and emulation.

Coercion describes the pressure of international organizations and/or powerful states on other states, and as a result, the adoption of certain policies by the subjugated states. One of the examples that can be given in this context is conditionality. Accordingly, in order to achieve certain targets and resources, states have to comply with certain rules. As Schimmelfennig and Sedelmeier (2004) have shown, the conditionality introduced by the European Union is one of these norm diffusion mechanisms: the European Union's membership allows for far-reaching reforms in the candidate country, including transposition of the EU acquis into national law and restructuring of national political institutions and practices. and its implementation. On the other hand, competition is defined as a process that basically aims at attracting or retaining economic resources to the country, and in this context, political decision makers perceive the attitudes of other countries or are formed by their reactions to these attitudes. Tax reforms made within the framework of globalization processes can be given as an example of this mechanism. Learning refers to a process in which decision makers in a country can evaluate the possible consequences of policy change in their own country, by making use of the experiences of other countries. Emulation is used to describe situations where policies spread because of their normative aspects rather than their objective characteristics. It can be seen that this mechanism becomes reality in cases such as the idea of gaining prestige or the construction of identity as part of a certain group.

Also, the term "Europeanization" has been put forward in order to underline the special and complex, or sui generis nature of EU as a "norm diffuser" and the way it "exports" its norms. The Europeanization literature, studying the ways and levels of impact of European integration on national policies, reveals that Europeanization should not be understood as something equal to policy convergence among national policies of EU Member States (Liefferink and Jordan, 2005). Indeed, the literature on Europeanization showed that there are cases where persistence or even divergence of national policies occurred. Therefore, the impact of EU policies on national policies is not a straightforward top-down impact resulting in convergence, contrary to the term Europeanization at first may suggest. That is to say, the concept of Europeanization implies a broader area for research through which differential outcomes of European impact, such as persistence or divergence, are also explored. There is a similar picture with regards to the European impact on national *environmental* policies. Therefore, the broader Europeanization literature, albeit beneficial and shedding light on the overall process, may not provide enough explanatory detail on the specific tenets of Turkey's approximation in the water policy sector. So, this paper borrows some terms related to the Europeanization debate (like conditionality), but tries to advance it as well.

3. Norms and Norm Diffusion in the EU

This section reviews the main characteristics of "carriers" of norms as I would call; i.e. legislation. In other words, legislation make or transform the norms into mundane sets of visible and enforceable rules. There are three types of binding legislation in the EU. (See Table 1.)

Table 1. EU legislation

Directives	Regulations	Decisions
1. Enter into force on the date specified in the directive, or on the 20th day after publication in the Official Journal.	1. Enter into force on the date specified in the regulation, or on the 20th day after publication in the Official Journal.	1. Enter into force upon notification to the party to whom they are addressed.

Directives	Regulations	Decisions
This then obligates Member States to approximate.		
2. Directives are the most frequently used instrument in environmental law.	2. Regulations are used when a unified system is required: funds, institutions, EU voluntary schemes such as eco-label; product or trade regulation, such as endangered species, transport of waste.	2. Decisions are used to specify detailed administrative requirements.
3. Member States must adopt laws, regulations and procedures to give effect to the directive by the deadline for transposition.	3. Member States must have in place the necessary institutions and structures for implementation. They must repeal conflicting national provisions.	3. Decisions are focused in scope and application.
4. Directives come into effect on the date prescribed as the deadline for transposition, unless other date(s) are indicated in the directive for specific instances. May have direct effect if the Member State fails to transpose.	4. Regulations are of general application on the date they come into force.	4. Decisions are binding on the parties to whom they are addressed on the date they come into force.

Source: Europa Website, internet, https://european-union.europa.eu/institutions-law-budget/law/types-legislation_en.

Additionally, there are basically two types of EU instruments which are non-binding. These are recommendations and opinion. They are not binding; therefore, they do not have legal affect. However, they have a subtle affect via sometimes influencing the interpretation of the legislation of the Community.

With regards to all legislation presented above, Member States (as well as candidate and accessing countries) are required to get into compliance with them via a process called as approximation. Approximation is described as a unique obligation of membership of the EU[2]. It is an obligation to align national laws, regulations, rules and procedures in order to give effect to the entire body of EU law contained in the *acquis communautaire*. There are three key steps to approximation:

a) Transposition: The requirements of EU legislation must be fully incorporated into national legislation. This will require adoption or amendment to national laws, regulations, rules and procedures (Europa Website).

b) Implementation: It is also known as "Practical Application". Implementation is the incorporation of EU law by the competent authority/ies into individual decisions. It includes

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[2] See, European Commission (1997) Guide to the Approximation of European Union Environmental Legislation, Brussels.

providing the infrastructure, budgets and provisions needed in order to enable the competent
authorities to perform their obligations under EU law and to take appropriate decisions.[3]

c) Enforcement: The necessary controls and penalties must be provided to ensure full and proper
compliance with the law.[4]

Directives, and in this case the Water Framework Directive (WFD), is a significant political
and legal document that needs a rather lengthy explanation here. Adopted by the Council in
conjunction with the European Parliament or by the Commission alone, a directive is addressed
to the Member States. Its main purpose is to align national legislation. A directive is binding on
the Member States as to the result to be achieved but leaves them the choice of the form and
method they adopt to realize the Community objectives within the framework of their internal
legal order.[5] If a directive has not been transposed into national legislation in a Member State,
if it has been transposed incompletely or if there is a delay in transposing it, citizens can directly
invoke the directive in question before the national courts. Additionally, the Commission, in its
role as guardian of the Treaty, has a right to take legal action at the European Court of Justice
(Bloech 2004). Such legal action may result in Court judgments for noncompliance with the
provisions of the EU water legislation which could also include penalty payments.

4. EU's Water Policy: A Brief Overview

Water has been largely part of the environmental legislation in the European Communities. This
is due to the fact that, in most of Europe[6], the problem of quality of water is more critical
compared with the "quantity" problem. Since the need for sufficient precipitation is not a
serious matter, and negative externalities of industrial development are clearly seen in the
increasing pollution of water, water in Europe is mainly considered within the environmental
sphere of policy-making. It is also important to note that the philosophy of European
environmental policy usually coincides with, and shapes the development of worldwide
environmental protection (Fu 2008). It is this environment-focused development of the EU's
water policy that represents one of the difficulties for Turkey to adopt EU norms. The WFD is
regarded as an exemplar of this type of approach to water.

The WFD has been in force since 22 December 2000. The significance of the WFD is
acknowledged in many studies. In this, the Directive has been regarded as "the most significant
piece of European environmental legislation ever introduced" (Howarth 2009). It has been said
to be the "constitution" of the EU water management policy (Cicek 2010). Having been adopted
after "a decade of political struggle" which comprised a process of multiple negotiations among
a variety of stakeholders including European Union organs (European Parliament, European
Commission and European Council of Ministers), Member State governments and NGOs; the
WFD introduced a new, integrated approach into EU water policy to protect and improve all
types of European waters[7]. It constitutes for the first time in the development of European water

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[3] European Communities (2003)*Convergence with EU environmental legislation in Eastern Europe, Caucasus
and Central Asia: a Guide*, Bradford, Great Britain, 2003, p. 9.

[4] *Ibid*., p. 10.

[5] The legal position of the WFD, as well as other directives, is based on article 249 para. 3 of the Treaty of the
European Community (Treaty of Nice, 2001). The article states that ''a directive shall be binding as to the result
to be achieved, upon each Member State to which it is addressed, but shall leave to the national authorities the
choice of form and methods''. In practice this means that the member states have a certain degree of flexibility
and discretion in implementing the objectives of the directive. The degree of flexibility in the WFD is being
discussed in the light of provisions of the Directive. See the section "Exemptions in the WFD".

[6] Notable exceptions are those Member States situated in the southern part of the continent such as Greece, Italy
and Spain.

[7] Freshwaters *and* coastal waters.

policy a single piece of framework legislation that aims at coordinating environmental objectives and all measures instead of concentrating only on improvements in different water-related sectors separately. In this sense, the WFD introduced an ecological and holistic water status assessment approach based on river basin planning, a strategy for elimination of pollution[8] by dangerous substances, public information and consultation and also financial instruments. Under the Directive, Member States are obliged to prevent further deterioration and to enhance and restore the status of aquatic ecosystems as well as terrestrial ecosystems and wetlands directly depend on aquatic ecosystems. It aims to achieve "good ecological status and chemical status" by 2015, which is subject to renewal through six-year cycles. The main approach of WFD is stated concisely in Recital 1 as "Water is not a commercial product like any other but, rather, a heritage which must be protected, defended and treated as such."

According to Article 1 of WFD, the purpose of the Directive is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters[9] and groundwater. This protection will a) prevent further deterioration and protects and enhances the status of aquatic ecosystems, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems; b) promote sustainable water use based on a long-term protection of available water resources; c) provide an enhanced protection and improvement of the aquatic environment, through specific measures for the progressive reduction of discharges, emissions and losses of priority substances and the cessation or phasing-out of discharges, emissions and losses of the priority hazardous substances etc.; d) ensure the progressive reduction of pollution of groundwater and prevents its further pollution, and e) contribute to mitigating the effects of floods and droughts.

The WFD adopts the river basin[10] as its main unit for action. It has been argued that from the ecological point of view this is the correct approach to water management. The proponents of this argument reiterate that the Directive, through adoption of the river basin, the hydrological unit, as main reference point for water management; promotes the integrated river basin management (IRBM) as the most efficient way to achieve sustainable water use (Borja, 2005). This, in turn, requires coordinated planning for using land and water resources within the entire river basin covering all surface, coastal and groundwaters and land-use activities.

5. Turkey's Water Management and EU-induced Norm Diffusion

In this section, first the main characteristic of approximation process is discussed. This main characteristic of the process of approximation, namely "conditionality-based coercion" provides the main framework, limits the available choices for actors, but does not explain much about the details of, and the changes within the process. So, secondly, how this coercion takes different shapes through the approximation process will be analyzed. Utilizing Gilardi's framework with respect to Turkey's approximation with the WFD, a coercion mechanism based on conditionality might be thought of a proper fit for analysis.[11] This type of a relationship, namely through mechanism of coercion enhanced

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[8] Pollution is defined as "the direct or indirect introduction, as a result of human activity, of substances or heat into the air, water or land which may be harmful to human health or the quality of aquatic ecosystems or terrestrial ecosystems directly depending on aquatic ecosystems, which result in damage to material property, or which impair or interfere with amenities and other legitimate uses of the environment." See, Marleen van Rijswick, "The Water Framework Directive", in H. van Rijswick (ed.), *The Water Framework Directive; Implementation in German and Dutch Law*, Utrecht, 2003, p. 18 (on file with the author).

[9] Waters up to the one mile from the shore.

[10] River basin is defined as geographic area that drains all surface water to a single point.

[11] This is not to say that other mechanisms are completely nonexistent. The point here is that the coercion mechanism is the main and most profound mechanism that seems to explain most about the relationship between
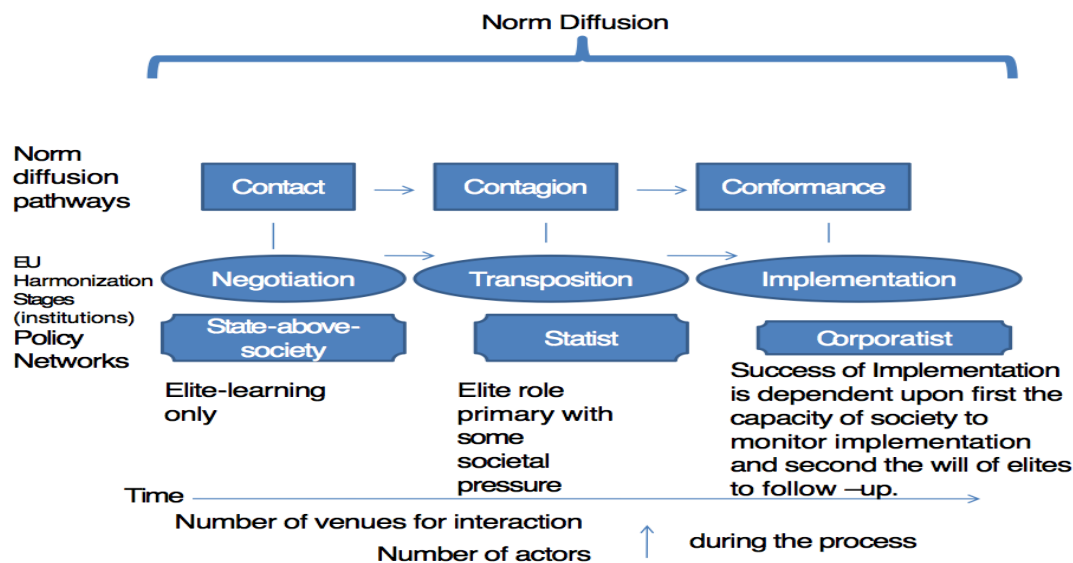
Figure 1: Norm diffusion trough different stages of harmonization

Source: Author's own compilation

by conditionality, while creates potential for candidate country to converge with norms of the EU, also entails a risk. As this mechanism does connote a certain level of rigidity, may not respond and accommodate differentiated interests of a considerable number of countries. This situation is also related with presumably high political costs of harmonization. To illustrate, if the WFD principle of "recovery of cost" is implemented in full, it is highly probable that areas under cultivation in Turkey will experience a shrinkage, in parallel to studies done in Spain, a country with similar agricultural conditions of Turkey. This would be quite contrary to what Turkey aims with respect to its overall long-term agricultural policy.

The process of WFD harmonization, which can be termed as a "coercion through conditionality", has also been unfolding itself in Turkey in three successive norm diffusion pathways, each corresponding to a different stage in the harmonization process, as well as to a different policy network, i.e. the networks established among stakeholders in policy-making and policy-implementing agencies in the negotiation process. In such a framework, the three norm diffusion pathways can be listed as 1- contact, 2-contagion, and 3-conformance. (See Figure 1).

In the *contact* phase, Turkish and EU officials established initial networks of dialogue, and determined the terms of negotiations in somewhat sterile conditions, with almost no public involvement. The main carrier of the process is thus elites (EU-related hydrocracy). First joint projects (involving the EU and negotiating country) focusing on "capacity building", "gap analysis", "twinning" fall within this stage of harmonization.

During the second phase -*contagion*- the transposition occurs. After finalization within the ministerial bureaucracies, the WFD legislation would now be brought to Parliament for a thorough discussion and approval. In this phase, the general public becomes more involved in the process, particularly via the help of media. After the legislation proposals appear in the official website of the Parliament, media organs start to play significant role in publicizing the issue. However, it is still the elites, albeit widened, are the main agents of change.

EU and Turkey. Otherwise, if mechanisms like emulation, or learning had been the main mechanisms for norm diffusson, one would have seen significant developments/reforms in Turkey's water policy before its candidacy.

The third phase is the *conformance*. In this stage of harmonization, the real implementation of the WFD should be anticipated. Since water quality management is a complex task involving a great number of stakeholders, such as industries, farmers, households etc., the successful implementation of the WFD would rest upon the society at large.

Through the process of implementation, while the elite role would be diminishing in comparison to other stakeholders, the process is getting a more multi-actored one, along with an expansion of the ways of interaction. All these changes imply a transformation of the networks associated with the making and implementation of the WFD-related policies (See the diagram for a visualization). With regard to most of the harmonization process, which is the conformance, the policy network would no longer be confined to bureaucratic or political elites; rather on the quite contrary, the achievement of the WFD rules is highly dependent on the quality of the expansion and transformation of the network.

Within the context defined by the Helsinki Summit, beginning from early 2000s, a number of steps have been taken by Turkey in order to facilitate the harmonization process with the EU Water Framework Directive and its related EU level legislation. All these efforts could be analyzed under three main headings.

The first one is the "pilot projects" which includes projects supporting harmonization of a specific location (e.g. MATRA Project focusing on Büyük Menderes Basin), projects supported by a single country (the DEFRA-UK supported Project, namely "Restructuring of the Turkish Water Sector for the Implementation of EU Water Directives"), or those projects which are supported more than one country (Twinning Project, "Capacity Building Support to the Water Sector in Turkey").

The second category is the "legislation changes" specifically done in order to move Turkish water legislation closer that of the Union's. These include changes in existing legislation and enactments of new pieces of legislation. Between 2004 and 2017, a number of water related European Directives are transposed into the Turkish legislation. The adoption of a "framework law" will be one of the important steps in this area.

The third category could be the changes in official institutional structures in water management policy sector. It should, however, be crucially noted that the aims of these changes are multidimensional and not limited only to harmonize with the EU water *acquis*. In other words, there are other reasons for this type of changes, they could be, for instance, socio-political, or economic, or both. Nevertheless, these changes have great impact in restructuring the Turkish water management framework. Also, as Turkey had already set an overarching goal of harmonizing with the EU *acquis*, the changes in institutional structures must therefore not be against, but *for* the realization of this aim. This is why the institutional changes that are been done after the adoption of the EU WFD should be analyzed within the framework of the steps taken by Turkey in its march towards getting in line with the aforementioned Directive.

6. Conclusion

This paper has analyzed the process of EU- induced norm diffusion in Turkey's water policy sector. Although the aforementioned fragmented set of changes makes it difficult to capture the picture of the total average level of approximation, it also enables us to see the differentiation of approximation at different planes. To begin with, a number of pilot projects have been completed with relative success. Also, Turkey now tries to fully implement a number of (outa total of twenty-five) River Basin Management Plans (RBMPs). RBMPs are the backbones of the whole WFD implementation process. On the legislation side, as of today, and according to Turkish water officials, Turkey has now completed transposition of EU's water legislation by 80% (Karaaslan 2016).The main remaining legislation is definitely the Draft Water Law which

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will set the scene for future reforms. Despite the lags, this level of transposition is still remarkable when compared with the other parts of the acquis communautaire that Turkey tries to adhere to.

The relatively high transposition rate means that Turkey has got closer to the final, but also to the most challenging part of the chain of norm diffusion, namely conformance. As stated above, the final part of the norm diffusion process would require a more balanced multi-actor setting, in which the primary role of the state authorities needs to be compromised a bit.

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Entity Transformation Projects: The Extreme Crisis Strategy (XCS)

Antoine Trad[1]

Abstract

This article uses the author's Applied Holistic Mathematical Model (AHMM) to support Geopolitical Analysis (GA) decision making systems for eXtreme Crisis (XC) (Trad, & Kalpić, 2020a). GA needs a generic and polymathic structure that is abstracted with GA's Concept (GAC) for XC (GAC4XC), like in the cases of Pandemics/COVID-19, global reginal wars, and major financial crisis/crashes. The AHMM for XC (AHMM4XC) was already used in various domains, like for the analyses of the origins Middle East's Area (MEA) destabilizations (and related conflicts) and of major global financial crimes. Chaos, destabilization, and major conflicts are essential for major financial investments, especially in military/defense domains, which would open new business profits, like in the case of Marshall's plan. XC related investments are the backbone for major global economies' evolution, stagnation, or decline/failure. Powerful countries are the ones who drive major societal transformation plans and innovation trends. XC can provoke massive societal and military technology transformation possibilities and innovation slots, which are based on major financing capabilities, demography, ideology, and global expansion capabilities. Countries, Global Organizations, Health institutions, Military environments, and Enterprises (or simply Entities) are increasingly using complex combined fields like, Artificial Intelligence (AI), AI based GA, Finance, Health, Avant-garde technologies, Societal chaos opportunities, to gain geopolitical, military, and hence substantial eco-business advantages. Transformed Entities must face XC challenges and XC based Risks (XCbRisk), when implementing their societal, organizational concept, and AI based Information and Communication System (ICS). One of the most important XCbRisk is related to find the optimal defense strategy by balancing between: Pandemics strategy, Health and Military Technology (MT) Strategy (MTS), Defense strategy, Financial capabilities, GA knowledge, Optimal discipline/combativity status, Independence, and the evolution of equilibrated demography. Therefore, the stability of an Entity, depends on a holistic and polymathic strategy, like the H&MT Strategy (H&MTS). The H&MTS supports the Entity's societal transformation projects, which needs a methodology and a concept to manage its geological stability and a GAC4XC to detect main XCbRisks; knowing that an Entity may lose the needed its defense capabilities, by assuming that only H&MTS and financial investments will solve all types of XCbRisks (Trad, 2021a, 2021b).

Keywords: transformation projects, XC, COVID-19, health & military technology, strategy, enterprise architecture, AI, GA, GA4XC, polymathic holism

1. Introduction

Synchronized and directed chaos opens new eco-busines opportunities and is major source of long-term financial profit for multinational corporations. Pandemic, like COVID-19, have brought such corporations and ultra-rich personalities colossal profits calculated in trillions of USDs. The latest reginal war between Ukraine and Russia War (URW) has made USA's economy blooming again; because of the major fact in which the USA has transferred its archived basic and obsolete military resources to Ukraine; that resulted in eth injection of about 100 billion USDs in the its economy/industry to replace the transferred hardware. At the same time starting a Marshall plan like scenario for Europe which would ensure its everlasting economical emprise on Europe and the rest of the world. Therefore, XCs can be an excellent opportunity for declining mammoth like economies, which need new horizons. Entities need H&MTS and related tactics, which are the basis of managing: Modern defense, Proactive health/pandemics awareness, and warfare readiness. The H&MTS includes: Proactive design, Planning, Coordination, and Preparation activities. The H&MTS is built on a defensive tactical pattern to support instant, short-term, and long-term critical decisions. The term strategy means, *the art of the general* (from the Greek term strategos), which originally meant just planning of

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a defense/military campaigns, and the H&MTS is similar to a defensive military strategy, that is based on GA4XC based intelligence, mobilization, planning, and the optimal usage of the Entity's main pools of resources that includes: Human/demography, Organizational capacities, Medical systems, Infrastructure, Military, Technological, economical, and political resources. Tactics are complex activities that are used to be distinguished from static strategies; and tactics are very dependent on strategic considerations. Today's major change in defense strategies and tactics, are due to the evolution of AI, ICS, GA technics and Medical technologies. The H&MTS includes tested tactical scenarios and possibilities, which depend on the *Entity's* Training capacities, Morale status, Infrastructure, Hardware, Geographical context, Weather/climat, Demography, Medical capacities, Financial capacities, ICS capacities, and Quality standards… Financial and Technological (FinTech) capacities are probably the most important ones, because they enable the coordination of various organizational activities in order to serve Entity's leaders, GA4XC specialists, and executive management. An adapted Decision Making System (DMS) for XC (DMS4XC) supports H&MTS' evolution and includes the following factors and areas: 1) GA4XC Design capacities; 2) Managing FinTech capabilities; 3) Developing GA4XC knowledge; 4) Preparing highly combative moral status; 5) Monitoring XCbRisks; and 6) Ensuring the evolution of capable demographic resources. These factors and areas are interrelated and their disbalance may create major setbacks and even major disasters. The human factor and its sustainable demographical evolution is a major constraint for Entity's defense capabilities, in order to operate simultaneously in various fields like, defense, medical/pandemics, management, security, policy, regulatory and governance related needs . H&MTS' central domain is Enterprise Architecture (EA) based DMS4XC, which is heavily used in GA4XC, to support their proactive defense alignment. Many Entities embraced EA to support their defense and government strategies. The H&MTS comprises a set of templates to support GA4XC design, implementation and operations. USA's Department of Defense (DoD) Architecture Framework (DoDAF) uses an EA based approach (DoDAF, 2010); but the H&MTS differs from DoDAF's objectives because of its polymathic approach and its focus on the human factor and is not finance centric (Hue, 2014; Burke, 2020). A societal transformation is an unbundling process that results from religious and ethnical conflicts, and can be considered a societal antifragility-based change, which is a lot more than simple financial gains or loses based events, where robust societies might not be resistant to sudden and major problems that can generate major shifts. This article's Research and Development Project (RDP) for 4XC (RDP4XC) will offer a set of GAC4XC recommendations.

2. The RDP4XC

This article's Research Question (RQ) is: "Can an H&MTS, support an Entity transformation project by implementing a GA4XC?" The main H&MTS gaps are related to the Entities' capacities to support complex defense activities. RDP4XC's first activity was the Research's Literature Review's (RLR) for XC (RLR4XC).

2.1. The RLR4XC

The author's RDP4XC and framework are very mature in the domains of Societal Transformation Projects (simply a Project) XCbRisks' management and strategy design. The RLR4XC result is practically null because relevant scholar resources are rare. Some exceptions exception like The Open Group Architecture Framework (TOGAF) is used to relate to basic EA strategies, concepts, technology areas and interfaces to existing standard frameworks. The RLR4XC confirmed that there is an important gap, between existing resources and the H&MTS, the RDP4XC uses a polymathic holistic approach. In this article the following resources were used: 1) Various articles related to GA and crisis management; 2) The author's

general related works and framework, the Transformation Research Architecture Development framework (TRADf); 3) An initial set of factors; 4) A large set of H&MTS related literature, standards, and frameworks; 5) XCbRisk topics; and 6) Empirical Engineering Method (EEM). The author's related works that are used in this chapter:

- *Entity's* Security Management Concept (Trad, 2021a): The most important gRisk is the State's Organized Global Financial Predators (SOGFP) that use avant-garde technologies. Therefore, the security of an *Entity* must be based on GAC4XC which manages Cybersecurity.
- *Entities* Transformation Projects (Trad, 2021b): Military technology strategies, wars, and military investments are the backbone for dominant economies and are a nightmare for weak *Entities*.
- *Projects* in the financial industry and ethics (Trad, 2021c): Analyses the ongoing global financial, societal, and geopolitical crisis; and related crimes. It defines CSFs and CSAs that can identify SOGFP. SOGFPs are in general ranked as the very ethical organizations and that limits ethical approaches. Regulatory organizations are corrupt and are linked to financial centers (Transparency, 2020; Swissinfo, 2021); and these centers commit major financial crimes.
- Using AHMM based transformations (Trad, Kalpić, 2020a): Evolution led businesses to transform and use avantgarde-technologies, depend on decision-making capabilities. Using AHMM based transformations is essential for decision-making systems in dynamic business environments.
- Using societal transformations for GA of MEA's events (Trad, 2021d): Presents historical, financial, and geopolitical CSFs of MEA's crisis, which is a recurrent scenario of a financial destruction and plundering concept.
- The nation of Semites–The Phoenicians (Trad, 2021f): Presents the nation of Semites who have influenced humanities for thousands of years. It is the oldest structured and networked civilization that has chosen the MEA as a jumpstart for their expansions.
- The transformation framework used to analyze the rise and the 1975's fall of the Lebanese business ecosystem (Trad, 2019a): Lebanon was a dominion that was shaped by its historical ally, France. But Lebanon faced many challenges like SOGFP misdeeds.
- Control and audit for SOGFP financial crimes (Trad, & Nakitende, & Oke, 2021): Presents a societal transformation concept that can predict, control and audit SOGFP financial crimes; especially in the context of global financial and societal crisis.

The LRL4XC is a far more than just. literature scanning and are concrete engineering projects (Easterbrook, Singer, Storey, & Damian, 2008).

2.2. Empirical Engineering Methods and Critical Success Area

The RDP4XC uses the EEM, which is optimal various types of engineering projects like the H&MTS (Easterbrook, Singer, Storey, & Damian, 2008); and the main goal is to implement an interactive mixed method that is based on selected factors and TRADf's Heuristics Decision Tree (HDT). Critical Success Area (CSA) is a set of Critical Success Factors (CSF), where a CSF is a set of KPIs. A KPI corresponds to a single Project or H&MTS requirement. For a H&MTS requirement, a GAC4XC analyst identifies an initial set of CSFs, where these CSFs are important relations between the H&MTS, Entity's organizational predisposition, and the DMS4XC. Therefore, CSFs reflect control domains that meet strategic goals and defined constraints (Peterson, 2011). Measurements are used to evaluate XCbRisks for each CSA, where CSFs can be internal or external. For a given GAC4XC problem type, the H&MTS analyst, must identify the initial set of CSFs to be used for the DMS4XC and its HDT. The H&MTS delivers a set of recommendations for the CSFs based Project.

2.3. Selecting CSFs for the Project

Selecting the sets of CSFs is based on the following topics and resources: 1) AI, HDT, and ICS; 2) Actors and boundaries; 3) Used and connected components; 4) Common and XC functional requirements; 5) Established national strategies, objectives, and goals; 5) Applied national policies; 6) Sustainability, robustness, proactivity and competition; 7) Geopolitical, national/societal and geoeconomical statuses; and their correlation; 8) Behavioral sciences, propaganda and parapsychology mirage, which can alienate the main objectives; and 9) The SOGFP for XC based destabilizations, where the targets, can be national destabilizations & civil-wars, national security, financial plundering, logistics, geopolitics or other; it can be even used for a combination of these fields. Determination and the evaluation of major XCbRisks, which are affected by various CSFs and their relation/correlation is therefore essential. Entities must defend their population, organizations, ICS, assets, and resources; so that an external actor or aggressor using a SOGFP (or other) based scheme can be detected and deterred to access to Entity's internals. The Entity must be capable of managing XCs, and must build an H&MTS to identify and block any external XC related dangers, like COVID-19 or sophisticated SOGFP attempts aimed to damage the Entity. Just using quantitative methods, which use data and historical events is a partial, limited and offers static solutions; therefore, TRADf proposes the AHMM4XC.

2.4. The Applied Holistic Mathematical Model for XC

The AHMM4XC nomenclature is showed in Figure 1, in a simplified form to be understandable on the cost of a system's holistic formulation vision (Daellenbach, & McNickle, 2005; Trad, & Kalpić, 2020a).

Basic Mathematical Model's (BMM) Nomenclature

Iteration	= An integer variable *"i"* that denotes a *Project/ADM iteration*	
microRequirement	= (maps to) KPI	(B1)
CSF	= Σ KPI	(B2)
Requirement	= (maps to) CSF = ⋃ microRequirement	(B3)
CSA	= Σ CSF	(B4)
microMapping microArtefact/Req	= microArtefact + (maps to) microRequirement	(B5)
microKnowledgeArtefact	= ⋃ knowledgeItem(s)	(B6)
neuron	= action->data + microKnowledgeArtefact	(B7)
microArtefact / neural network	= ⋃ neurons	(B8)
microArtefactScenario	= ⋃ microartefact	(B9)
AI/Decision Making	= ⋃ microArtefactScenario	(B10)
microEntity	= ⋃ microArtefact	(B11)
Entity or Enterprise	= ⋃ microEntity	(B12)
EnityIntelligence	= ⋃ AI/Decision Making	(B13)
BMM(*Iteration*) as an instance	= EnityIntelligence(*Iteration*)	(B14)

Figure 1: The AHMM4XC nomenclature.

The H&MTS uses the AHMM4XC that is formalized as shown in Figure 1, and AHMM4XC's main artefacts are:

- Basic H&MTS actions = support XC scenarios analysis.
- H&MTS = A set of basic H&MTS actions to counter destabilization and major failures.
- National territory and interests' space = Includes the territory and remote areas.
- National Security and related = security of national territory, Interests' space + the defined goals of protecting assets/population(s).

- Organizational security and Interests' security = includes national territory + Interests' space + avant-garde technologies + ICS security.
- *Entity* (or national) Security and ICS security = $\sum$ Organizational Security and ICS security.

The Generic AHMM's Formulation

$$\text{AHMM} \qquad\qquad = \underline{\bigcup}\,\text{ADMs} + \text{BMMs} \qquad\qquad (B15)$$

AHMM's Application and Instantiation for GA (Implementation Case: GAC4XC)

$$\textit{Domain} \qquad\qquad = \text{GAC4XC} \qquad\qquad (B16)$$

$$\text{AHMM4}(\textit{Domain}) \qquad = \underline{\bigcup}\,\text{ADMs} + \text{BMMs}(\textit{Domain}) \qquad (B17)$$

Figure 2: The domain oriented AHMM4XC.

As shown in Figure 2, the AHMM4XC based H&MTS needs an Architecture Development Method (ADM).

2.4. The Use of the Architecture Development Method
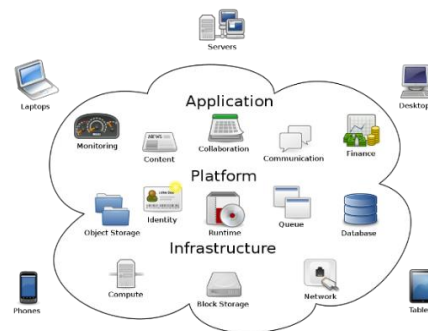
Figure 3: The EIP environment (Wikipedia, 2022a).

The role of a robust distributed ICS is essential for Projects; where the integration of Entity Cloud Platforms (EIP) is its backbone. EIP enables an on-demand based Communication System (ICS) which can be accessed without any direct human interaction; and has its critical operations and functions distributed over many locations. The EIP is based on sharing of its resources to support coherence, as shown in Figure 3. The EIP provides a secured managed suite of ICS platform services, which can be thought as an amorphous cloud distributed environment (Wikipedia, 2022b). Entity's parc of technologies or the ICS, enables the processing and coordination of its various critical activities, which include a large set of applications and resources. These EIP coordinated applications, are used in order to serve GA analysts, leaders, clients and executive management, who are also supported by an adapted and integrated DMS4XC (Trad, 2022a). As mentioned Entities use avant-garde EIP based FinTech and methodologies as the kernel of their EA based H&MTS, like DoDAF's case (DoDAF, 2010). An agile H&MTS can adapt to the actual age of fast changes, geopolitical instability/XCs, climate/health challenges, AI/intelligence, complexity, knowledge, economy, and EIP/ICS' evolution (Gardner, 1999). For an Entity, the H&MTS becomes the most important strategic objective, and in order to fulfill that it needs an HDT like algorithm that

supports a wide class of XC problem types; that is a major benefit for a GA based Learning Process (GAbLP) (Markides, 2011). The EA based H&MTS synchronizes its implementation activities by using the ADM, in order to deliver Juts-In-Time (JIT) solutions. The H&MTS defines capabilities to protect the Entity from XCs' outcomes by: 1) Localizing gaps in its defense and infrastructure systems; 2) Learn and enforce GAbLPs; 3) Implement a proactive defense concept; 4) Locate potential weaknesses and enemies; 5) Build a robust H&MTS for various sectors, like health, finance, defense...; 6) Integrate H&MTS in in all Project's requirements; 6) Block SOGFP attacks; 7) Build intelligent security services; and 8) Apply qualification procedures in the Project. TOGAF's ADM is the most used EA delivery process and this article it represents which H&MTS artifacts are relevant to ADM's phases. This enables, various standard frameworks and conventions to interface the H&MTS, and to provide common GAC4XC based models which can be used to improve XCs' management. The ADM supports the H&MTS to create best practices and Entity-centric security capabilities, which supports EA and geo-security experts in detecting critical XCbRisks. This article offers recommendations on the needed skills to carry out H&MTS activities. The EA for H&MTS is treated as a separate domain within the EA and this enforces of the Entity's security policies (The Open Group, 2011a, 2011b). TRADf englobes TOGAF/ADM, and other standard methodologies and artifacts, which are used by the H&MTS; where the MTS is a base utility (Trad, 2021a, 2021b).

3. MTS' Fundaments and Utility

3.1. The Role of MT's Basics

XCs are the fundament and important drivers for strong economies and their expansions. Defense oriented institutions are the ones who drive major transformation, evolution and innovation trends. MT transformation and innovation projects depend on financing capacities, geopolitics, economical strategies and demography. Entities are increasingly using avant-garde MT to gain substantial defense, geopolitical and eco-business advantages. Entities are today, facing major XC challenges and there is a need to implement robust defense concepts have the right balance between: Innovative MT, Biological Technology's (BioTech) evolution, Strategy, GA context, Combativity, and Demography. The stability of an Entity depends on a well-defined MTS to support the Entity's defense. Today the world is witnessing unprecedented ICS and BioTech Changes, where new alliances, have emerged, alongside traditional XCbRisks. The unfortunate evolution of terrorist groups, SOGFP greediness, and non-state militias who have access to sophisticated ICS, BioTech, and destructive weapons. Therefore, BioTech has become a major XCbRisk in the global competition. MT related Research and Development (MTRD) has become the major CSF in for the H&MTS, where new technologies are developed much faster than before. Weaker adversaries like state supported terrorist groups have become capable of developing destructive capabilities, which gives them geopolitical advantage; like the case of the Islamic state of Iran and its brutal remote militias who brutalizing the MEA. The H&MTS needs to challenge such brutal actors by using synchronized sources and preparing the right tactics and above all, to implement courage in its population. The H&MTS needs to set short to long term objectives, building future JIT defense capabilities, taking major XCbRisk, improving scientific qualitative AI and ICS literacy... The H&MTS focuses on various types of technologies, which are mature in the commercial sector, and which can be used for defense objectives. H&MTS' capabilities are seeing important changes in the fields of: Drones, medical systems, Cyber domains, Electronic warfare, Sensors, Data/networks, EIP, AI/Autonomy/robotics, BioTech/genomics, and Synthetic biology. The H&MTS needs to mitigate XCbRisks and to take into account the following CSFs (Cheyney, 2021):

- To apply an HDT like algorithm to maintain the Entity's defense and security capabilities (MOD, 2020).
- To apply the principles of total warfare, like: Defining objectives, Offensiveness, Surprises, Security, Unity of command, Economy of force, Mass, and Maneuver. MTS must have a well-defined objective(s) and the control of command to manage the mass.
- Maneuvering tactics have changed due to new technologies and challenges.
- Strategy and tactics have historical roots of date back to the origins of human warfare and the development of large-scale defense capabilities started in the Middle Ages where tactics were based on defensive fortifications and armored cavalry. And in *modern tactics* which transformed MTS maneuvering tactics, which it uses small, mobile units with important firepower.
- The 19th century was an age of major technological transformations that heavily changed the scope of tactics and strategy, and hence the H&MTS. This was noticed in the first total war, USA's Civil War, in which railroads and steamships increased their volume, reach and speed of mobilization and of conscription; and that needed major technological artifacts and infrastructure.
- World War (WW) I and WWII, which have seen the birth of trench tactics to Nuclear strategy, where WWI saw the emergence of immense, rapid, national mobilizations and classical offensive maneuvers, but after various attempts to destroy their enemies and after the *Battle of the Marne*.
- The need to invest in major MTs, such as medical systems, drones, directed energy, or hypersonic objects, in which there is clear MTS operational value. Non-digital technologies like, Optics, Energy, and Power are improving, but not as fast as ICS, and they are less likely to offer transformative changes in warfare that needs advanced MT equipment.

3.2. MTS' Advanced Equipment

Entity's internals, like boundaries, organizations, applications, ICS, assets & resources, and processes; are designed, and implemented with an important level of security. Depending on the Entity's eco-system and geopolitical context major domains (or CSAs) can be divided into subdomains (or CSFs) which include:

- The importance of ICS which has an exponential growth in various areas, like: Medical system/BioTech, Data/ Networks, AI, and Processing power… That has changed MT's competition and the H&MTS has to include the abilities to sense the situation and transmit information and make JIT decisions.
- Cyberspace includes Cyberwarfare and Cybersecurity domains, where ICS security, includes the protection of Entity's information against unauthorized actions.
- The MTS supports constant technology priorities and the capacity to win a long-term technology competition, which need investments. Today's ICS' evolution is the leading trend and is the highest priority. Technology is the artifact needed to achieve MT superiority.
- AI based autonomous hardware is the future and is the major drive for MT and is driven by the private sector because the military does not have the needed financial resources to support avantgarde technologies; like in the USA which has a 700 billion USD defense budget. Actual Global Regional Wars (GRW), like the one in URW has demanded massive MT investments, where old USA's MT was transferred to the Ukraine and was booked as global debts, that has exponentially launched USA's economy and USD, as shown in Figure 4 (Scharre, & Riikonen, 2020). Therefore, the current absolute winner is the USA.

- Investments are financially driven by the business and that endangers world stability. The H&MTS has to prioritize CSAs that enable a systematic/holistic approach.
- Nuclear modernization has become one of the least priorities and the actual priorities are: Hypersonics; Directed energy; Command, control, and communications; Space offense/defense, Cybersecurity; AI and machine learning; Missile Defense; Quantum science and computing; Microelectronics; Autonomy (which replaced nuclear weapons). But H&MTS' modernization priorities are: AI and machine learning; Biotechnology; Autonomy; Cyber; Directed energy; Fully networked command; Microelectronics; Quantum; Hypersonics; 5G; and Space technologies. AI and autonomy are probably the number one priority for any H&MTS (Kania, & Vorndick, 2019).

Figure 4: USD against the EUR.

Major H&MTS support investment strategies for critical technologies and as shown in Figure 5, the current global MTRD trends are important. USA's MTRD ecosystem has shifted dramatically over the past several decades and its DoD is not anymore the dominant player in MTRD's landscape. In the 1960s, the USA funded two-thirds of the MTRD, and the DoD alone funded about half of its MTRD. But today, the DoD contributes with one-tenth of USA's MTRD and its overall share has declined to less than one quarter. The H&MTS recommends combining national public spending, demography, and motivation/ideology; that explains the actual USA's decline and China's fulgurant dominance. And the evolution lies in the usage of AI capable MT artefacts.
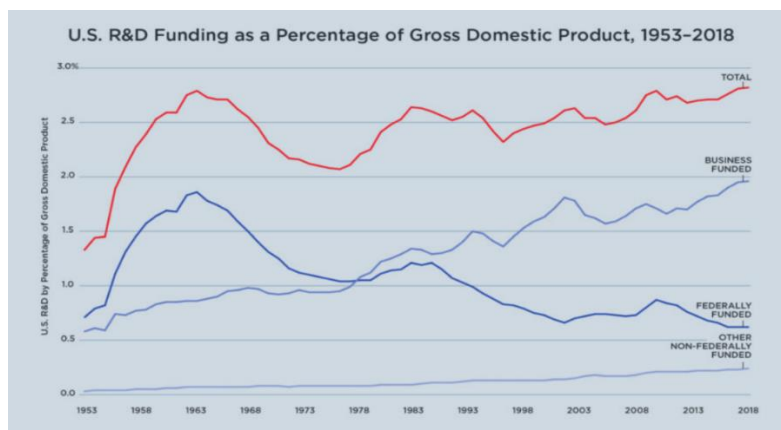

Figure 5: The MTRD trends.

3.3. Major MT Artefacts

The intersection of MT, BioTech, finance, and AI can be a strategic synergy for future XCs, like the one that ones being happening. In 2016, the strategic value of genetic information, influenced the Chinese government to create the *National Genebank*, which is the largest genetic information database; its goal is to *develop and utilize China's valuable genetic resources, safeguard national security in bioinformatics, and enhance China's capability to seize the strategic commanding heights* in domains related to BioTech and probably Biological Warfare (BioWar) (Kania, & Vorndick, 2019). There are major MTs that do not have financial benefits and in such cases the H&MTS proposes, to invest and develop them, because non tangible CSF can be the most crucial ones. H&MTS' intangible values include: High-energy lasers, Hypersonic missiles, Stealth, Armor and above all the Demography. The progress of specific MTs is slow compared to ICS' evolution and the H&MTS must consider MTs which will not bring direct financial benefits, but rather intangible long-term transformative benefits. These intangible effects will be felt on the longer-term and the main artefacts are (Trad, 2021a):

- MTS: Where investments alone in right is not recommended and an Entity must enforce its global capabilities. MTS is a crucial CSF for economic competitiveness and financial benefits, which is supported by political and mammothlike companies like Google and others.
- Spending: China will overtake the USA in national MTRD activities, knowing that China is already a leader in various domains. Between the years 1998 and 2018, China's national MTRD spending had an average of 15 percent annually and it is closing the gap with the USA. USA's MTRD spending was 13 times that of China's in 1998 and China surpassed the USA in 2020.
- Limited tactics: since WWII, there were tactical advances in amphibious warfare and nuclear warfare, which continued after WWII. The use of conventional tactics with technologically very advanced arms, would predominate GRWs, in which a H&MTS pattern is used that looks like: Small, Mobile special forces, Armed with light but sophisticated weapons, and Trained in guerrilla tactics, which can be rapidly used and rapidly withdrawn (Cheyney, 2021).
- Cyberwarfare: include types of Cyberattacks like: 1) Denial-of-Service (DoS) and Distributed Denial-of-Service (DDoS) attacks; 2) Man-in-the-Middle (MitM) attacks are simple types of digital attacks; and others. The most common motivations for Cyberattacks are: Geopolitical changes, SOGFP greediness, Lack of ethics/immoral education and others. SOGFP greediness can drive to major global criminal acts, like, the gigantic financial irregularities, which are related to fraud and money laundering that damage many Entities, and this case it is related to major global financial institutions, like the Swiss Union des Banques Suisse (UBS) (Stupples, Sazonov, & Woolley, 2019), in which 32 trillion US dollars are *hidden*.. An *Entity's* H&MTS may counter these types of threats: 1) Cybercrime, which includes a single Cyberattacker or groups, attacking *Entities* for financial gains or to cause damage; 2) Cyberattack, often involves politically motivated information gathering for various ideological purposes; and 3) Cyberterrorism, it is used to undermine the ICS and to cause panic; it originates from various anonymous groups (Trad, 2021a).
- XCs as global crimes: SOGFP motivated global crimes schemes use FinTech platforms which in turn can be controlled by the H&MTS by using HDT based XCbRisks mitigation, mainly to avoid locked-in situations. SOGFP locked-in scenarios lock the Entity's financial structure.
- XC is similar to the Black Swan phenomena or simply the directed Swiss Black Swan, which should be avoided and penalized. It is probably wiser to pay more taxes and social

services then to face such Swiss based phenomena and traps (International Monetary Fund, 2009; Taleb, 2012).

- The Project can use the Secure Development and Operations (SecDevOps) to support changes (Mees, 2017).
- That request for legal integration and constraints and in order to achieve this legal support, CSFs are selected and asserted, to monitor the used artefacts.
- Uncontrolled conflicts and other types of irregularities can drive to unconventional wars like BioWars, which can be defined as an intentional application of biological artefacts, like, bacteria, viruses, fungi and toxins, as military weapons in warfare activities. The organized application of microorganisms, like toxins, is an ancient military discipline that is today reinvented. The MTS evolutes to englobe unconventional and intensive XCs.

4. Unconventional and Intensive XCs

4.1. Recent Relevant Historical Timeline

Based on the author's works, which resumes various facts like the 9/11 Islamist-terrorist act that has hit the Western hemisphere's societal, financial and cultural Megalopolis, New York, was than an alarming signal. But there were various chained events and changes have disrupted an ongoing Western, mainly USA's unilateral domination that had been built on a disequilibria notion of forces with the use of SOGFP black holes. The discrepancy or gap was deepened with the obvious loss of oil fields, MT/MTS lead, and business markets, in the MEA, Asia, South America and in North Africa that are the result of a MTS and hence political incapacity that generated XC problems and many withdrawals. These various changes and resulting XC caused world-wide instability like: the URW, Venezuelan Crisis, the continuous Arab springs and the emergence of Islamist Internationalism and Eurocentric Racist-Far-Right/anti-Semite (ERFR). The Syrian Civil War (SCW) which is also a GRW, the rise of ERFR currents in many Western countries (and Brazil), the European Union's (EU) unbundling (due to the BREXIT, Franco-German divorce, Hungary…), continuous targeted scandals in the Roman-Catholic Church, SOGFP crimes, the reactivation of Balkan/Bosnian tensions, the Caucasia conflicts (mainly Armenia and Azerbaijan), Israeli hit and run tactics with the Russian backed terror twins Syria-Iran (and their micro twins Hizballah-Hamas), the Saudi-Yemenite GRW, the devastating neo-feminist rise (and probable fall) which had a dream to become a new societal alternative to the traditionally male dominated environments. These events have produced the emergence of new global powers like China, Russia and maybe India and Turkey; on the cost of disillusioned West. An important part of the West is struggling to hold to its frenetic dive by changing radically its approach to confront regional and global powers and to deepen the world's polarization, to form a new confrontation between the USA-UK (South-Korea, Taiwan, Saudi Arabia, Israel, India, Brazil, Croatia, Poland, Ukraine…) led coalition that versus Russia-China (and their allies Iran, North Korea, Venezuela, Syria, Serbia, Cuba, …). Still some countries like Turkey, Germany, France, Italy, Egypt, and others are to be convinced to polarize. The mentioned new XCbRisks need a H&MTS to offer recommendations and explanations, rather than to use simplistic quantitative methods for explaining XC events. Today most Western strategies are based on short-term rigid accountancy, austerity and superficial quantitative studies, similar to the ones used to invade Iraq which was totally faulty (even genocidal) and caused 600,000 Iraqis to perish and has left many of them homeless. The GA4XC uses the actual and historical XC events, ongoing-financial crisis and geopolitical tensions, extending from the 70-ies (or probably earlier, at the failure of the various MEA's peace talks and the Vietnam war debacle) until today, which can be analyzed and presented as a global societal transformation movement, where SOGFP looting detection models can help. The author uses various XC events the GA4XC and H&MTS that delivers a set of explanations and forecasts.

H&MTS specialists, politicians/leaders, or GA4XC analysts often simplify their analysis to complex events by offering simplistic austerity-based accountancy explanations and tactics which were largely implemented by the German ex-Chancellor Angela Merkel, and that is probably EU's main problem. That is direct cause for URW, BREXIT and other. Other important historical XC's timeline (Trad, & Kalpić, 2021a):

- What is interesting is that the major documented event concerning the SOGFP, was the case of the Phoenician general Hannibal (247-182 BCE), who was one of the most famous military leaders. He led a military campaign which took place during the Second Punic War (218-202), where he caught the Romans off guard by diverting his campaign and crossed the Alps. But there the financially too ambitious Helvetic (Swiss) tribes ambushed and looted the Phoenician armies. The Swiss tribes plundered all of Hannibal's wealth; these events can be considered as a the origins and typical SOGFP behavior(s)… It is interesting how history repeats itself.

- From the year 1973 to 1990 ethno-religious conflicts eruption and end of the cold war: WWII gave birth to the cold war that culminated in 1975, with the Vietnamese war. That ignited a new wave of ethno-religious civil wars that broke in Africa, Cyprus, and MEA/Lebanon; which opened the doors to terrorism. The real roots of the terrorism phenomena are anchored in the history of a Syrian Muslim extremist sect (the hisheshes which was translated to assassins), who was once based in Aleppo, in the north west of Syria. The word assassin was brought to Europe from Syria by western Christian Crusaders.

- 1970-ies, the USA reschedules its strategy: In the 70-ies marked a turning point from an ideological concept to an ethno-religious concept to confront the Warsaw pact. In 1973 Kissinger accounts Assad's aggressive ambitions in the rich Lebanon and observes a possible solution to MEA's problems. The solution lies in ousting the Lebanese Christian community and replacing them with the Palestinian refugees. This was a short-sighted strategy and Assad's forces and allies were defeated.

- 1974, Turkey, USA's ally, invades the northern part of Cyprus, which can be considered as an ethnic and religious conflict. President Nixon resigns in August 1974, opening the door to Kissingerism. Kissinger's realism used SOGFP but very probably he was not fully aware of the extent of this hyper brutal model.

- 1975, the change in strategy: In April 1975, Vietnam negotiated the end of the war and Kissinger received a Peace Noble Prize and a few days later the Lebanese civil war was started.

- Nazi implication in the MEA: The most significant fact and event is that the Austrian mass-murderer Alois Brunner, Eichmann's most important and efficient executor, who was transferred and secured by the Swiss intelligence to Syria, more precisely to Damascus ministry of Assassinations; this seems incredible but it is a part of the Syrian Ministry of defence. Brunner the Nazi restructured the hishesh Syrian secret services and planned and trained killing squads that are responsible for the hundreds of thousands of murder cases in Syria and Lebanon.

- In 1979, the Iranian revolutionary movement toppled the USA-backed Shah of Iran and established a strategic alliance with Syria. For the Lebanon, this meant more confusion that culminated with terrorist attacks on the American and French Army Barracks in Beirut in 1982 near the Airport of Beirut and in 1983 blasting the Drakkar building. Western forces decided to leave the Lebanon, running away from the rebirth of terrorism. Islamic Iran provoked a war with Iraq, which caused heavy human casualties and a religious polarization between the main two branches of Islam, the Shiites and

Sunnis. At the end, Iraq was ruined and all its deposited money was looted by Swiss bankers.

- The years 1990 to 2000 ethno-religious expansion-unilateral superpower: The start of a global confrontation on the basis of ethno-religious divide. This new form of confrontation has become multi-lateral, challenging many to many counter parts that is probably the real reason for the Soviets' fall. The Lebanese civil war ends and the stocks of weaponry were sent by Swiss arms dealers to various regions in ex-Yugoslavia.

- 1991, the collapse of the Soviet Union: In the early nineties, USA's leadership, became the only super-power and global peacemaker; but it missed to impose itself. USA's domination permitted it to intervene directly in conflicts like in ex-Yugoslav republics, where in the cases of Croatia, Bosnia and Kosovo. This domination seemed to be total, except and until the 9/11 disaster and the chaotic rise of a multi-lateral world order. That caused many conflicts like the ones in Russia's Southern republics (Chechnya, Georgia,…).

- 1991, the Yugoslav agony and the Croatian war for independence brought the Croatians freedom. It is interesting to mention, that the Croatian independence war has shown the real nature of the Croatian nation, which proved to be determinant, cohesive, and tolerant. This is actually the only nation that supports and tolerates the Muslim (and others) minority, with respect to what has happened in Bosnia and even in the MEA.

- 1991, the USA intervenes in the Gulf and invades Iraq, destroying its infrastructure and its important (over 3 million-strong) Christian minority, which proves that the main danger is not just extreme Islam, but probably extreme financial greediness. And today many Iraqis have become homeless immigrants…

- 1994, the Rwandan genocide in which the Hutu ethnic majority massacres 800,000 Tutsis.

- The years 2000 to 2007 ethno-religious global crisis: This phase marks a peak of the ethno-religious strategy in which the USA played a central role in the war on terror.

- The 9/11 terrorist act has hit the epicenter of the Western hemisphere's societal, financial and cultural Megalopolis resulting with American's military actions, in Somalia, Iraq and Afghanistan that destabilized the whole MEA and ignited the Islamic world to confront the West. These interventions have totally destroyed MEA's Christian minorities. These actions culminated in 2005 and 2006 with the unfortunate withdrawal of Western armed forces out of the MEA. These military defeats and helplessness signaled a discrepancy between the mighty Western financial cash-in-cash-out giant and its fading military forces.

- The seize of Saudi Arabia: 40 years of faulty politics in the MEA and the post 9/11 retaliations, accompanied with USA's clumsy moves, ended with a logical military debacle and the expansion of the Shia Islamic Republic of Iran's influence in the whole MEA, creating what is known as the Shia Crescent. Today USA's took base in Saudi Arabs, which is encircled with Iran backed militias.

- Gender tacit confrontation: USA's dominance brought a new type of societal conflicts or polarizations with the moto, the *end of men* approach. That in essence, argues that the role of men has changed and that men have become a burden for the Western society… This extremist view on equality, caused the West to weaken and that signaled the use of brutal change using legal violence, which in fact is the transfer of richness.

- The financial crisis: The 2007, has seen the beginning of what should become a major financial crisis or change that is mainly due to many types of polarizations and is the reason for various GRWs.

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4.2. The Globalized Civil War

Today it is not possible to have another WW but because of the fatal Nuclear arsenal, but GRWs (and other XCs) are currently a reality and they depict a siloed distributed WW. Such GRWs are freezed when a defined red line is to be crossed, like in the case of using tactical cross-continental Nuclear missiles… Unfortunately we are in a form of a globalized civil war because of the following facts:

- France's President Macron mention's a war economy (*une econime de guerre…*).
- 2020 Beirut's explosion which is one the biggest conventional explosion and is believed to be provoked by Syrian services.
- Notions of total GRWs which can provoke high civilian casualties that can be due to BioWars of a Nuclear wars.
- Iranian backed Syrian war and the URW; and GRWs caused major extremism and polarizations.
- Ongoing financial crisis since 2007 created conflicts in many regions in the world
- The Anglo-Saxon disorientation and new coalitions, where the USA's and UK's military misadventures in the MEA, Southern-Asia, Africa, Afghanistan have put an end to the decades of global military dominance and have created a disorientation in the USA and the UK. That resulted in a new type of coalition between the USA, UK, Australia, India, Canada and very probably Israel.
- The rise and fall of neo-feminism, which focuses on the disruption of the traditional system of power and the loss of credibility of the masculine factor. This extremist utopia sees the masculine gender as the source of major troubles, like violence, financial crisis, wars,…
- Russia, Eastern Europe and Ukraine, there are tensions in Eastern Europe that inflamed; but probably the real causes for these crises is again the attempt to seize wealth. The conflict in Eastern Europe and more specifically in Ukraine, showed that the Russian army is weak.
- The EU is surrounded with unquiet regions like: 1) Ukraine/East Europe; 2) Balkans; 3) Northern Africa, source of immigration; 4) MEA which is a source of immigration; 5) Emergence ERFR; 6) Social instability, like France's Gillet Jaune; and 6) UK's BREXIT that puts it in a totally locked-in situation from the outside.
- Latin Americas is witnessing major changes and since the 90-ties leftist oriented evolutions and in some regions it is witnessing an emergence of ERFR.
- The African continent is facing major demographic changes, desertification, and Islamic extremism; especially in its northern and central parts, has again become a central point of interest for the global powers, especially China and Russia. The African continent's issues can be regarded as a start of a major change in the sense that the West, especially the USA and Europe are losing influence and control in this part of the world. In the same time the African continent is making significant economic progress.
- South-Asian spring and the rise of China as a global super power, and confrontation's phenomenas have spread to south-east Asia where tensions have run high between the USA and: 1) North-Korea; and 2) China. These tensions can be regarded as a start of a major change in the sense that the West, especially USA are losing influence and credibility in this part of the world.
- The beloved oil fields and the energy GRW: The loss of oil fields and as shown in Figure 6, permitted Russia, China and Iran to surpass the traditional Western governed oil and energy producers, like the USA and Saudi Arabia; where Saudi Arabia is lately having a neutral attitude.
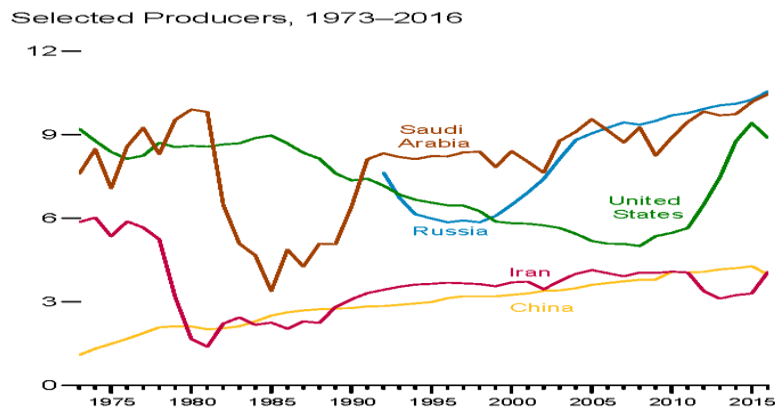
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Sustainability in the Post Covid-19 World"   Istanbul/Turkiye
                                                              2-3rd December 2022

Figure 6: The world major producers.

- The Arab spring, Israel's strategy, and the Irano-Syrian destabilization schemes: These events have destabilized the MEA, EA, and Africa in which practically all governing systems were changed and generated the Syrian civil war that came as a demonstration of Iran as a regional and Russia/China as super-powers. These changes and the dangerous Iranian Nuclear project will probably change the balance of powers in the epic Arab-Israeli war(s) that seems to have become a major GRW.

- The already mentioned 2007/2008 financial crisis which is still ongoing, that had roots in: 1) The chaotic Cash In Cash Out (CICO) out overflow and disruption, the modern financial system is based on a virtual asset management system based input and output of cash. The gap created a CICO suspicion that in turn generated panic and in the traditional human silo logic that was translated simply in the Subprime, LIBOR and many other crises; 2) LIBOR down slide, an important factor in frequent changes are the roles of the loss of national finance control, as shown in Figure 7; 3) Subprime's debacle, that is related to the LIBOR, because the deterministic LIBOR caused all related financial products to collapse; 4) Growth and employment, the financial crisis effect is moderately serious on the UK's GDP but the UK economy is very robust and it stayed solvable due to the important volume that is managed by the London financial hub and its financial institutions; and 5) The West's monopole of the global financial system.
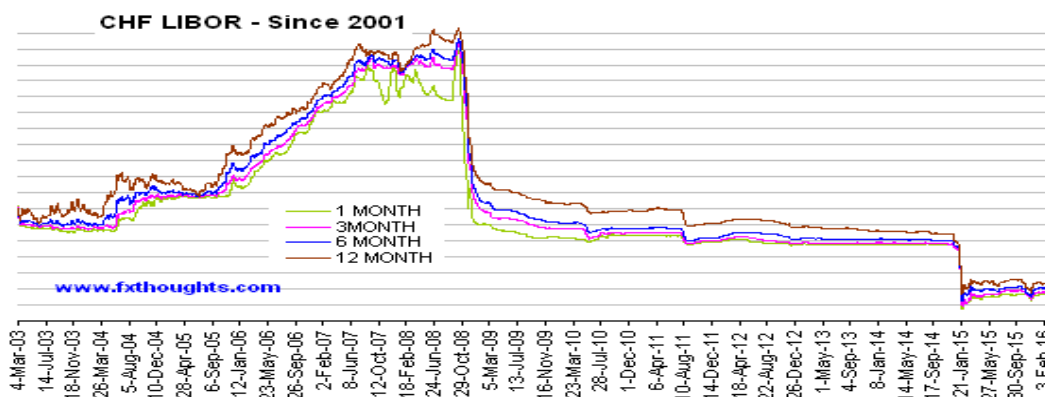

Figure 7: LIBOR interest rate's system degradation.

- The latest rise of global and regional superpowers, that has seen the decline of the West and led to a critical financial gap. This gap will be probably filled with new incomers

like China and India, where China has become a global power and will bring new XCbRisks like BioTech.

4.3. BioTech as a Major Risk

The evolution of BioTech has major benefits but also it can be a XCbRisk. The Chinese People's Liberation Army (PLA) is conducts MTRD on modifications that includes gene editing, human performance enhancement, viruses, and other. This domain is a new type of warfare and the related advances in BioTech (and genetic engineering fields) have various applications in medicine and has also alarming implications in MTS. China's H&MTS has highlighted biology as a major priority and its PLA is a forefront of expanding and exploiting this type of knowledge. PLA's key interests are reflected in strategic writings and MTRD that presents advances in BioTech and is contributing to change the form and nature of today's warfare, and can be formulated as follows:

- BioTech is a science driven industry domain that uses living organisms and molecular biology to produce healthcare-related products; and Biowarfare ones…
- Biological (or BioTech attack) can used in Bioattacks or BioWars, also known as germ warfare). Bioattacks use of biological toxins or infectious agents such as bacteria, viruses, insects, and fungi with the intent to destroy the human factor (and spread panic, incapacitate humans, animals or plants); which is a major act of total war. Biological weapons (BioWeapon), Biological threat Agents (BioAgent) are living organisms or replicating objects (like viruses, which are not universally considered *alive*). Entomological (insect) warfare is a subtype of BioTech based warfare (Wikipedia, 2022a).
- Offensive BioWars are prohibited under customary international humanitarian law and several international treaties; in particular, the 1972 Biological Weapons Convention (BWC) which bans the development (and production, acquisition, transfer, stockpiling and use of BioWeapons.
- In the 2010's period, *War for Biological Dominance* publication, Guo Jiwei, a professor with the Third Military Medical University, emphasizes the impact of BioTech in future warfare.
- In 2015, then-president of the Academy of Military Medical Sciences, He Fuchu argued that BioTech will become the new *strategic commanding heights* of national defense and a central focus of warfare, from Biomaterials to *brain control* weapons. Maj. Gen. He, has since become the vice president of the Academy of Military Sciences, which leads China's military science enterprise…
- Biology is among seven *new domains of warfare* discussed in a 2017 book by Zhang Shibo, a retired general and former president of the National Defense University, who concludes: *Modern biotechnology development is gradually showing strong signs characteristic of an offensive capability*, including the possibility that *specific ethnic genetic attacks* could be employed.
- The 2017's edition of Science of Military Strategy, a textbook published by the PLA's National Defense University, which is authoritative, debuted a section about biology as a domain of military struggle, similarly mentioning the potential for new kinds of biological warfare to include *specific ethnic genetic attacks*.
- Following these lines of H&MTS approaches, the PLA is pursuing military applications for biology and looking into promising intersections with other disciplines, including brain science, supercomputing and AI. Since 2016, the Central Military Commission

has funded projects on military brain science, advanced biomimetic systems, biological and biomimetic materials, human performance enhancement, and *new concept* BioTech.

- By internal law China's PLA activities are prohibited (Wikipedia, 2022a)… Well are these newest Pandemics (COVID, Cholera, …) coincidences or collusion(s)…
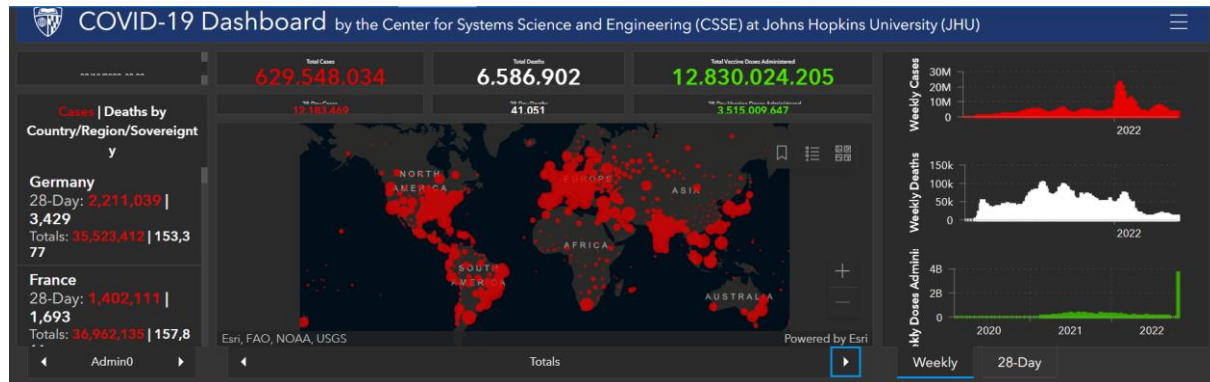
4.4. Pandemics

Figure 8: All COVID statistics (JHU, 2022).

Latest massive pandemics like COVID-19, which has two probable origins of the virus, which came from: 1) A laboratory; 2) Live animal markets; or 3) Both… (Smith-Rogers, 2022). As shown in Figures 8 and 9, COVID-19 inflicted the most damages to the Western eco-system; even though that it has the far most best health and protection systems. Added to that the West has colossal spending as shown in Figure 10, and had strictly confined its population and that paralyzed its economy and industry. But in the West, France's humanistic approach was noticed by the aggregation of strict confinement, spending, and the mobilizations of all the public sector/population. A very astonishing and unhuman attitude was Nordic/Swedish and Swiss approaches, in which very little was done and has left people to their destiny and especially migrants/foreigners… Knowing that North Europe/Sweden and Switzerland praise themselves for a high standard of human rights, standard, and equality, but when it comes to finance (or money); they seem to forget all its presented (probably marketing) values. This major XC had showed also that probability based on statistics that it is an immunity issue. At the same Western Entities have made trillions of USDs in massive profit. Many companies and individuals have multiplied their richness during this XC period; mainly because they have absorbed the largest part of the public spending.
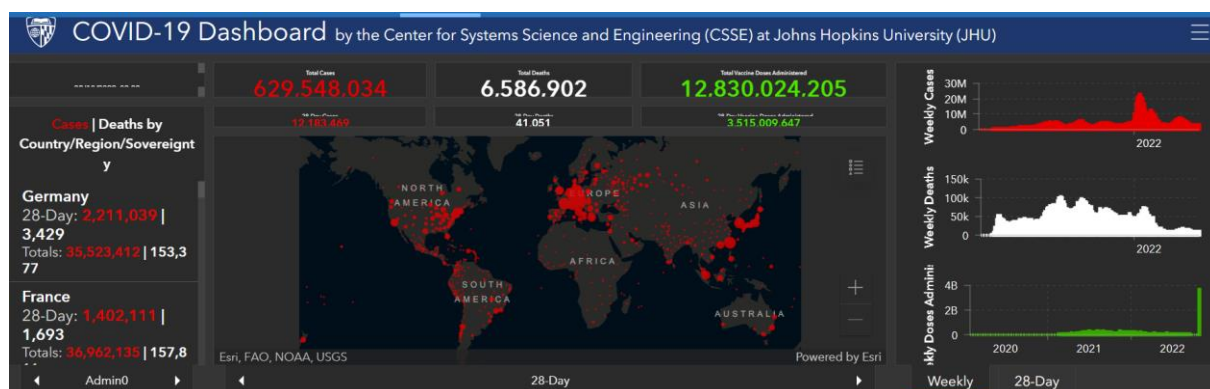

Figure 9: Latest COVID statistics (JHU, 2022).

Foreign aid for developing countries was at an all-time high of 161.2 billion USDs in 2020, up 3.5% in real terms from 2019, and was boosted by additional spending, which was mobilized to help these countries combat COVID-19. In the scope of Official Development Assistance's

(ODA) supported by Economic Cooperation and Development's (OECD) Development Assistance Committee in 2020, initial estimates indicate that DAC countries have spent 12 billion USDs on COVID-19 activities.
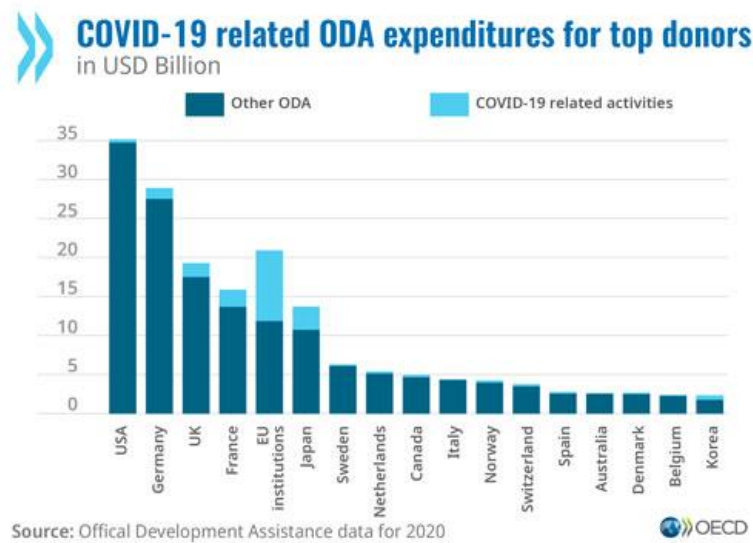

Figure 10: COVID top spending countries statistics (OECD, 2021).

"This crisis is a major test for multilateralism and for the very concept of foreign aid. We need to make a much greater effort to help developing countries with vaccine distribution, with hospital services and to support the world's most vulnerable people's incomes and livelihoods to build a truly global recovery" (OECD, 2021). And of course, to make developed countries much richer; and especially global consultancy companies that have gained trillions and avoided to pay taxes (Consultor, 2022). The countries (like North Europe/Sweden and Switzerland) have made the largest profits and were at the same time the most brutal even with their own populations letting people die by prioritizing finance. Besides the COVID-19 pandemic, there are other dangers like Cholera… This all comes at the same time with GRWs and have created conflicts and hence extremism and polarization.

4.5. Extremism and Polarization

Polarization and extremism are based on the following facts:

- Societal divides: 1) Uncoherent neo-feminism causing gender divide; 2) Generations young old divide; 3) Vegetarian divide; 4) Extreme Ecological activities…
- Extreme Islamism and terrorism.
- ERFR's intolerance and Xenophobic activities. Racial intolerance (Racism) and colored white divide. Eurocentric North European convergence towards an Apartheidic model. The Swiss Federal Court leaders of the far right-wing Swiss People's Party (SVP) that is Switzerland's ruling and most popular party, guilty of racism and anti-Semitism, over propagating extreme racism, using racist symbols (The Local, 2017). Racism based on the color of skin as shown in Figure 11. Where the black sheep denotes a colored person.
- Intolerance which comes from financial and business circles that initiated the term of Tolerance Zero and extreme facts checking… Knowing that these circles are the major problem in financial crisis…
- SOGFP's like Switzerland extreme financial greediness.

Figure 11: The Swiss ruling party's poster (The Local, 2017).

4.6. SOGFPs' Destructive Approach and Fall

The consequent financial crisis that became visible in the 2008 has showed SOGFP's (mainly Switzerland's) extreme greediness… SOGFP crime schemes use FinTech platforms and locked-in scenarios, therefore there is a need to build a robust financial structure.

Figure 12: Shows Credit Suisse's downslide.

SOGFPs apply a coordinated legal and financial locked-in trap; and it represents an unwritten concept that can at any moment sweep out the financial resources from an *Entity* and even powerful countries like the USA, UK and France; and can ruin many Entities like Lebanon, who saw its richness dilapidated by Swiss banks. This locked-in Swiss SOGFP model, combines: 1) Specific culture and mentality; 2) The power of Swiss law; 3) Too Big to Fail state banks; 4) Banking secrecy that protects financial crimes; 5) Ultraliberal economy; 6) rejection of local and global standards; and laws; 7) Isolationism and racism; and 8) A finance supportive political environment for collective plundering. Swiss banks and other Swiss financial institutions are under no supervision whatsoever; and are free to hit and run. That indirectly makes this *Entity* the financial and malware industry's super protector that sets up fortifications against any possible legal intrusion; even when these institutions are executing massive irregular, criminal and illegal activities. Major Swiss banks are seeking billions from

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investors in make-or-break shake-up activities; where they plan to raise billions from investors, to cut thousands of jobs, and shift its focus from investment activities towards extremely rich clients. Knowing that Swiss banks are behind colossal financial crimes that were neglected by the West, which can be interpreted as a form of organized corruption. As shown in Figure 12, we are witnessing the fall of such SOGFP based institutions. At the same these same Swiss banks have hidden trillions in dubious banks (Illien, Hirt, & O'Donnell, 2022a; Stupples, Sazonov, & Woolley, 2019). SOGFP are also responsible for major ecological catastrophes. SOGFP institutions collaborate with brutal dictators supported by Swiss bankers like the case of the notorious Nazi banker Francois Genoud (Brown, 2016); who operated from Switzerland where dirty money cannot be transparently. SOGFP baked Swiss banks are the main leaders in worldwide financial crimes, scandals, misdeeds, and criminal acts including: 1) The Libor/Currency/Credits/Subprime manipulations; 2) Supporting arms/drugs dealing transactions; 3) Hijacking people's wealth; 4) Tax evasion/Financial fraud; 5) War victims and common people's wealth confiscation; 6) War support against financial competitors, like the case of Lebanon; 7) Drastic and unfounded fines; and 7) Destroying the ecology and many other forms of SOGFP crimes.

4.7. Climate and Ecology

SOGFP activities, wars, GRWs, dictatorships', and other can influence climate change which affects natural disasters. With important increase of global surface temperatures, the possibility of more droughts and increased intensity of storms occurs. More water is evaporating into the atmosphere, and that is the fuel for more powerful storms to occur. More heat in the atmosphere and warmer ocean surface temperatures can lead to increased wind speeds to create tropical storms. Important sea levels rise, expose higher locations not usually subjected to the power of the sea and to the erosive forces of waves and currents (UGS, 2022). These climate and ecology deregulations are one of the most important reasons for migration from the South to the North; and is also responsible for major changes in demographics.

4.8. Migration and Demography

Demographic trends in EU's regions as shown in Figure 13, has various implications for European and especially on its Mediterranean regions.
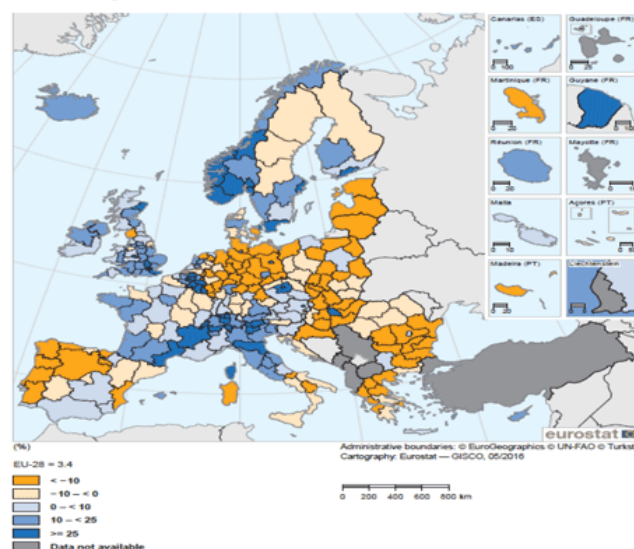

Figure 13: COVID Demographic trends in EU regions (Europa, 2019).

Some of these regions are rural and remote, are have an extreme decline in their populations. This situation causes the acceleration the economic decline of these regions and that widens the gap between the very wealthy and the poor regions/categories of people. Thus, the demographical transformation severely affects the social, economic and territorial cohesion of the EU; and the rise of various types of extremes make things more complicated. Another important reason is the heavy concentration of population in urban centers (or Megapoles), which creates important negative consequences, like violence, pollution, and lack of housing. Latest migration trends have improved the demographic balance in EU regions, but migration affects EU regions in an unbalanced manner. EU's structural and investment funds are mainly used for improving economic growth in its regions and to address issues related to demographic challenges (Europa, 2019).

4.9. Poverty and Famine

In 2019, around 690 million people worldwide were undernourished, which is 8.9% of world's population. As shown in Figure 14, this will exponentially rise, and especially because of various GRWs like the one in URW. Added to that the economic/financial slowdowns and extreme climate/weather deregulations will worsen the situation. Lack of work opportunities, few crops, Pandemics (like COVID-19, pests) leave many regions fearing desertification and famine. For previous decades, there were record harvests that resulted in incomes to rise rose and food prices to fall; and it is not anymore the case. In the past few years, the situation has quickly degenerated and that could continue to get worse. United Nation's (UN) Food and Agriculture Organization (FAO) forecasts in its annual review of the world's food security and nutrition, describes the situation as *alarming*. Stopping CXs like GRWs and making reforms to global food distribution systems could improve the situation, but the effects of COVID-19 are still felt (Kretchmer, 2020). The effects of malnutrition can have disastrous effects on people heath and cause important and real collective psychological effects.
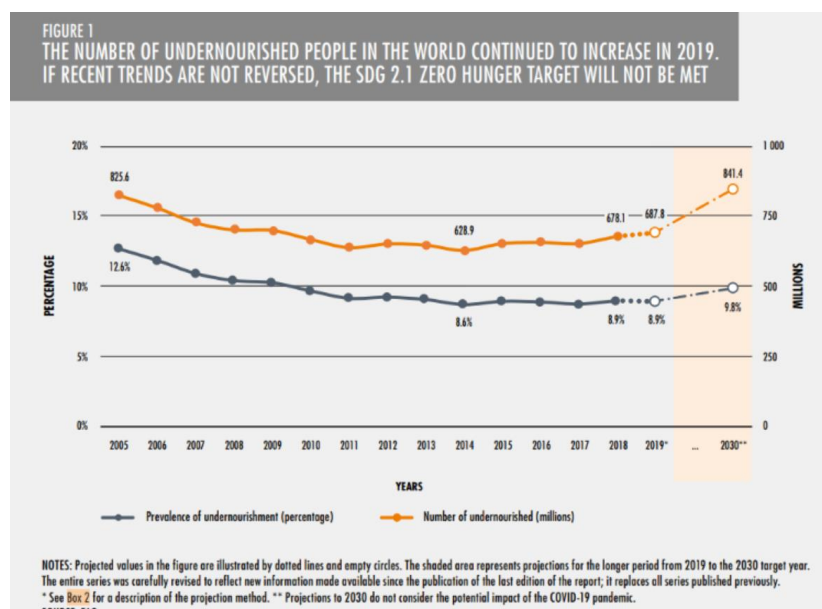

Figure 14: Undernourished world's population (Kretchmer, 2020).

4.10. Artificial Psychology

XCs can have disastrous effects on peoples' heath and can cause important psychological effects; and that needs special support. But unfortunately, psychology is used many domains which is not supposed to be used in. This phenomena of using Artificial Psychology (AP) has non-medical intentions, and mainly financial ones; has a dramatic implication on the society.

AP is heavily used in Marketing, Business, Politics, Law, and many other domains. It is taught to noon-medical students like in Business schools, with the aim to use weaknesses to make important profits, which is not ethical. This vulgarization/misuse of psychology and behavioral sciences has defined new standards and is causing societal robotization and resignation.

4.11. Societal Robotization

AP based societal robotization may cause major resistances, like Team resistances in Projects; such resistances can be predicted. Major resistances can jeopardize *Entity's* sustainable evolution or even its existence. That is why there is a need to understand the *real* Psychology of resistance to keep people healthy and for the survival of an Entity and its ability to introduce a successful changes; resistances and mainly due to the human factor. That all depends on the roles of organizational justice, Manager's capabilities, and Readiness for Change (RfC). Change processes are very challenging, and most *Entities* struggle to execute *Project* strategies to avoid failures related to people's resistance, hence there is a need to change their attitudes toward applying change. People are unaware of the potential benefits associated transformations, and they develop fear and they consider change as an unfair act. Therefore, they develop negative attitudes and exhibit adverse reactions toward change, a phenomenon known as Resistance to Change (RtC). For the Project there a need to select the CSFs influencing RtC and find technics which influences RtC by transforming people's attitudes. People's beliefs, attitudes, intentions towards change determine their state of RfC, furthermore, the RfC depends upon the peoples behaviors and emotions related to change (Rehman, Mahmood, Ibtasam, Murtaza, Iqbal, & Molnár, 2021). RtCs and RfCs in the context of societal transformations depend on the speed of change. The RFC can be influenced by: Role of accountancy, Used AI approach, Limitation of resources, Wellbeing/Housing, The roles of automation and robotization, and the role of justice.

4.12. The Role of Justice

The role of objective justice is essential for GA4XC and especially in the case of SOGFP misdeed, which can be a structural manner to detect global destructive financial crimes, by applying the H&MTS, and for that goal a strategic vision is needed for the integration of legal controls and mitigation mechanisms. The H&MTS is fundamental for the Entity's long-term societal and business longevity. Besides all the previously presented facts, there is a need to optimally integrate the global economy in a coordinated, controlled, and above all in an ethical manner. Knowing that SOGFP's control mechanisms are complex (Trad, & Nakitende, & Oke, 2021). Can the existing world system and order still continue in its current societal and legal form and structure. The dynamic and quick, frequent societal changes are unbundling the world's structure and a new system is to appear. Can an archaic financial, legal, social, economic, (geo)political contexts resist to this brutal and ultra-dynamic demand for change… It is probably a long transformational process but there is an imperative need to modernize and restructure the global justice systems. Entities have long been working on the transformation of their legal systems by implementing procedural reforms, integrating ICS modules, and realigning financing models. Where the main goals are: Improving efficiency, Quality, and Independence. Various XCs have accelerated these *Project* plans while undermining the need for greater progress, essentially to meet the requirements and urgent needs of the quickly marginalized segments of the society. Such a legal transformation of justice systems has to become citizen-centric, ensuring access to a dynamic and agile evolving world of pervasive inequality and declining trust in Entity's institutions. Entity's political leaders must take into the experiences learned from XCs to set new legal concepts; where the existing archaic legal system is obsolete. Such a Project is urgent because of the peoples mistrust towards Entity's corrupt politicians and SOGFP activities. Preliminary results of the 2021 Trust in Government

survey, delivered by the OECD, shows that only half of respondents trust their Entities, and just 57% trust their judiciary systems. That's lower than trust in other government institutions such as education (68%), healthcare (71%) and police (78%). Therefore, justice systems must strengthen trust by implement Projects to make their processes more transparent, accountable, ethical, fair, accessible, affordable and equitable to all; which must also independent of geography, socioeconomic status, religion, ethnicity, or language (PwC, 2022). Where justice can be distributive, interactional, and procedural, which today is evaluated by combined statics and applies the rules of casts. All mentioned XCs and related RtCs/RfCs and can be interpreted as a possible version of Indirect Collusions (IC).

4.13. Indirect Collusion and Resistances

Collusion refers to a secret agreements which can be unethical; but the author uses the term ICs to denote the situation in which various major events (like XCs) happen and which can *indirectly* profit an opportunistic actor; and that results in having winners and losers. ICs can result in major cases of resistances like France's Gillet Jaune movement that shook France and Europe; and that has shown that the current order cannot continue in its current form and structure. The dynamic and quick, frequent societal changes are unbundling the world's structure and a new system is to appear. The actual geopolitical situation, ICs, and possible major resistances resulted from facts like:

- In the 70' period MEA's events were influenced by geopolitical changes in the world, like (Maalouf, 2020): 1) The elections of UK's Margret Thatcher and USA's Ronald Reagan, who took a radical neoliberal approach; 2) The Iranian Islamic revolution and the transformation of the Shia Muslim approach; 3) The various communist victories in Central-Asia, Indochina and Africa; 4) The Turkish intervention in Cyprus; 5) The Assassination of Aldo Moro…; 6) Major changes in Central and South America; 7) The rise and fall of Pan-Arabism;… All these major events are in fact a major civilizational decline that probably resulted in the URW.

- XC like the URW, will be for the West and appalling period of decline. The world is tilting to the East and will be ruled, tomorrow and the day after, by autocratic Asia. The West will have no choice but to adapt. There has been something of the order of suicidal denial for the West for years, by refusing to admit that the world has already shifted to the East and that the world of tomorrow will be governed from Asia. For decades, we have known that everything will be played out in the decades to come on this side of the globe. The withdrawal of the USA from the MEA to redeploy towards the Asian pivot has been proof of this fact. Current XCs are giving rise to two antagonistic poles of power: USA (which still is an uncontested leader of the West, and Asia (embodied by the Moscow-Beijing axis). The obvious has been ignored for too long (Boussois, S2022).

- The Azerbaijan and Iran backed Armenia wars. Azerbaijan has close cooperation with Turkey as a guarantee against security threats posed by the alliance of Iran and Armenia. (Huseynov, 2022).

- The disappearance of intuitive risk culture that must be redeveloped. All XCbRisks (Fires, floods, submersions, avalanches, nuclear, industrial risks, …) must be prepared for in advance (Quinault-Maupoil, 2022).

- EU's unbundling that is due to Brexit, GRWs and other XCs… Conflicts between France and Germany are possible again. France and Germany have always had divergent strategic interests, but the fear of a new conflict between the two nations has enable temporary understanding. This is no longer necessarily the case, and it is a danger for the EU, believes Jacques Attali. Nothing is more serious for the future of France than what is happening at the moment with Germany (Attali, 2022).

- Wokism: racialism, the new weapon of societal deconstructions. For supporters of the wokism who do not hesitate to defend anti-Semitism and anti-White racism in the name of an assumed. Most observers thought that this movement would remain marginal, as it defies human common sense. Today, wokism has conquered most universities and Anglo-Saxon media and is spreading worldwide. The goal of woke is to deconstruct the actual society. It is the intersectionality of various struggles: racialism, neo-feminism, anti-speciesism, the battle of gender and sexual identity (Waintraub, 2022).
- The world enters the *most dangerous decade* since WWII, The West is seeking to maintain its domination. We are undoubtedly facing the most dangerous, the most unpredictable decade (Le Figaro, 2022b).
- This actual societal unbundling caused by major XCs, like the ones we are witnessing today: Sweden's, Hungary's, Italie's convergence to the ERFR; China's aggressiveness and practical lead; URW; 9/11 Terrorist act and invasions in the MEA; USSR's dismantlement; Arab spring and related wars in Syria, Libya…; The 2008 global financial crisis that is still ongoing; Lebanon's breakup and Beirut's mega-explosion; The Armenian-Azeri conflict and the roles of Turkey and Russia; Famine and food crisis; Pandemics (COVID-19, Cholera…)… All these chained and in the same time simultaneous XCs support the existence of a IC result in local collective resistances and create two global groups the Hunters and the Hunted.
- As shown in Figure 9, the exponential IC based USD's rise and the proportional fall of the EURO. The real XC's winner is the USD and it shows clearly that there is an IC will to stay on top. And the clear losers are: 1) Europe, which is drastically weakened; 2) Ukraine that had been practically destroyed; and 3) 3rd world countries which are facing famine and are ignored.

As presented chaos and IC are good terrains for finance and powerful economies, but societal transformations need a lot of time and cannot be done in extremely short time; because if the main goal is just finance, then that can cause XCs.

8. Proof of Concept

8.1. The Environment's Implementation

H&MTS' PoC was implemented using *TRADf* which was developed exclusively by the author and uses HDT's Microartefacts on the basis of the "1:1" mapping design and concept; and was developed using the following resources and tools: 1) Microsoft Visual Studio .NET/C#, system scripting and C/C++; and 2) Java Enterprise Edition development environments.

8.2. The Literature Review's Outcome

The RLR4XC and phase 1's outcomes support the PoC, by using of the author's archive of an important set of references and links that are analyzed using a specific interface; where each link can then be reviewed, archived, weighted parsed into an Excel file. After selecting the sets of CSA/CSFs, tags are linked to various microartefacts scenarios. A CSF is implemented as an item, in an Excel file; where all its details are defined; these actions conclude phase 1. In this PoC (or it phase 2), the HDT is used to deliver solutions to concrete H&MTS problems. The HDT process is an iterative *rule of thumb* and a guide to implement H&MTS problem solving using a goal function and constraints. The H&MTS uses the AHMM4XC instance to manage microartefacts mechanics', which in turn uses the internal initial sets of CSFs' that are used in phases 1 and 2.

8.3 The H&MTS-S' CSFs Phase 1

Table 1: The ACS's CSFs that have an average of 9.0.

Critical Success Factors	KPIs	Weightings
The Research and Development Project	ROBUST	From 1 to 10. **10 Selected**
H&MTS-MTS' Fundaments and Utility	COMPLEX	From 1 to 10. **08 Selected**
H&MTS-Unconventional and Intensive XCs	COMPLEX	From 1 to 10. **08 Selected**

All CSAs' (and CSFs) values are defined by the H&MTS expert. Based on the RLR4XC and the related evaluation processes (phase 1) the most important CSFs are used and processed by the internal HDT and the results are presented in Table 1. As shown in Table 1, this fact keeps all CSAs that helps to make this work's conclusion. If the automated evaluation of RLR4XC outcomes are successful, then this ends phase 1 and afterwards phase 2 starts to complete the PoC. As shown in Table 1, the results justify (an average of 8.3, rounded) the usage of the H&MTS and how it can be used with the PoC's final phase (or phase 2); where the described process is applied to the CSAs. A H&MTS problem is selected and an HDT process is launched to find a set of solutions.

8.4. The Architecture Method's Phases' Integration, Setup and Selecting Factors

The phase 2 implementation setup looks as follows:

- Sub-phase A or the *Architecture Vision* phase's goals, establishes a data architecture.
- Sub-phase B or the *Business Architecture* phase shows how the H&MTS target architecture.
- Sub-phase C or the *Gap Analysis* phase uses the *Application Communication Diagram*.
- Sub-phase D or the *Target Technology Architecture and Gap Analysis* phase shows the end H&MTS's concept implementation, where here is limited.
- Sub-phases E and F, or the *Implementation and Migration Planning*; where the transition architecture, proposing possible intermediate situation and evaluates H&MTS's integration status.

8.5. Experiment's *Processing* on a Concrete Tree Node

In phase 2, the HDT is used, to find a combination of HDT's action, used to solve an H&MTS problem related to this chapter's RQ. A specifically selected CSF is linked to a H&MTS problem type and a related set of actions; where the processing starts in the root node. Each H&MTS problem, like this case the PRB_H&MTS_ SOGFP H&MTS problem, has the following set of actions: 1) ACT_H&MTS_Define_ProblemType; 2) ACT_H&MTS_Verify_ProblemType; 3) ACT_H&MTS_Match_ProblemType 4) ACT_H&MTS_Validate_ProblemType… For this H&MTS related PoC, the author has selected the CSF_H&MTS_ESTIMATION as the active CSF, taken from the previously defined Tables or the H&MTS's CSAs. In this PoC the goal is to find solutions related to this selected CSF's related H&MTS problems. Such H&MTS problems can be only researched with the HDT based mixed-model that is very similar to the (re)scheduling of *Project's* activities. Solving the given H&MTS problem is done by a set of actions and delivers solutions.

8.6. Selected Node Solution in Phase 2

The frameworks scripts make up the processing logic of the H&MTS problems and is supported by a set of actions. Where these actions are processed in the DMS background to support microartefacts that are called by the HDT's engine actions, which deliver the solution and the

flow of steps. This RDP4XC, the AHMM4XC and its related CSAs/CSFs were selected as demonstrated previously and interact.

8.7. Experiment's Processing on a Concrete Tree Node

The HDT is applied to a specific CSF that is mapped to a specific H&MTS problem and a set of linked actions, to deliver results in the form of solutions. The selected H&MTS problem is related to *the detection of a possible XC*. The hyper HDT approach is used, to find a combination of HDT's action, used to solve an H&MTS problem related to this chapter's RQ. A specifically selected CSF is linked to a H&MTS problem type and a related set of H&MTS actions; where the processing starts in HDT's root node. Each H&MTS problem, like in this case, the selected H&MTS problem, has the following set of actions: H&MTS_Init, H&MTS _Eval and others.

8.8. Selected Node Solution in Phase 2

The scripts make up the processing logic of the defined H&MTS problems and are supported by a set of actions. Where these actions are processed in the background by the use of microartefacts that are called by HDT's actions, which deliver the solutions.

9. Conclusion

Because of the score, of 8.3, Table 1 shows that H&MTS' implementation is possible, and the resultant recommendations are:

- The GA4XC supports the H&MTS in order to ensure an efficient defense concept.
- XCs are the backbone of major economies.
- Military organizations are the ones who drive major technological transformation trends.
- H&MTS and tactics are the basis of managing XCs like COVID-19.
- *Entities* are using unconventional technologies as the kernel of their H&MTS.
- BioTech is showing offensive capabilities.
- To avoid collaboration with SOGFPs.
- XCs signal major worldwide societal changes.
- The West lost its military combativity readiness and the world is moving to a multilateral model.
- The world has become multilateral, where global powers like China and Russia are emerging.
- The West's loss of influence and the geopolitical misbalance and its real military capacities are weakened mainly due to the pure financial greediness strategy; and that results in an open confrontation with Russia, China, and other regional powers like Iran. Russia and China have replaced the USA in the MEA, Africa and other parts of the world.
- Extremism like ERFR and anti-Semitism are rising; and other divides are deconstructing the society. That is destroying the fine-grained cosmopolitan society.
- France will emerge as an important power and will lead the EU, mainly because of its GA capabilities, historical tolerance, and geographical context; whereas Russia, Iran, and the USA will face decline and that will permit China to become a global power.
- These new changes will permit the rise of interface powers, like India, Egypt, and Turkey.

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Fragmentation of the Global Economy in the Context of Deglobalization

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Abstract

This article is devoted to two trends in the global economy - fragmentation and deglobalization. A multidimensional approach to the interconnectedness of fragmentation and deglobalization, the impact of each trend on the global economy, and suggestions for further joint development of these trends in the global economy are considered.

Keywords: fragmentation, global economy, deglobalization

1. Introduction

The world is currently in a state of uncertainty: the growing geopolitical tension in the world leads to problems in the economy and the state of society. There is an opinion that globalization and cooperation are no longer relevant.

The inability of the world's largest economies to agree has its price: rising inflation, which has already reached record high levels due to the closure of borders and the imbalance of supply and demand, tightening monetary policies, which means a deterioration in credit conditions and business development, dear dollar.

All this leads to problems, and possibly crises, in developing economies. That is, the process of globalization in the world economy is starting.

2. Literature Review and Discussion

Deglobalization is a movement toward a less connected world characterized by powerful nation states, local solutions, and border controls, rather than global institutions, treaties, and free movement. This description was given by Professor Markus Kornprobst (Department of Political Science and International Relations, Vienna School of International Studies) and John Wallace, Digital Content Manager.

But what does deglobalization mean in simple terms? It is logical to assume that this is the reverse process from globalization, that is, in turn, a change in priorities. This implies the replacement of cheap and easy-to-manufacture goods with reliable and safe ones in production.

The Financial Times expert notes that the deglobalization process can " improve the safety of importers, increase the competitiveness of local producers and increase the number of jobs in domestic production, as well as create investment opportunities during the transition period" (Expert of The Financial Times, 2022). But there is also a downside to all these processes: if globalization has led to the emergence of cheap consumer goods, it is logical to assume that its opposite will lead to a widespread increase in prices.

In turn, the term "fragmentation" refers to a supply chain that is broken down into different parts. Simply put, companies distribute the production process between different suppliers and manufacturers when they are fragmented. Thus, companies use separate suppliers and manufacturers of components to produce their products and services.

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If we consider these terms in the conditions of the modern world, we can immediately say that everything that happens is suitable for them. And what is happening now includes the remnants of the pandemic and a special operation in Ukraine. These events have disrupted the global economy and created consequences that risk devaluing the achievements of the past 30 years. Saadia Zahidi, Managing director of the World Economic Forum, said: "Leaders face difficult choices and trade-offs at home when it comes to debt, inflation and investment. However, business and government leaders must also recognize the absolute need for global cooperation to prevent economic suffering and hunger for millions of people around the world" (Saadia Zahidi, 2022).

It can also be assumed that the future life of the world economy can be represented as low economic activity, low real wages, high inflation and large food shortages around the world, pointing to the devastating human consequences of the fragmentation of the world economy. Although, if we are honest with ourselves, we can say that all this is happening right now. Therefore, at this stage, business and government decisions lead to greater fragmentation of the global economy and shifts in supply chains, which in turn leads to a storm of instability and uncertainty.

Today, Europe is dominated by economic fragmentation, which is centered on its financial component. Major problems in the financial sphere of many EU countries are the basis for the development of the fragmentation process and determine the nature of relations between them, the level of competitiveness of their economies.

The whole world has experienced significant changes and upheavals in recent years, which have greatly affected the life of society and the economy. These changes include Brexit in 2016, trade wars between the US and China, the COVID-19 pandemic in 2020, and the extreme change is impossible not to include geopolitical tensions in 2022. So, all these events have turned the usual course of life for each person and will have long-term consequences.

Most of all, I would like to pay attention to two of the events listed above: the pandemic of 2020 and the difficult geopolitical situation in 2022.

Starting to reflect on the impact of COVID-19, borders around the world were closed, leaving both people and the economy of each country isolated from each other: people were banned from the streets, and supply chains were disrupted. All sectors of life were affected, but most of them were under threat: logistics, entertainment, and of course industry. But there is also a lucrative part of this situation, which is of course the online business, which has led to the emergence of unaccountable global monopolies, such as Amazon, which has benefited enormously from the pandemic, and exacerbating income inequality both between and within countries.

However, the deglobalizing approach does not offer clear solutions to these problems. An attempt by a national government to regulate Amazon or Google will not be reinforced in isolation, and developing countries cannot be more fairly represented in global trade without global, binding trade standards.

It is difficult to argue that deglobalizing forces are inherently bad, because there are problems that are best addressed internally. The COVID-19 pandemic illustrates the dangers of depending on global supply chains for essential health products, while climate change requires reducing the huge carbon footprint of international trade. The second event, which I will describe in more detail, is international military conflicts and the complete isolation of countries in economic terms. So, if in 2020 the isolation of countries was a necessary measure to save the lives of the population of countries around the world, then in 2022 deglobalization is political in nature. The sanctions imposed during this period caused

the division of Russia with Europe and the United States: namely, the destruction of logistics routes, the termination of multi-year contracts, agreements and partnerships. Because of this, relations between the United States and China have again become tense.

This is the third year that supply chains have been disrupted, and important market heroes are being disrupted: governments and businesses are beginning to rethink their approach to self-sufficiency, insecurity, and security in their supply chains. There is a chance that multinational companies will limit and diversify their supply chains in the next three years-rearranging them along geopolitical fault lines.

So now we can safely say that we are seeing deglobalization, which to some extent began during the pandemic, but accelerated with a special operation. We are seeing fragmentation, whether in supply chains, but also in technology.

The increased process of deglobalization has also led to the fragmentation of the global monetary system. At the BRICS summit, issues related to its transformation were discussed. The global crisis and deglobalization will lead to changes in the financial sector and the need to create reserve currencies. In this regard, one of the main topics of the summit was the need to de-dollarize payments between countries and create a new reserve currency. In the context of the sanctions war against Russia, the idea of creating an alternative currency seems particularly relevant.

3. Conclusion

The increasing process of deglobalization and fragmentation of the global monetary and financial system creates the risk of a global crisis.

The BRICS partners agreed that the current geopolitical crisis has exacerbated the unresolved post-pandemic problems and exposed bottlenecks in the global economy. At the same time, the BRICS countries are concerned about the risks of economic disintegration and fragmentation of the international monetary and financial system, which should be used for the benefit of all countries.

The simultaneous tightening of monetary policy and the implementation of an unprecedented sanctions campaign by Western countries significantly increase the risks of global stagflation and the global food crisis, while undermining confidence in the global monetary and financial system creates the risk of a global economic crisis. The existing risks are global in nature, so the BRICS countries need to agree on joint coordinated response measures and propose their own program of actions to stabilize the economic situation.

The BRICS countries called on developed countries to implement economic policies responsibly, avoiding unilateral and protectionist measures that run counter to WTO rules, which have negative side effects for developing countries.

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The Determinants of Sustainable Development in E7 Economies: Insights from Panel ARDL/PMG Approach

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Abstract

Sustainable development has been on the agenda not only of advanced and emerging economies but also of international organizations and national institutions. The main challenge faced by these units, especially emerging economies, is to provide social, economic, and environmental conditions that meet countries' sustainable development goals in the medium- and long term. In this parallel, the present study investigates the determinants of sustainable development, proxied by Adjusted Net Saving Rate (ANS), in E7 economies over the period 1990-2019 using pooled mean group (PMG) panel ARDL model. The empirical findings reveal that government expenditure, foreign direct investment, and unemployment have a negative effect, where only the effect of unemployment is insignificant, while per capita income growth and financial depth have an insignificant positive effect in the short run. On the other hand, in the long run, the effects of unemployment and per capita income growth turn out to be significant, whereas foreign direct investment loses its significance and becomes positive. The findings may be interpreted in such a way that E7 economies should harness long-term macroeconomic policies that would increase the efficiency of government expenditure and countries' saving rate and decrease unemployment to achieve sustainable development rather than short-term orientation.

Keywords: adjusted net saving, sustainable development, panel-ARDL, E7 economies

1. Introduction

Sustainable development has long been a question of great interest in a wide range of fields like environment, politics and economics. Such disciplines take a different approach to defining and testing the sustainability development concept. For instance, Pearce et al. (1994) define sustainable as something that endures and lasts. On the other hand, Parris and Kate (2003) propose that a set of elements like life expectancy, wealth, and social capital that belong to people, economy, and society should be developed. In this sense, enduring and lasting these elements can be a subject of sustainable development.

So far there has been little agreement on how best to measure sustainability. Although the origin of the concept lies primarily in environmental issues, researchers from economics prefer to use well-being or utility, which are often represented by Gross Domestic Product (GDP), Net National Product (NNP), Gross National Product (GNP) as they enable people to have more income and increase their utility (Green, 2013). For instance, according to López and Figueroa (2016), sustainable development occurs if economic growth is environmentally and socially sustainable. Similarly, Phimphanthavong (2014) considers sustainable development as a composition of economic growth, environmental conditions and social development. However, some others (Koirala and Pradhan, 2020) propose that sustainable development is about wealth that includes not only economic units, but also natural resources and human capital.

From the above discussion, the necessity of a new and wider proxy for measuring sustainable development has come to the spotlight. Adjusted Net Saving (ANS) developed by World Bank has become popular among researchers and policymakers in analyzing the sustainability of development. Many researchers have used ANS as a proxy for sustainable development and analyzed the association of various macroeconomic, social and environmental factors with ANS

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for many countries, especially for emerging economies (for instance, see, Gnegne, 2009; Pardi et al., 2015; Kaimuri and Kosimbei, 2017; Koirala and Pradhan, 2020). As ANS widely considers human capital, net national saving and depletion of various natural resources as well as the impact of environmental factors, it seems more appropriate to be used for determining the sustainability of development in emerging economies.

Using ANS as a proxy for sustainable development, the present study analyzes the determinants of sustainable development in E7 economies for the period 1990-2019. Deploying pooled mean group (PMG) panel ARDL approach, this study considers the interaction of multiple economic and financial factors with ANS for E7 economies. The next section shortly summarizes the related literature. Afterwards, data and method will be evaluated and lastly, the results will be presented.

2. Literature Review

This chapter reviews related literature to clarify the concept of sustainable development. As discussed in the previous chapter, sustainable development is such an important concept for emerging economies (EMEs). Development in these countries is limited or not sustainable due to a lack of social, cultural and economic factors. Therefore, the assessment of possible economic, social, financial and environmental factors has importance in designing long-term policies that would help them to achieve sustainable development goals (SDGs) for these economies.

Using the vector autoregression (VAR) model, Osuji and Nwani (2020) analyze the relevance of government expenditure to sustainable development for Nigeria over the period Q1:2000-Q4:2018. The authors consider sustainability from an economic, social, and environmental points of view and find that government expenditure has a negative effect on economic growth in the long run, while it positively affects social sustainability through increasing school enrolment. Finally, the authors conclude that government expenditure negatively affects environmental sustainability as it causes CO_2 emissions to rise. On the other hand, in their theoretical work, Šileika and Bekerytė (2013) investigate the role of unemployment, poverty and crime in sustainable development. The authors found that these factors negatively affect sustainable development through deteriorating socioeconomic structure of societies, leading countries not to adequately focus on sustainable development goals.

Moreover, Din et al. (2022) have analyzed interrelationships among sustainable development, adjusted net saving (ANS), economic growth and financial development using panel OLS and panel generalized method of moments (GMM) for South Asia emerging countries over the period 1990-2020. The authors conclude that sustainable development proxied by the sustainable development index, financial development and economic growth have a significant positive effect on ANS, whereas inflation and natural resource use have a significant negative impact on sustainable development. Similarly, using panel data for the period 1990-2014, Koirala and Pradhan (2020) investigated the determinants of sustainable development proxied by ANS in 12 Asian countries. The authors find that per capita income and financial development generate a significantly positive effect on sustainable development, while inflation rate and natural resources use have a significant negative impact.

3. Data and Methodology

The present study aims to analyze the determinants of sustainable development (proxied by adjusted net saving rate) in E7 economies during the period 1990-2019 using pooled mean

group (PMG) panel ARDL approach.[2] Panel ARDL is a useful method that is developed by Pesaran et al. (1999) and can be used for both short and long run estimations. What makes PMG panel ARDL method superior over other methods like Mean Group (MG) and the Dynamic Fixed Effects (DFE) is allowing researchers to apply restrictions on long run coefficients as well as allowing short run dynamic coefficients to differ across countries (Pesaran et al., 1999). On the other hand, the Hausman test in Table 5 below suggests the efficiency of the PMG estimator over other models since its probability value is 0.95 ($p>0.05$). To carry out analysis, some related variables are constructed depending on the aid literature. These variables and their sources can be seen in Table 1 below.

It is then possible to show the variables of interest in the following panel regression form:

$$ans_{it} = \beta_0 + \beta_1 ans_{i,t-1} + \beta_2 exp_{it} + \beta_3 fdi_{it} + \beta_4 gdpc_{it} + \beta_5 unemp_{it} + \beta_6 fdep_{it} + \mu_{it} \qquad (1)$$

On the other hand, short-run specification of the model can be written in the following form:

$$y_{it} = \sum_{j=1}^{p} ¥_{ij}\, y_{it-j} + \sum_{j=0}^{q} \pi_{ij}\, \gamma_{it-j} + \mu_i + \varepsilon_{it} \qquad (2)$$

where $¥_{ij}$ and π_{ij} are coefficients and μ_i represents fixed effects while ε_{it} is error term. γ_{it-j} is (kx1) explanatory variables of our country group.

Turning Eq. (2) into the form that includes both error correction term and short and long run coefficients, it is then possible to write it down as follows:

$$\Delta y_{it} = \varphi_i(y_{it-1} - \beta_i\gamma_{it}) + \sum_{j=1}^{p-1} ¥_{ij}^*\, \Delta y_{it-j} + \sum_{j=0}^{q-1} \pi_{ij}^*\, \Delta \gamma_{it-j} + \mu_i + \varepsilon_{it} \qquad (3)$$

Table 1: Variables and sources

Variable	Definition/Unit	Source
ans	Adjusted Net Savings, including particulate emission damage / % of GNI	World Bank https://data.worldbank.org/
exp	General government final consumption expenditure / % of GDP	World Bank https://data.worldbank.org/
fdi	Foreign direct investment, net inflows / % of GDP	World Bank https://data.worldbank.org/
gdpc	GDP per capita / annual %	World Bank https://data.worldbank.org/
unemp	Unemployment rate / % of total labor force	World Bank https://data.worldbank.org/
fdep	Financial depth measured by broad money / % of GDP	World Bank https://data.worldbank.org/

Descriptive statistics and correlation matrix of the variables can be seen in Table 2 and Table 3, respectively.

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[2] E7 economies consist of Brazil, India, Mexico, China, Turkiye, Indonesia and Russia. Russia has been excluded from the group due to missing values. Therefore, our econometric analyses have been conducted by six other countries.

Table 2: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ans	180	11.8323	6.684416	-4.682339	27.59344
exp	180	12.8509	3.69639	5.693508	20.92792
fdi	180	2.027039	1.42023	-2.75744	6.186882
gdpc	180	3.608711	4.013775	-14.35056	13.63582
unemp	180	6.102372	2.468944	2.37	13.67
fdep	180	64.93313	43.89915	22.38758	207.6738

Table 3: Correlation matrix

	ans	exp	fdi	gdpc	unemp	fdep
ans	1.0000					
exp	0.0751	1.0000				
fdi	0.3107	0.3924	1.0000			
gdpc	0.5909	-0.0272	0.2407	1.0000		
unemp	-04086	0.4363	-0.1391	-0.3011	1.0000	
fdep	0.6751	0.4126	0.3573	0.4624	-0.1792	1.000

As Table 3 tells us that the variables in our analysis are not highly correlated with each other, that is, none of them are higher than 80%.

4. Empirical Analysis and Findings

Before running the PMG panel ARDL model, I checked the stationarity of the variables. If not, one may be subject to non-stationary variables that would lead to biased and unreliable results. To check the stationarity, I use Im-Pesaran-Shin unit root test developed by Im et al. (2003) and Levin-Lin-Chin (LLC) (2002) unit root tests. As can be seen from Table 4; ans, exp, gdpc, unemp and fdep are not stationary in levels, but all variables become stationary in their first difference. Since the variables are stationary $I(0)$ or $I(1)$, we can proceed to PMG panel ARDL estimations.

Table 4: Panel unit root tests

Statistics	IPS		LLC	
Order	I(0)	I(1)	I(0)	I(1)
ans	0.22 (-0.76)	0.00* (-6.32)	0.07*** (-1.46)	0.00* (-5.16)
exp	0.13 (-1.10)	0.00* (-6.42)	0.22 (-2.20)	0.00* (-5.81)
fdi	0.01* (-2.17)	0.00* (-8.15)	0.00* (-2.67)	0.00* (-7.37)
gdpc	0.00* (-5.35)	0.00* (-10.61)	0.00* (-3.69)	0.00* (-8.34)
unemp	0.18 (-0.90)	0.00* (-6.22)	0.06*** (-1.48)	0.05** (-1.63)
fdep	0.89 (1.24)	0.00* (-6.75)	0.14 (-1.06)	0.00* (-5.37)

Note: *; **; *** denotes respectively 1%, 5% and 10% significance level.

Table 5: Short and long run PMG estimation results

Dependent variable=Δans			
Variables	Coefficient	Standard Error	*p* value
ECT_(t-1)	-.2070*	.0728	0.00
D (exp)	-1.6811*	.5264	0.00
D (fdi)	-.7717**	.3507	0.02
D (gdpc)	.1288***	.0757	0.08
D (unemp)	-.4303	.5395	0.42
D (fdep)	.0381	.0844	0.65
Constant	6.6579*	1.7139	0.00
Long-run results			
exp	-1.5343**	.7110	0.03
fdi	1.0661***	.6382	0.09
gdpc	1.6615*	.3518	0.00
unemp	-2.3749*	.5636	0.00
fdep	.0307	.0537	0.56
Hausman Test			0.95

Note: *; **; *** denotes respectively 1%, 5% and 10% significance level.

As Table 5 shows the coefficients of both short and long run PMG estimations, it can be concluded that government expenditure (exp) and foreign direct investment (fdi) have a significant negative effect while income per capita has a positive and significant (at 10%) effect on sustainable development in the short run. The impact of unemployment and financial depth on sustainable development is not statically significant.

In the long run, however, government expenditure and unemployment have a significant negative impact on sustainable development while the effect of foreign direct investment turns out to be positive. In addition, per capita income still has a significant positive effect on sustainable development in the long run. Any significant effect of foreign direct investment on sustainable development has not been observed in both short and long run periods.

Since the sustainability of development is a much wider concept that requires a comprehensive look at social, economic and environmental issues, it is possible to say that its determinants would be much more visible in the long run. Although short run factors would still affect the way in which developments in these areas contribute to sustainability, they are much more likely to affect sustainability in the long run. Interpreting our results from this perspective would help us better understand the short and long run dynamics of sustainable development. Government expenditure (exp) has a significant and negative impact on sustainable development in the short and long run. Although its short run negative effect may be justifiable under the assumption of inefficient and unproductive expenditures are made, its negative impact in the long run is interesting and questionable. It raises a question mark over the quality of expenditure rather than its level in the long run. The role of foreign direct investment (fdi) is erratic, showing a significant negative impact in the short run while having a significant positive effect in the long run. This is another surprising result that may be interpreted in the way that foreign direct investment may deteriorate income disparity in the short run while boosting economic growth in the long run (Ridzuan et al., 2017).

A significant and positive impact of per capita income (gdpc) on sustainable development in the short and long run is in line with the literature as it frequently corresponds to well-being, utility and the quality of life from economics points of view (Pearce et al., 1994). A higher and consistent level of per capita income leads people to consume more, get more utilities and increase the quality of life. On the other hand, a significant and negative effect of

unemployment (unemp) on sustainable development can be explained by the fact that it reduces saving and household consumption, therefore paving the way for a lower level of economic activity, which is in line with the findings of Kaimuri and Kosimbei (2017). Lastly, the effect of financial depth (fdep) is not statistically significant in the short and long run.

5. Conclusion

Although sustainable development has long been discussed among researchers and scholars, there is no consensus regarding its definition in the literature. Additionally, researchers take social, economic and environmental dimensions of sustainable development into account, allowing them to look at the concept from different points of view. The purpose of the current study, therefore, was to investigate the determinants of E7 economies using pooled mean group (PMG) panel ARDL approach over the period 1990-2019. The findings clearly indicate that in the short run government expenditure and foreign direct investment have a significant negative effect on sustainable development while per capita income has a significant positive effect. On the other hand, in the long run, government expenditure and unemployment have a significant and negative effect on sustainable development, whereas foreign direct investment and per capita income have a significant positive effect on sustainable development for E7 economies.

Taken together, the results of this research provide insights into the dynamics of short and long run determinants of sustainable development in E7 economies. Our dependent variable, adjusted net saving rate, might be seen as a comprehensive measure of sustainable development as it consists of not only economic factors but also social and environmental elements in its nature. Considering the results previously reported, it is possible to say that E7 governments should channelize expenditures into efficient areas that would increase the potential of the economy and contribute to nations' saving rate. E7 economies should also implement sound macroeconomic policies that would decrease unemployment rate, which in turn would have a positive effect on sustainable development thereby increasing households' income.

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