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ABSTRACTS
Efforts of Serbia in Reforms and Adjustments to Facilitate Trade

Predrag Bjelić1 Ivana Popović Petrović2

Abstract
During this Post-Covid period, Serbia is fostering its efforts to continue with extensive reforms, to obtain a competitive market-based economy, to continue with investments and to facilitate trade flows. The priority is given to the non-tariff measures which impede supply chains efficiency and have a strong impact on the trade transaction costs level. Therefore, numerous activities have been initiated in order to decrease identified barriers impact, by trade capacity building. The most obvious are activities and reforming process oriented towards regulatory and especially procedural trade barriers removing. This should be a possible precondition for enabling trade enterprises to benefit fully from taking part in international trade.

Although Serbia still is not the WTO member country, the implementation of the WTO Trade Facilitation Agreement is seen as the process in progress. There are implemented, or at least, developed many facilitating components of that process: strengthening of the national Enquiry Points within the Ministry of Economy, with the aim to provide free of charge information, or regulatory requirements and administrative procedures to participants in international trade. One of the main results of reforms was the aligning of the customs procedures by adopting the Integrated Border Management Strategy and its full implementation from 2006. This meant uniting the work of several agencies like Serbian Customs Administration, Border Police, Border Phytosanitary Inspection and Border Veterinary Inspection.

A new Risk Based Management is already in use as one of the main contributors to Trade Facilitation process in this part of the Europe. It enables customs clearance to be more efficient and effective, with activities mainly based on the double Departments responsibilities. The first one is responsible for the risk analyses at the national level and the other one, for risk management at the regional and local levels. Their work is strengthened by the Customs Service Information System and with a large number of bilateral agreements on mutual assistance with its counterparts in the region, signed during last two decades.

Within this process of trade facilitation, thanks to the complaints of the participants in foreign trade, some difficulties are observed, as: the lack of harmonization in working hours between the inspection agencies, connected with the work of the customs administration, the lack of clarity of rules for sanitary and phytosanitary testing, long waiting time for completing the radiological testing and inspection, problems with the customs valuation because the lack of clarity over tariff classification, the lack of trade capacity and infrastructure for perishable goods and live animals, transport congestions at the border crossing points, especially during last five years, provoked by EU regulations and procedures for controlling migration. These are also the most challenging elements of the reform processes.

Keywords: procedural trade barriers, trade facilitation, enquiry points, risk-based management, customs administration, complaints

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Democratization in Serbia: Political Culture, Civil Society and Institutions

Önder Canveren

Abstract
The overthrow of the Milošević regime after the Bulldozer Revolution in 2000 led the way for political transition and a new opportunity of political liberalisation in Belgrade. As a post-conflict and post-communist country, Serbia has been analysed by varied disciplines with reference to its efforts, current catch-up strategies, European Union (EU)’s (positive) impact and also the obstacles and challenges against the consolidation of democracy. This study aims at analysing the uncompleted democratization process in Serbia, by referring to i) civil society ii) political culture and iii) institutions as the domestic variables. In this framework, Serbia's problems with democratization concerning the above-mentioned issues will be analysed by examining the data written by certain international organisations, EU reports and the relevant literature. Main observations on Serbia reveals that there are structural difficulties that challenges the open-ended and incomplete democratic consolidation of Serbia. The weak and dependent civil society and the media; political polarization, lack of consensus for a European Serbia, and certain illiberal and non-democratic values and attitudes among the Serbian elites; finally concentration of power in the executive branch, challenges in party politics and the lack of independent and capable institutions prevent the establishment of an embedded democratic system in Serbia.

Keywords: Serbia, European Union, democracy, democratization, domestic politics

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Innovative Methods to Ensure Competitive Advantage in International Trade: Blockchain Applications

Mehmet Burak Ceran

Abstract

In today’s digitalizing world, it is important for businesses to keep up with this digital environment in order to continue their existence. It is not possible for businesses to compete with their competitors unless they can adapt to the requirements of the global competitive environment. This situation is similar to the case of businesses that resist global change and do not approve credit card payments, but leave only cash sales option to their customers. Undoubtedly, the end of such businesses has to be the same as the case of the phone manufacturers who were late to smart phone technology and wiped away from the market despite their high brand value.

Global competition has completely lost its borders in today’s World of technology which is developing day by day undermining all borders. The businesses that are most affected by this situation and in dire need to adapt are foreign trade companies operating in international markets. Blockchain applications, which are one of the most important and talked about development in recent years, are expected to be encountered more frequently in practice. This entails that foreign trade companies need to adapt to this technology quickly.

Blockchain and smart contract applications can be defined as a technology that will systematically provide the element of trust between businesses and provide the opportunity to do business efficiently. The application enables transactions on commercial networks to be carried out with technological methods and at lower costs. Blockchain can also be expressed as a database system consisting of interconnected blocks. Any information that includes a transaction can be processed into this database. The newly realized transactions are added on top of the previous block and a new block is created, and the commercial transactions proceed safely in this way.

In our study; blockchain and smart contract applications, which are considered as one of the latest technologies in the continuous development and adaptation processes necessary for foreign trade companies to increase their effectiveness in global markets, are mentioned. In addition, delivery and payment methods, which are important topics for foreign trade companies, are discussed within the scope of blockchain applications.

Keywords: international trade, blockchain, smart contracts, delivery and payment

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Examining Cryptocurrencies Within the Framework of Sustainability

Canan Dağıdır Çakan\textsuperscript{1} \hspace{1em} Mehmet Hanifçi Ateş\textsuperscript{2} \hspace{1em} Tolgahan Tuğlu\textsuperscript{3} \hspace{1em} Aleyna Uca\textsuperscript{4}

Abstract
Cryptocurrencies have been attracting a significant amount of attention in the world since it is first launched in 2009. Pretending to be a decentralized finance (DeFi) solution, it brought out a new era in technology called blockchain. Even though the benefits did not come into action in daily routines for many to be aware of, the market and its variety kept growing. On the other hand, there are also a lot of concerns and unpredictability about the future of this technology. Especially the high energy consumption while generating blocks for mining cryptocurrencies and completing transactions is commonly being criticised.

In this study, blockchain technology and basics of mining and validation procedures such as Proof of Work (PoW) and Proof of Stake (PoS) processes will be explained and the environmental effects of bitcoin mining in terms of carbon dioxide emissions will be investigated through econometric models. In the perspective of environmental sustainability of cryptocurrencies, the improvement in usage of renewable energy and its side benefits will be overviewed for a better prediction on the blockchain technologies future.

Keywords: sustainability, green energy, DeFi, blockchain, cryptocurrencies

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Trends in Google Search for Insurance in Romania during Pandemics

Dan Constantin Dănulețiu1 Adina Elena Danuletiu2

Abstract
The study analyzes the Google searches of the key term „insurance” during the period 1st of March 2020-1st of March 2022. For this, Google Trend was used and the period was split in two subperiods: 1st of March 2020 – end of 2020 and 1st of January 2021-1st of March 2022.
The analysis of the 2 periods reflects some specificities of the searching behaviour of population about insurance. Year 2020 is dominated by searches related to „travel insurance including covid option”, other significant searches being related to “auto insurance” (price, online contract or complaints) and “malpraxis insurance”. Analyzing the periods when these terms were searched intensively, we can observe that „travel insurance including covid option” was searched even in the first days of March or April, but searches started to grow at the end of May 2020 and most intense search of the term was during August 2020, in a period of relative acalm of Covid pandemic. As regard „auto insurance”, the most important search regard the online insurance and important searches are seen in the last part of March (when, because of the emergency period, the activity of insurers was translated in online) and, after a short period of low searches, in the end of april these searches started again to grow. Confronted with an unusual situation, Romanians started to seach for the price of “malpraxis insurance” during April, at the end of the first month of emergency situation. But more intense searches were found in the middle of July, the end of September and the end of November.
In 2021 and first part of 2022, the searches related to insurance subject were dominated by „auto insurance” (especially MTPL insurance), and especially by the price of MTPL insurance and the protection fund of insurers faced with the probability of bankruptcy of the main MTPL insurer in the Romanian market. This kind of search was most intense in a period of about 2 weeks after the decision of Romanian Authority of Financial Supervision to call for the bankruptcy of the most important MTPL insurer in the Romanian market, but after that the searches were less intense, even in the period when the justice decided to declare the bankruptcy the searches being no more than half of the searches in the first period. As a consequence of this insurer bankruptcy (insurer recognized for low prices), the prices of MTPL policies registered an increase, so many searches in the end of September and first part of October were related to the price of „auto insurance”. Only two terms related to sanitary situation were found in the main terms searched in 2021. The term “storno insurance Covid” was searched especially on the end of January, February and March and again in the first part of July, being related generally to early bookings or last bookings. Another term used in the search is „how much is a one month health insurance” (understood as travel insurance), which was searched especially at the end of May, but also in August or the last days of November or last days of December. These searches are related to the vacation periods or free days (first days of December).
The searches on internet reflect a slight different behaviour of Romanian population. In 2020, confronted with a new situation, important searches were for „online insurance”, „travel insurance with covid option” (generally for shortly planned vacation) or „malpraxis”, but in 2021 most important searches were about “auto insurance” (as a consequence of leaving the insurance market by the main MTPL insurer) and well under the above searches “health/travel insurance” or “storno insurance Covid” (for planned vacations). The paper underline the searching behavior of Romanians related to insurance aspects and suggest some ways of using internet search data to improve insurers strategies.

Keywords: insurance, internet search, behavior

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Analysis of the Behaviour of the Effective Exchange Rates of WB Countries in the Light of Current Instabilities

Aleksandra Đorđević

Abstract

Monitoring the movement of exchange rates is important in order to analyze the cyclical position of the economy. This is an important issue in modern conditions characterized by global imbalances and increasing instability in markets around the world. In order to analyze the competitive position of the country based on the movement of exchange rates, it is adequate to monitor the movement of the effective exchange rates (EER). This type of exchange rate is the most comprehensive indicator of global export competitiveness and provides a clear picture of the value of the currency, and thus the competitiveness of the economy. More specifically, for these needs, it is most adequate to analyze the movement of the real effective exchange rate (REER).

Although REER is an important macroeconomic variable that contains useful information on competitiveness and economic performance, analyzing its development is underrepresented in the literature on the Western Balkan countries (WB). This paper seeks to fill this gap, focusing on the analysis of EER behavior in five WB countries (Albania, Bosnia and Herzegovina, Montenegro, North Macedonia and Serbia) in the period from 2001 to 2021. This analysis serves as an indicator of price competitiveness, which determines the relative position of domestic producers in foreign markets in the period before, during and after the global economic crisis, but also including the period of current instabilities. By analyzing the recent dynamic of exchange rates of WB countries, valuable conclusions can be drawn in the context of current global economic and geopolitical changes and their consequences. In that sense, an analysis of REER movements over time in the region was conducted in this paper, which enables observing the changes in the competitive position of WB countries. In addition, the decomposition of REER changes was conducted, in order to determine which factors are responsible for REER developments, i.e., what contribution nominal effective exchange rate and inflation have in REER changes. In this way, the basic drivers of REER changes are identified, which provides important information given the current price volatility in the global market. This type of analysis is extremely important for the countries of WB region, bearing in mind that exchange rates have important role in stimulating their export and economic growth.

Keywords: real effective exchange rate, nominal effective exchange rate, inflation differential, WB countries, competitiveness

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Young Customers and Social Platforms

Giulia Gavriletea

Abstract

Social media is constantly increasing in popularity in the last few years and become an affordable and powerful marketing tool for many companies, that can be used to attract the younger generation of customers. Young consumers can be more receptive in advertising provided on social platforms like TikTok, Instagram, and Twitter compared to ones provided by traditional marketing channels. This can be explained by the fact that the young generation is using more digital media than traditional media. Companies that are adapting quickly to these new realities and are adjusting the ways they communicate to customers will become stronger and will grow faster. Business leaders need to face fundamental challenges and must understand young consumers’ behavior and purchase decision patterns, must understand that social media can help their companies to reduce advertising costs, to interact easier with consumers and to solve more efficient customer service issues. Social platforms are becoming gradually essential for each business and many strategies can be used to develop their relationship with young customers. Using different platforms, raising social media posting frequency, using influencers to promote companies’ products and services, and providing consistent media content that can attract young consumers’ attention can be the key to the company’s success. It is imposed to raise and answer some important questions related to this issue: are business leaders open to embracing new marketing strategies and investing in new solutions that can connect companies with young customers, are traditional marketing techniques still effective or must be totally reconsidered, is social media marketing the future of digital marketing?

Keywords: social platforms, young customers

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Impact of Insurance Sector on Financial Development in Romania

Marius Dan Gavriletea¹

Abstract

Insurance sector is a critical sector for financial system through its long-term investment horizon and risk management instruments. In this study, the impact of insurance sector on financial sector development is investigated in sample of Romania. Our findings reveal that insurance sector is a significant determinant of financial sector development.

Keywords: insurance sector, financial development, Romania

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Debates on Malthus's Population Hypothesis: Neo-Malthusianism, Anti-Malthusianism, and the Socialist Opinion

Hasan İslatince¹

Abstract

The 19th century was a period in which a profoundly serious demographic change was experienced in Western Europe. The economic and social issues caused by the rapid population growth in Europe, especially in the UK and Germany, started to be discussed. Some economists began to allege that the surplus of the population brought misery, not welfare. Malthus was the spearhead figure among these authors, and he is still discussed in the field of demography today. Malthus argues that the rate of population growth is greater than the rate of increase in the food supply, which is the main cause of poverty. This opinion has found both great support and criticism. Malthus alleged a pessimistic theory, by noticing that the increase in the UK population was raising poverty in some areas. In his theory of growth, in which he included population and resources, he claimed that food production would increase at decreasing rates due to the law of diminishing yields, by assuming that the amount of arable land was constant. Malthus is a typical liberal philosopher of the period. According to him, the reason for the misery was that the lower classes reproduced too much and had more children than they could care for. In this context, he strongly objects to the 'Poor Laws' that regulate the state's social assistance to the poor.

In 1877, the Neo-Malthusian population approach, which adopted Malthus’s population approach, began to take shape in the UK. The first major advocates of birth control were British radical Neo-Malthusians. Despite Malthus's opposition to the contraception in principle, these early Neo-Malthusians in the UK considered overpopulation to be a cause of poverty and supported birth control with the idea that it would reduce poverty and improve the living conditions of the working population by ensuring that the poor had fewer children. Criticism of Malthus and Neo-Malthusian opinions was carried out by Anti-Malthusians and Socialists. Anti-Malthusianism is a doctrine that opposes Malthusian thoughts, sees a decline in population growth as a danger, and promotes fertility. In France, where fertility rates fell in an early era, the Anti-Malthusian trend was widely accepted. Another group that opposed Malthus's thoughts was the socialist thinkers of the period. They were criticizing Malthus's liberal perspective of poverty. According to the Socialists, to eradicate poverty, it was necessary to change the model of society rather than controlling the population.

Keywords: population, starvation, growth

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The EU Common Agriculture Policy and Food Security

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Abstract
The EU Common Agricultural Policy (CAP) has been the first major measure adopted, with the clearly defined aim of ensuring self-sufficiency in agri-food products and stabilizing agricultural market turmoil. These first objectives of the CAP were met in the 1980s, but at the same time this type of approach began to show its shortcomings in the common market, as large-scale subsidies stimulated intensive, large-scale production to achieve the lowest possible prices for the final consumer. Crises of overproduction began to appear, growing stocks of products, which more and more obviously exceeded the demand on this market. Also, the negative impact of agricultural activity on the environment, agricultural land, animal welfare, food quality has started to become obvious. Therefore, the need for a new approach to agricultural policy at EU level has become apparent, calling for effective solutions for the sustainable development and transformation of the sector. New terms and concepts have emerged in this regard: food security, "green" agriculture, biodiversity, etc., concepts that are becoming key elements of the CAP now and for the future.

Regarding agriculture, a very important aspect must be accepted, which particularizes agriculture compared to other areas of a national economy and forces us to analyze it differently: obvious and permanent dependence on geographical location, weather conditions, climate change. Therefore, the development of EU agricultural policies provides only a general framework for action, regulating financial assistance measures, and each Member State will define national implementation plans, depending on economic, social and, finally, depending on the geographical location and environmental factors. The current geopolitical situation clearly demonstrates that the access to sufficient and affordable nutritious food is essential. During crisis time, the consumer behavior is significantly different and would dramatically shift towards panic with negative implications. The EU’s answer to crisis is set up in the Contingency plan for ensuring food supply and food security in times of crisis.

But confronted with an exceptional situation, characterized by higher prices of commodities and energy, increased costs with logistics and other input costs and the armed conflict between Russia and Ukraine, EU introduced some exceptional measures to sustain food security, not neglecting the environmental objectives.

This paper analyzes the measures through which EU address the food security and prices’ stability issues in this complex situation, in the context of Farm to Fork and the Biodiversity Strategies.

Keywords: EU common agricultural policy, exceptional measures, food security

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State of Affairs in Accounting Regulations and Practices in the Republic of Serbia - Incentive or Obstacle in the European Union Accession Process

Danica Jovic¹

Abstract
Accession Negotiations of the Republic of Serbia to the European Union have been underway since January 21, 2014. Current status of negotiations: there are 20 open chapters, for 7 chapters were given opening benchmarks, and 4 chapters were not given opening benchmarks (two open chapters were provisionally closed). Bearing in mind the accession procedure and the experiences of countries in the region, this paper will investigate the impact of accounting regulations and practices for the private and public sectors entities, in the Republic of Serbia on the course of Accession Negotiations and their duration. Precisely, this paper aims to find out whether the accounting system in the Republic of Serbia is an incentive or an obstacle to Serbia's entry into the EU.

Keywords: accounting regulations, accounting practice, accession to EU

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The Role of the US Dollar in the International Monetary System: Challenges and Prospects

Radovan Kovačević

Abstract
The US dollar is still dominant in currency invoicing of international trade (around 40%). It is followed by the euro and the renminbi. Global value chains are an important factor in invoicing in dollars and euro in trade with the US and the euro area. The internationalization of the Chinese renminbi, through the network of swap arrangements of the Chinese National Bank, has contributed to the increase in invoicing of trade in the renminbi, to the detriment of the US dollar. The transfer to payments for the export of natural gas from Russia in the rubles, and in the future also for the export of other products, indicates a further reduction in the share of the dollar in invoicing international trade. The dollar is also a key currency of allocated global foreign exchange reserves (a share of about 60%). It is followed by the euro and the Japanese yen. Before the outbreak of the global financial crisis 2008-2009., the U.S. dollar's share of global allocated foreign exchange reserves reached almost 70%. In the post-crisis period, this share is declining due to the increase in the share of the Canadian and Australian dollars, and the Chinese renminbi. The highest growth of foreign exchange reserves in the post-crisis period was recorded in emerging and developing economies. They owe a turn from the dollar to non-traditional foreign exchange reserves. Trade tensions between the US and China, Brexit and the economic sanctions against Russia could increase the diversification of foreign exchange reserves towards other currencies, at the expense of the dollar. This indicates the opening of the process of reforming the international monetary system, which would reduce the international role of the dollar.

Keywords: Dollar, currency invoice, foreign exchange reserves, financial crisis

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The Role of Environmental Taxes in Reducing GHG Emissions: Case of EU Countries

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Abstract
The research problem is based on the increasing global environmental pollution, reduction of the natural potential of countries, and the importance of exploration of the effective measures for the solution of these issues. The research analyzes the economic and environmental effectiveness of the environmental taxes as an environmental policy instrument helping reduce the environmental pollution and increase the natural potential. Environmental taxes are one of the most important tools for the reduction of GHG emissions in the EU. The research aim is to assess the role of environmental taxes in EU countries. The authors explore the following question: whether environmental taxes can contribute to the policy of GHG reduction? Research results show that environmental taxes contribute to solving several societal challenges. The general trend for the European Union and other analysed countries of the sample show reduction in the greenhouse gas emissions, increase in renewable energy use and revenues from environmental taxes, economic growth, and reduction in energy consumption growth rates.

The study has demonstrated that with an increase in revenues from environmental taxes in analysed EU countries, the environmentally unfriendly indicators tend to reduce. The leading countries in terms of environmental protection have been found to be the countries with the largest ecological deficit, while the outsider countries in this field are the countries with the smallest or absent deficit, usually, these are the countries that joined the EU at later stages.

The research has revealed that the effect of environmental taxes is very close to the economic effect, and lags behind the energy effect on environmental protection. The energy consumption effect is considerably stronger. In addition, the environmental tax effect on environmental protection is stronger in economically more sound countries with slower economic and tax growth rates and more rapid development of renewable energy production technologies.

Keywords: environmental taxes, GHG, environmental policy

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Internal Company Determinants of Sustainable Growth Rate: Empirical Investigation on an Emerging Market

Aleksandar Naumoski

Abstract

Growth and development of the company is a broad concept. Understanding the financial dimensions of growth is crucial to creating sustainable growth of the company. Successful companies are those that go through a predictable life cycle: starting with the introduction phase, through growth, than maturity, until the decline phase. Managing growth is especially challenging for companies in the second phase - growth. Continuous undertaking of capital investments with which the company increases its production capacities in order to respond to the increased market demands requires engagement of more capital from internal and external sources. Achieving increased production and sales requires engagement of more assets of all types (fixed and current) that must be financed from certain sources. Internally generated money form retained earnings and associated borrowing are limited investment funds. If the company is not ready to make a new shares issue and / or enter into excessive borrowing, the limitation of internally generated funds is a ceiling for growth that can be realistically achieved without straining its own resources. This is exactly the sustainable growth rate. This is the maximum rate at which company sales can increase without depleting financial resources and getting into a situation of financial distress.

Modern companies pursue consistent financial policies with a defined optimal capital structure, which requires proper tailoring and adjustment of dividend policy. This reasoning is present with the pecking order theory in corporate finance. This approach suggests that there is a financing hierarchy. A firm should finance its investment in the first order by accumulated internal funds, then with safe and risky debt, and finally with equity. That is due to the information asymmetries that make outside funds more expensive. It follows that what limits a company's growth rate is its share capital growth rate. Larger retained earnings provide the opportunity for proportionate additional borrowing with unchanged capital structure and greater opportunities for investment and growth of the company. Therefore, company’s sustainable growth rate is nothing more than its growth rate in equity.

Corporate managers focus on sustainable growth. An important postulate is that growth is not something that should be maximized, but sometimes it is necessary to limit it to maintain the financial stability of the company as a way for its survival and prosperity in the long run. Rapid growth is not always a blessing for the company, as it can put considerable strain on a company’s resources, pushing it into financial distress and even bankruptcy. Also, slow growth is not a desirable option, as it does not meet the returns requirements of the company’s stakeholders, especially shareholders, board members, and opens the way to potential competitors. This again creates financial problems as well as rapid growth. Rapid growth has led to the bankruptcy of as many companies as slow growth. The growth of the company should be managed in a way that will ensure the optimal growth rate.

The subject of research in this paper is the concept of sustainable growth rate. This concept has been developed on research in the case of developed countries, and here we will research on

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the case of companies from North Macedonia which is a small emerging market from Southeast Europe. The country moved from a socialist regime to a market economy a few decades ago, and the findings of this study will allow us to gain insights into the determinants of sustainable growth for companies in transition countries. The research will be conducted on the case of non-financial manufacturing companies.

The data for the research are provided by the financial statements of the listed companies on the Macedonian Stock Exchange. Our research will include a satisfactorily large sample consisting of 63 companies for the period 2005-2019.

The purpose of this research is to understand the impact of internal company factors that determine the sustainable growth rate (SGR). More specifically, we aim to investigate the relationship between the sustainable growth rate and the firms’ performance accounting indicators as the financial leverage, liquidity, profitability, asset efficiency and size in order to determine the factors that are associated with the sustainable growth rate of firms listed on the Macedonian stock exchange. Sustainable growth rate is simply the rate of growth of equity. Our hypothesis is that it exists statistically significant positive relationships between the SGR and the firm leverage, profitability, and firm asset efficiency, and that there is a statistically significant negative relationship between the SGR and the size of the firm.

The research will be conducted using econometric panel regression analysis in which the dependent variable will be regressed in relation to the independent and control variables. The results of the research will give a clear picture of the management of growth and the determinants of sustainable growth in the companies of an emerging market. Also, it will provide significant conclusions and implications for managers in these countries.

**Keywords:** sustainable growth rate, emerging markets, financial leverage, assets efficiency
Health Governance Literature: Review and Future Research

Mirela Oana Pintea (Cas. Bogdan)¹

Abstract

This paper aims to explore the literature review on corporate governance in healthcare sector, emphasizing both its structure and its evolution. The main focus in this area of research is related to the improvement of health outcomes generated by good governance. The objective of this research is to realize a systemic review of the literature by presenting the different studies conducted and their results. Our review starts from presenting the efforts made by different authors to define and describe the health governance function, considering that effective governance is a key component of health systems. Another path followed in this research was to identify studies that link different governance mechanisms to health outcomes. We conducted a research of social science and health literature focusing on defining the health governance function and the link between different governance mechanisms and health outcomes, despite the literature vastness around these two concepts.

As we notice, there are a lot of terms used in defining health governance, from governance ideals to characteristics of organization of actors in governance arrangements. Different authors consider that despite a growing literature around health governance, there is still a need for a better understanding of this concept. By reviewing the literature, we tried to answer several questions: which are the most relevant governance definitions? Which are the relevant governance dimensions? and which are the appropriate tools to govern. On the other hand, starting from the premise that governance mechanisms influence health outcomes, in the studied literature are identified four key governance mechanisms that can impact health outcomes: health system decentralization, health policy making through empowering stakeholders, enhanced community engagement strengthened social capital. Other authors focus their attention the main attributes that impact governance in healthcare systems: quality of health care, corporate social responsibility in health, health risk management and global health governance.

Our conclusions, after this literature review is that not all the studies found a positive correlation between health governance and healthcare outcomes. Another conclusion of our research is that of that the lack of governance can have an impact on the quality of health services. For a better understanding of the relationship between governance and health, further exploration is needed. Considering the obvious correlation between environment and the quality of health, a path for future research is to study the relationship between them, considering that researchers gave it little attention.

Keywords: governance, healthcare, literature review

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Rising Inflation: A Renewed Macroeconomic Challenge in the Post-Covid World of Geopolitical Instability

Aleksandra Praščević

Abstract

Rising inflation has been an almost forgotten problem in macroeconomics since the 1980s, when monetarist recommendations for economic policy began to be implemented. Significant changes in the conduct of monetary policy, which was left to an independent central bank and whose only goal was a low and stable inflation rate, led to decades of price stability in developed economies. However, the unforeseen shocks caused by COVID-19, as well as the economic policy applied in overcoming the effects of the COVID-19 crisis on the economy, led to rising inflation in 2021. Such trend continued this year, which can be considered as a post-COVID period. However, after the COVID-19 crisis, geopolitical tensions and the Russia-Ukraine war caused global economic disruptions that resulted in rising inflation. The large-scale war in Europe inevitably led to economic problems, primarily in European economies. Among these problems is the slowdown of economies and their entry into recession, but also the emergence of rising inflation. It is primarily a consequence of rising energy prices (gas and oil), given the fact that Russia is the main supplier of energy in Europe. There has also been an increase in food prices, again because Ukraine and Russia are European suppliers of cereals. Thus, inflation appears as cost inflation, although the effects of monetary and fiscal expansion from the COVID-19 pandemic era continue to exist. This imposes difficult choices on economic policymakers in macroeconomic goals as well, as well as in the choice of economic policy. In many elements, economic policy makers will not be able to influence macroeconomic results, because they will depend on unforeseen events during the armed conflict between Russia and Ukraine. However, all the relevant macroeconomic knowledge that we have today in the field of solving inflation and overcoming the economic recession, are of special importance.

Keywords: inflation, economic recession, geopolitical tensions

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Risk Management in the Insurance Sector

Alexandra Ioana Daniela Rus¹  Marius Dan Gavriletea²

Abstract

Risk management is a process that aims to protect an organization's assets and income from the possibility of accidental loss. It can also help minimize the impact of a disaster on the organization's other stakeholders. Aside from insurance, Risk Management also focuses on managing the various financial consequences of a loss. Although it is important to have insurance, a loss can still have a significant impact on an organization. This can result in higher expenses and even cause the loss of income. Despite the relatively small impact of the credit crisis on the insurance industry, it has revealed the need for better supervision and risk management.

The objective of this study is to analyze the various features of insurance and develop a mechanism that will allow insurance professionals to make informed decisions to develop a management risk system for insurance companies.

Keywords: insurance sector, risk management, financial sectors

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The Economic Impact of Government Policies and Incentive Programs in the Use of Electric Vehicles and Those with Low Emissions: Case Study-Romania

Ioana Cristina Sechel

Abstract

Significant pollution reduction is on the front page, both in countries concerned with this issue, but especially worldwide. National authorities have proposed various projects to reduce pollution in the transport sector, especially in congested cities. In Romania, there are two such programs aimed at reducing pollution and granting financial subsidies for the purchase of a new, electric or low-emission vehicle. This paper analyzes the economic impact of government policies and incentive programs in the use of electric vehicles, respectively those with low emissions, for the case of Romania. We also considered the analysis of the efficiency of these stimulation programs, in reducing CO\textsubscript{2} emissions, in the case of Romania.

Keywords: electric vehicles, environment, CO\textsubscript{2} emissions
Tax Avoidance, Management Ability, and Firm Value

Maryam Seifzadeh

Abstract
The study's main objective is to evaluate the relationship between tax avoidance, management ability, and firm value. In this context, three hypotheses are proposed to meet the paper's objective. For conducting such a practical study, which is based on a post-event descriptive-correlational approach, data are gathered from the official website of the Tehran Stock Exchange during 2013-2019. A total of 183 companies is selected through the systematic elimination method and analyzed using the R statistical software.

The obtained results from data analysis using the multiple panel regressions indicated a negative relationship between managerial ability and tax avoidance. Moreover, we find a significant and negative relationship between tax avoidance and firm value. Finally, the findings argue that in companies with high-ability managers, the intensity of the negative relationship between tax avoidance and firm value is mitigated.

Keywords: tax avoidance, managerial ability, firm value

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Trade Potential and Border Effects between Bulgaria and North Macedonia

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Abstract

The gravity model of trade predicts that two neighbouring countries with shared historical ties and similar culture would exhibit a more intensive trading relationship than with third countries. In the case of Bulgaria and North Macedonia certain hurdles seem to prevent them from achieving the full potential of their trading partnership. We explore this issue using data on export and import flows of North Macedonia with 26 major trading partners over the period 1995-2020. A stochastic frontier methodology is applied within the gravity framework to estimate the potential of trade between North Macedonia and Bulgaria, comparing it to the potential with other countries. The difference between potential and actual trade is then used as an indicator of the trade efficiency between countries. The results indicate that the magnitude of overall trade inefficiency is around 35\%, whereby Macedonian exports to Bulgaria are more efficient than imports. Moreover, trade efficiency between North Macedonia and Bulgaria has declined over the sample period, while it has increased with respect to Germany. One potential explanation for these patterns is shown to be the decrease in border effects between North Macedonia and Germany, which is not observed vis-à-vis Bulgaria.

Keywords: trade efficiency, trade potential, stochastic frontier analysis, Bulgaria, Macedonia

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Trade Potential and Border Effects between Bulgaria and North Macedonia

Kiril Tochkov (Corresponding author)¹ Paskal Zhelev²

Abstract

The gravity model of trade predicts that two neighbouring countries with shared historical ties and similar culture would exhibit a more intensive trading relationship than with third countries. In the case of Bulgaria and North Macedonia certain hurdles seem to prevent them from achieving the full potential of their trading partnership. We explore this issue using data on export and import flows of North Macedonia with 26 major trading partners over the period 1995-2020. A stochastic frontier methodology is applied within the gravity framework to estimate the potential of trade between North Macedonia and Bulgaria, comparing it to the potential with other countries. The difference between potential and actual trade is then used as an indicator of the trade efficiency between countries. The results indicate that the magnitude of overall trade inefficiency is around 35%, whereby Macedonian exports to Bulgaria are more efficient than imports. Moreover, trade efficiency between North Macedonia and Bulgaria has declined over the sample period, while it has increased with respect to Germany. One potential explanation for these patterns is shown to be the decrease in border effects between North Macedonia and Germany, which is not observed vis-à-vis Bulgaria.

Keywords: trade efficiency, trade potential, stochastic frontier analysis, Bulgaria, Macedonia

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Abstract

In these days, when we are seeing technological developments in every aspect of society, we come across sectors that are more affected by the events in the commercial field. Because it is seen that there is faster and more effective communication between companies operating in the same field in the world. A development experienced in the sector on the other side of the world has become the effects of the grocery store in Turkey's smallest settlement. The world is now compared to a "small village". In addition to this situation, the Covid-19 Corona Virus, which occurred in Wuhang, China in March 2020, affected every area positively or negatively. It has also caused the emergence of sectoral problems in supply in the world. Also masks, vaccines, etc. For the countries that cannot fulfill the medical requirements, it has started to give more importance to international trade in terms of procurement from other countries. The banking sector, which is the most important actor in the payments of these transactions, is expected to be positively affected. In the study, the developments in the sector will be tried to be interpreted by considering the values before and after the date of March 2020, which includes the Covid-19 Pandemic period. However, the full effects of the Pandemic will take place in the long term. The number of banks in our country, the number of domestic/foreign branches, the number of deposit/participation banks, the volume of the finance sector in GDP, the number of personnel working in banks, the total number of savings deposits of banks, the total amount of savings deposits of banks, the values that we can see the effect of in the short term. The total number of ATMs/POS and the number of establishments that are members of the banks will be examined.

Keywords: Turkish banking sector, Covid-19, Wuhang, international trade, sustainable development
FULL PAPERS
The Mediating Role of Emotional Intelligence on the Effect of Cognitive Flexibility on Career Adaptability: Evidence from Healthcare Workers

Nursel Aydintuğ Myrvang

Abstract
Healthcare workers work in a stressful environment and their anxiety levels are generally high due to factors such as working much longer hours and at an increased pace than normal working conditions, high risk of infection, and insufficient psychological support provided in the institutions where they work. The health sector is a service-intensive sector and by its very nature, requires individuals with high cognitive flexibility to work. For this reason, it is very important to have individuals with high cognitive flexibility and the ability to adapt to certain situations, the ability to move from one thought to a different thought or to produce very different solutions to different problems. Emotional intelligence level plays a mediating role in the relationship between cognitive flexibility and career adaptation and provides integration. The aim of this study is to reveal the mediating role of emotional intelligence (EI) in the relationship between cognitive flexibility (CF) and career adaptability (CA) for 650 private hospital employees in Istanbul. As a result of correlation analysis cognitive flexibility is positively related to career adaptability by 51.4% and cognitive flexibility is positively related to emotional intelligence by 40.9%. On the other hand, career adaptability is significantly positively correlated with emotional intelligence by 56.2%. As a result of the regression analysis, CF and IE variables were found to be positive relationship significant on CA. The IE variable was determined as a “fully mediating” variable.

Keywords: emotional intelligence, cognitive flexibility, career adaptation, regression analysis

1. Introduction
The health sector differs from other working environments in that it is difficult to serve patients with severe stress, and employees in this sector often face stressful situations in their daily work environment. The fact that patients' wishes and desires vary instantaneously causes a lot of trouble for healthcare professionals in the face of this situation. Providing accurate information to patients, enabling patients to access the service as soon as they request, ensuring a sense of trust, providing the right to choose, paying attention to confidentiality, showing respect, the existence of institutional order, eliminating possible negativities that may arise between patients and healthcare professionals, providing emotional support to patients and their relatives, continuity of service, ensuring the comfort of patients and their relatives and trying to provide the best service are the factors that increase patient satisfaction.

Excessive workload, caring for patients with serious health problems and terminal patients, and having to help patients and their relatives emotionally when necessary cause work-related stress and tension in healthcare professionals. In addition, inadequacies in health services and the unbalanced distribution of health workers also create frustration and stress for workers. Stress and exhaustion based on this working environment cause psychological symptoms such as depression, anxiety and feelings of helplessness, and physiological symptoms such as headaches, muscle tension and insomnia.

According to Savickas (2005), being flexible is an important factor in coping with stress. Considering that stress is the pressure felt by the individual, having a flexible perspective and mindset will help the individual to get out of this pressure with the least damage. The flexibility

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and effectiveness of the coping methods we use in stressful situations and the appropriate responses to these situations reveal the concept of cognitive flexibility.

Cognitive flexibility is defined by Cheng et al., (2014) as an individual's ability to adapt to certain situations, the ability to switch from one thought to a different thought, or the ability to produce many different solutions to different problems. Martin and Rubin (2004) state that cognitive flexibility is positively related to communication competence. Maltby et al., (2004) emphasized that individuals who are cognitively flexible are more willing to try new ways of communicating. Individuals with cognitive flexibility are expected to be aware of options, able to cope effectively with new and difficult situations, generate alternative thoughts and ideas, and adapt to new situations. At the same time, individuals who consider themselves to be cognitively flexible are reported to be more self-confident, good, attentive and understanding.

In order to be effective, efficient and successful in social and business life, it has been revealed in the scientific dimension that it is not only sufficient to have a high intelligence, but also that the effect of emotions is a fact that cannot be ignored, and this new concept has been named emotional intelligence. This new concept is defined as the ability to understand and manage one's own and other individuals' emotions. Emotional intelligence is the ability to know one's feelings, to manage these feelings without drowning in them, to motivate oneself in one's work, and to communicate by recognizing the feelings of others (Ashkanasy and Daus, 2005:243).

Career adaptation supports the individual's ability to self-regulate and successfully solve problems in complex situations, in short, the individual's positive psychological development in developmental professional tasks, professional transitions and work-related trauma situations. Factors such as self-awareness, professional awareness, support systems and self-confidence are important for the person to overcome this adaptation process. On the other hand, the relationship between the optimism tendencies of individuals in coping with new situations in their lives and career adaptation and proactive personality, self-confidence, goal setting, career satisfaction, career advancement and career adaptation processes is noteworthy (Rossier, 2015:155; Rudolph et al., 2017:19).

The existence of healthcare workers with high cognitive flexibility and high career adaptability is of great importance. Emotional intelligence level plays a mediating role in the relationship between cognitive flexibility and career adaptation and provides integration. The aim of this study is to reveal the mediating role of emotional intelligence in the relationship between cognitive flexibility and career adaptability for 650 private hospital employees in Istanbul.

2.Conceptual Framework

2.1. Cognitive Flexibility

Cognitive flexibility is key to explaining the conscious behavior of individuals. At this point, it serves as an important variable in intelligence and creativity research. Making choices in the face of unstructured and complex situations are concepts related to creativity and cognitive flexibility. For this reason, decision researchers and psychologists define cognitive flexibility differently. According to behavioral therapy, emotions and behaviors are determined by our thoughts, and behaviors in turn have a significant impact on thoughts and emotions. When a person is cognitively inflexible, he or she is unable to function in coping with situational demands, so he or she often performs erroneously (Spiro and Jehng, 1990:165; Osiyevskyy and Dewald, 2015:59).

Cognitive flexibility is characterized by the readiness of an individual's thought system to external environmental influences, the ability to reorganize one's information processing
strategies in the face of new and unexpected situations, and the ability to respond to and explore multiple influences simultaneously. But conditions are not always the same, and solutions are sought for changing conditions. Therefore, thoughts, feelings and actions are not unidirectional; they are composed of concepts that affect each other (Hamiaux and Houssemand, 2012:564).

Considering the individual's decision-making process, cognitive flexibility stands out in two main areas: “control and option generation”. In this context, alternatives are determined while creating options. The purpose of not producing alternatives is known as the ability to perceive possible alternatives to situations and human behaviors that arise in life and to produce a large number of solutions to difficult situations. In control, it is the tendency to see difficult situations as manageable (Gruner and Pittenger, 2017:245).

The reactions of individuals who encounter different perspectives to new situations are important for cognitive flexibility and are affected by this situation (Colzato et al., 2006:1045). Being flexible is essential to adapt to new situations. Flexible cognition requires activation and modification that keeps cognitive processes alive in response to changing job descriptions. Cognitive systems function by generating new states of activation, such as directing and selecting upcoming responses, making plans and providing information to the system, with variable attention as situational factors and job descriptions vary (Moore and Malinowski, 2009:179). Cognitive flexibility therefore entails being ready to change job descriptions without being caught off guard or having problems adapting to them. In this way, it is possible to ensure the cognitive flexibility of the individual by increasing the change that he/she provides in a depressive state and replacing it with positive change (Dennis and Vander Wal, 2010:243). Cognitive flexibility stems from the individual's desire to be flexible. While the individual is aware that there are different ways of behaving, this awareness does not require them to move away from standard behaviors. Cognitively flexible individuals are willing to try alternative ways to communicate, to face different situations, and to be more adaptive in order to make their actions meet contextual needs. (Denson et al., 2014:72).

2.2. Career Adaptability

In studies on career management, "career adaptability", which is characterized as the basic component of career readiness and career development, is accepted as a key competency that plays a role in the career success of young individuals (Savickas and Porfeli, 2012:663). Career adaptability refers to the readiness of individuals to overcome unforeseen changes in work conditions by preparing for predictable tasks and participating in job roles (Kidd, 2004:442). Career adaptation is a psychological construct that shows the individual's readiness and acquisition of the skills necessary to overcome current and near future professional development tasks, job changes and stress levels (Biemann et al., 2002:162). The basis of career adaptation in young individuals is the adaptation of career and educational goals to environmental opportunities and constraints (Fiori et al., 2015:115). Career adaptability is considered to be a basic construct that includes attitudes, competencies and behaviors that are necessary for young individuals to adapt to their jobs and changing work life in the career development process (Zacher, 2014:23).

Career adaptability refers to the critical skills that individuals should have in decision-making processes related to their work life and career (Merino-Tejedor et al., 2018:79). In this respect, career adaptability can be seen as a link between career development and social and psychological adjustment (Zacher and Griffin, 2015:228). Savickas and Porfeli (2012) discussed the sources of career adaptability in four dimensions: anxiety, control, curiosity and confidence. Anxiety is based on individuals' awareness of their abilities and planning for the professional future. Control is related to individuals' ability to make decisions about their professional future and to have a sense of self-management. Curiosity refers to an individual's
tendency to investigate his/her environment; confidence refers to individuals' perception of themselves as competent in solving career problems.

Career fit indicates that people are opportunity-oriented, have a career-related vision and are ready for upcoming career tasks, changes and challenges. People with high anxiety are more likely to think about and prepare for their professional future, including carefully planning how to achieve their career goals. Being aware of how current choices and opportunities affect the process can help achieve these goals (Zacher, 2015:79). Control is the responsibility of the individual to shape himself and his environment in the present by being disciplined, diligent and patient in order to prepare for what may happen in the future. In other words, it is recognizing that one is responsible for building one's career and believing that one has the capacity to do so. Control reflects the degree of responsibility individuals take for their professional future, making people feel responsible for self-managing and shaping their careers. Control is a powerful tool for self-determination. It reflects the responsibility of individuals to shape themselves and their environment in order to master the field in which they pursue their careers (Savickas, 2005:67).

Curiosity is the individual's tendency to investigate and examine what is going on around him/her. Vocational curiosity describes the search for the fit between self and work life and finding the right options for oneself. Curiosity, which is an indicator of professional curiosity and the tendency to engage in opportunity-oriented activities, motivates individuals to turn towards alternatives and motivates individuals to take action. In this context, curiosity involves finding possible future career opportunities and thinking about how these opportunities might affect different lines of work and contexts (Koen et al., 2012:396). Confidence is the ability to believe that one's current abilities, knowledge and experience are sufficient to solve and overcome possible future career problems. Career confidence embraces the understanding that positive outcomes in an individual's career choices are the result of the individual's efforts (Zacher and Griffin, 2015:229). Confidence is closely linked to self-confidence and also refers to one's self-confidence and ability to achieve one's career goals. Confidence refers to the degree of self-efficacy in pursuing one's career aspirations, one's belief in one's problem solving and success, and one's ability to overcome career obstacles and to focus on success in moving towards these obstacles (Johnston, 2018:6).

2.3. Emotional intelligence

Since the 1990s until today, the concept of "emotional intelligence-EQ" has become a subject that has aroused great repercussions both in academic circles and in practice. It is stated that this concept has its roots in concept of "social intelligence". In this sense, social intelligence is considered as the ability to understand and manage people and to act wisely in relationships (Wong and Law, 2002: 243). In addition, it is known that Wechsler's work on "nonintellective intelligence" as a part of general intelligence in 1943, Gardner's concept of "multiple intelligences" in 1983 and Sternberg's (1997) "practical intelligence" studies also contributed to the development of EQ. The concept of "emotional intelligence" is of great importance in the studies conducted in the health sector. Because these professions require direct communication with patients and the service can only be provided with teamwork, the ability to use emotional intelligence comes to the fore.

In addition, occupational requirements mandate certain skills in employees. The most important of these skills is "self-confidence". In addition to the technical skills of physicians and nurses, a necessary characteristic is the frequently emphasized skill of listening. It has been determined by research that patients prefer hospitals and health personnel only because of these features (Nelson and Low, 2003:81). The concept of empathy, which is defined as the ability to put
oneself in someone else’s shoes and understand their feelings and experiences, is considered as a "central feature" of EQ. Because individuals feel exhausted due to a hectic work life. To this end, people need personal connections, empathy and open communication in the workplace. Empathy is one of the important indicators of emotional intelligence and contributes greatly to professional success (Brown et al., 2003:381).

Based on this information, when the literature on emotional intelligence is examined, it is seen that different interpersonal skills are considered as sub-capabilities of emotional intelligence in all emotional intelligence models. Salovey and Mayer (1990) argued in their model that emotional intelligence consists of three main abilities: understanding and expressing emotions, regulating emotions and using emotions. When we interpret employee and customer interactions in the retail sector using this model, it is seen that communication between customers and employees requires the use of these skills. Considering Bar-On's (2006) model, "empathy" and "interpersonal relationships" in the interpersonal dimensions of emotional intelligence and "stress tolerance" and impulse control" in the stress management dimension are thought to be emotional competencies that can help employees to understand customers and cope with difficult situations (customers). In addition, the abilities of "optimism" and "happiness" mentioned in the general mood dimension may also have an impact on the employee's behavior towards customers. In Cooper and Sawaf's (1998) EQ-i map, the skills of being aware of one's own emotions, expressing emotions, and being aware of others' emotions, which are sub-skills under the main dimension of being aware of emotions, can be considered as skills that can affect employees’ behaviors towards customers. Employees with high emotional intelligence are more successful in applying both their individual and social skills in their work life.

Emotional intelligence can be raised and developed regardless of whether it is innate or not. In addition, individuals can strengthen their emotional intelligence by discovering their own skills and abilities and developing themselves in these areas (De Haro García and Castejón Costa, 2014:718). Scientists state that there is no age for the development of emotional intelligence and that individuals of all ages can always improve their emotional intelligence skills and that it is a type of intelligence that can be learned (Merino-Tejedor et al., 2018:80). While emotional intelligence skills can be developed at any time, the importance of transferring these skills through education, especially during childhood, when individuals are most open to learning, in terms of increasing their life skills, has been a common point mentioned by many researchers in different fields.

3. Statistical Analysis

3.1. Purpose and importance

Cognitive flexibility is defined as an individual's willingness to remain flexible in his/her mind and confidence that the outcome of his/her actions can be positive. Individuals with this resilience believe that the outcome of their actions will be successful. Career adaptability refers to the readiness to cope with unpredictable changes in the work environment by preparing individuals for predictable tasks and participating in job roles. Career adaptability is of great importance in terms of an individual's self-efficacy, as well as in terms of building his/her future and directing his/her current career plan. Health service delivery is actively provided for 24/7. Individuals in the health sector should always be ready for emergencies and have superior problem-solving skills. Due to the high cognitive flexibility skills of employees, they are able to produce practical alternatives to problems in chaotic healthcare organizations and offer quick solutions. The ability of employees to be in harmony with their career can ensure the continuity of the continuous business environment in health institutions without disruption. In addition,
high levels of emotional intelligence are expected to greatly affect the success of an organization working with zero error. The aim of this study is to reveal the mediating role of emotional intelligence in the effect of cognitive flexibility of healthcare workers on career adaptability.

3.2. Population and sampling

The population of the study consists of health personnel working in private hospitals in Istanbul. The study consists of voluntarily participating health workers between the ages of 18-65. According to the Turkish Statistical Institute (TÜİK) Health Statistics Yearbook 2020, the number of healthcare personnel in Istanbul including public and private hospitals is given as 119,772 people. The number of samples to be drawn from a given population was determined as 384 people for p=0.50 and q=0.50 for a sampling error of 0.05 in the table developed by Yazıcıoğlu and Erdoğan (2004). In this study, analyses were conducted for 650 health workers. Random sampling method was used in the study.

3.3. Research Model and Hypotheses

The hypotheses of the study are as follows:

H$_1$: There is a statistically significant relationship between cognitive flexibility and career adaptability

H$_2$: There is a statistically significant relationship between cognitive flexibility and emotional intelligence

H$_3$: There is a statistically significant relationship between career adaptability and emotional intelligence

H$_4$: Emotional intelligence mediates the effect of cognitive flexibility on career adaptability.

![Research Model](image.png)

**Figure 1:** Research Model

3.4. Data Collection Tools

**Cognitive Flexibility Inventory (CRI):** The Cognitive Flexibility Inventory (CRI) was developed by Dennis and Vander Wal (2010) to measure the cognitive flexibility levels of individuals in the face of events and situations. The validity and reliability study of the Turkish version was conducted by Sapmaz and Doğan (2013). It has two sub-dimensions. The Cronbach's alpha reliability coefficient of the CRI was found to be 0.90 for the whole scale, 0.90 for the "alternatives" sub-dimension and 0.84 for the cognitive control sub-dimension. It consists of 20 items. CRI is a 5-point Likert-type scale. It is scored as "Not at all appropriate" (1), "Not appropriate" (2), "Somewhat appropriate" (3), "Appropriate" (4), "Fully appropriate" (5). Items 2, 4, 7, 9, 11, 17 are reverse coded. A high average response score indicates a high level of cognitive flexibility. The characteristics of individuals with high cognitive flexibility...
can be listed as high self-determination and self-esteem, able to look at things from different perspectives, internally controlled, less depressive and optimistic.

**Career Adaptability:** In the study of Savickas and Profeli (2012), a scale called "career adaptability scale", which was created as a result of the joint work of 18 researchers from 13 countries, was used to measure career adaptability. The scale includes a total of 24 statements and 4 sub-dimensions under the dimensions of anxiety (6 statements; $\alpha = .83$), control (6 statements; $\alpha = .74$), curiosity (6 statements; $\alpha = .79$) and trust (6 statements; $\alpha = .85$). Turkish validity and reliability study was conducted by Kanten (2012). A 5-point Likert-type scaling (1=strongly disagree and 5=strongly agree) was used. Items 1, 2, 3, 7 and 18 are reverse coded. The scale can be evaluated with both a total score and an average response score. The higher the score, the higher the career adaptability.

**Emotional Intelligence Scale:** In the study, the Schutte Emotional Intelligence Scale developed by Schutte et al. (1998), later revised by Austin et al. (2004) and adapted into Turkish by Tatar et al. (2011) was used to measure emotional intelligence. The scale consists of a total of 41 statements and three sub-dimensions: 21 statements related to the optimism (regulation of mood) dimension, 13 statements related to the evaluation of emotions, and 7 statements related to the use of emotions. Participants were asked to rate the statements from "(1) strongly disagree" to "(5) strongly agree". The higher the score, the higher the level of emotional intelligence.

### 4. Findings

Cronbach's Alpha, Split, Parallel, Absolute Strict Parallel were considered as reliability tests of the survey. A Cronbach Alpha value exceeding 70% is an indication that the survey is successful. Reliability analysis results of the survey: Cronbach Alpha = 0.925, Parallel = 0.924, Strict = 0.925. Percentage distribution information for demographic information:

- While 65.9% of the participants were female, 34.1% were male. The female participants were in the majority.
- 39.7% of the participants were married, 57.7% were single and 2.6% were widowed/divorced. The majority of the participants were single.
- 63.2% of the participants were between the ages of 20-30, 23.3% between 31-40, 9.5% between 41-50 and 4.0% between 51-60. The majority of health workers were between the ages of 20-30. The number of employees aged forty and above is low.
- The length of service of 58.2% of the participants is 0-5 years, 19.0% is 6-10 years, 7.9% is 11-15 years, 6.1% is 16-20 years and 8.7% is 21 years and above. In general, the number of employees with 0-5 years of service is higher.
- Of the participants, 25.4% were doctors, 45.2% were nurses, 0.3% were senior managers, 2.1% were middle managers and 27.0% worked in other departments.
- 33.9% of the participants work in internal departments, 34.7% in surgical departments, 16.9% in laboratory departments, 6.3% in administrative departments and 8.2% did not write down their department.
Table 2: Correlation Analysis Results

<table>
<thead>
<tr>
<th></th>
<th>Cognitive flexibility</th>
<th>Career adaptability</th>
<th>Emotional intelligence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive flexibility</td>
<td>r</td>
<td>1.000</td>
<td>.514*</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>.000</td>
<td>.409*</td>
</tr>
<tr>
<td>Career adaptability</td>
<td>p</td>
<td>1.000</td>
<td>.562*</td>
</tr>
<tr>
<td></td>
<td>r</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Emotional intelligence</td>
<td>p</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>r</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant relationship at 0.05

The dimensions were found to be positively and statistically significantly related to each other. Cognitive flexibility is positively related to career adaptability by 51.4% and cognitive flexibility is positively related to emotional intelligence by 40.9%. On the other hand, career adaptability is significantly positively correlated with emotional intelligence by 56.2%.

In the study, emotional intelligence (EI) variable should fulfill some conditions for the mediation effect to occur. First condition; cognitive flexibility (CF) variable will be statistically significant on career adaptability (CA) variable, second condition; emotional intelligence variable will be significantly related to career adaptability variable, third condition; cognitive flexibility variable will be significantly related to emotional intelligence variable and finally fourth condition; cognitive flexibility and emotional intelligence variables together in the relationship on career adaptability: "partial mediation effect" if the coefficient of cognitive flexibility decreases and is significant, and "full mediation effect" if cognitive flexibility is insignificant in the relationship. The results of regression analyses involving this algorithm are given in Table 3.

Table 3: Regression Analysis Estimation Results

<table>
<thead>
<tr>
<th>Dependent Variable: CA</th>
<th>Coefficient</th>
<th>St. error</th>
<th>t statistic</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed</td>
<td>3.780</td>
<td>0.582</td>
<td>6.494</td>
<td>0.000*</td>
</tr>
<tr>
<td>CF</td>
<td>0.703</td>
<td>0.134</td>
<td>5.246</td>
<td>0.000*</td>
</tr>
</tbody>
</table>

R² = 0.711  F_{calculation} =31.67  F_{significance} =0.000  Harvey test (p) = 0.128  LM test (p)=0.137  Jarque-Bera (p)=0.254

<table>
<thead>
<tr>
<th>Dependent Variable: CA</th>
<th>Coefficient</th>
<th>St. error</th>
<th>t statistic</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed</td>
<td>4.386</td>
<td>0.663</td>
<td>6.615</td>
<td>0.000*</td>
</tr>
<tr>
<td>IE</td>
<td>0.726</td>
<td>0.141</td>
<td>5.148</td>
<td>0.000*</td>
</tr>
</tbody>
</table>

R² = 0.732  F_{calculation} =38.71  F_{significance} =0.000  Harvey test (p) = 0.131  LM test (p)= 0.145  Jarque-Bera (p)=0.275

<table>
<thead>
<tr>
<th>Dependent Variable: IE</th>
<th>Coefficient</th>
<th>St. error</th>
<th>t statistic</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed</td>
<td>4.871</td>
<td>0.782</td>
<td>6.228</td>
<td>0.000*</td>
</tr>
<tr>
<td>CF</td>
<td>0.657</td>
<td>0.136</td>
<td>4.830</td>
<td>0.000*</td>
</tr>
</tbody>
</table>
As can be seen in the model results, the CF variable has a positive and significant effect on the CA variable. As the perception of CF increases by 1 unit, the size of the CA increases by 0.703 units. The first condition is met.

The IE variable is positively and significantly related to the CA. As the IE dimension increases by 1 unit, the CA dimension increases by 0.726 units. The second condition is met.

The perception of CF is significantly positively correlated with the IE variable. As the perception of CF increases by 1 unit, the IE dimension increases by 0.657 units. In this case, the third condition is also met.

Finally, the IE variable was found to be significantly correlated with the CA variable. On the other hand, the CF variable was not found to be significantly correlated with the CA variable. The coefficient of influence of the IE dimension on the CA dimension was found to be 0.785. Since the CF variable is insignificant, the IE variable is a "fully mediating" variable.

H1, H2, H3 and H4 hypotheses were accepted in the study.

5.Conclusion

The aim of this study is to reveal the mediating role of emotional intelligence in the effect of cognitive flexibility on career adaptability with the help of regression analysis for 650 employees in the health sector in Istanbul. As a result of the correlation analysis, cognitive flexibility is positively related to career adaptability by 51.4% and cognitive flexibility is positively related to emotional intelligence by 40.9%. On the other hand, career adaptability is significantly positively correlated with emotional intelligence by 56.2%. As a result of the regression analysis, since the CF variable was found to be insignificant, the IE variable was determined as a "fully mediating" variable.


Emotional intelligence is a structure within a broad framework formed by people's cognitive abilities. Businesses want their employees to have high emotional intelligence for more effective decisions. Because the decision maker with a higher emotional intelligence can resist negative situations more effectively. Employees with high emotional intelligence are more...
aware of their emotions and are able to integrate their thinking and emotional experiences more efficiently. Thus, while high EI is an important parameter that helps employees in processes such as career decisions, it is also a key that helps employers keep employees with potential in their businesses. People's emotional intelligence is an important psychological capacity that enables their adaptation in different areas of life. EI predicts our emotional and social competencies in social relationships and in our first encounter with a stranger. Therefore, people with higher than average EI levels produce quicker and more accurate solutions to social problems. Employees with low emotional intelligence perform worse than others and also have more turnover intentions. Because EI is a compass that helps people cope with stress and find creative ways to overcome these challenges during difficult periods. Low EI makes it difficult for employees to adapt to the organizational climate, limits their productivity, and causes them to constantly try to postpone the assigned tasks. In time, the employees who experience such adaptation problems feel a sense of "being there for the sake of being there" in the organization, their commitment to the organization decreases and they gradually move away from their workplaces.

It can be said that cognitive flexibility levels should be increased in order to enable healthcare workers to cope with negative situations such as stress, failure and conflict in their organizations. For this purpose, managers can take measures such as providing employees with trainings to develop cognitive flexibility, coping with stress, emotional intelligence subdimensions, providing a working environment and creating a culture that will ensure effective communication in the organization. Therefore, since the stress rate of employees with strong cognitive flexibility will decrease significantly, it will help to reduce the negative effects of stress, especially during the pandemic period. The study was limited to Istanbul province and private hospitals. In future studies, comparative analyses are recommended for the public sector and for different provinces.

References


The Effect of Talent Management on Organizational Performance and Organizational Identification

Nursel Aydıntuğ Myrvang

Abstract
Employees' innate abilities have a fundamental impact on their performance. All factors being equal, education, knowledge, experience, skills and ambition, the factor that explains the superior performance of one person over another in the same position is the abilities of that person. Applying the same personal development process to everyone in the organization and at the same time accelerating the process for those with high potential will increase organizational performance. Thus, a system is needed to develop those with high potential or talent faster than others. Today, the talent phenomenon, which has become one of the primary concerns of organizations, focuses on discovering, selecting, training and retaining top managers, but should also cover all employees in the organization. In this respect, performance appraisal constitutes an important aspect of organizational and management development efforts and is considered as one of the objectives of increasing individual and organizational productivity. On the other hand, in organizational identification, employees generally internalize the values and beliefs of the organization as if they were their own values and beliefs. Employees who fully identify with their organizations may see themselves as representatives of the organization. The purpose of this study is to determine the effect of talent management (TM) on organizational performance (OP) and organizational identification (OI) with the help of structural equation modeling for 450 banking sector employees. As a result of correlation analysis, organizational performance increased by 54.9% and organizational identification increased by 37.2% as talent management practices increased. According to the SEM results; TM has a statistically significant positive effect on OP ($\beta=0.613; p<0.01$). TM has a statistically significant positive effect on OI ($\beta=0.411; p<0.01$). The TM variable was most effective on the OP.

Keywords: talent management, organizational performance, organizational identification, structural equation modeling

1. Introduction
While globalization has changed the conditions of competition, today's business life has entered a rapid process with radical changes. The rapid increase in change in the current century has forced businesses to create and maintain competitive advantage. This competitive environment has brought about changes in human resources practices and the profile of employees needed. A concept that has been on the agenda in recent years is talent management. Talent management is one of the most important elements for companies to achieve their goals and gain competitive advantage (Heinen and O’Neill, 2004:69). The successful progress of talent management enables organizations to gain efficiency from talent management practices. In this way, organizations can retain critical personnel and gain competitive advantage. After these stages, the system should be operated from top to bottom and implemented in all departments with the awareness of how important each employee and talent is for the organization to achieve its goals and achieve high performance (Kehinde, 2012:179). While the process is being operated, the human resources manager has the important responsibility of being a bridge to spread the system from top to bottom.

Talent management is a comprehensive and integrated process used today to build excellent organizations. In order to create an organizational structure based on the concept of talent and to manage it successfully, first of all, what is done must be owned at the management level. A talent management strategy is then created that is integrated with the company culture, goals,
objectives and strategies (Nafei, 2016:43). In this management approach, talented people need to be attracted to the company, retained through effective development programs and provided with an environment to create added value. High performers are then evaluated through effective performance and competency systems. Successful results can be achieved by differentiating different performers from others and implementing innovative recognition and reward systems. This necessitates companies to have a high performance and result-oriented culture (Collings and Mellahi, 2009:306). We can express talent management as an integrated approach that aims to find, train and develop talented employees, which is the key to the success of the business, and to train them in line with the goals of the business (Sareen and Mishra, 2016:68). Thus, talent management as a concept that creates positive developments in both the qualitative and quantitative structure of organizational performance is a very important concept for today's businesses.

The purpose of this study is to determine the effect of talent management on organizational performance and organizational identification for banking sector employees. In the first stage of the study, talent management, organizational performance and organizational identification are discussed within the conceptual framework, and in the next stage, statistical analyses are presented and findings are interpreted.

2. Conceptual Framework

2.1. Talent Management

These are the stages and processes in which the talented and competent personnel in the organization are evaluated in the best way by the top management of the organization, the talent strategy is brought to the same level with the strategy of the business, and the loyalty to the organization is increased by recruiting talented personnel, developing their competencies and ensuring their job motivation (Payambarpour and Hooi, 2015:313). This creates a natural space for talented employees to express themselves better in the environment provided for them. Talent management is simply the recruitment, development and retention of high potential individuals. It is to recruit people with the skills and knowledge required by the business at the right time and to lock them into the same goal with the business in order to realize business goals (Hughes and Rog, 2008:745).

The concept of ability is a concept that identifies with or finds meaning in human beings. It is the ability of an individual to do or improve a job by using his/her knowledge, skills, experience and intellect. For this reason, since ability is the sum of competence-based characteristics that are formed based on experience and that differentiate an individual from other individuals, it is necessary to evaluate each individual with the abilities person possesses, and ability refers to the innate capacity of a person, referring to what person can do in the future. A person's abilities are transformed into skills and competencies in the learning environment, leading to high performance and success (Meyers et al.,2013:307). Talent management, on the other hand, is the work of selecting, developing, retaining and ensuring the integrity of the most suitable employee in terms of talent in order to achieve the goals within the organizational structure (Najm and Manasrah, 2017:38). Talent management refers to the process of directing employees efficiently so that the organization can achieve high performance (Kostopoulos et al., 2017:1336). According to another definition, talent management is a management strategy that focuses on human resources to cope with organizational problems, to achieve organizational goals and objectives by implementing competitive strategies and policies (Al Aina and Atan, 2020:3). The main features of talent management can be listed as follows (Latukha and Veselova, 2019):
Effective talent management increases workforce productivity, leading to higher associated earnings,

Talent management strategies are formulated and controlled by top management, while human resources departments are responsible for their execution,

Talent management, like all other strategies, needs to be in harmony with the overall strategy of the organization, as well as revealing the competencies and skills of leaders in order to achieve organizational goals,

An effective performance appraisal and rewarding process is one of the key requirements for a successful talent management practice,

Talent development programs are programs that bring together theory and practice, supported by practices such as coaching and mentoring.

One of the characteristics of talented employees is that they are constantly open to innovation and development in the social and work environment. In this context, with their entrepreneurial characteristics, they take an active role in the development and transformation activities within the company and often even manage change (Gharaipour and Al Ibrahim, 2014:6). They use their entrepreneurial qualities effectively in the competitive environment of the company and develop new methods that will provide competitive advantage and ensure the adaptation of the company to future technologies, trends and practices by making new expansions. Apart from being determined, rational and willing for continuous development, which are among the characteristics of talented employees, there is also a fondness for freedom (Joyce and Slocum, 2012:186).

Employees' innate abilities have a fundamental impact on their performance. All factors being equal, education, knowledge, experience, skills and ambition, the factor that explains the superior performance of one person over another in the same position is the abilities of that person (Connell and Walton-Roberts, 2016:159). It is necessary to apply the same personal development process to everyone in the organization and at the same time accelerate the process for those with high potential. In this way, focusing develops those with high potential or talent faster than others (El Dahshan et al., 2018:110). The tendency of talented employees to develop and change themselves individually is recognized as one of the most important talent characteristics. The important characteristics of talented employees are that they are in effective communication with their teammates, that they constantly act with innovative thinking and that they are ready to share their ideas systematically.

2.2. Organizational Performance

Organizational performance is becoming an area that researchers pay attention to in terms of competition, efficiency, and competitive advantage. Maximizing organizational performance also increases competitiveness (Almatrooshi et al., 2016:845). For this reason, businesses today need above-average organizational performance to improve their current situation in order to adapt to technological changes emerging with globalization, markets, changes in customer expectations and to sustain their existence (Moghtadaie and Taji, 2016:783).

The extent to which the goals that companies want to achieve as a result of their work are realized is shown through organizational performance. Organizational performance includes determining the extent to which organizational goals have been achieved and the steps taken to achieve these goals (Richard et al., 2009:719). The concept of performance is explained as the fulfillment of tasks in such a way that predetermined criteria are met, and when juxtaposed with the concept of appraisal, it becomes a concept of greater importance in the field of business (Singh et al., 2016: 216). In this respect, performance appraisal constitutes an important aspect
of organizational and management development efforts and is considered as one of the objectives of increasing individual and organizational productivity (Rop and Kwasira, 2015:2455).

Performance management is an issue that businesses should pay attention to in terms of cost benefits. Businesses are obliged to achieve maximum profit and efficiency in their work in order to continue their work and grow. In order to achieve profit balance, businesses need to examine their performance measures in detail and carry out their operations in a way that all partners benefit from their services (Jang et al., 2019:5). The benefits of the performance measure, which is of great importance for businesses, are listed as follows:

- Increasing job satisfaction
- Increasing employees' self-confidence
- Identifying what employees are better at
- Introducing and evaluating organizational objectives
- Improving organizational performance
- Improving employee communication
- Developing managers' skills
- Determining job descriptions of employees
- Ensuring equality in wage distribution
- Realizing corporate motivation
- Feedback opportunity

What, not how, to measure the degree of effectiveness or efficiency of organizational performance and how to choose definitions and techniques has become the main issue. In order to measure organizational performance, first of all, it is necessary to decide which aspects and criteria will be taken into account in the evaluation of organizations. Which organizational performance variables are decisive for human resource management and how these variables affect each other are among the fundamental questions (El Dahshan et al., 2018:101). The information obtained through performance measurements can be adopted as tools that both manage and guide the behavior of managers and employees. In other words, it is important for employees and managers to be able to identify deficiencies by taking necessary measures according to the measurement results. In the current management approach, the measurement of performance gains importance as it is based on the source of information produced in enterprises (Kehinde, 2012:180).

Timely and accurate information gathered by organizations on organizational performance, competitors and other business conditions contributes greatly to organizational competitiveness. Many measures of organizational performance and the approach to these measures help organizations to identify performance measures in terms of high quality and quality methodology (Van Knippenberg, 2000:359). Measuring organizational performance means the process of testing the product / service outputs in organizations, the factors that change the success of the activities performed and the results that develop accordingly. After measuring organizational performance, the unexplored aspects of companies are discovered, the growth of the organization is achieved by commenting on the analysis, and the increase and decrease in profit rates are observed (Taleghani et al.,2013:86).
2.3. Organizational identification

The term “identification” was first used in the literature as a psychological, sociological and rhetorical concept by Harrold Lasswell (1935), who worked in the field of political science. Lasswell defined the concept of identification as the process guided by the emotional bond with other people and the perception of being similar, and stated that such an achievement can only occur with a multiplicity of shared relationships and symbols.

Identification is a perceptual and cognitive concept; it is not specifically related to behaviors or emotional states. Organizational identification, on the other hand, is considered to be a concept that explains many important attitudes and behaviors in the organization, as it is seen as a psychological field that serves as a basic link or key that underlines the bond between the employee and the organization. Organizational identification is also seen as a tool to help ensure that employees work in line with the interests of the organization (Ashforth et al., 2008:327).

In-group identification, as a dimension of organizational identification, is defined as a person's attachment to the group of which they feel themselves as a part of. According to another definition, in-group identification means that employees experience the successes and failures of the group to which they belong on a personal level (Van Dick et al., 2004:173). The individual believes that they are bound by a psychological bond in which they share the same fate with other members of the group with which they identify. In the studies, work groups are named as workgroup collaboration, department, work group, colleagues, team and subgroup. These names may differ depending on the structure of the organization or the sector in which it operates. The second organizational identification dimension is identification with the organization. Individuals are evaluated by the organization they are a member of in their social lives (Solomon and Casey, 2017:96) The knowledge that individuals are members of an organization means that these individuals also carry some value judgments and emotions belonging to the organization. This also contributes to a positive increase in individuals' personal reputations. This functional process of being a member of an organization is called identification with the organization. Organizational identification is the harmonious integration of the goals of the individual and the goals of the organization (Kreiner and Asforth, 2004:6). As in in-group identification, in organizational identification, the employee has the perception that the successes and failures of the organization are their own successes and failures.

Organizational identification is a social and psychological bond between the organization as a social and dynamic entity and the employee. The employee's identification with the organization and his/her active and voluntary participation in organizational processes occur when he/she integrates with the goals and values of the organization (Brammer et al., 2015:326). Identification brings the feelings, attitudes and beliefs of individuals and their colleagues closer to each other and as a natural consequence, it enables the integration of the individual into the organization (Colquitt et al., 2015:66). In addition, it is claimed that organizational identification helps to create feelings of self-control, meaning and belonging in the workplace (Shamir and Kark, 2004:117). Therefore, it can be conveniently said that an individual's identification with the organization to which he or she belongs is of critical importance for organizations.

Organizational identification is the formation of a perception of unity with the organization or a perception of belonging to the organization through the overlap of individual and organizational values in employees, or a process that involves the perception of oneself as a member of a particular organization in the self-definition of a person in general. Organizational identification is based on social identity theory. Organizational identification is a form of social identity in which individuals identify themselves, especially in terms of membership of their organization (Lee et al., 2015:1051).
Organizational identification is important for individuals because it is a process by which people define themselves, communicate with others through this definition and use this definition to shape their private and professional lives (Gautam et al., 2004:303). Organizational identification is also very important for organizations. Because it includes organizational outcomes such as cooperation, effort, participation, decision making for the benefit of the organization, intrinsic motivation, task performance, information sharing, coordinated action, turnover and turnover intention, job satisfaction, job adjustment, organizational citizenship behaviors, creative behavior, increased social support, helpful behavior in times of job stress, and positive evaluation of the organization (Edwards and Peccei, 2007:26). Another concept that is conceptually very close to organizational identification is organizational commitment. The psychological relationship between the individual and the organization has been conceptualized in terms of both organizational identification and organizational commitment. Organizational identification differs from organizational commitment in that it reflects the personal definition of organizational membership (Dick et al., 2006:70). Organizational commitment is more contingent in processes of social change, assumes that the individual and the organization are psychologically separate entities and more closely related to work attitudes. In other words, the main difference between identification and commitment is based on the indirect relationship between the individual and the organization. Identification reflects psychological togetherness, while commitment reflects the relationship between separate psychological entities (Drzensky and Van Dick, 2009:276).

3. Statistical Analysis

3.1. The Purpose and Importance of the Study

It can be said that efforts to manage the talents of employees, which are among the basic resources of organizations, effectively and correctly will facilitate the achievement of organizational goals and objectives. In this sense, many studies have shown that the concept of talent management, which is of great importance for organizations, leads to positive organizational outcomes. The most important of these positive outcomes are organizational performance and organizational identification. In today's banking sector where customer relations are prominent, the knowledge, skills, human quality and professionalism of bank employees have a significant impact on the profitability of banks. The customer looks not only at the product offered by the bank, but also at the quality of service, reliability and customer orientation of both the organization and its employees, as well as the performance of employees. Therefore, to cater to increasingly sophisticated customers, banks should take care to train highly professional and customer-oriented bankers and make serious efforts in talent management. The quality of bank management and human resources practices is reflected first and foremost in the working environment and conditions within the bank, but also in the bank's customers and in all bank operations. It is thought that both individual and organizational performance will increase in banks that can organize talent management properly. As a result of this situation, the act of organizational identification will also take place. Therefore, it is aimed to determine the effect of talent management on organizational performance and organizational identification with the help of structural equation modeling for the employees of four private banks serving in Istanbul.

3.2. Sample of the Study

According to the March 2022 report of the Banks Association of Turkey, the population of the study consists of 38.397 employees of four private commercial banks serving in Istanbul. The sample consists of 450 people who voluntarily participated in the study among these employees. The number of samples to be drawn from a given population was determined as 381 people for p=0.50 and q=0.50 for a sampling error of 0.05 in the table developed by Yazıcıoğlu and
Erdoğan (2004). Thus, the sample size of 450 is statistically appropriate. Random sampling method was used in the study.

3.3. Research Hypotheses and Model

The main hypothesis of the study is that talent management positively affects organizational performance and organizational identification. The hypotheses developed in the study are given in Table 2.

Table 1: Hypotheses of the Study

<table>
<thead>
<tr>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1    Talent Management (TM) is significantly related to Organizational Performance (OP)</td>
</tr>
<tr>
<td>H2    Talent Management (TM) is significantly related to Organizational Identification (OI)</td>
</tr>
</tbody>
</table>

Figure 1: Research Model

3.4. Assumptions and Limitations

It was assumed that the respondents reflected their true feelings and thoughts while answering the questions in the scale. It is assumed that the participants willingly responded to the survey and answered the questionnaire accurately and completely. It was assumed that the respondents understood the true meaning of the survey questions. There were difficulties in increasing the sample size of the survey. On the other hand, employees who did not check their e-mails or were on leave or report during the survey period were excluded from the sample.

3.5. Data Collection Tool

The study has a non-experimental quantitative research design and is a correlational survey model according to the methodology. The questionnaire used in the study was prepared by utilizing scales whose validity and reliability have been confirmed in previous studies as a result of an extensive literature review. We can explain these scales as follows:

Talent Management Practices Scale: The talent management scale, the validity and reliability of which was conducted by Duran et al. (2019), consists of 49 statements and 7 sub-dimensions. Sub-dimensions are defined as Rewarding, Training, Retention, Engagement, Attraction, Talent Pool and Selection and Placement. The Cronbach's Alpha value of the scale was 0.958. Participants gave answers in Likert format from "strongly disagree" (1) to "strongly agree" (5).

Organizational Performance Scale: Organizational performance scale was taken from Sayilgan's (2017) doctoral dissertation study titled "The Importance of Organizational Culture
in Production Efficiency and Its Relationship with Organizational Performance”. The scale consists of a total of 10 items and 2 sub-dimensions: the sub-dimension of actions to increase the competitiveness of the organization and the sub-dimension of increasing employee productivity through training services. Scale ranges from, (1: Strongly disagree-5: Strongly agree) on a 5-point Likert scale.

**Organizational Identification Scale:** In determining the level of organizational identification, the organizational identification scale which was developed by Mael and Ashforth (1992) and the Turkish validity and reliability study of which was conducted by Tüzün (2006), was used. In this scale consisting of a total of 6 statements, the answers were received in a 5-point Likert scale (1=Strongly disagree, 5=Strongly agree). Mael and Ashforth (1992) reported the reliability coefficient of the scale as 0.87. Tüzün (2006) reported the reliability coefficient of the scale used in his study as 0.78.

### 4. Findings

Cronbach Alpha, Split, Parallel, Absolute Strict Parallel (strict) tests were applied as reliability tests for the data obtained from the survey study. A Cronbach Alpha value above 70% indicates that the survey was successful. Some researchers, on the other hand, take exceeding 75% as a basis. The fact that the other criteria are above 70% indicates that the questionnaire shows internal consistency and the results can be trusted. In this study, the reliability analysis results of the questionnaire were Cronbach-Alpha = 0.902, Parallel = 0.904, Split = 0.901-0.906 and Strict = 0.902. In the first phase of the study, general information about the respondents is given below:

- 37.8% of the employees are female and 62.2% are male.
- 49.7% of the employees were between the ages of 25-35 years, 40.5% between the ages of 36-45 years and 9.8% between the ages of 46 and above.
- Of the employees, 40.2% were married, 37.3% were single and 22.5% were divorced/widowed.
- 37.4% of the employees had a professional seniority of 1-10 years, 32.5% had a professional seniority of 11-15 years, and 30.1% had a professional seniority of 16-20 years.
- 75.0% of the employees have a university degree, 19.8% have a master’s degree and 5.2% have a doctorate degree.

Factor analysis is a multivariate statistics method intended for finding or discovering a small number of unrelated and conceptually significant new variables (i.e. factors, dimensions) by bringing together p number of interrelated variables. After the suitability of the data set was confirmed by the tests, the "Principal Components Analysis" approach was applied via the "Varimax" rotation technique as the factor retention method in order to reveal the factor structure.

**Table 2:** Exploratory factor analysis results

<table>
<thead>
<tr>
<th>Talent Management Scale</th>
<th>PVE</th>
<th>CA</th>
<th>AVE</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attraction</td>
<td>16.13%</td>
<td>0.901</td>
<td>0.753</td>
<td>0.909</td>
</tr>
<tr>
<td>Selection and Placement</td>
<td>14.82%</td>
<td>0.895</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commitment</td>
<td>10.44%</td>
<td>0.890</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retention</td>
<td>9.67%</td>
<td>0.887</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>8.25%</td>
<td>0.892</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rewarding</td>
<td>7.56%</td>
<td>0.895</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In the factor structure, 7 factors for talent management, 2 factors for organizational performance and 1 factor for organizational identification were obtained with eigenvalues higher than 1. The Kaiser-Meyer-Olkin (KMO) sampling adequacy was 0.913 for the talent management scale, 0.905 for the organizational performance scale and 0.918 for organizational identification, which is above the value of 0.70, indicating a good level. The results of Bartlett’s test of sphericity to measure the consistency of the variables to be analyzed were statistically significant for the talent management scale ($\chi^2=5851.34$ and $p=0.000$), organizational performance scale ($\chi^2=6789.44$ and $p=0.000$) and organizational identification scale ($\chi^2=6231.75$ and $p=0.000$). According to the results of the anti-image correlation matrix, the cross-correlation coefficients of the statements were above the critical level of 0.5 and no questions were removed. Factor loadings were between (0.58 - 0.86) for the talent management scale, (0.61 - 0.85) for organizational performance and (0.610 - 0.88) for organizational identification.

Confirmatory factor analysis (CFA) is utilized to express multivariate statistical analyses containing latent structures denoted by a large number of observable or measurable variables. CFA is a factor analysis technique utilized to question whether the factors revealed as a result of Exploratory Factor Analysis (EFA) are appropriate for the structure of the factors revealed as a result of the hypotheses. While EFA is utilized to examine which variable groups are highly correlated with which factors, CFA is employed to determine whether the variable groups contributing to the $k$ number of identified factors are sufficiently represented by the said factors.

**Table 3: CFA Model Fit Indices**

<table>
<thead>
<tr>
<th>Measurement (Fit Statistic)</th>
<th>Good Fit</th>
<th>Acceptable Fit</th>
<th>Research Model Value</th>
<th>Fit Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Model Fit</td>
<td>$\leq 3$</td>
<td>$\leq 4.5$</td>
<td>2.10</td>
<td>Good fit</td>
</tr>
<tr>
<td>Comparative Fit Statistics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NFI</td>
<td>$\geq 0.95$</td>
<td>0.94-0.90</td>
<td>0.930</td>
<td>Acceptable fit</td>
</tr>
<tr>
<td>TLI (NNFI)</td>
<td>$\geq 0.95$</td>
<td>0.94-0.90</td>
<td>0.978</td>
<td>Good fit</td>
</tr>
<tr>
<td>IFI</td>
<td>$\geq 0.95$</td>
<td>0.94-0.90</td>
<td>0.981</td>
<td>Good fit</td>
</tr>
<tr>
<td>CFI</td>
<td>$\geq 0.97$</td>
<td>$\geq 0.95$</td>
<td>0.965</td>
<td>Acceptable fit</td>
</tr>
</tbody>
</table>
In Table 3, $\chi^2/\text{sd}=2.10$, a "good fit" decision was made since it met the condition $\leq 3$. NFI=0.930 resulted in the range of 0.94-0.90, thus an "acceptable fit"; other results were obtained as TLI (NNFI)= 0.978 $\geq 0.95$, a “good fit”; IFI= 0.981 was $\geq 0.95$, a “good fit”; CFI= 0.965 was $\geq 0.97$, an “acceptable fit”; RMSEA= 0.023 was $\leq 0.05$, a “good fit”; GFI= 0.936 was $\geq 0.90$, a “good fit”; AGFI= 0.949 was $\geq 0.90$, a “good fit”; and RMR= 0.033 was $\leq 0.05$, thus it was a “good fit”. Correlation analysis results for talent management and organizational performance are given in Table 4.

**Table 4: Correlation Analysis Results**

<table>
<thead>
<tr>
<th></th>
<th>Talent Management</th>
<th>Organizational Performance</th>
<th>Organizational Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talent Management</td>
<td>$r$</td>
<td>1</td>
<td>0.549*</td>
</tr>
<tr>
<td>$p$</td>
<td></td>
<td>0.000</td>
<td>0.372*</td>
</tr>
<tr>
<td>Organizational Performance</td>
<td>$r$</td>
<td>1</td>
<td>0.561*</td>
</tr>
<tr>
<td>$p$</td>
<td></td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Organizational identification</td>
<td>$r$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$p$</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant relationship at 0.05

The dimensions were significantly positively correlated with each other. As talent management practices increase, organizational performance increases by 54.9% and organizational identification increases by 37.2%.

Structural equation modeling (SEM) is a statistical technique used to test models in which causal relationships and correlation relationships between observed variables and latent variables coexist; it is a multivariate method that is formed by combining analyses such as variance and covariance analyses, factor analysis, and multiple regression in order to predict interdependency relationships. Considering the goodness of fit criteria for SEM, it was found that $\chi^2/\text{sd}=2.24$, a “good fit” decision was made because it met the condition $\leq 3$. NFI=0.949 resulted in 0.94-0.90, thus an "acceptable fit"; other results were obtained as TLI (NNFI)= 0.981 was $\geq 0.95$, a “good fit”; IFI = 0.982 was $\geq 0.95$, a “good fit”; CFI= 0.988 was $\geq 0.97$, an “acceptable fit”; RMSEA= 0.018 was $\leq 0.05$, a “good fit”; GFI= 0.947 was $\geq 0.90$, a “good fit”; AGFI= 0.950 was $\geq 0.90$, a “good fit”; and RMR= 0.022 was $\leq 0.05$, thus it was a “good fit”. SEM estimates fit criteria yielded the result "acceptable" for only one criterion; others revealed that a "good fit" was attained and the model was appropriate for interpretation.
According to the SEM results, significant relationships were obtained among the variables. TM has a statistically significant positive effect on OP ($\beta=0.613; p<0.01$). TM has a statistically significant positive effect on OI ($\beta=0.411; p<0.01$). According to the coefficient sizes, the TM variable is most effective on the OP variable.

5. Conclusion

The primary goals of organizations are to achieve profitability and sustainable competitive advantage. In order for organizations to achieve these goals, it is necessary to systematically identify key positions within the organization and select talented employees with high potential to fill these positions. Efforts are then made to create talent pools and develop high performing talent to fulfill the roles. All these activities and processes are defined as talent management.

The aim of this study is to reveal the effect of talent management on organizational performance and organizational identification for banking sector employees. As a result of correlation analysis, organizational performance increased by 54.9% and organizational identification increased by 37.2% as talent management practices increased. According to the SEM results; TM has a statistically significant positive effect on OP ($\beta=0.613; p<0.01$). TM has a statistically significant positive effect on OI ($\beta=0.411; p<0.01$). The TM variable was most effective on the OP.

The main studies that found the positive and significant effect of the effect of talent management practices on organizational performance are Davies and Davies, 2010; Nafei, 2015; Behera, 2016; Thunnissen and Buttiens, 2017; Sheehan et al., 2018; Almaaitah et al., 2020; Al Aina and Atan (2020).

The recommendations of the study can be listed as; workforce planning to support the competitive strategy of the organization, identifying existing talented employees, determining the skills needed, encouraging qualified employees to meet these needs, establishing a suitable working environment and ensuring the retention of talented employees.

Talented employees should be classified and a talent pool should be put in place to be used when needed. Talented employees should be developed taking into account the future plans of the business and programs such as coaching, mentoring, leadership, etc. should be organized for development. In order to ensure the sustainability of talented employees within the organization, different wage policies should be structured and, when necessary, different mechanisms should be created to reward employees in addition to these wage policies. In addition to the personal development of talented employees, their professional and career development should be supported through various trainings and workshops within the company. Talent management should not only be regarded as a task for human resources, but managers should also be trained in talent management.
In future research, it may be recommended to extend this research for different occupational groups and sectors. The limitation of the study is that it is applied to Istanbul province and four private banks for which permission can be obtained.

References


Educational Attainment and High Technology Exports: Evidence from BRICS Economies

Yilmaz Bayar  
Mahmut Unsal Sasmaz

Abstract

Technological development and in turn high technology exports is a key factor for economic growth and development. Therefore, specification of factors underlying high-technology exports is important for design and implementation of right policies for economic growth and development. This study investigates the interaction between educational attainment and high technology exports in BRICS economies for the 2007-2019 period through causality analysis. The causality analysis unveils that educational attainment is a significant determinant of high-technology exports.

Keywords: educational attainment, high technology export, causality analysis

1. Introduction

Technological development is a critical determinant of economic growth and development. High-technology products as a result of technological development have relatively higher value-added and also raise the competitiveness of the countries in the international markets. Therefore, high-technology is vital for economic growth and development of the countries. Global high-technology exports as a percent of manufactured exports were 22% (World Bank, 2022) and the developed countries have generally higher share in global high-technology exports.

The critical role of high-technology products in economic growth and development of the countries have led the researchers to explored the factors underlying high-technology products and impact of high-technology exports on economic growth and development. In this context, GDP, human capital, educational attainment, institutions, R&D expenditures, financial development, foreign direct investments, and openness have been documented as the determinants of high-technology exports (Samimi and Alerasoul, 2009; Tebaldi, 2011; Mehrara et al., 2017; Liu and Xia, 2018; Gaur et al., 2020; Mulliqi, 2021)

This study investigates the mutual interaction between educational attainment and high-technology exports in sample of BRICS (Brazil, Russia, India, China, and South Africa) for the 2007-2019 duration through causality test with cross-sectional dependence and heterogeneity. In this context, the next section sums up the related literature and then data and method are described and causality analysis is conducted and its findings are discussed. The study ends with the Conclusion section.

2. Literature Review

In the related empirical literature, the determinants of high-technology exports and growth effect of high-technology exports have been generally explored. In this study, the interaction between educational attainment and high-technology exports was analyzed considering the related empirical literature. The researchers have generally investigated the influence of various education indicators on high-technology exports through regression analysis and revealed a

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positive influence of education indicators on high-technology exports (Ferragina and Pastore, 2007; Tebaldi, 2011; Mehrara et al., 2017; Gaur et al., 2020; Mulliqi, 2021).

Ferragina and Pastore (2007) analyzed the influence of human capital proxied by secondary school enrolments on high technology exports in 84 countries over the 1994-2003 duration and revealed a positive influence of secondary school enrolments on high technology exports. Tebaldi (2011) researched the determinants of high-technology exports in a panel for the 1980-2008 period through regression analysis and discovered a positive influence of human capital proxied by average schooling years and on high-technology export.

Mehrara et al. (2017) investigated the determinants of high-technology exports in 25 developing countries for the 1996-2013 period through Bayesian model averaging and weighted-average least square techniques and unveiled that institutions, human capital, openness and GDP were the significant determinants of high-technology exports. Gaur et al. (2020) investigated the determinants of high-technology exports in 15 developing and developed countries for the 2007-2018 duration through regression analysis and discovered that openness and financial sector development were significant determinants of high-technology exports.

Gunes et al. (2020) analyzed the factors underlying high-technology exports in 48 countries for the 1980-2017 duration through ARDL approach and uncovered the schooling as a significant determinant of high-technology exports. Mulliqi (2021) also investigated the influence of education on technology intensive exports in 27 European countries over the 1995-2010 period through regression analysis and discovered a positive interaction between higher education and medium and high technology exports in the European countries. On the other hand, Peña-Vinces and Audretsch (2021) also investigated the influence of tertiary education on high-technology exports in Latin American-developing countries for the 2008-2017 duration through regression analysis and revealed a positive influence of tertiary education on high-technology export.

3. Data and Method

In the causality analysis, high technology export (HIGHTECH) is represented by high-technology exports (% of manufactured exports) and obtained from World Bank (2022). On the other hand, educational attainment (EDU) is proxied by education index of UNDP (2022). The education index is calculated based on expected years of schooling and mean years of schooling and takes values between 0 and 1 (higher values mean higher education levels.) (UNDP, 2022). The study period is 2007-2019, because data of high-technology exports is available for the BRICS economies as of 2007 and the education data ends in 2019 and all series are annual.

Eviews 11.0 and Stata 16.0 statistical programs are employed to conduct the econometric tests and the mutual interaction between educational attainment and high technology exports is analyzed by causality test of Emirmahmutoglu and Kose (2011) causality test. The summary statistics of high technology exports and education index are displayed in Table 1. The mean of high technology exports is 13.9% of manufactured exports and the mean of education index is 0.6651, but high technolog exports considerably varied among the BRICS economies. The high technology export as a percent of manufactured goods in 2002 was 31.28% in China, 11.35% in Brazil, 11.03% in India, 9.2% in Russian Federation, and 5.62% in South Africa (World Bank, 2022).

Table 1: Summary statistics of the series

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Std.Dev.</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGHTEC</td>
<td>13.9024</td>
<td>8.9801</td>
<td>4.8942</td>
<td>32.1236</td>
</tr>
<tr>
<td>EDU</td>
<td>0.6551</td>
<td>0.0984</td>
<td>0.4517</td>
<td>0.8231</td>
</tr>
</tbody>
</table>
3. Econometric Analysis

In the empirical analysis, presence of cross-sectional dependence between two series (HIGHTEC and EDU) is examined with LM test, LM adj. test, and LM CD test, and the test results are depicted in Table 2. The null hypothesis of cross-sectional independence is rejected view 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

<table>
<thead>
<tr>
<th>Test</th>
<th>Test statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LM (Breusch and Pagan, 1980)</td>
<td>130.12</td>
<td>0.0000</td>
</tr>
<tr>
<td>LM adj* (Pesaran et al., 2008)</td>
<td>22.44</td>
<td>0.0000</td>
</tr>
<tr>
<td>LM CD* (Pesaran, 2004)</td>
<td>6.114</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

*two-sided test

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 unveiled. The employment of a causality test regarding the cross-sectional dependence will lead us to obtain relatively more robust findings in view of the results of cross-sectional dependence and homogeneity tests.

Table 3. Homogeneity tests’ results.

<table>
<thead>
<tr>
<th>Test</th>
<th>Test statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\hat{\Delta}$</td>
<td>1.316</td>
<td>0.188</td>
</tr>
<tr>
<td>$\hat{\Delta}_\text{adj}$</td>
<td>1.500</td>
<td>0.134</td>
</tr>
</tbody>
</table>

The stationarity analysis of HIGHTEC and EDU is investigated with Pesaran (2007) CIPS unit root test considering the cross-sectional dependency and test results are displayed in Table 4. The unit root test results unveil that HIGHTEC is I(1), EDU is I(0).

Table 4: Unit root test’s results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Constant</th>
<th>Constant+Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$Zt-bar$</td>
<td>$Zt-bar$</td>
</tr>
<tr>
<td>HIGHTEC</td>
<td>-0.915</td>
<td>-0.417</td>
</tr>
<tr>
<td>d(HIGHTEC)</td>
<td>-2.931***</td>
<td>-3.628***</td>
</tr>
<tr>
<td>EDU</td>
<td>-3.710***</td>
<td>-2.105**</td>
</tr>
<tr>
<td>d(EDU)</td>
<td>-2.735***</td>
<td>-3.194***</td>
</tr>
</tbody>
</table>

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

The causal interaction between high technology exports and educational attainment is investigated by Emirmahmutoglu and Kose (2011) causality test and test results are shown in Table 5. The panel findings revealed a unidirectional causality from educational attainment to high-technology exports. In other words, educational attainment has a significant influence on high-technology exports. The country level causality analysis unveils a significant unidirectional causality from educational attainment to high-technology exports in China, but a unidirectional causality from high-technology exports to educational attainment in Russia.
### Table 5: Causality test results

<table>
<thead>
<tr>
<th>Countries</th>
<th>EDU $\rightarrow$ HIGHTEC</th>
<th>HIGHTEC $\rightarrow$ EDU</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Test statistic</td>
<td>P value</td>
</tr>
<tr>
<td>Brazil</td>
<td>0.086</td>
<td>0.770</td>
</tr>
<tr>
<td>China</td>
<td>10.495</td>
<td>0.001</td>
</tr>
<tr>
<td>India</td>
<td>0.096</td>
<td>0.757</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>1.959</td>
<td>0.162</td>
</tr>
<tr>
<td>South Africa</td>
<td>1.198</td>
<td>0.274</td>
</tr>
<tr>
<td>Panel</td>
<td>20.773</td>
<td>0.023</td>
</tr>
</tbody>
</table>

### 5. Conclusion and Policy Recommendations

High-technology exports are a vital factor for economic growth and development of the countries. Many social, institutional, and economic factors have been suggested as the determinants of high-technology exports in the literature. In this study, the mutual interaction between educational attainment and high-technology exports in BRICS economies is analyzed through Emirmahmutoglu and Kose (2011) causality test unlike the related literature, because the researchers have generally focused on the influence of various education indicators on high-technology exports.

The findings of the causality analysis indicate that educational attainment has significant influence on high-technology exports at panel level and in China and are largely consistent with the findings of the other empirical studies. Furthermore, a significant influence of high-technology exports on education is revealed for Russia. As a result, education can be used as a useful instrument to improve the high-technology exports.

### References


Urbanization and CO₂ Emissions: Evidence from Turkiye

Yilmaz Bayar¹  Mahmut Unsal Sasmaz²

Abstract
The global CO₂ emissions have been increased considerably as of Industrial Revolution and become a serious problem for environmental sustainability in the world. This study investigates the interaction between urbanization and CO₂ emissions in Turkey over the 1965-2021 duration through causality analysis. The causality analysis unveils a unidirectional causality from urbanization to CO₂ emissions.

Keywords: urbanization, CO₂ emissions, causality analysis

1. Introduction
Global CO₂ emissions from industry and energy combustion reached to 36.3 gigatonnes in 2021 and coal use was the main factor in increase of CO₂ emissions from energy (IEA, 2022). CO₂ emissions are a serious threat for environmental sustainability via climate change and pollution. Therefore, international and regional institutions and countries try to decrease the global CO₂ emissions. In this regard, specification of factors underlying CO₂ emissions is important for policy-making.

The researchers have discovered that many factors such as urbanization, industrialization, institutional quality, GDP per capita, economic growth, financial sector development, foreign direct investments, fossil fuel consumption, technological progress, and globalization are significant determinants of CO₂ emissions (e.g. see Sharma, 2011; Balogh and Jambor, 2017; Li et al., 2021;).

This study examines the causal interaction between urbanization and CO₂ emissions in Turkey over the 1965-2021 duration. Urbanization can influence the CO₂ emissions through increasing the energy demand depending on countries’ development levels (Khoshnevis-Yazdi and Golestani-Dariani, 2019). The next section of the paper summarizes the relevant empirical literature and data and method are explained and causality analysis is conducted in the next two successive sections of the paper. The study eventuates in the Conclusion section.

2. Literature Review
Many factors have been documented as the determinants of CO₂ emissions in the related empirical literature. In this study, the interplay between urbanization and CO₂ emissions is investigated in case of Turkey. The related empirical studies have reached different findings about the interaction between urbanization and CO₂ emissions until now as seen in the following studies.

Zhang et al. (2017) investigated the influence of urbanization on CO₂ emissions in 141 countries over the 1961-2011 duration through regression analysis and discovered an inverted U-shaped interaction between urbanization and CO₂ emissions.

Khoshnevis-Yazdi and Golestani-Dariani (2019) investigated the causality between various variables including urbanization and CO₂ emissions in Asian countries for the 1980-2014 through Granger causality analysis and discovered a bidirectional causality between

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² Assist.Prof., Department of Public Finance, Usak University, Uşak-Turkiye, mahmut.sasmaz@usak.edu.tr
urbanization and CO₂ emissions. On the other hand, Fan et al. (2020) examines the non-linear interaction between urbanization and CO₂ emissions in South Asian countries for the 1974-2014 duration and uncovered a U-shaped interaction between urbanization and CO₂ emissions. Anwar et al. (2020) investigated the major factors underlying CO₂ emissions in Far East economies for the 1980-2017 period and unveiled the urbanization as a significant determinant of CO₂ emissions. Zhang et al. (2021) also investigated the impact of urbanization on CO₂ emissions in provinces of China over the 2000-2012 period through dynamic regression approach and discovered that the influence of urbanization on CO₂ emissions varied depending on urban resident population and interregional population migration. Nihayah et al. (2022) analyzed the effect of various indicators on CO₂ emissions in Indonesia over the 1971-2019 duration through vector error correction model and uncovered a unilateral causality from urbanization to CO₂ emissions in the short term.

3. Data and Method

The paper investigates the causality between urbanization and CO₂ emissions in Turkey. The urbanization (URBAN) is proxied by urban population as a percent of total population and procured from World Bank (2022). On the other hand, CO₂ emissions (CO) is represented through CO₂ emissions as million tonnes of carbon dioxide by BP (2022). The study period is 1965-2021 due to availability of CO₂ emissions.

Eviews 11.0 statistical program is utilized to conduct the econometric tests and the causal interaction between urbanization and CO₂ emissions is analyzed by causality test of Toda and Yamamoto (1995). The summary statistics of urbanization and CO₂ emissions are shown in Table 1. The mean of CO₂ emissions is 172.3807 million tonnes and the mean of urbanization is 57.54% of total population. However, both series have a very high dispersion.

Table 1: Summary statistics of the series

<table>
<thead>
<tr>
<th></th>
<th>CO</th>
<th>URBAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>172.3807</td>
<td>57.54139</td>
</tr>
<tr>
<td>Maximum</td>
<td>403.3000</td>
<td>76.56900</td>
</tr>
<tr>
<td>Minimum</td>
<td>25.10000</td>
<td>34.22700</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>114.2734</td>
<td>13.49010</td>
</tr>
<tr>
<td>Skewness</td>
<td>0.549880</td>
<td>-0.290691</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>2.112801</td>
<td>1.663316</td>
</tr>
<tr>
<td>Observations</td>
<td>57</td>
<td>57</td>
</tr>
</tbody>
</table>

Toda and Yamamoto (1995) causality test examines the causal interaction between two series without pretesting cointegration. First, the optimal lag length (p) is specified through VAR model, then the highest integration degree (d_max) among the series is added to the p and the following VAR model with the level values of the series for p + d_max lag is estimated:

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

\[ X_t = \beta_0 + \sum_{i=1}^{p+d_{max}} \beta_{1i} X_{t-i} + \sum_{i=1}^{p+d_{max}} \beta_{2i} Y_{t-i} + v_t \]  
(2)
Lastly, the constraints are imposed on the coefficients obtained from $d_{\text{max}}$ and the significance of these constraints are investigated by modified Wald test. The null hypothesis for the (1) numbered equation is that there is no causal relationship from $X$ to $Y$ and the null hypothesis for the (2) numbered equation is that there is no causality from $Y$ to $X$.

4. Empirical Analysis

In econometric analysis of the study, the stationarity of two series is analyzed by ADF (augmented Dickey-Fuller) test of Dickey and Fuller (1981) and test findings are shown in Table 2. The variable of URBAN is found to be I(2) and CO is found to be I(1).

Table 2: Results of ADF unit root test

<table>
<thead>
<tr>
<th>Variables</th>
<th>Constant</th>
<th>Constant + Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBAN</td>
<td>-1.294669</td>
<td>-1.422806</td>
</tr>
<tr>
<td>D(URBAN)</td>
<td>-2.443525</td>
<td>-2.670845</td>
</tr>
<tr>
<td>D(D(URBAN))</td>
<td>-4.960595***</td>
<td>-4.915697***</td>
</tr>
<tr>
<td>CO</td>
<td>1.561145</td>
<td>-1.507548</td>
</tr>
<tr>
<td>D(CO)</td>
<td>-7.861925***</td>
<td>-8.395539</td>
</tr>
</tbody>
</table>

*** significant at 1%

First, VAR model with the level values of the series is estimated to determine the optimal lag length and the findings are presented in Table 3. As a result, optimal lag length is specified as 3. The autocorrelation and heteroscedasticity problems are also checked with LM tests and White heteroscedasticity tests and no autocorrelation and heteroscedasticity problems are discovered.

Table 3: Optimal lag length specification

<table>
<thead>
<tr>
<th>Lag</th>
<th>LogL</th>
<th>LR</th>
<th>FPE</th>
<th>AIC</th>
<th>SC</th>
<th>HQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>-466.2303</td>
<td>NA</td>
<td>227092.3</td>
<td>18.00886</td>
<td>18.08390</td>
<td>18.03763</td>
</tr>
<tr>
<td>1</td>
<td>-216.3810</td>
<td>470.8697</td>
<td>17.77192</td>
<td>8.553117</td>
<td>8.778261</td>
<td>8.639432</td>
</tr>
<tr>
<td>2</td>
<td>-175.6289</td>
<td>73.66727</td>
<td>4.327596</td>
<td>7.139574</td>
<td>7.514814</td>
<td>7.283432</td>
</tr>
<tr>
<td>3</td>
<td>-168.8212</td>
<td>11.78268*</td>
<td>3.892756*</td>
<td>7.031583*</td>
<td>7.556918</td>
<td>7.232984*</td>
</tr>
<tr>
<td>4</td>
<td>-168.1838</td>
<td>1.054173</td>
<td>4.446865</td>
<td>7.160914</td>
<td>7.836344</td>
<td>7.419858</td>
</tr>
<tr>
<td>5</td>
<td>-165.7618</td>
<td>3.819205</td>
<td>4.753237</td>
<td>7.221609</td>
<td>8.047135</td>
<td>7.538096</td>
</tr>
</tbody>
</table>

* 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

In the analysis, the highest integration level of the series ($d_{\text{max}}$) is 2 and $p$ is found to be 3. Therefore, regression model with 5 lags ($p + d_{\text{max}} = 2 + 3 = 5$) is estimated and the test results are displayed in Table 4. The causality analysis revealed a unilateral causality from urbanization to $CO_2$ emissions in Turkiye.

Table 6: Results of Toda and Yamamoto (1995) causality test
Null Hypotheses | Chi-sq | Prob.  
--- | --- | ---  
URBAN → CO | 0.214067 | 0.0453  
CO → URBAN | 1.233068 | 0.7451  

5. Conclusion

$CO_2$ emissions are a significant determinant of environmental sustainability. Therefore, determinants of $CO_2$ emissions have been extensively studied in the empirical literature. In this study, we investigate the interplay between urbanization and $CO_2$ emissions in Turkiye. The causality analysis uncovered a unidirectional causality from urbanization to $CO_2$ emissions in the short-term. Therefore, green-oriented measures should be emphasized during the urbanization.

References


Convergence of Public Expenditures in the 10 Most Immigrant Countries: Evidence from the Panel Unit Root Test with Structural Breaks

Furkan Beşel¹ Mücahit Aydın² Veysel İnal³

Abstract
Increasing interdependencies with the effects of globalization have brought about the acceleration of mutual interactions. Apart from globalization, the joint supply of commercial and economic needs has caused the economic policies of countries to be affected by each other. Apart from these factors, the migration movements that have increased for various reasons in the recent period have brought similar practices in terms of the public expenditure policies of the countries. Public expenditures are likely to converge in countries where migration movements are concentrated. In this study, the convergence of public expenditures in Turkey and the 10 countries receiving the most immigration according to the 2020 Global Migration Report data will be examined through second-generation unit root tests. It is examined whether other countries exhibit convergence behavior in terms of public expenditures to the USA, which is in the sample group and receives the most immigration. The data on the ratio of public expenditures to GDP for the period 1990-2020 used in the study was obtained from the World Bank database. Findings from the Fourier-based new generation FPKPSS unit root test reveal that the convergence behavior differs.

Keywords: convergence, migration, unit root

1. Introduction
The convergence hypothesis emerged based on the Solow (1956) Neoclassical Growth Model. In this model, it is stated that capital-poor countries will grow faster than capital-rich countries. The convergence hypothesis, shaped in line with this view, has been used to explain the process of many macroeconomic variables (Yazgan et al., 2018:122). Public expenditures are also among these macro variables. The relationship between public expenditures and convergence is explained through the effect of public expenditures on economic growth. If public expenditures are more effective on the economic growth performance of low-income countries, convergence will be positively affected. There is debate about the exactness of this relationship. The possibility that some of the public goods and services may be offered more efficiently in the private sector and that taxes, the source of financing for public goods, may adversely affect the private sector are expressed in the literature. These possibilities may hinder the certainty of the relationship between public expenditures and convergence (Sağbaş, 2002; Hemming, 1992). When the studies in the literature are examined, it is seen that different results have been reached regarding the convergence of public expenditures. Sağbaş (2002) stated that public expenditures do not positively contribute to convergence and that convergence can be explained by factors other than public expenditures. Yazgan et al. (2018) examined the behavioral trends of military expenditures in their study of 14 NATO member countries for the period 1960-2014. The convergence behavior of the USA, which has the highest military expenditure among 14 countries, was examined with the help of nonlinear unit root tests. The findings revealed that the military expenditures of the NATO countries, which constitute the study’s sample,
converged with the US military expenditures and the convergence pattern followed a non-linear process. Marelli et al. (2019) discussed the convergence of income per capita in EU countries for the period 1995-2016. Unlike absolute reflection, the authors acted on the concepts of "conditional" and "club" convergence. The results indicate that the convergence coefficient's size and importance increase with the enlargement of the EU area. The increase in member states contributes to a more robust convergence process. Another interesting result is that the convergence path of the Eurozone decreased after 2008. It has been revealed that the convergence rate of the crisis has reduced. As seen in the studies examined, different factors affect convergence behavior.

This study examined the convergence behavior of public expenditures to the USA in Turkey and the ten countries receiving the highest number of immigrants according to the 2020 Global Migration Report data. Although there are studies on the subject in the literature, no study has been found that considers the possible impact of migration on the public expenditure convergence process. In addition, the FPKPSS technique used in the study and the up-to-datedness of the period range in question differentiates the study from other studies in the literature. The study is designed in 3 parts. The first chapter presents a brief theoretical briefing on the subject and summaries of the literature. The second part of the study includes econometric methodology and findings. In the third section, the conclusion and recommendations are included.

2. Econometric Methodology and Empirical Results

Cross-section dependency is an important issue that needs to be investigated in panel data analysis studies. Increasing cooperation with the effect of globalization causes the macroeconomic variables of many countries to be affected by each other. This interaction can lead to biased country-specific results. The most popular tests used in the literature for the detection of cross-section dependence are the Breusch and Pagan (1980) CDLM1 test and the Pesaran (2004) CDLM2 and CD tests. Breusch and Pagan (1980) proposed the following LM test statistic based on the square of the correlation between cross-section residuals.

\[ CD_{LM1} = T \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \hat{\rho}_{ij}^2 \]  

where \( \hat{\rho}_{ij}^2 \) represents the squares of the estimated binary correlation of the residuals. Pesaran (2004) suggested the following LM test statistic that can be used in larger N and T cases.

\[ CD_{LM2} = \sqrt{\frac{1}{N(N-1)} \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} (T \hat{\rho}_{ij}^2 - 1)} \]  

Pesaran (2004) states that it is not appropriate to use the CDLM1 test statistic when N is greater than T. It states that the CD test should be used based on the sum of the correlation coefficients between the cross-section residues.

\[ CD = \frac{2T}{N(N-1)} \left( \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \hat{\rho}_{ij} \right) \]  

The null hypothesis of all three test statistics shows that there is no cross-sectional dependence, while the alternative hypothesis shows that there is cross-sectional dependence. The data on the ratio of public expenditures to GDP for the period 1990-2020 used in the study was obtained from the World Bank database. Table 1 shows the cross-section dependence results. The results show that the public expenditures variable includes cross-sectional dependence. Accordingly,
unit root tests to be carried out after this stage should also take into account the cross-sectional dependence.

**Table 1. Cross-section dependency test results**

<table>
<thead>
<tr>
<th>Variable</th>
<th>$CD_{LM1}$</th>
<th>$CD_{LM2}$</th>
<th>CD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Expenditures /GDP</td>
<td>190.3107* (0.000)</td>
<td>15.15043* (0.000)</td>
<td>4.504506* (0.000)</td>
</tr>
</tbody>
</table>

**Note:** Values in parentheses are probability values. * indicates 1% significance level.

Nazlıoğlu and Karul (2017) developed the LM-type panel stationary test, which takes into account soft structural breaks and cross-section dependence. The model of this stationarity test is as follows:

\[ y_{i,t} = \alpha_t + \bar{\mu}_i + \bar{F}_t + \epsilon_{i,t} \]

\[ r_{i,t} = r_{i,t-1} + u_{i,t} \]  \hspace{1cm} (4)

where $\bar{\mu}_i$, $r_{i,t}$, and $F_t$ denote the weights, random walk process and unobserved common factor, respectively. Nonlinear or any structural break in deterministic terms can be estimated with the Fourier approach (Becker et al., 2006).

\[ a_i(t) = a_i + b_i t + \gamma_{1i} \sin\left(\frac{2\pi k_1 t}{T}\right) + \gamma_{2i} \cos\left(\frac{2\pi k_1 t}{T}\right) \]  \hspace{1cm} (5)

where $k_1$ is Fourier frequency. Becker et al. (2006)'s KPSS-based unit root statistics allowing the Fourier frequency is as follows.

\[ \eta_i(k) = \frac{1}{T^2} \sum_{t=1}^{T} \tilde{S}_n(k)^2 \]  \hspace{1cm} (6)

\[ \tilde{S}_n(k) = \sum_{j=1}^{k} \tilde{e}_{jt} \] is the partial sum operation of the residues of the 4th equation estimated with OLS. Also, $\tilde{\sigma}_{\epsilon}^2$ is an estimate of the long-run variance of the error term and is shown as follows.

\[ \tilde{\sigma}_{\epsilon}^2 = \lim_{T \to \infty} T^{-1} E(S_n^2) \]  \hspace{1cm} (7)

The Fourier panel statistic (FKPSS) is calculated by averaging the individual statistics.

\[ FPKPSS(k) = \frac{1}{N} \sum_{i=1}^{N} \eta_i(k) \]  \hspace{1cm} (8)

Table 2 shows the FPKPSS unit root test results. The results were examined on a country basis as well as for the country group that made up the panel. The results show that the variable showing public expenditures for only Germany and Turkey is stationary in the constant and trend model. All other countries have a unit root for both models. Therefore, it can be stated that Germany and Turkey exhibit convergence behavior. On the other hand, when the panel countries are considered as a whole, it is seen that public expenditures contain unit root.
Table 2. FPKPSS panel unit root test results

<table>
<thead>
<tr>
<th>Countries</th>
<th>Constant</th>
<th>Constant and Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spain</td>
<td>0.2417</td>
<td>0.1106</td>
</tr>
<tr>
<td>Australia</td>
<td>0.08325</td>
<td>0.05955</td>
</tr>
<tr>
<td>Canada</td>
<td>0.09299</td>
<td>0.07719</td>
</tr>
<tr>
<td>France</td>
<td>0.1044</td>
<td>0.09284</td>
</tr>
<tr>
<td>Germany</td>
<td>0.1653</td>
<td><strong>0.03357</strong></td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>0.1695</td>
<td>0.08934</td>
</tr>
<tr>
<td>Russia</td>
<td>0.282</td>
<td>0.05883</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>0.3217</td>
<td>0.07315</td>
</tr>
<tr>
<td>Turkey</td>
<td>0.6558</td>
<td><strong>0.03513</strong></td>
</tr>
<tr>
<td>Panel</td>
<td>9.099 (0.000)</td>
<td>10.390 (0.000)</td>
</tr>
</tbody>
</table>

Notes: Critical values for country-based results are 0.0471 (10%), 0.0546 (5%) and 0.0716 (1%). The bold parts indicate that the null hypothesis of stationarity cannot be rejected at a significance level of at least 10%.

3. Conclusion and Policy Recommendations

The convergence behavior of public expenditures was examined in the study based on the sample of the ten countries receiving the highest number of immigrants and Turkey. The convergence of other countries to the USA, which is the country that receives the most immigration in the sample group, was examined with the help of the FPKPSS unit root test. According to the findings, it is in the direction that Germany and Turkey converge to the USA.

In addition to the demand for public goods, migration movements also affect the production and consumption of semi-public goods, thus the level of public expenditures. It is possible to encounter a financial burden in countries with heavy immigration. This situation can also be reflected in the immigration policies of the government. In today's world, the financial burden of forced migration, generally due to increasing wars and internal turmoil, can differentiate attitudes and behaviors towards immigrants. This subject, which has an intense discussion area, is not mentioned in terms of the study’s limitations. However, the empirical findings obtained from the study reveal that only Turkey and Germany show convergence behavior with the USA, and this result is quite thought-provoking. This result, which can be interpreted as the fact that other countries receiving large numbers of immigrants do not want to take on the financial burden, also contains clues about the attitudes and behaviors of these countries towards immigrants.

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Where Are We in Green Education? A Global Assessment

Adnan Celik¹

Abstract
Education is the right of every human being. This right is affected by many factors, from the family to the global environment. In the first years of life, family members and the immediate environment are more prominent. Then educational institutions, reference groups and socio-economic environment appear. Undoubtedly, the international environment also has implications. The cooperation of internal and external factors is very important in order to offer the right to education equally to every individual. However, actual practices show that it is far from ideal structures. The general problem here is also felt in the context of green education. In green education, different sub-titles can be evaluated. Above all, the right to life of all living things must be protected. There is a world goal where the ecological structure is respected. In socio-economic activities, these goals need to be sustainable. There is a need for institutionalization in green life philosophy and practices. This study has been prepared in order to evaluate these issues. In the study, firstly, green education and global agreements supporting green education were discussed. Then the methodology is mentioned. In the findings and discussion part, after explaining the green education dimension in developed and developing countries, it was moved to underdeveloped countries. The study is concluded with conclusions and recommendations.

Keywords: green education, global agreements supporting green education, global dimension in green education

1. Introduction
Education, learning and perception are important considerations. They are influenced by the immediate, national and international environment. Initially, adults in the family can be role models. Another process begins with education. Educators and educational technologies are introduced. Knowledge, skills, awareness and development begin to take shape. Positive behaviors can be reinforced with appropriate training. The negative ones can be left. Do not forget about the circle of friends and reference groups. Career journey is also an important factor. Today, the social environment has come before many things. The level of development, socio-cultural characteristics, technological developments, life preferences, livable environment, social media literacy can be listed among these.

A livable world is the most natural right of every living thing. Industrialization, the use of fossil fuels and approaches that are far from environmentalism brought negativity. Resources were used like loot. Unfortunately, the natural relics that will be passed on to future generations could not be preserved. Corrective or remedial applications are now needed. That's why green education is so important. Because the aim of green education is the goal of a livable world. Green understanding requires multidimensional institutional activities that concern macro and micro environments. The green philosophy can be used effectively at every stage of these dimensions. For this, first of all, institutionalization should be ensured. Individuals should be able to instill green life as a passion. Every individual should have green living goals. Green learning should be extended from the individual to the family and society. We need this for an improved green world and a protected atmosphere. In the literature title of this study, first of all, green education was emphasized. Then, global agreements supporting green education were introduced. Within the scope of the methodology, the problem, purpose and importance of the research, as well as the research method and scope are discussed. Findings and discussion part consisted of two sub-titles. Here, firstly, the issue of green education in developed and

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developing countries was evaluated. Then, undeveloped countries were evaluated. As a result of the study, various suggestions were listed for the relevant circles.

2. Literature Review

In the title of literature review, green education and global agreements supporting green education are included.

2.1. Green Education

Before talking about green education, it is useful to give information about general education. Education interacts closely with many processes. Learning and perception are at the forefront of these. An individual begins his physical life journey from the mother's womb. Then the family is met. The family can have significant effects on an individual's perception, learning and personality structures. Perception can be expressed as "the process of noticing something and attributing it to the realized thing by finding a place in our information system, and judging and evaluating the phenomenon in question qualitatively and quantitatively". Attention, meaningfulness of information, emotional deprivation, motivation and learning have an important place among the events that affect perception. Learning is "quite permanent or permanent changes that occur in the behavior of the organism through repetition or experience" (Simsek et al., 2019: 115-118).

A quality education should be a sustainable development goal. States have to provide quality education based on equity. Those who promote lifelong learning opportunities can achieve remarkable success. Every child should receive a free, equitable and quality basic education. This process can be sustained with technical and vocational training. Even access to higher education can be facilitated. Not only educational opportunities, but also market conditions should be improved. In workplaces, human dignity should be treated. Technical and professional skills for entrepreneurship should be supported. The number of young people and adults with these skills should be increased. It is essential to support underdeveloped countries in these matters. Vocational training programs should be transferred from developed and developing countries to other countries. Necessary aid should be given to underdeveloped countries, especially those in the African continent. Sharing engineering and scientific programs, especially information and communication technologies, is essential (UN, 2022).

Adequate expertise should be communicated to stakeholders in education. Efforts should also be made to develop their perceptions and intuitions. The future can be designed better with qualified personnel. Open communication should be preferred in these studies. Those who are suitable for flexible working hours and can add value to the team should be preferred. It should not be forgotten that those with technical and intellectual abilities can create more value. Information is very fluid. It is necessary to capture the information, assimilate it and evaluate it. There is no harm in being a knowledge worker. In other words, people should be able to research, learn and improve themselves continuously. Learning is a lifelong function. It is necessary to evaluate, assimilate and transfer knowledge to new generations (Yesil, 2020: 1).

Within the scope of green education, green school practice can be mentioned. The green school philosophy facilitates the institutionalization for the settlement of green understanding today and in the future. It emphasizes that every individual has the right to live in a clean and healthy environment. Designs the sustainability goal in green management. These institutions can be more intertwined with nature. Even the design of buildings can create green consciousness. Materials to be used in schools can primarily be produced from recycling. Solar panels can be used extensively for lighting and heating. Typical examples can be looked at in this regard (Green School, 2022; Cam, 2015). Of course, for these, the support of the whole environment,
especially the parents, is needed. The financial support of the states is also important for the spread of such schools. It is useful to know the discipline of biotechnology within the scope of green education. This field is about “the use of biological systems in the production of goods and services based on engineering principles without harming the environment and human health”. The term biological systems includes natural and artificial biomolecules such as enzymes, nucleic acids, in addition to tissues and cells obtained from all kinds of biological sources (such as plants, animals and microorganisms). It is meaningful to include the phrase "environment and human health" here. Because biotechnology systems and processes should be used in a way that does not threaten human health and ecological life, such as biological weapons (Unal, 2020: 123).

2.2. Global Agreements Supporting Green Education

The phenomenon of green education has gained momentum with the development of the relevant literature. In other words, every study on "green economy, green development, green growth, green development or green development" has enriched the field of green education. In particular, global agreements and collaborations on these issues have contributed greatly.

Environmental sustainability and green thinking have gained importance since resources have become increasingly scarce and inaccessible. This understanding has started to set the agenda more especially in developed and developing countries. Non-governmental organizations and environmental organizations have contributed a lot to these developments. Therefore, some organizations have begun to see green management practices as the most important focus of their management goals (Acar, 2022: 57).

Various studies are carried out in order to reduce the risks regarding climate change, global warming and sustainability. These studies; It also contributes to the fields of green economy, green environmental law, green development, green growth and green education. Significant global agreements or studies that are closely related to all the aforementioned issues can be listed chronologically as follows (Kose, 2018, 60-69; Demir, 2022; IPCC, 2022; EC 2022; UNFCCC, 2022):

- 1972 United Nations Conference on the Human Environment (UNCHE): This event, held in Stockholm, was the first international platform to discuss environmental issues. The UN Environment Program (UNEP) was also implemented in 1972.

- 1979 First World Climate Conference (WCC-1): Held in Geneva. The World Meteorological Organization (WMO) held an important meeting on climate change. This was followed by the 1985 Villach conference.

- 1987 World Commission on Environment and Development (WCED): The report “Our Common Future”, also known as the Brundtland Report, was published here. In 1987, efforts were made to protect the atmosphere with The Montreal Protocol.

- 1990 WCC-2: It is a well-attended meeting on climate and global warming held in Geneva.

- 1992 UN Conference on Environment and Development (UNCED): Also known as Rio convention or world environment summit. At this meeting, the climate change framework agreement was drawn up. It is the first environmental consensus on climate change at the intergovernmental level. The New York “UN Framework Convention on Climate Change” agreement was also evaluated.

- 1995 Berlin Climate Change Conference: Worked within the scope of The United Nations Framework Convention on Climate Change (UNFCCC). As a concrete step, the Conference of the Parties (COP1) was created. Later, COP2 was held in Geneva.
- 1997 UN Intergovernmental Panel on Climate Change (IPCC): Also referred to as “Kyoto Protocol to the United Nations Framework Convention on Climate Change” or “CMP16”. It is a widely agreed study. Here, global warming and the risks it causes are discussed in detail. Ultimately, “COP3” was signed. The environmental protocol entered into force on 16 February 2005.

- 2007 IPCC: Climate change was discussed by the parties at this panel held in Valencia. Before the Paris Agreement, many events were organized within the scope of global warming and climate change. Some of these are those; “2007 Bali Action Plan, 2009 WCC-3; 2010 Cancun Agreement; 2013 IPCC Evaluation Report; 2013 Warsaw COP19; 2014 Lima COP20”.

- 2016 UNFCCC: Also known as “Paris Climate Agreement” or “CMA3”. It was signed in 2015 and entered into force in 2016. COP21 was opened for signature. The control of climate change has been brought to the fore. Decisions have been taken to curb the global temperature rise. Aids that can be used by developing countries in the fight against global warming are listed. Adaptation or green funds have been mentioned. The UN “Framework Convention on Climate Change”, which was decided here, has been recognized by 191 countries as of March 2021.

- 2019 European Green Consensus (EGC): With this agreement, carbon regulation at the border has been determined.

- 2021 UNFCCC: Also called “COP26” or “Glasgow Conference”. It is regulated in order to reduce global warming and greenhouse gas emission rates. 197 countries participated in the event.

- 2022 IPPC Climate Change 2022 (Impacts, Adaptation and Vulnerability) Report: With this report, an urgent reduction of greenhouse gas emissions has been requested. A call was also made to take adaptation measures against the effects of climate change and to protect the most vulnerable groups.

The global-level agreements or studies listed above have made very important contributions to green philosophy. The need for green education has been brought to the fore in order to establish the green understanding in the world with its right. Socio-economically fully developed countries seem to support this understanding. Developing countries have also started to take remedial measures. Although there are some improvement movements in underdeveloped countries, institutional arrangements are needed.

3. Methodology

The global-level agreements or studies listed above have made very important contributions to green philosophy. The need for green education has been brought to the fore in order to establish the green understanding in the world with its right. Socio-economically fully developed countries seem to support this understanding. Developing countries have also started to take remedial measures. Although there are some improvement movements in underdeveloped countries, institutional arrangements are needed.

Within the scope of the methodology, the problem, purpose and importance of the research, as well as the research method and scope are discussed.

3.1. Problem, Purpose and Importance of Research

The earth is the common living space of every living thing. Ecological structure must be protected for the continuation of life. For sustainable plans and practices, a green friendly society should be targeted. For this, individuals need to be trained at the green education point. The main problem of this study is how to overcome the problems that may be encountered in
the macro and micro dimensions of green education. The main purpose is to create a livable and sustainable green world. Education is also an important cornerstone for this purpose. Various questions can be developed within the scope of green education. First of all, who will make the green education movements? Is it easy to reach a more livable green world, starting with a green educated individual? What are the responsibilities of developing countries for green education? What kind of help do underdeveloped states need in this context? Does the global green education campaign have a chance of success? These and similar questions should be answered with an active green education movement. Revealing the importance of this movement and taking remedial measures is of undeniable importance for all living things.

3.2. Research Method and Scope

The goal of green education for a livable world includes everyone. This phenomenon is of undeniable importance for all living things. It is also a requirement. In developed and developing societies, awakenings in this direction have begun. There are efforts by governments, companies and non-governmental organizations. Efforts are made to inform the public, especially environmental organizations. However, it is necessary to increase the sustainable plans and institutional practices that will be accepted by all parties. In this study, literature review was preferred. The literature on green education, global agreements supporting green education and the global dimension in green education has been evaluated. In addition to theoretical studies, studies specific to green education were included in the discussion according to country scales.

4. Findings and Discussion

Countries can be considered in various dimensions in terms of development and development dimensions. In the generally accepted classification, there is a distinction between developed, developing and undeveloped countries. In the findings and discussion title, firstly, the green education dimension of developed and developing countries was included. The reason for this was that the green movements in these two groups of countries showed some similarity. Those that are relatively below the average are discussed in the second heading. In other words, the evaluation of underdeveloped countries has been started.

4.1. Green Education in Developed and Developing Countries

When a fully developed country is mentioned, a socio-economically developed country is desired. In such countries, democracy and human rights are entrenched. There are not these, but there are those who are only financially advanced. The “competence or inadequacy” here is the subject of another study”. A developed country at a desirable level is a livable place. The rules regulating social life apply to everyone. All living things have an ecology goal to breathe. Education is institutionalized. Health institutions are active. There are livable cities. Transportation and traffic problems are minimized. Capital is protected. Entrepreneurship has opened up. In industrialization, the protection of the earth and atmosphere was accepted. Undoubtedly, the impact of the industrial revolution and post-industrial developments on the weakening of the green world cannot be denied. In other words, the ecological structure, which is rapidly deteriorating, can also be seen as a negative work of developed countries. However, these countries have realized the magnitude of the problem over time and have begun to turn to remedial activities. The issue of green education should also be looked at from this perspective.

The idea of combining business with green emerged in the late 20th century, following the growing public concern about the sustainability of economic development. With the effect of the green management philosophy, which has an important place among the expectations of the consumers and revealed by the global competition, businesses have started to turn to greener structures and make their practices compatible with the environment (Acar, 2022: 1-4).
The 2016 Paris Agreement, 2019 EGC, 2021 COP26 and 2022 IPPC meetings and agreements included binding decisions for all countries. One of them is the commitment of countries towards the 1.5 degree target. The transition to a carbon-free economy has been an important goal. Even the “2053 net zero” principle has been adopted. Developed countries have paid attention to reducing their carbon dioxide, methane and nitrous oxide gas emissions below the limits. For this reason, they have turned to legal regulations and training of the relevant circles. This is monitored by the Climate Action Tracker (CAT). According to the International Energy Agency (IEA) data, significant decreases were experienced in global energy-related carbon dioxide emissions in the Covid-19 crisis environment. Due to production and transportation restrictions and other factors in 2019; Compared to 2018, total global carbon emissions have decreased. In 2020, there were 5.15% lower values compared to 2019 (TUIK, 2022; Li et al., 2022: 1). However, with the revival of production and trade in recent years, increases have started, albeit partially.

National roadmaps for decarbonisation have begun to emerge in most developed and developing countries. Especially developed countries have greened their economies and turned to green education. In these countries, national green growth strategies have been very common (Sulich, 2018: 6861).

Along with green growth and green development, the agenda of sustainability and ecological sensitivity has also intensified. These issues have started to gain importance in many industries, especially clean energy, environmental protection and green buildings. Today, it is emphasized that schools, homes and workplaces should have more green practices. Workplaces, academic circles and non-governmental organizations are now more interested in “carbon emission, climate change, sustainability, ecology, renewable energy” issues. With this perception, the field of "green career" has also expanded. In other words, “green-collar job status” has become important. Disciplines such as "sustainable environmental design, engineering environment, environmental health sciences, environmental law, science and sustainability, horticulture, marine sciences, renewable energy, sustainable agriculture, wildlife ecology, geology" have been shared more in educational institutions (Green Degree, 2021).

In some developed or developing countries, the unity of green understanding between public institutions and private enterprises is striking. It is seen that individuals, as well as organizations, have internalized this understanding. Sensitivity in the use of natural resources can be instilled with the trainings provided. The society can be encouraged for environmentally friendly products. Companies can obtain various benefits with this conscious personnel. Sensitivity in the use of electricity, water and manufactured goods can reduce total costs. This allows consumers to provide products that are both environmentally friendly and at a lower cost. The green organization or green initiative movement also provides psychological satisfaction on the parties (Athambawa, 2021: 384-392).

In some enterprises of industrialized countries, the number of green collar workers is increasing. In other words, they aim to become more environmentally friendly and high-aware institutions. In order to create green awareness within the enterprise, training and technical support can be provided. Green organizational culture has begun to be accepted. In the way of creating a green vision, green leadership styles have been encountered (Acar, 2022: 57-59).

4.2. Green Education in Developed Countries

There are those who say, "It is the industrialized countries that make the world uninhabitable, they should fix it". However, reducing climate change and providing a livable environment is everyone's business. If the developed or developing ones pay attention, the world should not be said to be comfortable. In other words, the support of underdeveloped countries is also needed. When the underdeveloped country is mentioned, those who do not have what is in the developed
countries come to mind. Some of what happens in developing countries can happen in these countries. There are many socio-economic problems in underdeveloped countries. Income inequality is drawn. There are inequalities in social life. Institutionalization in education and health could not be achieved. Disease and death rates are high. The absence of heavy industry facilities can be perceived as less damaging to the environment. However, the lack of full development of environmental awareness is a problem in itself. Cities are unplanned. Transport and traffic flow are problematic. Conserving capital and promoting entrepreneurship is not easy. The market order is not fully settled.

Developed countries; they have problems in green economy, green environmental law, green development, green growth and green education. For example, decarbonisation national roadmap studies; either absent or behind developed countries. Institutional structures have not yet been established. There are technical and financial difficulties. It seems that it will take a long time for them to reach innovation and green development oriented economies. In some, there are also approaches such as “grow first, then clean” (Sulich, 2018: 6861).

Since green education is not institutionalized in underdeveloped countries, the protection of the natural environment can be neglected. However, the existence of green areas provides many benefits to the people who use it. Even man-made gardens have an undeniable importance. Their physical, aesthetic, psychological, recreational, therapeutic, ecological and similar effects cannot be ignored. Because users can express their satisfaction in these areas. This situation requires increasing urban green areas. These places can reduce carbon dioxide emissions by reducing energy consumption and therefore the need for air conditioning (Eren and Var, 2018: 53-54).

There is a need for public institutions, private businesses and civil society movements focused on green education. Sustainable environment cannot be fully conveyed to the public. Awareness needs to be created. People need to be encouraged to save energy. In some developed or developing countries, these situations have been highlighted. However, this is not the case in developing countries. Top management support is lacking for the development and supervision of environmental control codes. Inadequacies in the general education level continue in the context of green education as well. Since training and technical support are not provided, sensitivity in the use of natural resources cannot occur (Athambawa, 2021: 384-392).

The speech of the International Monetary Fund (IMF) Director Kristalina Georgieva while presenting the report titled “Feeling the Heat: Adapting to Climate Change in the Middle East and Central Asia” is remarkable. Georgieva argued that the frequency and severity of climate-related disasters are increasing rapidly in the Middle East and Central Asian countries. This situation has been stated as a major threat to the growth and welfare of the countries concerned. Attention was drawn to the socio-economic problems that could be caused by the climate crisis. Economic deterioration and financial bottlenecks were mentioned. It has been emphasized that livelihoods may decrease and life may become more difficult. According to Georgieva, adverse weather events generally reduce annual economic growth by 1-2 percentage points per capita. Underdeveloped countries were advised to adapt their economies to climate challenges. The need for carbon regulations, increasing green investments and just transition studies was emphasized (Georgieva, 2022).

Developed countries need foreign aid in order to develop. Foreign aid “to a country or international organization, promoting economic and social development, improving democracy and human rights, social equality, meeting basic needs in emergencies, etc. It is about donations, loans and debts given for purposes. Underdeveloped countries have insufficient physical and human capital. With the protocols arranged after the Second World War, it was decided to help these countries. Especially the decisions of the Bretton-Woods Conference convened in 1944
are important. If the developed countries had kept their promise and transferred 0.7% of their national income to the related countries, some problems would not have occurred at all. In this sense, aid from the World Bank and its derivatives IBRD, IDA, IFC, MIGA can be followed. With such aids, the quality of human life worldwide can be increased. Economic life as well as social structure can be revived. Especially by supporting initiatives in underdeveloped regions, economic mobilization can be achieved (Andersen, et al, 2005: Karatas and Vatansever, 2001: 75-76; Arslan and Kiper, 2015: 9, 22; Celik, 2021: 587-588).

5. Conclusion and Recommendations

The history of humanity is full of struggles to make life sustainable. In fact, life is necessary not only for humans, but for every living thing. However, this balance has not been preserved. With industrialization and global colonialism, ecological destruction has increased even more. Humanity, using the natural structure rudely, started to look for solutions when problems emerged. “Environmental sustainability, social responsibility, ecological sensitivity, climate change, carbon emissions, renewable energy, green spaces, clean water resources, solar flares and global cooling” have become more talked about. In other words, there are efforts to create a new language. Some circles may point to industrialized countries as the source of the problems. There is some justification in them, too. But for now, the focus should be on the solution. The phenomenon of green education can be usefully used in this sense. Socio-economically developed countries have started actions in this direction. Some developing countries are also following them. However, there are various problems for developing countries. Collaboration must be established promptly. Therefore, relevant circles should pay attention to the following recommendations:

- First of all, it should be aimed to add value to living things, nature, cities, the world and the atmosphere. For this purpose, all preventive, corrective or remedial actions should be exhibited. Governments must do their part. Especially industrial companies should adopt the concept of green management. Collaborations with environmental organizations and non-governmental organizations should be increased in order for green education to become widespread.

- A green school project can be offered to every country in general, and to underdeveloped ones in particular. It can be aimed that students become individuals with a green understanding. They can be provided to develop their green knowledge and skills. In order for these institutions to be sustainable, “less environmental impact; increased level of health and well-being; increasing environmental and sustainable literacy for all graduates” can be brought to the fore. In other words, measurable success criteria of green schools can be revealed (Heming 2017).

- Decarbonization and net zero emission targets should be the common denominator of the countries. Every state should pay attention to greenhouse gas emissions. The use of fossil fuels in energy production, transportation, factories and buildings should be avoided as much as possible. For this, international environmental control codes should be developed and audited by independent bodies. Educational support is essential for this.

- International financial fund support should be provided to countries that have difficulties in adaptation. However, we should not be content with just transferring funds. Working methods and technology should also be transferred. Vocational and technical education should also be institutionalized. There is a need for environmental education to reduce carbon footprints. Green energy education should also be included in the curricula of education and training institutions.

In this study, the global dimension of green education was evaluated with the help of general literature. In order to overcome this limitation of the study, more comprehensive analyzes can be developed by accessing statistical data.
References


Analysis of the Poverty in Russia in 2022: Current Trends

Marina Danilina

Abstract

Poverty remains one of the most important problems in Russia. In this paper, the author analyzes the current indicators of poverty in 2022 and the possible ways of reducing the level of poverty in Russia. The real disposable cash income of Russians in the first quarter of 2022 decreased by 1.2% in annual terms, follows from the Rosstat report on the socio-economic situation in Russia. Prior to this, real disposable income grew over three quarters — by 6.8% year-on-year in the second quarter of 2021, by 8.8% in the third and by 0.5% in the fourth. High growth was largely due to the low base of comparison - the pandemic year of 2020. At the end of 2021, the indicator grew by 3.1%, the highest since 2013. In the article is presented the analysis the current indicators of poverty in Russia according to the data of Rosstat and other information agencies.

Keywords: economy, Russia, poverty, development, diminishment, growth, social problem

1. Introduction

The poverty in Russia has a specific character, the indicator of its level changes every year. According to a survey conducted by VTsIOM, Russians consider a family to be poor if their income per member is less than 15,000 rubles/30 days. Poverty is understood as the state of a person in which he is not able to meet the minimum level of his needs. According to sociologists and financial experts, today the definition of “poverty level” is rather vague. For 1/3 of Russians, poverty is the inability to have a personal car and visit "abroad".

For most of the population, it is characterized by a paycheck-to-paycheck lifestyle, contentment with inexpensive, low-quality products, the purchase of second-hand clothes, and the presence of debts. The authorities of the Russian Federation operate with the concept of a living wage. PM represents the amount of income sufficient to purchase a minimum of material values and services. The poverty threshold of the people of the Russian Federation is understood as the cost of the consumer basket. The allowable value is bound to the PM.

Poverty refers to the extreme form of poverty. Poor people become beggars in the absence of money even for the minimum needs. The main "symptom" of poverty is hunger. If a person does not have a roof over his head, then this is considered a sign of extreme poverty. In recent years, this has been observed not only in remote provinces, but also in relatively prosperous cities. According to the data provided by Rosstat, the number of Russians whose incomes are below the subsistence level is more than 20,000,000 people, or 15% of the population of the Russian Federation.

More than 5,000,000 pensioners receive a supplement to their monthly payments. In 67% of cases, poor citizens have a job, but their work is paid very low. The share of unemployed among the poor is 1.5%. Among the "official" poor elderly people - 16.8%. The age of the average poor person in the Russian Federation is 46–48 years. Education secondary, incomplete higher or incomplete secondary. At different periods of his life, such a person is engaged in low-paid work that does not require special knowledge.

In the article is presented the analysis the current indicators of poverty in Russia according to the data of Rosstat and other information agencies.

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2. Analysis of the Current Statistical Data

Until 1980, the concept of "poverty" did not exist in the statistical records of the USSR. Therefore, the assessment of the level of poverty by modern researchers is carried out on the basis of indirect indicators and an analysis of the level of wages of citizens. As can be seen, the peak of poverty occurred in the early 1990s (reached 35-40%). Speaking about the data for the Soviet Union, we note that the poverty rate in the middle of the existence of the state dropped to a minimum (11%), which has not been reached to this day. Despite the high value of the indicator in the 1950s and after the 1970s, one must understand that at that time there were social guarantees and a wide variety of free services [Federal Law of 24.10.1997 No. 14-FZ, Ambaryan A.Ya., 2020].

Almost 20 million Russians live below the poverty line (have an income below 11.6 thousand rubles per month). Note that 12 thousand rubles. quite difficult to distribute to a normal life. With such a "prosperity", all a person’s thoughts will be occupied only with what to eat today and how to pay for an apartment. For leisure, recreational activities, seasonal change of clothes (at least once every 2 years), treatment - not to mention the improvement of skills and additional education - there will be nothing left [Amirova S.A., 2020, Barinov A.D., 2016].

If we evaluate the real state of affairs, then the value of 20 million people. you can safely multiply by 2. It turns out that about 30-40% of Russians are really poor. This figure is close to the post-war period and is puzzling: the availability of resources, hydrocarbons, oil and other sources of exports and domestic industrial consumption are not reflected in any way on the economic well-being of the population. The poorest regions of the country include: the Republic of Tyva, Altai, Ingushetia, Karachay-Cherkessia, Kalmykia. Here, the average income fluctuates around the cost of the consumer basket, approaching it as much as possible [Barinova V.I., 2020, Caira Yu.V., 2020].

Pursuant to Decree of the Government of the Russian Federation dated November 26, 2021 No. 2049 “On Approval of the Rules for Determining the Poverty Lines in the Russian Federation as a Whole and in the Russian Federation Subjects Used in Estimates of the “Poverty Level” Indicator in the Russian Federation as a Whole and in the Russian Federation Subjects, and on amendments to the Federal Statistical Plan” The Federal State Statistics Service informs about the significance of the poverty line and the number of people with incomes below the poverty line (Table 1).

Table 1. Poverty lines for the whole Russian Federation roubles /a month

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<tr>
<th>Population, total</th>
<th>Including:</th>
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<tr>
<td></td>
<td>able-bodied population</td>
<td>pensioners</td>
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<td>base border poverty IV quarter</td>
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<tr>
<td>2020</td>
<td>11329</td>
<td>12273</td>
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<tr>
<td>Q1</td>
<td>11581</td>
<td>12545</td>
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<tr>
<td>Q2</td>
<td>11813</td>
<td>12797</td>
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</table>
The rules for determining the poverty line in the whole of the Russian Federation, used in the estimates of the indicator "Poverty rate" in the whole of the Russian Federation, starting from the first quarter of 2021, are established by the Decree of the Government of the Russian Federation of November 26, 2021 No. 2049-FZ.

The values of the poverty lines per capita and for the main socio-demographic groups of the population as a whole in the Russian Federation for the corresponding reporting quarter or year are determined by multiplying the values of the basic poverty lines by the consumer price index for the reporting quarter or year by the 4th quarter of 2020, determined by the chain method [Kartseva M.A., 2020, Koroleva N.V., 2020].

The basic poverty lines correspond to the values of the subsistence minimum per capita and for the main socio-demographic groups of the population, established in the whole of the Russian Federation for the fourth quarter of 2020 in accordance with the Federal Law of October 24, 1997 No. minimum in the Russian Federation” (as amended prior to the entry into force of Federal Law No. 473-FZ of December 29, 2020) (Table 2).

Table 2. Population with cash incomes below the poverty line in general for the Russian Federation

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Million people</th>
<th>In % of total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>20.8</td>
<td>14.2</td>
</tr>
<tr>
<td>Q2</td>
<td>18.2</td>
<td>12.5</td>
</tr>
<tr>
<td>1 half a year</td>
<td>19.3</td>
<td>13.2</td>
</tr>
<tr>
<td>Q3</td>
<td>16.0</td>
<td>11.0</td>
</tr>
<tr>
<td>January-September</td>
<td>17.6</td>
<td>12.1</td>
</tr>
<tr>
<td>Q4</td>
<td>12.4</td>
<td>8.5</td>
</tr>
<tr>
<td>Year</td>
<td>16.1</td>
<td>11.0</td>
</tr>
</tbody>
</table>

1) Preliminary data.

Source: Rosstat

The real disposable cash income of Russians in the first quarter of 2022 decreased by 1.2% in annual terms, follows from the Rosstat report on the socio-economic situation in Russia. Prior
to this, real disposable income grew over three quarters — by 6.8% year-on-year in the second quarter of 2021, by 8.8% in the third and by 0.5% in the fourth. High growth was largely due to the low base of comparison - the pandemic year of 2020. At the end of 2021, the indicator grew by 3.1%, the highest since 2013. Real disposable money income is the money income of Russians adjusted for inflation and minus regular payments (taxes, interest on loans, etc.). This indicator is not calculated in ruble terms; Rosstat only gives its dynamics as a percentage once a quarter [Kruglova E.L., 2020, Liferenko Yu.A., 2019].

According to Rosstat, in the first quarter, the share of income from entrepreneurship in the structure of money income of Russians was higher than a year ago (6.5% versus 5.8%). In addition, the share of income from property increased (4.7 vs. 4.3%). The share of income from wages and social benefits, on the contrary, decreased [Simonin P.V., 2020, Slugina A.V., 2020].

The list of the poorest regions of Russia was compiled by RIA Rating specialists. It was created on the basis of the availability of free funds among people living in various regions of the Russian Federation [Eshmatova D.A., 2020, Official site of the Federal State Statistics Service, 2022]. This definition represents the money left at the end of the month after paying bills and other expenses (Table 3).

**Table 3.** List of the poorest Russian regions on the base of the “free money” indicator

<table>
<thead>
<tr>
<th>Region</th>
<th>The amount of &quot;free money&quot; in a family with two or three children</th>
<th>The amount of &quot;free money&quot; in a family with one child</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pskov region</td>
<td>570 rubles</td>
<td>10 600 rubles</td>
</tr>
<tr>
<td>Dagestan</td>
<td>2400 rubles</td>
<td>11 100 rubles</td>
</tr>
<tr>
<td>Ivanovo region</td>
<td>3129 rubles</td>
<td>12 478 rubles</td>
</tr>
<tr>
<td>Altai Territory</td>
<td>3757 rubles</td>
<td>12 544 rubles</td>
</tr>
<tr>
<td>Smolensk region</td>
<td>4129 rubles</td>
<td>14 189 rubles</td>
</tr>
<tr>
<td>Kabardino-Balkaria</td>
<td>5037 rubles</td>
<td>13 856 rubles</td>
</tr>
<tr>
<td>Kalmykia</td>
<td>5112 rubles</td>
<td>13 657 rubles</td>
</tr>
<tr>
<td>Karachay-Cherkessia</td>
<td>5223 rubles</td>
<td>13 745 rubles</td>
</tr>
<tr>
<td>Kurgan region</td>
<td>5772 rubles</td>
<td>15 099 rubles</td>
</tr>
<tr>
<td>Kirov region</td>
<td>5737 rubles</td>
<td>15 123 rubles</td>
</tr>
</tbody>
</table>

Source: RIA Rating

Information on the level of poverty in the Russian Federation in 2021 is presented in the Table 4.

**Table 4.** Russian poverty index in 2021

<table>
<thead>
<tr>
<th>County</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vladivostok</td>
<td>0.09</td>
</tr>
<tr>
<td>Moscow</td>
<td>0.09</td>
</tr>
<tr>
<td>Yekaterinburg</td>
<td>0.13</td>
</tr>
<tr>
<td>Kazan</td>
<td>0.2</td>
</tr>
</tbody>
</table>
Russians interviewed by VTsIOM believe that the main factors provoking the growth of poverty in Russia include: unfair distribution of the Russian budget, mass cuts, liquidation of enterprises, social inequality [The official website of the Territorial Body of the Federal State Statistics Service for the Kemerovo Region, 2022, Poverty rate in Russia, 04/27/2022]. According to statistics, the main risks of poverty for Russians include: loss of work (40% of respondents), reducing the level of wages (80%), circumstances associated with loss of health (22%), credit bondage (67%). The risk group includes Russians over 45 years old who do not have qualifications and a diploma of higher education. Despite the optimistic statements of officials, the level of poverty in Russia continues to be stably high. About 75% of Russians save on the following: clothing and footwear - 76%, food - 69%, entertainment - 68.2%, vacation - 57.8%, medicines - 39.1%, other expenses - 6.4%. According to the analysis of poverty, up to 76% of women and approximately 66% of men resort to a frugal lifestyle.

3. Conclusions

To conclude, poverty in Russia remains one of the most important problems. The Constitution states that the Russian Federation is a social state whose policy is able to provide every citizen with favorable conditions for the realization of abilities and the organization of a decent life. Today, the fight against poverty in Russia is connected with the realization of the rights to the
following: work; salary for work; health services; welfare; housing; education. According to experts, poverty in modern Russia can be controlled with the help of government policies to prevent and reduce this phenomenon. In 2021-2022, the problem of poverty in the regions is among the highest priorities in the field of social policy.

There are the following ways to solve this problem: accelerating the growth rate of the national economy, introduction of a system of payment of benefits for the needy. The second way is the subject of much discussion. In the near future, a draft state budget for the next two years will be submitted to the State Duma deputies for consideration. Given the presence of many factors that had a negative impact on the formation of the revenue side, the expenditure side of the state budget will also be formed. According to First Deputy Minister of Finance T. Nesterenko, the need to introduce a poverty allowance today is conditioned. She believes that this will reduce the growth of negative sentiment in society.

When a positive decision is made, poverty benefits will be paid targeted to certain categories of citizens. Confidently using statistical data, T. Nesterenko believes that families with children under 16 years of age need appropriate payments. This also applies to families with two or more minor dependents and one parent who has a job. The main criterion is the real need for additional assistance from the state. Vice-President O. Golodets and Minister of Labor M. Topilin do not agree with the opinion of the Deputy Minister. The first believes that such benefits can only be introduced after a precise definition of the circle of people in need of such assistance. This is not reflected in the draft state budget for the next 36 months.

In the near future, it is planned to develop anti-poverty programs that help:

- Establish a minimum salary and labor pension at the level of the PM.
- Ensure that all categories of citizens receive socially important services and goods.
- Refuse to exploit the skilled labor of state employees in the form of a monopolistically low assessment of their activities.
- Establish and introduce a minimum standard for tax deductions. The aim is to maintain the level of wages at the level of the PM of the employee and dependents living with him.

According to analysts, reducing the risk of impoverishment is possible only with close cooperation between the state and the population. The following recommendations should be referred to real methods of poverty prevention for Russians:

- Continue looking for work. This is especially true of persons who are threatened with dismissal against the background of the closure of the enterprise.
- Regularly improve the level of your own education.
- Do not be afraid to leave one of the "depressed" regions of Russia and try to find a job in an economically prosperous place.
- Improve health.
- Expand your social circle, establish contacts with people who can help you find a job in a promising place.
- Live within your means and always remember credit responsibility.
- Liaise closely with social security authorities. This applies to the disabled, pensioners and mothers with many children.
The main way to solve the problem of poverty is the economic development of the country. In terms of nominal GDP, Russia ranks 11th in the world, which affects the situation of citizens. For the development of the economy, a number of measures are required:

- Optimization of income taxes (it should be profitable for entrepreneurs to hire employees and not pay a lot of money to the state for them);
- Development of industries (you need to sell not raw materials, but finished goods);
- Development of small and medium-sized businesses (benefits, incentives, assistance).
- Support for lagging regions.

Social guarantees must include:

- High-quality and relevant education (education of world-class specialists, increasing the attractiveness of Russian education abroad);
- Help for the poor (cash benefits, retraining programs, stimulating the desire to work);
- Increasing pension payments for seniority and contribution to the development of the industry, enterprise, country.

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Analysis of the Living Standards in Russia in 2022

Marina Danilina¹

Abstract
The current political and economic situation resulted in the diminishment of the living standards of the people in the Russian Federation. According to a conservative estimate of scientists, the decline in the standard of living of Russians this year will be about 20%. And the potential for cumulative inflation (taking into account somersaults of the national currency in 2020-2021) is 35%. The author analyzes the current situation and the future trends on the basis of the content analysis. The standard of living of Russians in 2022 may decrease against the backdrop of a decline in GDP, rising unemployment and a decrease in household income. The solution can be found in the development of social regional and local problem for the support of the population.

Keywords: economy, Russia, poverty, development, diminishment, growth, social problem

1. Introduction
In 2021, the recovery growth of the Russian economy continued. In 2021 Q2, GDP is estimated to have reached pre-pandemic levels. In July, GDP growth compared to July 2020 amounted to 4.7% yoy (against July 2019: +0.4%), according to the results of Q2 2021, it amounted to 10.5% yoy (+1, 9% compared to Q2 2019), in general for January-July - 4.8% y/y (1.1% compared to the same period in 2019). GDP growth for the current year is estimated at 4.2%. The output of key non-primary industries (manufacturing, agriculture, construction) confidently exceeds pre-pandemic levels (in July, according to estimates, by an average of 4.5%, a month earlier - by 5%). At the same time, mining production remains more than 2% below pre-pandemic levels under the terms of the OPEC+ agreement [Federal Law of 24.10.1997 No. 14-FZ (as amended on 01.04.2019), Ambaryan A.Ya., 2020].

From the point of view of the components of GDP use, the main contribution to the recovery of economic activity in the first half of the year was made by consumer demand. Retail trade turnover in January-May exceeded the pre-pandemic level, in June and July there was a slight decrease in the indicator. The recovery in the services segment was more gradual, given the significant decline in 2020 and continued local quarantine restrictions. As a result, the volume of paid services to the population and the turnover of public catering, although they showed recovery dynamics, in July remained -1.9% and -3.2%, respectively, below the pre-pandemic levels [Amirova S.A., 2020, Barinov A.D., 2016].

Consumer demand is supported by a steady recovery in the labor market. In July, the unemployment rate (according to the ILO methodology) actually reached the level of 2019 and amounted to 4.5% of the labor force (-1.3 p.p. compared to December 2020, -1.9 p.p. to the peak of August last year), on average for 7 months - 5.2%. The average unemployment rate in 2021 is estimated to be 5.0 percent. Against the backdrop of an improvement in the situation on the labor market, real wages continued to grow (in the first half of 2021 - 3.4% yoy, compared to the first half of 2019 - 6.5%). According to estimates, by the end of 2021, wages will increase by 3.1 percent [Barinova V.I., 2020, Caira Yu.V., 2020].

According to the results of the second quarter of 2021, real money incomes of the population continued to recover and approached the level of the same quarter in 2019 (-0.2% after -0.7% a quarter earlier). The monetary income of the population was supported by an increase in wages and social benefits (in real terms compared to the same period in 2019), other

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components also showed recovery dynamics. At the same time, per capita cash incomes showed a slight increase compared to Q2 2019 (+0.2% after a decrease of -0.3% in Q1 2021 compared to Q1 2019). The growth of real money income of the population following the results of the current year is estimated at the level of 3.3%, real disposable money income of the population - 3.0 percent [Kartseva M.A., 2020, Koroleva N.V., 2020].

Along with the recovery of the labor market and money incomes, temporary factors also contributed to the growth of consumer demand in the first half of 2021, including deferred demand formed during the period of quarantine restrictions, structural changes in consumer preferences, which resulted in increased demand for certain groups of goods and services, as well as restrictions on international movements. As these factors are exhausted, starting from the second quarter of 2021, a trend towards stabilization of consumer demand has emerged [Kruglova E.L., 2020, Liferenko Yu.A., 2019].

Consumer demand is expected to grow at a moderate pace in the coming months. The retail trade turnover in 2021 is estimated to increase by 6.9%, the volume of paid services to the population - by 16.7% (after falling by -3.2% and -14.8%, respectively, in 2020) [Simonin P.V., 2020, Slugina A.V., 2020].

Investment demand has become another driver of the recovery of the Russian economy this year. The growth of investments in fixed assets in January-June 2021 amounted to 7.3% yoy (+5.4% compared to the first half of 2019). At the end of 2021, the growth of investments in fixed assets is estimated at 4.5% [Eshmatova D.A., 2020, Official site of the Federal State Statistics Service].

Net exports are currently estimated to make a negative contribution to GDP growth, which is typical of post-crisis recovery periods in the Russian economy. An additional constraint on exports in 2021 is the OPEC+ deal aimed at stabilizing world prices. At the same time, as the physical volumes of exports recover and the dynamics of imports stabilize, the negative contribution of net exports is estimated to gradually decrease [The official website of the Territorial Body of the Federal State Statistics Service for the Kemerovo Region, Poverty rate in Russia, 04/27/2022].

2. Analysis of the Current Statistical Data

According to a conservative estimate of scientists, the decline in the standard of living of Russians this year will be about 20%. And the potential for cumulative inflation (taking into account somersaults of the national currency in 2020-2021) is 35%. According to the staff of the Institute of Pedagogics of the Russian Academy of Sciences, Russia's GDP may fall by about 11.3% - this is a record since 1994. Following the rise in prices, citizens' spending on goods and services will not increase - they simply will not have the money to ignore inflation, because with a fall in GDP, nothing promises an increase in earnings. Scientists expect a structural negative effect from everything that is happening, which will be expressed in a drop in the quality of raw materials, equipment and labor. In any case, on the horizon of 2-3 years, the domestic consumer will face a sharp depletion, despite the fact that he has been observing a frightening rise in prices for a year now. And business will face even tougher competition for the money of Russians who save on everything. One of the significant indicators is the living minimum. Table 1 reflects the value of the living minimum (ERM) for the Russian Federation.
Table 1. Value of the living minimum (ERM) for the Russian Federation (rubles per month)

<table>
<thead>
<tr>
<th>The period for which ERM was established</th>
<th>All population</th>
<th>Including by socio-demographic groups</th>
<th>Regulatory legal act, setting the VPM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>table-bodied population</td>
<td>pensioners</td>
</tr>
<tr>
<td>from January 1, 2021 to December 31, 2021</td>
<td>11653</td>
<td>12702</td>
<td>10022</td>
</tr>
</tbody>
</table>
| from January 1, 2022 to December 31    | 12654          | 13793                    | 10882       | 12274                     | Federal Law of December 6, 2021 No. 390-FZ 1)


The following factors can be identified that affect the decline in living standards: increase in the rate of inflation; ruble devaluation; rise in price of products; high probability of freezing the indexation of social benefits and wages; extension of the moratorium on the funded part of the pension; falling oil prices; imposition of sanctions. Amount of the basic minimum social guarantees established by the legislation of the Russian Federation in relation to the living minimum value is presented in Table 2.

Table 2. Amount of the basic minimum social guarantees established by the legislation of the Russian Federation in relation to the living minimum value (as of January 1; in percent)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum wage</td>
<td>68,2</td>
<td>67,1</td>
<td>57,3</td>
<td>59,0</td>
<td>70,1</td>
<td>87,5</td>
<td>96,8</td>
<td>103,4</td>
<td>100,7</td>
<td></td>
</tr>
<tr>
<td>Minimum unemployment benefit</td>
<td>11,1</td>
<td>10,3</td>
<td>8,2</td>
<td>8,1</td>
<td>7,9</td>
<td>7,8</td>
<td>12,9</td>
<td>12,8</td>
<td>11,8</td>
<td>10,9</td>
</tr>
<tr>
<td>Monthly allowance during parental leave</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>62,7³ 62,6³</td>
</tr>
<tr>
<td>for a child until they reach the age of one and a half years²):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>first child care</td>
<td>35,8</td>
<td>34,6</td>
<td>28,6</td>
<td>30,1³</td>
<td>31,4³</td>
<td>31,6³</td>
<td>31,0³</td>
<td>31,5³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>caring for second and subsequent children</td>
<td>71,6</td>
<td>69,1</td>
<td>57,3</td>
<td>60,1³</td>
<td>62,8³</td>
<td>63,1³</td>
<td>61,9³</td>
<td>63,0³</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
According to a number of experts, the level of real incomes of Russians in 2022 will be approximately equal to 2021. This assumption was made on February 11 by Vadim Zasko, dean of the faculty of taxes, audit and business analysis at the financial university under the Russian government. In his opinion, there are no factors known to him that can reduce the level of material security of the country's inhabitants. Indeed, last year there was a very high level of inflation (over 8%), which forced many employers to carry out forced indexation of wages. If, in 2022, consumer price growth is below 5 percent, we will face a positive trend in increasing household incomes.

The two leading cities on the map of the Russian Federation in terms of living standards do not lose their positions at all. St. Petersburg and Moscow are traditionally ahead of the rest in terms of quality of life, followed by the suburbs. Experts assessed the material well-being of 85 Russian regions based on 67 parameters. It should be noted right away that the top three, as well as the order of their stay in the list, has not changed for many years. Of the maximum 100 points, Moscow received 81.4, and St. Petersburg - 80.2. The Moscow region is lagging behind - 75.9 points, but the situation is still significantly different from other regions of the Russian Federation.

The ten most attractive regions of the country from an economic point of view include the Krasnodar Territory and Tatarstan, Belgorod, Leningrad, Samara, Nizhny Novgorod Regions and Khanty-Mansi Autonomous Okrug. Residents of Tuva, Kalmykia, Ingushetia, the Kurgan region, Buryatia, the Trans-Baikal Territory, Karachay-Cherkessia, the Jewish Autonomous Region and the Altai Territory feel worse than others. According to Deputy Chairman of the
State Duma Mikhail Delyagin, the level of income of the population in the country has not risen since 2021, so most Russians live below the poverty line.

According to Vadim Kovrigin, associate professor at the Plekhanov Russian University of Economics, this year the growth in household income will be less than even in 2021. At the same time, according to Rosstat, in 2021 this figure was only 3 percent. Most likely, the incomes of Russians will grow this year, but they will decline. Coronavirus restrictions contribute to this. In addition, high inflation coupled with a high key rate creates risks for another price hike. And this will again hit the pocket of the average Russian, which will again reduce the standard of living of citizens.

Sanctions will take away from the growth rate of Russia's GDP in the long term - until 2030 - 1-1.5% annually, according to experts interviewed by the National Research University Higher School of Economics. Household incomes will not keep pace with economic growth, they warn. The long-term effect of sanctions will be expressed in slowing down the growth rate of Russian GDP by 1-1.5% per year, according to the results of the consensus forecast on the prospects for economic development until 2030, conducted by the Institute "Development Center" of the National Research University Higher School of Economics among 17 macroeconomists from public and private organizations. The experts' assessments were voiced by the Director of the Institute, Natalia Akindinova, at the first of a series of seminars on the theme "Long-term socio-economic development in conditions of isolation, sanctions and external shocks", held at the Higher School of Economics at the end of May.

Economists expect that the dynamics of household income will be worse than the dynamics of GDP, as the total costs of the economy will rise, crowding out labor costs. Experts estimate the prospects for opening the economy to exports and imports differently, but the average estimate is that the share of exports will decrease by 5-7 percentage points by 2030 compared to the current share in GDP. In recent years, the share of exports of goods and services in Russia's GDP has ranged from 25 to 30%, according to World Bank data.

According to the latest Central Bank survey conducted among economists in June, they expect the economy to contract by 7.5% this year, zero growth next year, and GDP growth by 1.8% in 2024 and 2025. They estimated the expected average GDP growth rate in 2026-2030 at 1.5% per year. Even in the February forecast, before the imposition of sanctions, they expected the economy to grow by 2.4% in 2022, and by 2.1 and 2% in the next two years. Long-term GDP growth was also estimated at 2%.

Among the main risks for the long term, economists called the loss of macroeconomic and social stability, technological backwardness, as well as increased demographic problems. At the same time, participants in the consensus forecast also identified a number of opportunities that the sanctions crisis brings, such as a reorientation to other sources of imports and export destinations, as well as import substitution, primarily of technologically simpler goods. “Experts are quite skeptical about the possibilities of import substitution in particular and the development of high-tech industries in Russia in general, which is also a challenge for economic policy,” Akindinova said.

With the more active use of the tool of economic isolation, the effect of sanctions, including in the context of specific countries, began to be studied. However, the experience gained by other countries of the world cannot be borrowed to analyze the situation in Russia without making serious adjustments to the external economic context, the size, structure and level of development of economies, says Vladimir Salnikov, head of the analysis and forecasting of the development of the real sector of the CMASF.
Studies of the experience of other countries that have experienced sanctions pressure allow us to predict some of the consequences of economic isolation. Ilya Voskoboinikov, Director of the Center for Productivity Research at the National Research University Higher School of Economics, identified the following patterns:

Iran’s experience has shown that import substitution, as a natural reaction of a sub-sanctioned economy, leads to a decrease in production productivity, as the competitiveness of enterprises in the market worsens, costs rise, and sales decrease. As a result, the risks of unemployment increase. This situation is typical for high-tech industries;

Sanctions exacerbate inequality and poverty, dealing a heavy blow to the vulnerable, while the wealth of the wealthy may even increase. Isolating a country through sanctions reduces its “transparency”, and human rights violations can intensify within this zone.

In many ways, modern approaches to the formation of economic policy in Russia reflect the mobilization experience of the USSR, Voskoboynikov notes. But the main damage to the growth of the Soviet economy under sanctions was caused not so much by the lack of access to advanced technologies or restrictions on foreign trade, but by an internal inability to allocate resources efficiently, he said.

According to the expert, at the present stage, the state should increase the efficiency of resource allocation by providing a competitive environment, market pricing and support for entrepreneurial initiatives. The sanctions crisis hurts the sub-sanctioned economy, regardless of whether political goals are achieved.

3. Conclusions

The level of real disposable money income of Russians in the first quarter of 2022 decreased by 1.2% compared to the same period a year earlier. Prior to that, the well-being of Russians had been growing for three quarters. The real disposable cash income of Russians in the first quarter of 2022 decreased by 1.2% in annual terms, follows from the Rosstat report on the socio-economic situation in Russia. Prior to this, real disposable income grew over three quarters — by 6.8% year-on-year in the second quarter of 2021, by 8.8% in the third and by 0.5% in the fourth. High growth was largely due to the low base of comparison - the pandemic year 2020. At the end of 2021, the indicator grew by 3.1%, the highest since 2013.

According to Rosstat, in the first quarter, the share of income from entrepreneurship in the structure of money income of Russians was higher than a year ago (6.5% versus 5.8%). In addition, the share of income from property increased (4.7 vs. 4.3%). The share of income from wages and social benefits, on the contrary, decreased.Rosstat will publish data on real wages for March only in a month. The real size of assigned pensions decreased by 7.1% against February and by 8.3% against March last year. Of the 17.1 trillion rubles spent by Russians in the first quarter (which is 15.8% more than a year ago), 14.6 trillion was spent on the purchase of goods and payment for services. They spent from savings - in the first quarter they decreased by 1.3 trillion rubles (compared to 433.9 billion rubles a year ago).

With the introduction of Western sanctions in response to the “special operation”, the prospects for growth in real disposable income have changed. In particular, the March report of the VEB.RF Institute for Research and Expertise predicts a 12% decrease in the indicator for the year. Institute experts also predicted an increase in unemployment by the end of the year to 6.2%. According to Rosstat data for March, the unemployment rate is not growing yet - both in March and in February it amounted to 4.1% (or 3.1 million people).
The first quarter was marked by a sharp increase in inflation, which accelerated after the start of the “special operation”. By the end of March, price growth in annual terms reached 16.7% compared to 9.15% at the end of February.

By April 22, the figure rose to 17.7%. Weekly inflation slowed down for five weeks in a row, but accelerated in the last reporting week - from 0.20 to 0.25%, due to an increase in prices for domestic tourism before the May holidays, the Ministry of Economic Development explained.

The drop in income in the first quarter is the result of a sharp rise in prices, says Sofia Donets, an economist at Renaissance Capital for Russia and the CIS. “Revenues find it difficult to cope with a price increase of about 20%. High inflation is likely to see a gradual decline in real disposable income throughout the year. At the end of the year, they will fall by at least 5%, despite the planned indexation of salaries and pensions.”

References


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Ümmü Saliha Eken İnan

Abstract
Consumers with an increased awareness of environmental problems consider the same level of awareness in their purchasing attitudes and behaviors. In fact, most consumers can afford to pay more for organic products. Environmental problems; It is becoming a growing problem by human hands, and the world is dragged into irreversible disasters such as acid rain, the spread of greenhouse gases, pests in agricultural products, nuclear wastes, population imbalances, pollution in the seas/oceans/inland waters. This damage can be seen in the breath you take, the food you eat and the water you drink.

In this context, the aim of the study is; The aim of this study is to evaluate the effects of consumers' awareness of environmental problems on their purchasing behavior for organic products. For this purpose, the purchasing behavior of consumers for organic foods is examined for their nutritional needs, which is one of our basic needs. The data collected from the descriptive research conducted through google forms with 300 different consumers who participated voluntarily are analyzed using SPSS 25.0 and G-Power package programs.

As a result of this study, whose roadmap was determined with the conviction that more organic food purchase behavior has been made, especially since the Covid-19 epidemic, significant findings were obtained between the level of awareness of environmental problems in the purchasing behavior of consumers for organic products and the level of demand for organic foods. In the study, the mediation and regulatory effects of descriptors were also examined. It has been concluded that income has regulatory effects.

Keywords: organic product purchasing behavior, environmental issues, sustainability, regulatory impact, logistic regression model, odds ratio

1. Introduction
Today, consumers are increasingly researching what human-induced environmental damage is. Incorrect techniques such as fertilizers, synthetic production, pesticides, unconscious irrigation, damage to the living population in the seas and fresh waters, inability to ensure the welfare of animals grown on farms, the fact that animal feeds contain hormones, and also the genetic deterioration of animal products, used to increase production efficiency, are the most important obstacles to a sustainable future is one of the major obstacles. In order to remove these obstacles, both producers and consumers need to be knowledgeable about certain environmental issues and develop an environmentalist attitude while making their purchases.

While some of the important factors that enable consumers to create positive attitudes in the purchasing decision process are realized by the operation of the cognitive process; It is known that they are in exploratory buying behavior and that discovery also leads them to access applicable information. When consumers have information about organic products in the purchasing decision process; With the awareness that they will contribute to taking steps towards the environment, they become demanding of these products. Of course, in this process, consumers' income level, education level, social environment will be effective in their purchasing behavior.

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In this research, which tries to evaluate the effects of consumers’ awareness about environmental problems on their purchasing behavior towards organic products, the food group, which is one of our basic needs among organic products, will be discussed. While the introduction part is the first part of the study, in the second part; Organic food consists of a conceptual framework in which the concepts of environmental problems and environmental concern, purchasing behavior and sustainability for organic foods are explained. In the third section, there is the literature section that includes previous studies on the purchasing process of organic foods in the literature. The fourth chapter includes the methodology of the research. In the fifth chapter, the study is completed with the conclusion part of the research.

2. Conceptual Framework

2.1. Organic Food

Organic food is food that is free from genetic modification, does not contain pesticides and chemicals, is not harmful to the environment, produced by avoiding chemical fertilizers (Savita & Verma, 2017), certified according to ecological accreditation (Padel vd., 2010). As can be understood from this definition; primarily these products in the purchasing behavior of consumers towards organic products; It can be said that they consider fruits and vegetables as fruits and vegetables and have their first organic product experience (Padel & Foster, 2005) with these foods. Later, the demand for organic foods gradually took shape. One reason for the increasing demand for organic food is the increasing environmental awareness (Lee & Yun, 2015). These foods are seen as more environmentally friendly than conventional foods.

Animal foods are also essential nutrients. Thus, organic livestock farming uses lower levels of external inputs and fewer fossil fuels than conventional livestock production, so it is more energy efficient, reduces contamination, provides healthy food and ecosystem services, and contributes to mitigating and adapting to climate change (Pérez et al., 2019). When evaluated socially, environmentally and morally; A general sustainable lifestyle (Moser, 2015) should be adopted, including especially organic farming and short travel distances, as well as animal welfare.

2.2. Environmental Problems and Environmental Anxiety

Environmental problems; It is increasing due to reasons such as air pollution, climate changes, unconscious use of soil/water/energy resources, decrease in plant and animal population due to the deterioration of the ecosystem, loss of soil fertility, increase in the use of fertilizers / pesticides due to unconscious production. In studies on global environmental sustainability; food, water and energy security, and the protection of biodiversity are emphasized (Bouma & McBratney, 2013).

Environmental concern increases consumers’ awareness of environmental problems and the degree of their desire to solve problems (Paul et al., 2016). Environmental concerns have been shaping the purchasing behavior of consumers recently. A decarbonised food chain improves proactive environmental behavior (Gadema & Oglethorpe, 2011) by reducing carbon consumption. It supports the protection of the ecosystem, ensures sustainable rural development, therefore; more labor-intensive and qualified personnel are needed (Cachero-Martínez, 2020).

2.3. Purchasing Behavior for Organic Products and Sustainability

Purchasing behavior for organic products is affected by individual factors. The most important individual factors are; environmental concerns (Dangi et al., 2020; Kapuge, 2016; Ahmed et al., 2021; Petrescu et al.,2015; Asif et al.,2018; Hossain & Lim, 2016), health concern, awareness level for organics, eco-labels, trust in organic food consumption (Dangi et al., 2020).
Consumers, who are aware of the consequences of environmental problems and behaviors and think that their individual efforts will help solve the problems (Minton & Rose, 1997), lead the transition to a more sustainable food choice (Feil et al., 2020). Thus, for a more sustainable future, targets can be set to reduce human-induced damage to the environment.

3. Literature Review

Shepherd et al. (2005), in their study in which they investigated the determinants of consumer behavior related to organic foods, stated that consumers' opinions about organic foods were positive, but they did not see organically produced products as a determinant of purchasing. They state that there is a contradiction there. In addition, they show that environmental benefits and awareness about environmental problems are among the purchasing determinants, but there is no strong orientation in the purchasing behavior of consumers due to the high prices of organic foods.

Davies et al. (1995) investigated the profiles of organic food buyers in their study in Northern Ireland. In their study, they stated that environmental and health factors are common motivations for purchasing organic food, but availability and price factors prevent organic food purchase. In the study, they found that the profile of real organic product buyers consists of women aged 30-45, with children and in the high income group. Thus, they concluded that those who buy organic products are high-income consumers, but there is a difference between the purchasing behavior of the participants who claim to be interested in the environment.

Padel & Foster (2005), in their study in the United Kingdom, investigated whether consumers buy organic foods. They stated that environmental awareness is a priority in some segments in purchasing organic food, and they even associate organic food with organic production/agriculture. As a result, they found that environmental concerns as well as individual health are determinants in animal welfare, dairy products, production of organic vegetables and fruits, as well as in the production/consumption of other organics.

Ahmed et al. (2021), in their study investigating Chinese consumers' organic food purchase intentions within the framework of planned behavior theory, concluded that attitude, subjective norms and perceived behavioral control have positive effects on organic food purchase intention. In addition, attitude has positive effects on environmental concerns; They concluded that environmental concerns have a mediating effect on the relationship between attitudes and organic food purchase intentions of young consumers.

Tigan et al. (2021) in their work in Romania; They explored the consumption of organic, traditional and/or European eco-labeled products, local production and elements of sustainability. It has been emphasized that there is a direct relationship between the education level of consumers and their buying behavior of organic products, and environmental concerns are taken into account. In the study, they concluded that consumers with medium and high income levels prefer organic foods.

Pham et al. (2019) in their work in Vietnam; evaluated the organic food purchasing behavior of young people. They investigated facilitating and hindering factors related to organic food purchase using structural equation modeling. As a result of the study, they concluded that environmental concerns and biospheric motives of consumers are not effective in their purchasing attitudes towards organic food. Because they stated that there is a lack of knowledge of young people about how organic foods benefit the environment and that this should be eliminated.

Lauretti and Benedetti (2018) investigated the environmentally friendly purchasing behavior of consumers in Italy. Based on the random slope model in their work; focused on individuals' behaviors towards environmental concerns and purchasing attitudes. Those who are likely to
purchase organic products on a daily basis; They concluded that they are conscious consumers who are knowledgeable about animal welfare, soil pollution and deforestation.

Wee et al. (2014) investigated consumers' perceptions of organic foods, their purchase intentions and their actual purchasing behaviors in their study conducted in Malaysia. In their studies, in which they benefited from the Planned Behavior Theory, surveys were conducted specifically for consumers in supermarkets. The first of the findings is that the intention to buy organic foods has increased recently. In increasing the purchase intention; They concluded that environmental factors, animal welfare, healthy life perception and safety factor are important.

4. Research Methodology

This study is a descriptive research. Descriptive studies; It is used to research who the customers are, where they collect information for shopping purposes, which brands they prefer and why (Burns & Bush, 2015). In the study, it was aimed to evaluate the effects of consumers' awareness about environmental problems on their purchasing behavior for organic products: to investigate the regulatory role of consumers’ income levels.

4.1. Purpose of the Research

Purpose of the study; Evaluation of the effects of consumers' awareness about environmental problems on their purchasing behavior towards organic products: An investigation of the regulatory role of consumers' income levels. For this purpose, the effects of consumers' awareness of environmental problems on their purchasing behavior towards organic products were determined by the survey method, the attitudes of the participants with different age groups, different occupations and education levels.

4.2. Research Population and Sample

The research universe was determined as organic food consumers. In order to reach the sample that will reflect the characteristics of this universe, organic food consumers that can be accessed by the questionnaires over social networks were selected. In the study, sampling was carried out by using the Simple Random Sampling Method.

4.3. Research Method

Questionnaire method was used as data collection tool in the study. The relevant literature was used in the selection of the questions in the survey. The questions of the food purchasing criterion dimension and the exploratory purchasing behavior tendency (EBBT) dimension were adapted from Chryssohoidis & Krystallis (2005). Awareness dimension about environmental problems was adapted from Chryssohoidis (2000). Likert scale was used to rate the survey questions.

The data obtained in the research were analyzed using SPSS 25.0 for Windows (Statistical Package for Social Sciences), SPSS Process and G-Power programs. Frequency analysis was performed for grouped (categorical) variables in the study. In frequency analysis, the sample size (n) and percentage (%) values of the variables are given.

While testing the hypotheses, income level from demographic characteristics was re-categorized as high and low income. While deciding on the grouping categories, Annual Average Household Disposable Income announced by TUIK was taken as basis. (https://data.tuik.gov.tr/Bulten ).

The Shapiro-Wilk test was used to determine whether the data were normally distributed, and the homogeneity of the variances was examined using the Levene test. As a result of the analysis, it was determined that all of the data came from the Normal distribution family and the variances were homogeneous.
In the evaluation of the data meeting the parametric test conditions; Independent Samples t-test was used to compare numerical data between two independent groups, and the One-Way Anova test was used for more than two independent groups.

While testing the hypotheses of the research; regulatory effect was tested with Hayes' moderator effect model (Hayes, 2013).

In addition, Binary Logistics Model was created to determine which factors increase awareness of environmental problems and to what extent.

Cronbach's Alpha Reliability Analysis was conducted to measure the consistency of the answers given to the previously studied exploratory buying behavior tendency and environmental awareness scales. In the study, Cronbach's Alpha reliability values were determined as 0.838 for exploratory buying behavior tendency and 0.911 for awareness of environmental problems. Thus, it was decided that the scales had good and excellent reliability (Baker, 1991; Cronbach, 1951).

The power of the study was made through logistic regression analysis and it was determined as 83.72% with 5% Type 1 error. The statistical power criterion, which is aimed to be found above 80% in the studies, was achieved with the study in question (Hinton, 2007).

While interpreting the analysis results, the error was kept at 0.05 and 0.01 levels, so the decisions were made at 95% and 99% confidence levels.

4.4. Research Findings

Reliability Analysis Results of the Scale of Purchasing Behavior for Organic Products

Within the scope of the research, the reliability analysis findings of the Purchasing Behavior Scale for Organic Products, which consists of two sub-factors, are given in Table 1. The mean values, standard deviations, item-total correlations and Cronbach's Alpha values that would be obtained if the item was deleted from the scale were calculated in the table. The relevant results are described in the table below.

<table>
<thead>
<tr>
<th>Reliability Analysis Findings</th>
<th>Expressions</th>
<th>Average</th>
<th>Standard Deviation</th>
<th>Item Total Correlations</th>
<th>If the item is deleted from the scale Cronbach Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exploratory Buying Behavior Tendency</strong></td>
<td>I prefer to buy food from stores near my house.</td>
<td>4.010</td>
<td>0.923</td>
<td>0.445</td>
<td>0.831</td>
</tr>
<tr>
<td></td>
<td>I prefer to review a variety of food products before my final choice.</td>
<td>3.957</td>
<td>0.842</td>
<td>0.625</td>
<td>0.815</td>
</tr>
<tr>
<td></td>
<td>I visit different food outlets before my final choice.</td>
<td>3.680</td>
<td>0.952</td>
<td>0.606</td>
<td>0.816</td>
</tr>
<tr>
<td></td>
<td>I often buy random food.</td>
<td>3.183</td>
<td>0.958</td>
<td>0.176</td>
<td>0.856</td>
</tr>
<tr>
<td></td>
<td>I am very demanding on the food products I buy.</td>
<td>3.550</td>
<td>0.915</td>
<td>0.627</td>
<td>0.814</td>
</tr>
<tr>
<td></td>
<td>I consider many things before making my final choice.</td>
<td>3.926</td>
<td>0.744</td>
<td>0.714</td>
<td>0.810</td>
</tr>
<tr>
<td><strong>Environmental Issues</strong></td>
<td>I am willing to spend a lot of time buying food.</td>
<td>3.556</td>
<td>0.722</td>
<td>0.544</td>
<td>0.822</td>
</tr>
<tr>
<td></td>
<td>I prefer to consult the seller before my final choice.</td>
<td>3.586</td>
<td>0.665</td>
<td>0.601</td>
<td>0.816</td>
</tr>
<tr>
<td></td>
<td>I read various articles and other materials about food for information.</td>
<td>3.423</td>
<td>0.975</td>
<td>0.553</td>
<td>0.821</td>
</tr>
<tr>
<td></td>
<td>I consider other people's opinions before making my choice.</td>
<td>3.676</td>
<td>0.981</td>
<td>0.507</td>
<td>0.825</td>
</tr>
<tr>
<td></td>
<td>I know a lot about the acid rain problem.</td>
<td>3.233</td>
<td>1.072</td>
<td>0.738</td>
<td>0.897</td>
</tr>
<tr>
<td></td>
<td>I know a lot about the greenhouse effect.</td>
<td>3.413</td>
<td>1.015</td>
<td>0.736</td>
<td>0.898</td>
</tr>
<tr>
<td></td>
<td>I know a lot about agricultural water pollution and chemicals.</td>
<td>3.597</td>
<td>1.037</td>
<td>0.706</td>
<td>0.901</td>
</tr>
</tbody>
</table>
Environmental Issues

The Cronbach Alpha was calculated as 0.875 for the Purchase Behavior Scale for Organic Products applied in the study. Since the Cronbach Alpha coefficient was greater than 0.80, it was decided that the scale had "good" reliability.

In the scale of Purchasing Behavior towards Organic Products; The mean, standard deviation values, inter-item relations, additiveness of the test and Cronbach Alpha values of the sub-dimensions of exploratory buying behavior tendency and awareness about environmental problems are explained in Table 2.

Table 2. Reliability analysis findings for subscales of purchasing behavior for organic products

<table>
<thead>
<tr>
<th>Scales</th>
<th>Average</th>
<th>Standard Deviation</th>
<th>Cronbach Alpha</th>
<th>Relationship Between Substances</th>
<th>Additiveness of the Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exploratory Buying Behavior Tendency</td>
<td>3.655</td>
<td>0.595</td>
<td>0.838</td>
<td>F=34.69; p=0.0001*</td>
<td>F=3.039; p=0.081</td>
</tr>
<tr>
<td>Hotelling T²</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Issues</td>
<td>3.713</td>
<td>0.786</td>
<td>0.911</td>
<td>F=11.26; p=0.0001*</td>
<td>F=0.045; p=0.832</td>
</tr>
<tr>
<td>Hotelling T²</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The reliability analysis results of the sub-scales of Purchasing Behavior for Organic Products are as follows:

Cronbach's Alpha value for the Exploratory Buying Behavior Tendency scale; It was determined as 0.838. The reliability of the scale was determined as “good” in the literature scale. It was determined that the items of the scale were homogeneous and related to each other, and the test was summable (F=34.69, p=0.0001<0.05; F=3.039, p=0.081>0.05). Hotelling’s T-Squared Test was conducted to determine whether the test design was appropriate in terms of reliability analysis applications of the exploratory purchasing behavior tendency scale, and the model was found to be in an appropriate structure according to the test results (F=29.615, p=0.0001<0.05).

Cronbach's Alpha value of Environmental Issues Awareness scale; It was determined as 0.911 and the reliability level of the scale was determined as “excellent”. It was found that the items forming the Environmental Problems Awareness scale were homogeneous and related to each other (F=11.26, p=0.0001<0.05). It was also determined that the test was collectible (F=0.045, p=0.832>0.05). It was also determined that the test design of the Environmental Issues Awareness scale was appropriate in terms of Reliability Analysis applications (F=9.892, p=0.0001<0.05).

Demographic Characteristics of Participants

The descriptive characteristics of the participants in the study, in which the exploratory buying behavior tendency and environmental problems factors of the Organic Product Purchasing Behavior scale were investigated, are as explained in Table 3 below. The information obtained is as follows:
55.3% of the participants in the study were women, and 44.7% were men. It was determined that 69.3% of the people in the study were between the ages of 19-38 and 23.3% were between the ages of 39-58. In addition, 3.7% of the participants were 59 years old and older, while 3.7% of them were 18 years old or younger. While 65.7% of the people in the study reported that they were single, 34.3% of them stated that they were married.

It was determined that 14.0% of the participants within the scope of the study were primary school graduates, while 45.7% graduated from associate degree, 22.3% undergraduate and 18.0% graduate programs.

It was observed that 51.7% of the individuals in the study had an income level of 4000 TL and below, while 27.0% of them were between 4001-10000 TL. It has been determined that 21.3% of the participants have an income higher than 10001 TL.

While 49.3% of the people are students, 25.0% are self-employed, 16.3% are civil servants, 5.7% are workers and 3.7% are housewives.

**Table 3.** Demographic characteristics of individuals

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Individuals (n:300)</th>
<th>S</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>134</td>
<td>44.7</td>
<td></td>
</tr>
<tr>
<td>Woman</td>
<td>166</td>
<td>55.3</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 and younger</td>
<td>11</td>
<td>3.7</td>
<td></td>
</tr>
<tr>
<td>19 – 38 age difference</td>
<td>208</td>
<td>69.3</td>
<td></td>
</tr>
<tr>
<td>39 – 58 age difference</td>
<td>70</td>
<td>23.3</td>
<td></td>
</tr>
<tr>
<td>59 and above</td>
<td>11</td>
<td>3.7</td>
<td></td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>103</td>
<td>34.3</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>197</td>
<td>65.7</td>
<td></td>
</tr>
<tr>
<td><strong>Educational Status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Education</td>
<td>42</td>
<td>14.0</td>
<td></td>
</tr>
<tr>
<td>Associate Degree</td>
<td>137</td>
<td>45.7</td>
<td></td>
</tr>
<tr>
<td>Licence</td>
<td>67</td>
<td>22.3</td>
<td></td>
</tr>
<tr>
<td>Postgraduate</td>
<td>54</td>
<td>18.0</td>
<td></td>
</tr>
<tr>
<td><strong>Income Rate</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4000 ₺ and below</td>
<td>155</td>
<td>51.7</td>
<td></td>
</tr>
<tr>
<td>4001 – 10000 ₺ between</td>
<td>81</td>
<td>27.0</td>
<td></td>
</tr>
<tr>
<td>10001 ₺ and over</td>
<td>64</td>
<td>21.3</td>
<td></td>
</tr>
<tr>
<td><strong>Job</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housewife</td>
<td>11</td>
<td>3.7</td>
<td></td>
</tr>
<tr>
<td>Self-employment</td>
<td>75</td>
<td>25.0</td>
<td></td>
</tr>
<tr>
<td>Officer</td>
<td>49</td>
<td>16.3</td>
<td></td>
</tr>
<tr>
<td>Employee</td>
<td>17</td>
<td>5.7</td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>148</td>
<td>49.3</td>
<td></td>
</tr>
</tbody>
</table>

**Testing Hypotheses**

In this section, the researched hypotheses of the purchasing behavior scale for organic products are tested. In the research, the relationship between purchasing behavior scale for organic products, exploratory buying behavior tendency and awareness of environmental problems with some demographic data were investigated. In this direction, the results of the statistical analysis of the study are reported with the following tables.

Differences in Environmental Issues Awareness and Exploratory Purchasing Behavior Tendency Compared to Organic Food Purchasing
Findings on Environmental Issues awareness and Exploratory Purchasing Behavior Tendency and Organic Food Purchasing are explained in Table 4 below. The results obtained are as follows:

While the environmental awareness scores of the people who buy organic products were determined as $3.769 \pm 0.820$, the mean value of those who did not buy organic food was determined as $3.431 \pm 0.817$. Environmental problems of people who buy organic products were found to be statistically significantly higher than those who did not have awareness ($p$-value=$0.005<0.05$).

While the exploratory purchasing behavior tendency scores of people who buy organic products within the scope of the research were observed as $3.649 \pm 0.568$, the mean score of those who did not buy organic products was determined as $3.197 \pm 0.905$. The exploratory purchasing behavior tendencies of people who buy organic products were found to be statistically significantly higher than those who did not prefer organic products ($p$-value=$<0.000<0.05$).

Developed within the scope of the study;

“H1a: One's awareness of environmental problems is higher in those who buy organic products.” and

“H1b: One's propensity for exploratory buying behavior is higher in those who buy organic products.” Hypotheses could not be rejected.

**Table 4.** Differences in environmental awareness awareness and exploratory purchasing behavior tendency compared to organic food purchase

<table>
<thead>
<tr>
<th>Group</th>
<th>Organic Food Intake</th>
<th>Sample size (n)</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental Issues Awareness</strong></td>
<td>Not Buying Organic Food</td>
<td>59</td>
<td>3.431</td>
<td>0.817</td>
<td>-</td>
<td>0.005 *</td>
</tr>
<tr>
<td></td>
<td>Buying Organic Food</td>
<td>241</td>
<td>3.769</td>
<td>0.820</td>
<td>2.812</td>
<td>*</td>
</tr>
<tr>
<td><strong>Exploratory Buying Behavior Tendency</strong></td>
<td>Not Buying Organic Food</td>
<td>59</td>
<td>3.197</td>
<td>0.905</td>
<td>-</td>
<td>&lt;0.00</td>
</tr>
<tr>
<td></td>
<td>Buying Organic Food</td>
<td>241</td>
<td>3.649</td>
<td>0.568</td>
<td>4.712</td>
<td>*</td>
</tr>
</tbody>
</table>

Pairwise comparisons were made with the Independent Sample T-test. *$\alpha=0.05$

**Differences in Environmental Issues Awareness and Exploratory Purchasing Behavior by Frequency of Organic Food Purchases**

The findings regarding the awareness of Environmental Problems, Exploratory Purchasing Behavior Tendency and Organic Food Purchase Frequency are as summarized in Table 5. Here are the results:

The environmental awareness scores of people who buy organic food at least once a week were determined as $3.901 \pm 0.794$, while the average value of those who buy organic food at most once a month was determined as $3.586 \pm 0.821$. It was determined that people who purchase organic products more frequently are statistically significantly higher than those who are less aware of environmental problems ($p$-value=$0.001<0.05$).

In the study, the exploratory purchasing behavior tendency scores of people who buy organic products at least once a week were observed as $3.679 \pm 0.608$, while the mean score of those who purchased organic products at most once a month was determined as $3.487 \pm 0.691$. The exploratory purchasing behavior tendencies of people who purchase organic products every...
week were observed to be statistically significantly higher than those who prefer organic products at most once a month (p-value=0.014<0.05).

Developed within the scope of the study;

“H2a: One's awareness of environmental issues is higher in those who buy organic products more often.” and

“H2b: One's propensity for exploratory buying behavior is higher in those who buy organic products more often.” Hypotheses could not be rejected.

**Table 5.** Differences in environmental awareness awareness and exploratory purchasing behavior tendency according to organic food purchase frequency

<table>
<thead>
<tr>
<th>Group</th>
<th>Organic Food Intake Frequency</th>
<th>Sample size (n)</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental Issues Awareness</strong></td>
<td>At least once a week</td>
<td>109</td>
<td>3.901</td>
<td>0.794</td>
<td>3.211</td>
<td>0.001*</td>
</tr>
<tr>
<td></td>
<td>Once a month at most</td>
<td>191</td>
<td>3.586</td>
<td>0.821</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Exploratory Buying Behavior Tendency</strong></td>
<td>At least once a week</td>
<td>109</td>
<td>3.679</td>
<td>0.608</td>
<td>2.480</td>
<td>0.014*</td>
</tr>
<tr>
<td></td>
<td>Once a month at most</td>
<td>191</td>
<td>3.487</td>
<td>0.691</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pairwise comparisons were made with the Independent Sample T-test. *α=0.05

**Differences in Environmental Problems Awareness and Exploratory Purchasing Behavior Tendency by Educational Levels**

The findings regarding the differences in Environmental Problems Awareness and Exploratory Purchasing Behavior Tendency according to the education level of the individual are as summarized in Table 6. Here are the results:

While the environmental awareness scores of the people in the study with associate degree and lower education level were determined as 3.569 ± 0.813, the mean value of those who graduated from undergraduate and higher education programs was determined as 3.904 ± 0.813. The awareness of environmental problems of people with higher education level was determined to be statistically significantly higher than those with lower education level (p-value<0.000<0.05).

While the exploratory purchasing behavior tendency scores of the participants with associate degree and lower education level were observed as 3.461 ± 0.667, the mean score of those with undergraduate and higher education was determined as 3.692 ± 0.650. Exploratory buying behavior tendencies were observed to be statistically significantly higher in people with higher education level than those with lower education level (p-value=0.003<0.05).

Developed within the scope of the study;

“H3a: One's awareness of environmental problems is greater in people with a higher education level.” and

“H3b: One's propensity for exploratory buying behavior is higher in people with higher education levels.” Hypotheses could not be rejected.

**Table 6.** Differences in environmental awareness awareness and exploratory purchasing behavior tendency according to education level

<table>
<thead>
<tr>
<th>Group</th>
<th>Educational Level</th>
<th>Sample size (n)</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental Issues Awareness</strong></td>
<td>Associate degree and lower</td>
<td>179</td>
<td>3.569</td>
<td>0.813</td>
<td>3.578</td>
<td>&lt;0.00</td>
</tr>
<tr>
<td></td>
<td>Bachelor and above</td>
<td>121</td>
<td>3.904</td>
<td>0.813</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

103
The Regulatory Effect of Income Level on the Effect of Exploratory Purchasing Behavior Tendency on Environmental Problems

In the study, the moderator effect of the income level factor on the effect of exploratory buying behavior tendency on environmental problems was examined by Hayes Model 1 modulatory variable regression analysis. The results are described in Table 7. According to the findings:

“Awareness of Environmental Problems = 1.519 + 0.685 Inventive Purchasing Behavior Tendency + 0.925 High Income + 0.283 Inventive Purchasing Behavior Tendency * Income Level” model was created.

The increase in people's exploratory buying behavior increases their awareness of environmental problems by 68.5%. High-income people have a 92.5% higher environmental awareness compared to low-income people. In the model, the effect of exploratory buying behavior tendency and income level interaction on awareness of environmental problems is also significant (β=0.283, p<0.05).

Accordingly, it was determined that the income level factor played a moderator role in the relationship between exploratory buying behavior tendency and awareness of environmental problems. In addition, as the exploratory buying behavior tendency increases; It was determined that the awareness of environmental problems of people with high income increased by 68.5%, while those with low income level increased by 19.2%. Both effect values were statistically significant (p<0.05).

In line with the results;

“H4: Income level factor has a moderator role in the effect of exploratory buying behavior tendency on awareness of environmental problems.” The hypothesis could not be rejected.

Table 7. The regulatory effect of gender on the relationship between awareness of environmental issues and attitude and participation in the organic purchasing process

<table>
<thead>
<tr>
<th>Environmental Issues Awareness</th>
<th>β (95 % GA)</th>
<th>t</th>
<th>F</th>
<th>R²</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.519*</td>
<td>4.118</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exploratory Buying Behavior Tendency</td>
<td>0.685 (0.284 – 0.889)</td>
<td>5.637</td>
<td>16.331</td>
<td>0.0001**</td>
<td></td>
</tr>
<tr>
<td>Income Level (High Income)</td>
<td>0.925 (0.112 – 1.712)</td>
<td>2.169</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exploratory Buying Behavior Tendency * Income Level</td>
<td>0.283* (0.018 – 0.577)</td>
<td>1.895</td>
<td></td>
<td>0.476</td>
<td></td>
</tr>
<tr>
<td>High Income</td>
<td>0.685 (0.381 – 0.764)</td>
<td>9.725</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Income</td>
<td>0.192* (0.0911 – 0.513)</td>
<td>2.916</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Environmental Issues Awareness scale; Its predictors are summarized with confidence intervals and statistical significance values. *p<0.05,**p<0.001

Factors Affecting Awareness of Environmental Issues

Factors that increase people's Awareness of Environmental Problems were investigated with the Logistic Regression model approach. With this method, the extent to which some parameters that have statistically significant effects on awareness of environmental problems
and the level of meaning they create in the model are examined. The results obtained are summarized in Table 8; The results are as described below.

Within the scope of the study, awareness of environmental problems of people with high income level is 1,945 times higher than people with low income level. As the income level rises, awareness of environmental problems also increases. The effect of income level on awareness of environmental problems is also statistically significant (p-value=0.024<0.05).

Participants in the study with undergraduate and higher education are 2,516 times more aware of environmental problems compared to participants with associate degree and lower education. Having a bachelor's degree or higher education has a statistically significant effect on awareness of environmental problems (p=0.004<0.05).

The awareness of environmental problems of people who buy organic food is 1.966 times higher than those who do not buy organic food. The effect of purchasing organic food on environmental problems is also statistically significant (p=0.040<0.05).

The correct classification estimate in the model was determined as 79.3%, and the model was statistically significant (p-value<0.00<0.05). The Nagelkerke R2 value of the model was calculated as 65.0%.

In line with the findings obtained;

“Awareness of Environmental Issues (Positive) = 1.784 + 2,516 undergraduate and higher education level + 1,966 organic food purchases + 1,945 high income level + €” model was created. In summary:

While the increase in education level increased the awareness of environmental problems by 2.516 times, it was determined that the increase in the purchase of organic food increased 1.966 times. In addition, having a high income level increases the awareness of environmental problems by 1,945 times. Some parameters that were not taken into account constitute 38.8% of the model.

Developed in line with the results;

“H5: Educational status, income level and organic food purchase have an impact on awareness of environmental problems.” The hypothesis could not be rejected.

Table 8: Awareness of environmental issues logistic regression analysis

<table>
<thead>
<tr>
<th></th>
<th>Odds ratio</th>
<th>β</th>
<th>SE</th>
<th>% 95 CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Constant</strong></td>
<td>1.784</td>
<td>0.579</td>
<td>0.303</td>
<td>0.303</td>
<td>0.046*</td>
</tr>
<tr>
<td><strong>Income Level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Income</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Income</td>
<td>1.945</td>
<td>0.665</td>
<td>0.295</td>
<td>0.303</td>
<td>0.024*</td>
</tr>
<tr>
<td><strong>Educational Level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associate degree and lower</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelor and above</td>
<td>2.516</td>
<td>0.923</td>
<td>0.324</td>
<td>0.303</td>
<td>0.004*</td>
</tr>
<tr>
<td><strong>Organic Food Intake</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Buying Organic Food</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buying Organic Food</td>
<td>1.966</td>
<td>0.676</td>
<td>0.328</td>
<td>0.303</td>
<td>0.040*</td>
</tr>
<tr>
<td><strong>Nagelkerke R²</strong></td>
<td>% 61.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Model p-value</strong></td>
<td>&lt; 0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Conclusion
As a result of the Logistic Regression Analysis conducted in this research, in which the effects of consumers’ awareness of environmental problems on their purchasing behavior towards organic products were tried to be evaluated, it was concluded that the parameters affecting awareness in environmental problems were effective in the purchasing process at a rate of 61.2%. Of course, from this point of view, it is seen that different parameters can be added to awareness in environmental problems. Because there are different parameters that affect 38.8% of the model. In this study, it is one of the results that consumers who prefer organic products have a high awareness of environmental issues, and moreover, they exhibit exploratory buying behavior while purchasing organic products. In fact, as the purchase frequency of organic food consumers increases, their awareness of environmental themes also increases.

In addition, the level of awareness on environmental problems develops in direct proportion to the level of education. Consumers with a high level of education include features such as healthy, environmental, green or organic products among their purchasing criteria. However, as it is known, components such as the production, packaging and distribution of organic foods cost higher than non-organic products. Therefore, the income level of consumers is important on the purchase of organic foods, on the exploratory purchasing tendency. It has been concluded that the organic product purchasing behavior of those with a high income level is high, and at the same time, the income level has a regulatory role in the effect of exploratory purchasing behavior on awareness of environmental problems.

It is hoped that the study will lead the way in future studies, especially in terms of sustainability. Because it is expected that businesses will have more environmental concerns in the products they produce for the target market. The most important factor in the formation of this expectation is the high rate of organic food purchase and the frequency of purchases of consumers with high education levels. One of the other important factors is that individuals with both education and income levels exhibit exploratory buying behavior in organic product purchasing behavior and have a high awareness of environmental problems.

As a result of this study, the most important advice to businesses is to consider environmental problems in food production and marketing. A sustainable world can be achieved by urgent consideration of environmental issues and determining the necessary strategies on these issues.

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Bibliometric Profile of Articles Published in TR Index on Slow City (Citta-Slow)
Betül Garda¹

Abstract
Because of cities interact with various external factors as a result of globalization in rapidly changing and developing societies have begun to lose their own identity over time and have begun to resemble each other in many respects, especially in architecture and culture. Against the negative consequences of this uniformity in the tourism sector, some alternative models and concepts have begun to be discussed and applied within the scope of city tourism. One of the prominent models in these discussions is the 'Slow City' (Citta-slow) model, which is a sustainable city network blended with environmental policies, increasing the quality of life. The aim of this research, which is carried out in line with the said importance, is to examine the scientific works on the subject of slow city in line with certain parameters. For this purpose, the articles in the journals in the field of Social Sciences scanned in the TR index in Turkey were searched with the keyword 'Slow City' and analyzed by bibliometric analysis method. In the study, 25 articles accessed on the basis of 2014 and 2021 were included in the analysis. In the studies included in the research, certain parameters were discussed in terms of compliance with Pareto Law (80/20 rule), Price Law and Lotka Law. It is thought that the study will contribute to the literature in terms of determining the current situation on the slow city and guiding future studies.

Keywords: Bibliometric analysis, Slow City, Citta-Slow, TR index

1. Introduction
The fact that tourism is one of the most important economic and social phenomena of the world is now indisputably and clearly widely accepted in the world literature. On the other hand, the rate of change, amount, types, wide-ranging effects, and results of tourism activities have brought many controversial issues and different approaches to the agenda. In this context, one of the issues that are discussed and tried to be solved today is the fact that touristic areas resemble each other over time.

As a result of the similarity, monotony, and the emergence of various undesirable negative effects of tourism areas in a certain period, it has caused a slowdown in their tourism activities. In this context, there is a decrease in the benefits obtained from tourism, especially in economic returns, and as a result, the perspective and support of the local people towards tourism has been negatively affected. With the emergence of undesirable negative effects of tourism activities, the monotony of activities and the loss of their attractiveness, one of the alternative tourism types that has emerged recently has been the Citta-slow model, which should be evaluated within the concept of sustainability. The success of the slow city concept as a sustainable tourism activity will vary depending on the support and perspective of the local people, as in almost all tourism activities.

The aim of this study is to examine the place and dimensions of the concept of slow city (Citta-slow) in academic studies with the bibliometric analysis method, which was developed as a solution to the affinity of space and product in the tourism industry.

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2. Literature Review

While most of the touristic destinations have their own unique differences, which are the elements of attraction at the beginning, the destinations start to lose their originality and competitiveness by becoming similar over time.

There are three important characteristics of local people residing in touristic destinations; firstly, local people are one of the main sources that enable tourism activities to emerge within the scope of cultural attractions, secondly, developments in the field of tourism cannot be successful without the support of local people, and thirdly, they are the most affected part from these activities.

Many studies show that the support of the local people is important for the development of a touristic area to be successful, and the support will vary depending on how the economic, social, cultural and environmental effects of tourism are perceived by the local people (Akova, 2006) (Boğan & Sarıışık, 2016) (Coşar, 2014) (Harril, 2004) (Sirakaya, Teye, & Sönmez, 2002). There are many studies on the economic, socio-cultural, and environmental effects of tourism, and these studies emphasize that the effects of tourism can be perceived as positive or negative by the local people (Andereck, Valentine, Knopf, & Vogt, 2005) (García, Vázquez, & Macías, 2015) (Gürsoy & Rutherford, 2004) (Sharma & Gürsoy, 2015).

Alternative approaches and concepts emerging in the field of tourism emerge, take shape, and then begin to be generally accepted for several reasons. Firstly, these approaches are starting to find a place for themselves in the field of tourism, with the evaluation of the behavior patterns that have already existed in the society over time within the scope of tourism organizations and activities. For example, people's formerly calm, original, and slower movement styles (eating, drinking, walking, etc.) are now finding a place as a tourism activity under the name of calm or slow city. Until today, visiting the mausoleums or the places where suffering and tragedies were experienced was included in the scope of sadness tourism in the tourism literature. The second is the change in the lifestyles/behaviors of societies and individuals in the face of the changing needs and demands of the society. The search for this change is related to the concepts and approaches that emerged with the application of new, especially technological applications to the field of tourism in line with the conditions of the day. For example, space tourism, e-tourism, which is used to evaluate the digital and virtual environment. The third one emerges from the mixture of the first two elements and has a mixed quality.

The foundations of the calm city approach lie in slow movement and slow food. The foundations of the slow movement were laid in 1980 with the Libera e Benemerita Associazione Amici del Barolo (Association of Free and Praised Friends of Barolo Wine) established in Bra city of Italy in 1980. It continued in 1986 when a group led by Carlo Petrini protested a McDonalds branch opened in the Piazza di Spagna square in Rome. The purpose of this protest is to prevent the deterioration of the aesthetics of the square and to reject the fast-food style of eating (Unal & Zavalsiz, 2016). The fast-food chain protested here is not a process itself, but the disappearance of traditional recipes, fresh, seasonal, organic, and local products and enjoyable eating habits. In other words, it is an alternative to globalization in the food and beverage culture (Sağır, 2017).

Following this, the 'Slow Food Association' was established in the city of Barolo, Italy in 1989 under the leadership of Carlo Petrini, the Slow Food World Congress was held in 1997 and the philosophy of slowness was discussed. The Cittaslow (Slow City) network was established, covering the city of Greve in Chianti, Orvieto, Bra and Positano. The first manifesto about Slow City was published in the same year (Unal & Zavalsiz, 2016).
When the principles on which slow cities are based are taken as a whole, they aim to increase and protect the quality of life of individuals (local people and visitors) (Tosun, 2013). In short, the slow city is a concept that has been put forward as an alternative to today's modern city concept in order to enable the local people to continue their daily life in a certain comfort, away from environmental pollution, in an environment whose nature and culture are undisturbed (Coşar, 2014).

3. Research Methodology

The aim of the research is to perform the bibliometric analysis of the articles examining the concept of Slow City published in the journals scanned in the TR index between 2014-2021. For this purpose, articles published in journals scanned in TR index in 2014 and 2021 were examined. In the study, 41 articles published in different journals were handled with the bibliometric method. The evaluation focused on the following issues:

- Number of articles per author in articles
- Distribution of the institutions to which the authors are affiliated
- Most prolific writers
- Distribution of authors' title
- Multi-authorship status
- Broadcast language distribution
- The magazine with the most publications on the subject of Slow City
- Compliance of articles with Pareto law (80/20 rule), Price's law and Lotka's law.

3.1. Population and Sample of the Research

The research population consists of articles that examine the subject of Slow City in the journals scanned in the TR index. The slow city model, which has emerged since 1980 with the emergence of undesirable negative effects of tourism activities, the monotony of activities and the loss of their attractiveness, is an important concept in terms of the efficiency and sustainability of the industry. Since the slow city studies in the field of Social Sciences in the TR Index started in 2014, this year was taken as the basis for the study. Examining the studies on the slow city with the bibliometric method is important in terms of shedding light on future scientific studies and guiding the sector. In the study, data was collected by searching “TR Index” in the electronic environment. In this search, the years 2014 and 2021 and the Social Sciences field were selected. The data has been exported to Excel.

3.2. Research Method

As a research method, Bibliographic Analysis, which is a field of study based on counting, was preferred. Bibliometric analysis is based on the analysis of certain features of articles published in journals using various scientific methods. Bibliometric Analysis is a method used to show the progress of the journals and to reveal scientific developments by quantitatively evaluating the publications in the selected field (Ozel & Kozak, 2012, p. 716).

Tourism is one of the most important economic and social phenomena in the world, and it is now undisputedly and clearly accepted in the world literature. As in every industry, it is important to evaluate the current situation and sustainability of tourism in tourism. In this context, it is a necessity (Hall, 2011) to evaluate the contribution of researchers and publishers publishing in the field of tourism to the literature.
4. Findings of the Research

4.1. Authors’ Profiles

A total of 25 articles, 23 open to access and 2 closed to access, published in different journals, and scanned in the TR index between 2014-2021 were written by 46 authors. The number of articles per author is 0.54 articles. This shows that there is a multi-authorship situation in the publications. The most prolific authors are those who contribute at most two articles. These authors are Burhanettin Zengin, Elvetin Akman and Yeşim Çoşar. Three of the authors who contributed to the subject of Slow City in the journals scanned in the TR index contributed two articles each and 43 contributed one article.

The productivity of the authors is measured by different methods. One of them is the Pareto Law, which is known as the 80/20 rule. According to the Pareto Law, 80% of the total articles must be written by 20% of the total authors (Erbaşı, Cabi, Gümrah, & Hakses, 2017). Accordingly, 80% (20 articles) of 25 articles published in the reviewed journals should be written by 20% (9 authors) of 46 authors in total. In the evaluation, it was seen that only 34% of the published articles were written by 20% of the authors. In this case, the productivity of the authors does not comply with the 80/20 rule.

Lotka Law; states that 60% of all authors in a particular field should contribute with only one publication. 15% with two publications, and 7% with three publications (Erbaşı, Cabi, Gümrah, & Hakses, 2017). Accordingly, 96% (43 authors) of the authors whose articles were published contributed with one article, 4% (3 authors) with two articles, while there were no authors who contributed with three articles. The findings obtained in the study do not comply with the Lotka Law.

Price's Law asserts that the square root of the total number of authors in the articles wrote half of the total number of articles in the literature. Accordingly, the square root of 46 authors, that is, 6.7 authors, must have written half of 25 articles, that is, 12.5 articles. However, the most productive authors consist of two articles and three authors. In this context, 7 authors wrote 10 articles. These results do not comply with Price's Law.

4.2. Distribution of Authors by Academic Title

Figure 1. Distribution of authors by academic titles

The distribution of the authors according to their academic titles is given in Figure 1. In the figure, in addition to academic titles, the authors included in the other category are employees with titles such as inspector, specialist, teacher, manager, bank staff in different institutions, as well as doctoral students and graduate students in this category.
In Figure 1, the distribution according to titles is shown on the circle chart with percentages. The number of authors in the percentile is as follows, in order of title:

- 8 authors with 17% Professor title,
- 11 authors with the title of 24% Associate Professor,
- 11 authors with 24% Assistant Professor titles
- 4 authors with 9% PhD titles
- 5 authors with 11% Lecturer titles
- 7 authors named 15% other

### 4.3. Distribution of Authors by Institutions They Affiliate

In the evaluation made according to the institutions they are affiliated with; it is seen that the 46 authors who contributed to the slow city literature were included in 24 different institutions. Institutions that contributed the most with the authors: The four authors are from Selçuk University and Muğla Sıtkı Koçman University. The three authors are from Mersin University, Ondokuz Mayıs University, Tokat Gaziosmanpaşa University, Bursa Uludağ University and Süleyman Demirel University. The two authors are from Sakarya University, Kırklareli University and Batman University. Giresun, Dicle, Ağrı İbrahim Çeçen, Namık Kemal, Hacettepe, Caucasus, Sivas Cumhuriyet, İstanbul, Karadeniz Teknik, Gazi, Zonguldak Bülent Ecevit, Abant İzzet Baysal, Ege, Dokuz Eylül Universities contributed to the subject with 1 author. The findings are listed in Chart 1.

#### Chart 1. Distribution of authors by their affiliation

![Chart 1](chart1.png)

### 4.4. Journals Contributing to Slow City

In the search made on the search engine, it was determined that there were articles on Slow City published between 2014 and 2021 in 20 different journals scanned in the TR index. Of the 25 articles published on the subject of Slow City, 5 were published in the Turkish Journal of Tourism Research, 2 in the Journal of Management Sciences and 2 in the Journal of Travel and Hotel Management. The subject of Slow City was published with an article in other journals seen in Table 2. It has been determined that the journal that publishes the most articles on the subject of Slow City is the Turkish Tourism Research Journal.
Chart 2. Journals contributing to slow city

![Chart showing journals contributing to slow city]

4.5. Distribution of Co-Authorization in Articles

Considering the co-authorship of the articles contributing to the field of tourism about Slow City, 9 (36%) of the 25 articles are single-authored, 12 (48%) double-authored, 3 (12%) three-authored, and 1 (4%) four-authored. In Table 3, it is seen that the rate excluding single-authored publications is 64% in total. This situation shows that academicians carry out joint studies and try to contribute more to the field of tourism with their studies on Slow City.

Chart 3. Distribution of co-authorization in articles

![Chart showing distribution of co-authorization in articles]

4.6. Distribution of Publication Language in Articles

When the distribution of publication language in the articles was examined, 24 of the 25 articles were written in Turkish and 1 in English. When Chart 4 is examined, 96% of the publications were published in Turkish and 4% in English. These rates show that Turkish is mostly used in publications.
5. Conclusion

In this study, bibliometric analysis of 25 articles on Slow City in the journals scanned in TR index in Turkey was carried out in order to determine the change in tourism articles on Slow City. 96% of the articles were written in Turkish and 4% in English. Approximately one-third of articles are single-author publications. Others are multi-authored. As a result of the fact that 85% of the authors have academic titles and the rate of co-authorship is high, it has been concluded that very important studies have emerged in the literature of Slow City. The journal that publishes the most articles on Slow City is the Turkish Tourism Research Journal. In addition, it was concluded that the academicians working at Selçuk University and Muğla Sıtkı Koçman University contributed the most to the study.

It is an important limitation of this research that the articles examined in the study are limited to the subject of Slow City. In general, bibliometric studies, in which other studies on tourism are included in the scope of the research, can provide more in-depth information. In addition, the inclusion of only the articles published in the journals scanned in TR Index caused the articles published in other international journals to be excluded from the scope of the research. In future studies, research can be conducted on research questions such as the average number of citations of articles on Slow City and the distribution of the number of citations on a yearly basis. In addition, it is thought that it will be useful to repeat similar studies in the following years, as it will provide the opportunity to make comparisons.

References


Determining the Factors Affecting the Capital Structures of Commercial Banks in the Turkish Banking Sector

Nuray İslatince

Abstract

Because banks play a different role in the financial system than non-financial institutions, capital structure's determinants significantly impact decisions. Banks are expected to maintain more than minimum capital requirements. They do this to prevent various risks, such as bankruptcy, which may affect their activities. This study aimed to determine the factors affecting the capital structures of deposit banks operating in the Turkish banking sector. The study analyzed the banking sector data for the 2013-2021 period. In data analysis, correlation analysis was used to examine the relationship between capital adequacy ratio (CAR) and micro-macro indicators, and regression analysis was applied to examine their relationships at multiple levels. The capital adequacy ratio is the dependent variable representing commercial banks' financial stability. As independent variables, return on assets, liquidity risk, size, and non-performing loans, accepted to affect the capital structure in the literature, are taken as micro factors. In contrast, economic growth, inflation, exchange rate, and interest rate are macro factors. This study sought to determine the relationship between macro and micro economic parameters affecting the capital adequacy ratio.

Keywords: capital structure, Turkish banking sector, regression analysis, commercial banks

1. Introduction

Our rapidly globalizing world has witnessed many crises in the financial system in recent years. Therefore, banks' capital adequacy in developed and developing countries has become much more critical. Considering the need to identify banks' capital structures according to their risk profiles, it is important to determine whether the current capitals of banks can meet their credit, market, and other risk requirements. In the operational process, the capital adequacy ratio is an important indicator in measuring banks' risk levels. It is a necessity for banks to keep their capital adequacy ratios under the standards to hedge against the shocks they may face and to protect their customers. In summary, the capital adequacy ratio acts as a safety valve against risks. Following the 2008 crisis, Turkish banks, with the macroprudential measures taken by the Banking Regulation and Supervision Agency (BRSA), continued their activities with capital adequacy ratios higher than the legally determined minimum CAR of 8% and the target capital ratio of 12%. Increased performance in risk management, a balanced distribution of risks, adequate equity capital, and sound financial structures have prevented possible crises in the banking sector. This study takes as a dependent variable the capital adequacy ratio as an indicator of banks' financial stability and aims to investigate its relationship with the internal factors of banks and macroeconomic factors. The study used regression analysis to examine their relationships at multiple levels.

2. Literature Review

Jouida and Hallara (2015) aimed to shed light on the field of bank capital structure and regulatory capital. They used the panel dataset of bank leverage and capital adequacy ratio of French commercial banks, cooperative banks, investment banks, and saving banks covering the period of 2002 to 2012. They found that capital regulations significantly affected banks' capital structures. To analyze the effect of capital regulation, the authors employed the capital adequacy ratio as an explanatory variable. They concluded that Risk-Weighted Assets

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increased, which may stem from internal model improvements for banks, whereas the number of unprofitable, dividend-paying banks decreased.

Aydın (2019) investigated the factors affecting the capital structure of deposit banks in the Turkish banking sector for the 2006:Q1-2016:Q3 period. In the study, the fixed-effect panel data estimation results revealed that bank-specific variables such as bank size, return on assets, non-performing loans, liquidity risk, and deposit level are factors that affect banks' capital adequacy ratio.

Uçarkaya et al. (2021) investigated the post-global financial crisis period and tried to identify the factors affecting the capital adequacy ratios of private and foreign-owned banks operating in the Turkish banking sector. Using quarterly data for the 2009Q1-2020Q3 period, the authors made model estimations using the panel data method. They found that the capital adequacy ratio negatively correlated with the loan ratio, alternative cost of capital, liquidity, and growth but positively and significantly correlated with the equity-to-assets ratio, size, inflation, and the sector's average capital adequacy ratio.

Raja Harun et al. (2020) stated that the determinants of capital structure in the banking system differed from non-financial firms since banks played different roles from others. They also explained that banks were required to hold more capital than the minimum capital requirement stipulated by regulators, noting that this was because banking tended to face various risks that might affect banking operations and lead to bankruptcy. The authors stated that the understanding of how banks choose their capital structure and the related theory was still underexplored in the literature on banking. Therefore, due to some arguments related to the theories, they aimed to discuss the capital structure from the banking perspective and investigated the ultimate factors to determine banks' capital structure.

Din et al. (2016) researched the cement sector companies' capital structure on the Karachi Stock Exchange. They used panel data to analyze the firms in the cement sector for the 2006-2011 period. They used profitability, tangibility, firm size, and growth as explanatory variables to explore their relationship with leverage. They found results indicating that profitability had a significant and negative correlation with leverage and supported the Pecking Order Theory (POT) assumptions.

AL-Mutairi and Naser (2015) sought to identify the determinants of capital structure in a sample of commercial banks listed on the Gulf Cooperation Council (GCC) stock markets. The authors collected data from GCC commercial banks for the period between 2001 and 2010 and found that profitability and liquidity affected banks' decisions about capital structure. Their major contribution to the relevant literature is the finding that most of the commercial banks' assets in GCC are financed by debts representing more than 80 percent of the banks' capital.

Gadanecz and Jayaram (…) pointed out that financial stability was difficult to define or measure due to the interdependence and complex interactions of different financial system elements. They argued that composite quantitative measures of financial system stability could enable policymakers and financial system participants better to monitor the degree of financial stability of the system, predict the sources and causes of financial stress to the system, and communicate more effectively the impact of such conditions. They concluded that, in theory, composite indicators of financial stability were better suited than individual variables for defining threshold or benchmark values to indicate the state of financial system stability. They argued that given the complex nature of the financial system and the existence of complex links between various sectors, the construction of a single aggregate measure of financial stability was a difficult task and pointed out that partial composite measures such as a banking stability index or a market liquidity index were employed in a number of financial stability reports (FSRs).
Okuyan (2013) revealed the factors affecting the capital adequacy ratios of Turkish banks. The author researched the quarterly data obtained from the financial statements of the 2002:Q04 – 2012Q1 period by panel methods and concluded that the capital adequacy ratio negatively correlated with risk, size, deposit ratio, and loan ratio but positively correlated with economic growth and return on assets.

Pastory et al. (2013) aimed to determine the relationship between capital structure and bank performance. Using multiple regression models, bank performance was regressed against the components of capital structure. They found a negative correlation between capital structure and bank performance, as their results indicated negative coefficients.

3. Banks' Capital Structure Decisions

Banks use capital to create liquidity and credit. A bank's capital structure consists of permanent short-term liabilities, equity capital, and long-term liabilities that it uses for financing. In other words, the capital structure is the sum of the securities a bank uses to finance its investments. Banks can base their target capital structure choices or decisions on several calculations. The most important of these calculations is the leverage ratio and debt-equity ratio. In addition, capital structure decisions include the determination of the average maturity of debt or, when necessary, what specific financial resources should be. Banks are the most critical intermediaries of the financial system, but they also operate with a business mindset. The best method to evaluate the activities of a bank in a certain period and its performance for its targets is to analyze the bank's balance sheet, which summarizes its assets and liabilities. Instead of their equity capital, banks prefer to use foreign resources as their main fund source. Banks have very high debt leverage. In other words, most banks’ funds consist of deposits and non-deposit loans. Banks collect the savings surplus from the system as a deposit and return it to the system as a loan. Banks generate income and profit through assets. Every resource that constitutes the capital structure has a cost. For this reason, bank managers should create a capital structure that will maximize the bank's value.

4. Conclusion

Due to its importance in the financial system, the concept of trust in the banking sector stands out. While performing their intermediary functions, banks encounter many risks, such as liquidity and credit risk. If risks are managed properly, it may be possible to survive in the system with minimum losses. For this reason, banks consider their existing capital as a safety valve. However, given their abundance in the sector, banks can sometimes cause economic crises or be most affected by crises. Because of these key roles of banks, regulators have set minimum adequacy ratios. For the Turkish banking sector, this rate was set by the BRSA in line with the Basel criteria, with at least 8% and 12% as the target rate. However, considering the previous studies in the literature, it can be said that the Turkish banking sector operates much above the determined rate. In this context, other factors may also be effective besides banks' preferences regarding their capital structures. Therefore, the findings obtained from analyzing the determinants of banks’ capital structures will be shared in the article.

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An Analysis to Determine the Relationship Between Micro-Variables Affecting the Level of Derivative Use in the Turkish Banking Sector

Nuray İslatince

Abstract
Especialy in recent years, banks, which are the most important actors in the financial system, have started to attach more importance to the use of derivatives, which has become more important with globalization, to protect themselves from problems such as interest rate risk, exchange rate risk, credit risk, and decrease in capital, or to manage their risks properly. This study has been carried out since banks have increased their use of derivatives in fund management. The present study aims to reveal the derivative market transactions and the dynamics of derivative product use in the banking sector and to determine the internal factors that affect the use of derivatives by banks. To this end, the study seeks to analyze the relationship between the variables affecting the derivative use of public, private, and foreign-owned deposit banks operating in the Turkish banking sector during and after the crisis in the 2008 – 2020 period. Descriptive statistics in the study are given as means and standard deviations. The Kolmogorov-Smirnov test determines conformity to the normal distribution.

Keywords: derivatives, banking sector, CAR, net interest margin, size, exchange rate risk

1. Introduction
Properly designed risk management is of increasing importance in developing contemporary economies. The risk factor is considered together with the expected income in any financial undertaking. With the financial sector's globalization and rapidly developing technologies, risk sharing and risk transfer are in front of financial institutions as a current issue. In other words, risk management has become critical for all financial institutions. As a solution to this problem, derivative instruments have started to be used as a contemporary tool in risk assessment. Derivatives play an important role in international activities. There is no limitation for capital movements in integrated markets that can bring together buyers and sellers, even if they are from different cultures or geographical locations. Capital is constantly in circulation in the international arena. This circulation risks fragility to the economies of countries as well as positive gains. In this context, due to the emerging economic crises and the problems created by the crises, the attention of regulators has been directed to the causes of the crises and what kind of measures can be taken to prevent them. The crises experienced in the world and our country have revealed how important risk management is and the necessity of evaluating it at the international level. While using derivatives to avoid risks has many beneficial consequences, uncontrolled use triggers the emergence and spread of crises. The use of derivatives by the banking sector in Turkey dates back to the 1970s. The floating exchange rate system, implemented since 1989, has caused financial risk problems. This situation has increased banks' interest in derivatives markets. Banks can be dealers, end users, or both in derivatives markets. Suppose a bank has assumed the role of an end-user. In that case, it can use derivatives to hedge against unexpected changes in interest rates, exchange rates, or commodity prices or to speculate about the future movements of these economic variables. While all user banks participate to some extent in the derivatives market as end-users, only the largest banks act as dealers by providing derivatives to non-financial firms and other banks in the over-the-counter (OTC) market.

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The recent increase in the use of derivatives by banks is directly proportional to the decrease in deposits collected to finance loans. Many studies have been carried out based on the idea that the widespread use of derivatives is the basis of modern banking understanding. Banks return the deposits they collect to the system as loans. The interest income to be obtained in this way helps banks achieve their growth targets. However, problems in loan payments or failure to fulfill obligations for deposits may cause banks to face credit risk. This results in banks' failure to meet their funding needs, which naturally leads to liquidity risk. One of the biggest risks banks face is the uncertainty in the future prices of financial assets. Increases in capital movements cause volatility in financial markets. This leads to uncertainty in the prices of financial assets. Banks preferred to take positions in derivatives markets to eliminate the risks that may arise due to prices or exchange rates. Derivatives have been shown as the biggest cause of the 2008 crisis experienced in our country. Many researchers have voiced this argument. Taking these as a starting point, the present study aims to determine the determinants of derivative use levels during and after the 2008 crisis and to investigate the relationship between them. To this end, the study will perform a regression analysis. Obtained findings will help us determine the variables affecting the derivative use of deposit banks operating in Turkey.

2. Literature Review

Shyu and Reichert (2002) examined the financial and regulatory factors affecting the scope of derivatives activity in twenty-five major international dealer banks from 1995–1997. The authors concluded that derivative activities directly correlated with the bank's capital ratio, asset size, maturity difference, and the size of the credit rating but were inversely proportional to bank profitability.

Infante et al. (2018) presented empirical evidence on the relationship between some bank balance sheet characteristics and Italian banks' use of derivatives. Despite using multivariate statistical tools, the study did not aim to show the main characteristics of derivative use by Italian banks or to identify causal links between the variables considered. Based on their observations of a very high concentration in the Italian derivatives market, the authors stated that market participation requires an adequate scale of activity with dedicated resources to manage contracts. They confirmed the hypothesis that economies of scale exist in the derivatives market. They concluded that the notional amount of contracts positively correlated with bank size.

Alam et al. (2021) aimed to identify the driving forces behind Pakistani banks' use of financial derivatives during 2011-2016. In evaluating the determinants, the authors performed a two-stage test; first, they used logit regression to test the drivers behind the use of derivatives in banks. Second, they used a Tobit model to analyze the factors to determine the extent of derivative use. They concluded that Pakistani banks use derivatives for risk management and speculative purposes as they are both customers and users of derivatives simultaneously. They identified value reductions where systematic risk is high, and managers try to generate non-operating income from speculative activities.

Yonga et al. (2014) analyzed the determinants of the scope of derivative activities of Asian-Pacific banks. They found that Asia-Pacific dealer banks tended to use currency derivatives more, while interest rate derivatives were generally used for hedging purposes. They also determined that banks in countries with an open deposit insurance scheme engaged more in derivative activities.

Güçver (2015) investigated the effects of bank-specific and macroeconomic variables on banks' derivative transaction volumes. The author used a multiple regression model to describe the relationship between these variables through an econometric model. In the study, the derivative transaction volume of banks was found to have a positive relationship with asset size and total
profitability, a negative relationship with equity size, return on equity, return on assets, and USD/TL rate, and an insignificant relationship with net interest margin and TL deposit interest rates. The author also noted that banks with higher asset sizes and total profitability tended to use derivative products more.

Oktar and Yüksel (2016), aiming to determine the factors affecting the derivative use of banks, applied the MARS method to the quarterly data of Turkish banks from 2003-2015 and concluded that the special provisions that banks set aside for receivables that they think they cannot collect from customers had an inverse relationship with the use of derivatives. The authors also determined that banks try to manage this negative situation by using more derivatives in case of an increase in the NPL ratio.

Yenisu et al. (2021) used correlation analysis and the ARDL bounds test to determine which financial and macroeconomic variables are related to derivative market transactions by Turkish banks. The authors analyzed monthly data for the period 2005-2021. They concluded that banks increase the use of derivative instruments, especially as their asset sizes increase and the risk (financial risk and exchange rate risk) increases. They also noted that the increase in the use of derivative instruments reduced banks' return on equity.

Taştemel (2020) analyzed Turkish banks' use of derivatives market instruments in 2015-2019. The study sorted the banks by asset size and examined ten banks' use of derivative instruments. The authors found that banks generally used derivatives for trading purposes, they increased their derivative use volumes every year, and swaps had the largest share in trading transactions.

Akkaya (2020) investigated the effect of derivative use of Turkish banks on risk and profitability based on the annual data for the 2002 - 2018 period. As a result of the cointegration analyzes, they found long-term relationships between the use of derivative instruments and the ratios.

Hancı and Akçalı (2021) investigated the relationships between profitability, risk, and derivatives use. Using balance sheet data for 2002-2019, they examined private, public, and foreign-owned deposit banks and the Turkish banking system in general in four groups. Selected ratios and derivative transaction volumes of banks in these groups were tested comparatively in pairs with the Toda-Yamamoto causality analysis. As a result, the authors found statistically one-way or two-way significant relationships between derivative use and the risk and profitability of Turkish banks.

Aiming to examine the dynamics of derivative use in the Turkish banking sector, Şimşek (2015) analyzed the macroeconomic factors affecting the use of currency swaps and derivative products used in the Turkish banking sector. The author examined the relationship between currency swap transactions and macroeconomic variables by Granger causality analysis, regression analysis, VAR impulse response analysis, and variance decomposition analysis. As a result of the analysis, the author found a relationship between currency swap transactions and off-balance sheet risks, inflation, market risk, central bank reserves, and TL deposits in banks.

Aiming to determine the effects of macroeconomic variables that may affect foreign currency swap transactions, which have the largest share in the use of derivatives in the Turkish banking sector, Kuzu, and Çelik (2019) investigated whether there was a relationship between macroeconomic variables and currency swap transactions and tried to determine which macroeconomic variables could be effective in the use of currency swaps with panel data analysis.

Nisha and Madhumathi (2021) found that Indian commercial banks with high total assets, high capital adequacy ratios, and low non-performing assets used derivative instruments. They
concluded that high credit risk encouraged banks to hedge such risks, and hedged derivatives supported bank stability compared to derivatives trading.

3. Derivatives and Derivatives Markets

Derivatives

Underlying assets are the financial assets upon which financial contracts are based. That is, they are reference values of certain financial derivatives. Accordingly, in its most general sense, a derivative is a product whose value changes depending on the changes in the value of an underlying asset. Derivatives are used to manage and hedge against risks, or to increase profits by determining the risk ratio to be assumed. The value of derivatives throughout their maturity and maturity is determined by the market price of the asset for which the contract is signed. The markets where derivatives are traded are called derivatives markets, and serving many purposes. Banks use derivatives to protect their existing positions, profit from arbitrage transactions, and speculative purposes. Today, huge amounts of transactions are performed in the derivatives markets, and therefore derivative transactions have assumed a decisive role in the world financial markets.

Derivative Instruments

Financial derivatives are financial instruments whose value is tied to the value of a financial asset or commodity. For trading the related rights and obligations of derivative instruments, it does not matter whether the owner of the underlying asset changes.

Futures: A contract to buy or sell the underlying commodity or other assets at a specific price at a future date. In this way, investors finance themselves and hedge their assets against risks.

Forward: This transaction is a short-term investment. The duration of futures trades varies from a few days to several years. It is the purchasing and selling currencies, assets, and securities at a future date.

SWAP: It is a financial exchange. They are agreements to exchange currencies or interests. Swaps protect both parties, so they can switch to terms that are convenient for them.

Options: They are contracts giving the right to buy or sell a certain asset at a specified price within a specific period.

Advantages of Derivatives Markets

Derivatives are critical risk management tools that can be used, especially in processes where there are some serious fluctuations in the markets. In this context, trading in the futures markets brings many advantages. Thus,

- Precautions can be taken today against possible future price changes. Thus, the potential risks in the spot markets are managed much more effectively.
- Bankers and other financial institutions gain insight into the course of future prices and have the advantage of better managing their risks.
- Compared to spot markets, investors in futures markets can trade in the market with much smaller amounts of capital. When trading in spot markets, the entire transaction amount is collected. However, in the derivatives market, it is possible to trade with collateral that is less than the transaction amount.

4. Conclusion

While economic uncertainties negatively affect countries' development, stability in the financial system will encourage growth. If there is frequent volatility in the system, one of the tools that
can be used to manage risks will be derivatives. As in the rest of the world, the Turkish banking system, too, uses derivatives more and more to manage the risks in fund and asset management. As a natural result of this increase, it is important to determine the factors affecting the derivative use of banks and the relationships between these factors. For this reason, it is planned to determine these factors and the relations between them, considering the 2008 and post-crisis developments. It is thought that examining the studies on this subject in the literature can help produce an analysis output that will confirm the results found.

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Gender Inequality among the Academicians in Higher Education Institutions: A Comparison Between EU Countries and Turkey

Gamze Sart

Abstract
Social gender inequality is the inequality in access to opportunities and resources to the detriment of women, depending on social, cultural and economic structures and even policies. Gender discrimination in employment has now entered a more positive phase due to increased sensitivity to the issue and the creation of opportunities to improve women's qualifications and skills. The aim of this study is to examine the existence of gender inequality in higher education employment for EU countries and Turkey. In this context, for the year 2020, the existence of gender inequality in higher education employment was investigated with the help of the Mann-Whitney-U test. As a result of the analysis, it was determined that there were statistically significant differences between male and female academics. As a result, it is of great importance to improve the conditions necessary for the protection of gender equality in academia.

Keywords: gender inequality, higher education, academics, statistical analysis, Mann-Whitney-U test

1. Introduction
The first condition for economic development is to make effective use of the factors of production. Negative gender discrimination against women in the labor force, the most important factor of production, creates an imbalance in women's participation in the labor market. Especially since the beginning of the 20th century, women's active participation in employment has initiated a process of rapid change in both working life and social life. As a result of the Industrial Revolution that emerged in Western countries, women, who had to participate in business life in order to meet the need for labor power, made significant gains in this process. The inclusion of women in the labor force has been recognized as a critical element in sustainable development, but in developing societies it has not reached a sufficient level. An increase in women's employment will have a positive impact on economic development by creating an increase in sectoral value added in a country (Yorgun, 2010:168).

The concept of social gender is an expression of the roles, behaviors and social expectations assigned to women and men in society, separate from biological sex, according to their biological characteristics. The term social gender equality refers to the equality of women and men in their use of resources, opportunities and power within the institutions of society (health, family, education, work, religion, law, politics, etc.), while gender inequality refers to the inequality of one gender over the other in these areas. Social gender takes into account the cultural, psychological and social differences between men and women. The concept of social gender refers to the behaviors considered appropriate for men and women in a given society (Ecevit, 2003:84).

Improving the situation of women in social life and preventing gender inequality will play an important role in enhancing the human development process, in other words, in reducing human poverty. In addition to access to health, education and nutrition, gender inequalities in access to economic and social resources such as participation in the labor market and participation in

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political decision-making processes such as representation in parliament lead to an increase in poverty levels (Forsythe et al., 2000:575).

In the Global Gender Gap Index Report, first published by the World Economic Forum in 2006, the magnitude of social gender inequality is expressed in numbers and developments in the values in the indicators are monitored over time. As a result of the development of gender inequality indices by institutions other than the World Economic Forum, it has become possible to make comparisons between countries. Therefore, countries that achieve a holistic structure for comparing social gender differences at the global level and distribute resources equally between men and women are exemplary as “role model countries”.

The Social Gender Equality Index is not based on the level of development of societies, but on the ranking of gender differences. In other words, the main criterion used in the ranking is based on the prominence of the country that has managed to reduce the gap in access to the resources that make up the index. The Social Gender Gap Index examines the gap between women and men under four main headings: economic participation and opportunity, health and survival, educational participation and political empowerment. Within the scope of the report, countries are given a score between 0 and 1; if this score approaches 1, the gap decreases, and if it approaches 0, the gap increases (WEF-The Global Gender Gap Report, 2020).

It cannot be said that the functioning of the university as an institution is not affected by the dynamics of the society in which it is shaped and the gender regime. As Heilman (2001), Wenners and Wold, (2001) and Settles et al. (2006) point out, in universities, as in many other institutions, promotions and performance evaluations cannot be carried out independently of the gender of the individuals, and the same behaviors of women and men are interpreted differently according to their gender.

Table 1: Social Gender Gap Index Turkey Data

<table>
<thead>
<tr>
<th>Years</th>
<th>Turkey rank</th>
<th>Turkey score</th>
<th>Total Number of Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>105</td>
<td>0.585</td>
<td>115</td>
</tr>
<tr>
<td>2007</td>
<td>121</td>
<td>0.577</td>
<td>128</td>
</tr>
<tr>
<td>2008</td>
<td>123</td>
<td>0.585</td>
<td>130</td>
</tr>
<tr>
<td>2009</td>
<td>129</td>
<td>0.583</td>
<td>134</td>
</tr>
<tr>
<td>2010</td>
<td>126</td>
<td>0.588</td>
<td>134</td>
</tr>
<tr>
<td>2011</td>
<td>122</td>
<td>0.595</td>
<td>135</td>
</tr>
<tr>
<td>2012</td>
<td>124</td>
<td>0.601</td>
<td>135</td>
</tr>
<tr>
<td>2013</td>
<td>120</td>
<td>0.608</td>
<td>136</td>
</tr>
<tr>
<td>2014</td>
<td>125</td>
<td>0.618</td>
<td>142</td>
</tr>
<tr>
<td>2015</td>
<td>130</td>
<td>0.624</td>
<td>145</td>
</tr>
<tr>
<td>2016</td>
<td>130</td>
<td>0.623</td>
<td>144</td>
</tr>
<tr>
<td>2017</td>
<td>131</td>
<td>0.625</td>
<td>144</td>
</tr>
<tr>
<td>2018</td>
<td>130</td>
<td>0.628</td>
<td>144</td>
</tr>
<tr>
<td>2019</td>
<td>130</td>
<td>0.635</td>
<td>153</td>
</tr>
</tbody>
</table>
In the first report prepared in 2006, Turkey ranked 105th out of 115 countries. In the 2012 report, it ranked 124th out of 135 countries at the general level with a score of 0.601, while in the 2017 report, it ranked 131st out of 144 countries at the general level with a score of 0.625. The index for Turkey dropped to 133rd place with 0.638 points for 2020. A comparison of 2006 and 2020 data shows that Turkey has not made sufficient progress in addressing gender inequality in the intervening 15 years.

Table 2: Ratio of Female Faculty Members by Years

<table>
<thead>
<tr>
<th>Years</th>
<th>Ratio of Female Faculty Members (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1944-1945</td>
<td>13.9</td>
</tr>
<tr>
<td>1950-1951</td>
<td>15.9</td>
</tr>
<tr>
<td>1959-1960</td>
<td>18.8</td>
</tr>
<tr>
<td>1973-1974</td>
<td>25.4</td>
</tr>
<tr>
<td>1981-1982</td>
<td>26</td>
</tr>
<tr>
<td>1990-1991</td>
<td>31</td>
</tr>
<tr>
<td>1993-1994</td>
<td>33</td>
</tr>
<tr>
<td>1997-1998</td>
<td>33.8</td>
</tr>
<tr>
<td>2001-2002</td>
<td>36.6</td>
</tr>
<tr>
<td>2004-2005</td>
<td>38.2</td>
</tr>
<tr>
<td>2007-2008</td>
<td>40.3</td>
</tr>
<tr>
<td>2010-2011</td>
<td>40.8</td>
</tr>
<tr>
<td>2012-2013</td>
<td>41.5</td>
</tr>
<tr>
<td>2014-2015</td>
<td>43.0</td>
</tr>
<tr>
<td>2016-2017</td>
<td>43.2</td>
</tr>
<tr>
<td>2018-2019</td>
<td>44.0</td>
</tr>
<tr>
<td>2019-2020</td>
<td>45.0</td>
</tr>
</tbody>
</table>

The fact that women in Turkey take part in higher education in much higher numbers than in other countries is promising for women's employment in scientific production. As can be seen in Table 2, the rate of female academics in Turkey has been on an upward trend over the years.
Table 3: Distribution of Academics by Gender in Higher Education and Gender Gap Index for Selected Countries (2019-%)

<table>
<thead>
<tr>
<th>Countries</th>
<th>Percentage of Female Academics</th>
<th>Percentage of Male Academics</th>
<th>Gender Gap Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>0.49</td>
<td>0.51</td>
<td>0.727</td>
</tr>
<tr>
<td>Belgium</td>
<td>0.48</td>
<td>0.52</td>
<td>0.750</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>0.38</td>
<td>0.62</td>
<td>0.706</td>
</tr>
<tr>
<td>Denmark</td>
<td>0.44</td>
<td>0.56</td>
<td>0.782</td>
</tr>
<tr>
<td>Germany</td>
<td>0.40</td>
<td>0.60</td>
<td>0.787</td>
</tr>
<tr>
<td>Estonia</td>
<td>0.48</td>
<td>0.52</td>
<td>0.751</td>
</tr>
<tr>
<td>Ireland</td>
<td>0.44</td>
<td>0.56</td>
<td>0.798</td>
</tr>
<tr>
<td>Greece</td>
<td>0.35</td>
<td>0.65</td>
<td>0.701</td>
</tr>
<tr>
<td>Spain</td>
<td>0.44</td>
<td>0.56</td>
<td>0.795</td>
</tr>
<tr>
<td>France</td>
<td>0.44</td>
<td>0.56</td>
<td>0.781</td>
</tr>
<tr>
<td>Croatia</td>
<td>0.48</td>
<td>0.51</td>
<td>0.677</td>
</tr>
<tr>
<td>Italy</td>
<td>0.37</td>
<td>0.63</td>
<td>0.707</td>
</tr>
<tr>
<td>Latvia</td>
<td>0.56</td>
<td>0.44</td>
<td>0.745</td>
</tr>
<tr>
<td>Lithuania</td>
<td>0.56</td>
<td>0.44</td>
<td>0.785</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>0.40</td>
<td>0.60</td>
<td>0.725</td>
</tr>
<tr>
<td>Hungary</td>
<td>0.40</td>
<td>0.60</td>
<td>0.677</td>
</tr>
<tr>
<td>Malta</td>
<td>0.37</td>
<td>0.63</td>
<td>0.693</td>
</tr>
<tr>
<td>Netherlands</td>
<td>0.46</td>
<td>0.54</td>
<td>0.736</td>
</tr>
<tr>
<td>Austria</td>
<td>0.43</td>
<td>0.57</td>
<td>0.744</td>
</tr>
<tr>
<td>Poland</td>
<td>0.45</td>
<td>0.55</td>
<td>0.737</td>
</tr>
<tr>
<td>Portugal</td>
<td>0.45</td>
<td>0.55</td>
<td>0.744</td>
</tr>
<tr>
<td>Romania</td>
<td>0.51</td>
<td>0.49</td>
<td>0.724</td>
</tr>
<tr>
<td>Slovenia</td>
<td>0.42</td>
<td>0.58</td>
<td>0.743</td>
</tr>
<tr>
<td>Slovakia</td>
<td>0.46</td>
<td>0.54</td>
<td>0.718</td>
</tr>
<tr>
<td>Finland</td>
<td>0.52</td>
<td>0.48</td>
<td>0.832</td>
</tr>
<tr>
<td>Sweden</td>
<td>0.45</td>
<td>0.55</td>
<td>0.820</td>
</tr>
<tr>
<td>England</td>
<td>0.45</td>
<td>0.55</td>
<td>0.767</td>
</tr>
<tr>
<td>Norway</td>
<td>0.46</td>
<td>0.54</td>
<td>0.842</td>
</tr>
<tr>
<td>Switzerland</td>
<td>0.35</td>
<td>0.65</td>
<td>0.779</td>
</tr>
<tr>
<td>Turkey</td>
<td>0.45</td>
<td>0.55</td>
<td>0.635</td>
</tr>
</tbody>
</table>
Table 3 shows that countries with positive gender gap index values (Ireland, Sweden, Norway, Finland) have a high number of male academics working at universities. In Latvia and Lithuania, the proportion of female academics is higher than male academics, although the gender gap index is not as positive as in the Nordic countries. In this case, although the gender gap index value is generally positive, it is not reflected in the number of academics in most countries for universities. In European Union countries, with the positive impact of egalitarian policies in both education and employment, there has recently been a gendered shift in academic roles and leadership positions in higher education, and although this shift has been mostly in favor of women, the proportion of male academics is still high. Although Turkey has made progress in terms of gender gap over the years, it is lower than the European Union countries and the ratio of female academics is lower than the ratio of male academics.

The aim of this study is to examine the existence of gender inequality in employment in higher education for EU countries and Turkey in terms of academic titles. It is aimed to determine whether there is a statistically significant difference between the number of academicians with different titles working in universities according to gender.

2. Statistical Analysis

2.1. Data and Methods

In the study, analyses were carried out to determine whether there is a statistically significant difference between the male and female groups of academic staff working at universities in the EU and Turkey in terms of title. First of all, the data were tested for normality using Kolmogorov-Smirnov and Shapiro-Wilk tests. Since normal distribution could not be achieved, the Mann-Whitney-U test, which is accepted as a non-parametric test, was used. The Mann-Whitney-U test is a test that determines whether there is a significant difference for two independent groups. Data were obtained from www.yok.gov.tr. Table 4 shows the employment structure of academic staff by gender in higher education in Turkey.

2.2. Findings and Evaluation

In the first stage of the study, normality tests were applied to determine the appropriate analysis methods for the data. Kolmogorov-Smirnov and Shapiro-Wilk normality test results are given in Table 4.

Table 4: Normality Test Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Kolmogorov-Smirnov</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistics</td>
<td>p</td>
</tr>
<tr>
<td>EU women academics</td>
<td>.244</td>
<td>.000</td>
</tr>
<tr>
<td>EU male academics</td>
<td>.197</td>
<td>.000</td>
</tr>
<tr>
<td>TR female academics</td>
<td>.093</td>
<td>.000</td>
</tr>
<tr>
<td>TC male academics</td>
<td>.122</td>
<td>.000</td>
</tr>
</tbody>
</table>

As can be seen from Table 4, since p<0.05, the hypothesis $H_1$, which states that normal distribution is not provided for both tests, is accepted. In this case, the Mann-Whitney-U test, which is a non-parametric test and does not require normal distribution, was used to test the differences for the gender group.
As can be seen from Table 5, a statistically significant difference was found EU and TR in terms of gender (p<0.05). In other words, there is gender inequality in terms of employment. When the mean rank for the source of the difference is examined, it is seen that the number of males is higher. A gender difference was obtained for both EU and TR academics, the number of men was significantly higher in both country groups.

In democratic institutions such as universities, it is important to improve this situation quickly. Only lecturer and research assistant positions have a higher number of women, while other positions have a higher number of men. Looking at the literature, Özcan and İnanç (2015), Adak (2018), Tuncer (2019) and Kaya Erdoğan (2021) found that gender inequality manifests itself when the academic title is promoted to the level of associate professor, professor or deanship-directorate, and the number of women at these levels is low. This study is consistent with these findings.

Studies by Demir (2018), Öztan and Doğan (2015), Başarır and Sarı (2015), and Karakuş (2016) revealed that the problems faced by women in academia as a field of study are basically related to the managerial position, and that women's positions in academia are determined within the framework of male-dominated discourses. The findings obtained from these studies support our research.

Adak (2018) emphasized that although 45% of academic employees are women, the data in Turkey, as observed in the world, point to horizontal segregation in academia. As stated above, in this study, it is understood that women academics work most intensively in the fields of language and literature, followed by health sciences, social sciences and arts and applied social sciences. Men, on the other hand, prefer to work in technical sciences, mathematics and sciences, agriculture and forestry, which have higher economic returns.

In addition to the studies examining the current situation and problems of academic women in Turkey, Özkanlı White (2009), Machado-Taylor and Özkatanlı (2013) and Sağlam et al. (2018), which are studies that reveal similarities and differences by comparing the women working in academia in some selected countries and some European Union member countries, contribute to the field. In this study, as presented in Table 3, it was pointed out that the number of female academics is high in Turkey compared to many countries; however, the main problem manifests itself after promotion. These studies also compared Turkey and EU countries and concluded that the number of female associate professors and professors reached by this study is low. The fact that the same problem exists in EU countries, which are developed country groups, seriously reveals the existence of the glass ceiling syndrome in the world, where women cannot move up the career ladder rapidly due to their traditional roles.
3. Conclusion

Structural changes in the production system in a globalizing world have positively affected the inclusion of women in the labor force. In parallel with the developments in the economy around the world, the female workforce has also undergone changes; however, despite the positive developments, it has not been able to catch up with the male workforce. Advances in technology, legal, socio-cultural and sectoral changes have contributed to women's presence in the market. In addition, high technological advances in the world of work have led to a reduction in the number of jobs dominated by physical strength, leading to greater employment of women in the world of work. Legal developments in the field of women's protection and the prevention of gender inequality are particularly linked to the increase in women's employment and equal opportunities for women in the world of work. It is acknowledged that women do not exist to the same extent as men at all levels of society.

The aim of the study is to examine the existence of gender inequality in employment in higher education. For the EU and TR for 2020, the existence of gender inequality in higher education employment was investigated with the help of the Mann-Whitney-U test for group differences. A statistically significant difference was found in terms of gender, indicating the existence of gender inequality in employment. When the mean rank for the source of the difference was examined, it was observed that the number of males was higher.

In the study, the academician ratios for developed and developing countries are examined in Table 3, and it is seen that the ratio of male academicians is higher than the ratio of female academicians even in countries that have narrowed the gender gap. In this case, it can be said that although the gender gap has narrowed in different sectors, the gender gap in higher education has not narrowed. Although the gender gap index for Latvia and Lithuania is not as positive as in the Nordic countries, the proportion of female academics is higher than that of male academics. Although Turkey has made progress in the gender gap over the years, it remains low compared to the European Union countries. The rate of female academics is also lower than that of men.

According to data from YÖK (2020), there is a serious gender inequality in the senior management of universities. Only 9.1% of rectors, 10.3% of vice-rectors and 21.3% of deans are women. According to the report, social gender equality has been achieved most in research assistant positions. It is noticeable that the higher the academic title, the further away from equality between women and men. On the other hand, the Southeastern Anatolia region is the most unequal region among all regions with a 22.8% female rate in academia. In this region, 80% of professors are men. The Eastern Anatolia region has similar rates, with only 14% of professors being women.

It is of great importance to create support systems that facilitate women's candidacy for senior positions and to promote flexible and family-friendly employment conditions. In the decision-making bodies and institutional policies of universities in Turkey, gender sensitivity, as well as gender equality and balance in recruitment, career planning and development, the importance given to gender-related factors in ensuring work-personal life integration and the adequacy of the services provided, taking into account the perspective of gender and gender equality in research groups and research activities, the place of gender in education and training activities, and raising students' awareness of gender should be among the goals.

For developing countries like Turkey to improve their human development processes, they need to conduct analyses and formulate policies centered on eliminating social gender inequality. A social gender inequality perspective should be developed in the context of women's empowerment, which can be summarized as improving women's healthy living conditions, increasing their access to information and political participation, ensuring equal access to
economic opportunities and increasing women's employment. Providing opportunities for women in higher education to develop themselves, implementing elements that ensure work-life balance (day-care centers, etc.), disseminating the perspective that will eliminate gender inequality, and giving them a place in management are of great importance in improving the conditions necessary for the protection of gender equality.

References


Green Product Awareness among University Students

Gamze Sart

Abstract

While in the past consumers were only interested in consumption and purchasing, today they exercise a high level of sensitivity towards the environment. Businesses understand that green-conscious individuals can be loyal consumers and create a profitable market, and thus, they attach importance to developing green marketing and green product production strategies. Green consumption is a form of consumption that is based on the use of the world's resources within the limits of sustainability and seeks ways to minimize the damage to natural life. It is important to outline the interaction of green consumption with these variables and the green consumer profile, especially the new generation of consumers, especially young people. The aim of this study is to reveal the changes in green consumption attitudes of young people studying at university according to demographic characteristics. The sample of the study consists of 600 students studying in different faculties at Istanbul University's Cerrahpaşa Campus. As a result of the group difference analyses, significant differences were found in terms of gender, age, major studied and income perception. It was determined that female students, students aged 27 and over, veterinary and medical faculty students and students with higher income perception had higher green consumption attitudes.

Keywords: green consumption, higher education, statistical analysis

1. Introduction

The pressure on the environment caused by industrialization and mass consumption is an issue that is discussed at macro and micro scales, from the growth and development policies of countries to individual lifestyles. In general, many problems such as global warming, the destruction of the ozone layer and marine resources, the use of chemicals, nuclear activities and wastes, air, sound pollution and light pollution are within the framework of environment-centered debates (Ricci et al., 2018:56). In recent years, individual consumption activities have started to be prioritized in measures and solution policies regarding global environmental problems.

The process of preferring products that do not contain toxic chemicals, that can be recycled, that are environmentally friendly and adopting them to protect nature in the long term is called green consumption (Wang and Zhou, 2019:52). On the other hand, green consumers are researchers and innovators. In addition, green consumers set an example and guide others to buy environmentally friendly products.

There are some factors that influence actual green product purchasing behavior. These are green purchasing behavior, environmental awareness, price and perceived quality, corporate competition and advertising credibility (Akehurst et al., 2012:975). Green consumers are more cynical about and do not take seriously, product advertisements compared to non-green consumers. For example, green consumers are more liberal-minded than non-green consumers, and liberalism is skeptical of industry and advertising (Kilbourne and Pickett, 2008:887). Green consumers are a group of consumers who can influence the environment through their purchasing decisions. The consumption decisions of green consumers have social responsibility, and this understanding of social responsibility includes the search for information about the company that produces the products that consumers have purchased, the raw materials used in the product, the production practices, the effects of the products on the

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1Associate Professor Dr., İstanbul-Cerrahpaşa University, Hasan Ali Yucel Faculty of Education, gamze.sart@iuc.edu.tr, Orcid No: 0000-0002-0653-2855
environment during use and after disposal (Dean et al., 2012:673). Green consumerism involves effective research and evaluation of products based on green consumption and explains new consumer behavior that is committed to protecting the environment (He and Yang, 2004:6). As a requirement of this understanding, green consumers prefer businesses with a green business approach.

The aim of this study is to reveal the change in green consumption attitudes of young people according to demographic characteristics for 600 students studying in different faculties at Istanbul University's Cerrahpaşa Campus.

2. Green Consumers and Green Consumption Concept

It is observed that green consumption is handled with various expressions in terms of environmental bias, eco-friendly and sustainable consumption. However, environmental protection and its reflection on consumption practices are different processes (Li, 2020:586). Still, sustainable consumption encompasses many behavioral practices that require the transformation of sensitivities towards nature into a way of life. It is stated that the conceptual ambiguities in various dimensions such as being green, nature friendliness and its reflection on consumption are related to the lack of a clear definition of the concept of environment (Paul et al., 2016:125). Therefore, in general terms, the quality of being concerned only about the physical environment such as air, water and soil can be considered under the title of ‘green’ (Gonzalez et al., 2015:288), and environmental awareness related to consumption can also be considered as a quality of being green (Kim, 2011:66). In this context, green products are defined as ecological products or environmentally friendly products. In a broader sense, a green product refers to a group of products with recycling strategies or recyclable content, reduced packaging or reduced use of toxic materials to reduce the impact on the natural environment (Zhang and Li, 2017:345). Autio and Heinonen (2004) added the concept of ethics to the definition of a green consumer and listed the requirements for being green as, firstly, having an awareness of environmental problems and social justice, and secondly, having a desire for knowledge and internal discipline. They also stated that an individual should believe that they can combat environmental damage and make a difference through their individual consumption habits. The ability to contribute by being willing and changing one's behavior requires individuals to be aware of the issue first.

The discussion of green consumption in terms of the environment brings up the examination of green consumers' attitudes towards the environment. In general terms, attitude is defined as a positive or negative feeling developed towards an individual, object or situation. Attitude is also related to the belief formed by the knowledge that a person has towards a person, object or situation (Chen, 2011:96).

Although subsequent studies reveal that knowledge and awareness do not necessarily translate into behavior, it is stated that environmental knowledge will create environmental awareness and concern, which constitute environmental attitudes, and that this is an important determinant of green behavior (Johnstone and Tan, 2015:313; Ertz, 2016:5). Do Paço et al., (2013) study also reveals that personal-psychological values are the most influential factors on environmental behavior, while real and full knowledge and awareness are the least influential factors. However, it has also been stated that people who are more environmentally aware have higher levels of personal control. Therefore, although awareness is not directly effective on behaviors, it serves as an important indicator in determining the factors affecting behaviors.

Attitudinal factors towards the environment may not be sufficient to measure actual behavior. To be called ‘green’, individuals must have developed an understanding of the consequences of their behavior (Carrete et al., 2012:471). Therefore, it is possible to speak of a more indirect
approach between the cognitive dimension of action and attitude. In other words, knowing the consequences of one's behavior indirectly affects attitude as it is related to environmental awareness. The inadequacy of attitude to measure actual behavior brings behavioral intention to the agenda. Thus, it is stated that attitude affects behavior intention and behavior intention shapes actions (Yu, 2009:76; Leonidou et al., 2010:1320; Sheeran and Webb, 2016:504). Attitude, on the other hand, is determined by behavioral beliefs determined by knowing the consequences of a certain behavior. Each behavioral belief links behavior to a particular outcome or characteristic. The strength of belief and the evaluation of the outcome also reveal the attitude towards a certain behavior in total (Kim and Choi, 2005:594). In studies on attitude and behavior, it has been reported that individuals with positive attitudes engage in more responsible-environmental behaviors than individuals with negative attitudes (Suki, 2015:3). While attitude is not directly related to behaviors, it acts as a mediating variable between behaviors and values (Echavarren, 2017:147). Therefore, attitude is an important element in measuring the relationship between values and behavior (Yu, 2009:76).

3. Statistical Analysis

3.1. Purpose and importance of the study

This study aims to determine whether university students' personal characteristics make a difference in their attitudes towards green consumption, subjective norms, perceived behavioral control, perceived consumer efficacy, environmental knowledge and concerns, behavioral intentions and actual behaviors.

3.2. Population and sample of the study

The population of the study consists of 28,860 students studying in different faculties at Istanbul University's Cerrahpaşa Campus. The sample consists of 600 students from this population who voluntarily participated in the study. In the sample size table developed by Yazıcıoğlu and Erdoğan (2004), it was determined as 383 people for p=0.50 and q=0.50 for a sampling error of 0.05. In this case, the study is statistically appropriate for the sample size of 600 students. Random sampling method was applied in the research and The study has a non-experimental quantitative research design and is a survey model according to the method of conducting.

3.3. Research Hypothesis

The main hypothesis of the study is that gender, age, income perception, and educational background significantly differ in terms of behavioral disbelief, green consciousness, green priority, collective responsibility, purchase intention, green alternative orientation, waste perception, elimination problem, and the overall score of green consumption awareness.

3.4. Data collection tool

In the study, the green consumption behavior and attitude scale developed by Üstündağlı and Güzeloğlu (2015) was used. It is stated by the authors that Schwepker et al., (1991) and Bohlen et al., (1993) were utilized in the development of the scale. There are 4 statements measuring green behavior and the statements are taken from Gilg et al., (2005). The scale, which consists of 34 items in total, has 9 sub-dimensions including disbelief in the behavior (7 item), green consciousness (5 item), green priority (3 item), collective responsibility (3 item), purchase intention (3 items), green alternative orientation (4 item), waste perception (3 item), elimination problem (2 item) and green consciousness (4 item). In the scale, a 5-point Likert scale was used, with 1= "Strongly disagree" and 5 = "Strongly agree".
4. Findings

4.1. Reliability of the Survey

Cronbach Alpha, Split, Parallel, Absolute Strict Parallel (strict) tests were applied as reliability tests for the data obtained from the survey study. A Cronbach Alpha value above 70% indicates that the survey was successful. Some researchers, on the other hand, take exceeding 75% as a basis. The fact that the other criteria are above 70% indicates that the survey shows internal consistency and the results can be trusted. The results of the reliability analysis of the survey conducted in this study were Cronbach Alpha=0.919, Parallel=0.920, Split=0.918-0.924 and Strict=0.923. In the first phase of the study, general information about the respondents is given below:

- 56.8% of the students were female and 43.2% were male.
- It was determined that 25.4% of the students were in the 1st grade, 24.9% in the 2nd grade, 24.9% in the 3rd grade and 24.9% in the 4th grade.
- 27% of the participants were between the ages of 18-20, 37.9% between the ages of 21-23, 14.5% between the ages of 24-26, 9.4% between the ages of 27-29 and 11.3% at 30 and above.
- It was determined that 55.7% of the students had knowledge about the concept of green consumption while 44.3% had not.
- The income of 41.5% of the participants is less than their expenses, 36.8% of the participants’ income is equal to their expenses, and 21.7% of the participants’ income is more than their expenses.
- Of the participants, 15.5% were from vocational schools, 24.5% from engineering faculties, 25.6% from veterinary faculties, 21.9% from education faculties, and 12.5% were master's and doctoral students.

Table 1: Descriptive Statistics for Dimensions and Normality Test Results

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Mean</th>
<th>St.dev.</th>
<th>Asymmetry</th>
<th>Kurtosis</th>
<th>Kolmogorov-Smirnov</th>
<th>Shapiro-Wilk</th>
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</thead>
<tbody>
<tr>
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<td>ist</td>
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<td>p</td>
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<td>Behavioral Disbelief Subdimension</td>
<td>2.23</td>
<td>0.86</td>
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<td>0.832</td>
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<td>Green Consciousness Subdimension</td>
<td>3.82</td>
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<td></td>
<td>0.794</td>
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<tr>
<td>Green Priority Subdimension</td>
<td>4.04</td>
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<td>1.891</td>
<td>0.163</td>
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</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>0.912</td>
<td>0.000</td>
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<tr>
<td>Collective Responsibility Subdimension</td>
<td>4.48</td>
<td>0.72</td>
<td>-2.189</td>
<td>4.550</td>
<td>0.171</td>
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</tr>
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<td></td>
<td></td>
<td>0.790</td>
<td>0.000</td>
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<tr>
<td>Green Alternative Orientation Subdimension</td>
<td>3.45</td>
<td>0.78</td>
<td>-0.362</td>
<td>0.314</td>
<td>0.139</td>
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<td></td>
<td>0.936</td>
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<tr>
<td>Purchase Intention Subdimension</td>
<td>3.84</td>
<td>0.81</td>
<td>-0.287</td>
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<td>0.126</td>
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<td>Waste Perception Subdimension</td>
<td>4.58</td>
<td>0.84</td>
<td>-1.504</td>
<td>3.762</td>
<td>0.109</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>0.980</td>
<td>0.000</td>
</tr>
</tbody>
</table>
As seen, since p<0.05 in both normality tests, the hypothesis H₁, which states that normal distribution is not provided, is accepted. In this case, non-parametric methods will be used in group difference analysis. In the analysis of group differences, Mann-Whitney-U test for 2 groups and Kruskal-Wallis test for 3 or more groups were applied. Mean values were examined for the source of the difference.

### Table 2: Mann-Whitney U Test Results by Gender

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Group</th>
<th>Mean Rank</th>
<th>Mean Response</th>
<th>Mann-Whitney U</th>
<th>p</th>
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<tbody>
<tr>
<td>Behavioral Disbelief</td>
<td>Male</td>
<td>460.51</td>
<td>2.28</td>
<td>9563.34</td>
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<tr>
<td>Subdimension</td>
<td>Woman</td>
<td>440.21</td>
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<tr>
<td>Green Consciousness</td>
<td>Male</td>
<td>459.72</td>
<td>3.69</td>
<td>10.453</td>
<td>0.00*</td>
</tr>
<tr>
<td>Subdimension</td>
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<td>481.71</td>
<td>3.94</td>
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<td>Green Priority Subdimension</td>
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<td>3.80</td>
<td>8564.50</td>
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</tr>
<tr>
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<td>Woman</td>
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<td>4.19</td>
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<tr>
<td>Collective Responsibility</td>
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<td>459.91</td>
<td>4.22</td>
<td>7521.30</td>
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</tr>
<tr>
<td>Subdimension</td>
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<td>471.36</td>
<td>4.73</td>
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<td>Green Alternative Orientation</td>
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<td>3.30</td>
<td>9887.50</td>
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<td>Purchase Intention</td>
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<td>3.83</td>
<td>11.352</td>
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</tr>
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</tr>
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<td>Waste Perception</td>
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<td>4.44</td>
<td>9341.00</td>
<td>0.00*</td>
</tr>
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<td>4.73</td>
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<td>Elimination Problem</td>
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<td>3.82</td>
<td>8753.50</td>
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<tr>
<td>Subdimension</td>
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<td>4.18</td>
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</tr>
<tr>
<td>Green Ideology Subdimension</td>
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<td>7661.20</td>
<td>0.000*</td>
</tr>
<tr>
<td></td>
<td>Woman</td>
<td>441.58</td>
<td>4.16</td>
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</tr>
</tbody>
</table>

* Significant difference at 0.05

A significant difference was found in all sub-dimensions in terms of gender. While men were more prominent in disbelief towards the behavior, women had a higher perception in other dimensions. It is seen that women are more conscious about the attitude towards green consumption.

### Table 3: Mann-Whitney U Test Results by Age

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Group</th>
<th>Mean Rank</th>
<th>Mean Response</th>
<th>Chi-square value</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral Disbelief</td>
<td>18-20</td>
<td>284.38</td>
<td>2.48</td>
<td>10,980</td>
<td>0.003*</td>
</tr>
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<td>Subdimension</td>
<td>21-23</td>
<td>224.12</td>
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<tr>
<td></td>
<td>24-26</td>
<td>225.37</td>
<td>2.15</td>
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</tr>
<tr>
<td></td>
<td>27-29</td>
<td>235.47</td>
<td>2.15</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>30 and above</td>
<td>280.54</td>
<td>2.41</td>
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</tr>
<tr>
<td></td>
<td>18-20</td>
<td>233.71</td>
<td>3.81</td>
<td>12,345</td>
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<tr>
<td>Green Consciousness</td>
<td>21-23</td>
<td>227.89</td>
<td>3.75</td>
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<td></td>
</tr>
<tr>
<td>Subdimension</td>
<td>24-26</td>
<td>244.87</td>
<td>3.92</td>
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<tr>
<td></td>
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<td>251.00</td>
<td>4.09</td>
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<td></td>
<td>18-20</td>
<td>255.17</td>
<td>3.97</td>
<td>16,440</td>
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</tbody>
</table>


A significant difference was found in all sub-dimensions in terms of age (p<0.05). In the dimension of disbelief towards behavior, it is higher in students aged 18-20. They have not yet grasped the importance of green consumption. In other dimensions, it was observed that the 27-29 and 30+ age groups had a higher perception. It is seen that older students are more conscious about green consumption perception.

**Table 4: Mann-Whitney U Test Results in terms of Income**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Group</th>
<th>Mean Rank</th>
<th>Mean Response</th>
<th>Chi-square value</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral Disbelief</td>
<td>Income less than expenses</td>
<td>178.88</td>
<td>2.27</td>
<td>3.706</td>
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<tr>
<td></td>
<td>Income equal to expenses</td>
<td>244.21</td>
<td>2.08</td>
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<td></td>
<td>Income more than expenses</td>
<td>245.06</td>
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<td>Green Consciousness</td>
<td>Income less than expenses</td>
<td>109.10</td>
<td>3.59</td>
<td>11.313</td>
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<td>Income equal to expenses</td>
<td>165.96</td>
<td>3.75</td>
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<tr>
<td></td>
<td>Income more than expenses</td>
<td>169.38</td>
<td>4.05</td>
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<tr>
<td>Green Priority</td>
<td>Income less than expenses</td>
<td>234.70</td>
<td>3.95</td>
<td>10.453</td>
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</tr>
<tr>
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<td>Income equal to expenses</td>
<td>267.76</td>
<td>3.97</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant difference at 0.05
Green consciousness sub-dimension, green priority sub-dimension, collective responsibility sub-dimension, green alternative orientation sub-dimension, purchase intention sub-dimension, waste perception sub-dimension, elimination problem sub-dimension showed a significant difference in terms of income perception (p<0.05). When the mean response values for the source of the difference are analyzed, the difference in all dimensions is observed among the respondents whose income is higher than their expenditures with higher mean values. No significant difference was found for the behavioral disbelief sub-dimension and the green ideology sub-dimension.

**Table 5:** Mann-Whitney U Test Results by Department of Education

<table>
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<tr>
<th>Dimensions</th>
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<th>Mean Rank</th>
<th>Mean Response</th>
<th>Chi-square value</th>
<th>p</th>
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<td>15.841</td>
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</table>

* Significant difference at 0.05

All sub-dimensions showed a significant difference in terms of the faculty of education (p<0.05). Looking at the mean response values for the source of the difference, engineering faculty has a higher score for the sub-dimension of disbelief towards behavior. For the other sub-dimensions, veterinary and medical faculty students are more conscious than students from other faculties.

5. Conclusion
In the face of increasingly environmentally conscious consumers, businesses need to have social awareness and social responsibility in order to survive in this tough competitive environment. Consumers are demanding greater use of renewable resources in production that create less pollution, reduce waste, recycle more, and make products safer for the ecosystem. As consumers become more and more aware of environmental protection, it is becoming a more important issue for company managers and especially for marketing managers. Determining the characteristics and evaluating the behaviors of environmentally conscious consumers, who are increasing in number today, will provide important contributions to businesses in planning their environmental sensitivity and placing this effort in their product structures, production systems and marketing management.

The aim of this study is to reveal the change in green consumption attitudes of young people according to demographic characteristics for 600 students studying in different faculties at Istanbul University's Cerrahpaşa Campus. As a result of the group difference analyses, significant differences were found in terms of gender, age, major studied and income perception. It was determined that female students, students aged 27 and over, veterinary and medical faculty students and students with higher income perception had higher green consumption attitudes.

It was determined that the scores of the students participating in the study for the sub-dimensions of the green consumption awareness scale and general green consumption awareness were above average and at high levels. It can be said that students at the university show high awareness of green consumption and environmental issues. However, it can also be said that students who are considered to be environmentally conscious and sensitive to the environment prefer environmentally friendly/green products when purchasing products. When the literature is examined, the findings of a study conducted by Straughan and Roberts (1999) on university students in the USA that they are more sensitive to environmental issues support our research results. In addition, the youth participating in the study showed the highest level of participation in the sub-dimensions of "collective responsibility" and "perception of litter", which include the titles of responsibility for green products and waste. Supporting our research findings, Ayyıldız and Genç (2008) conducted a study on senior university students and concluded that university students' opinions on environment and green marketing are generally positive.

When male and female university students are evaluated, it can be said that women exhibit more 'green' behaviors than men. It is emphasized that women are more sensitive to environmental problems due to their emotional perspective (Kollmuss and Agyeman 2002; Autio and Heinonen 2004). Therefore, the fact that women have higher attitudes, intentions, concerns and sensitivity towards green products is a result also found in previous studies (Straughan and Roberts 1999, Sarıkaya 2007, Yılmaz and Arslan 2011, Karaca 2013, Üstündaglı and Güzeloğlu 2015, Sarıtaş 2018). However, in the study of Ünüvar et al., (2018), it was observed that female students had higher attitudes, behaviors, environmental concerns and environmental knowledge, which are the dimensions of the green product, compared to male students. These studies support our findings. However, in the study of Sarıtaş (2018), which differs from our research findings, it was stated that there was no differentiation between gender and the dimensions of the tendency to prefer environmentally friendly and recyclable products, environmental responsibility awareness, ecological awareness, and the tendency to choose environmentally sensitive businesses. Chen and Chai (2010) found that there is no gender-related difference in environmental attitude and attitude towards green products. Diamantopoulos et al., (2003) revealed in their study that socio-demographic variables have little effect on defining green consumers. The difference between the findings of the research and our study may be due to the sample group and the use of different measurement tools.
Looking at literature, according to the research findings of Sarıtaş (2018), which are partially similar to our research findings, only ecological consciousness, one of the sub-dimensions of the environmentally sensitive product awareness scale, differed from the age variable. In another study, Karaca (2013) stated that consumers in the 18-25 age group and 26-35 age group differ in purchasing environmentally friendly products compared to consumers in the 56-65 age group. Sarkıaya (2007) found a difference between age groups in consumers' attitudes towards organic products. Diamantopoulos et al. (2003) concluded that there is a negative relationship between age and pro-environmental attitude. Cesur and Memiş (2016) stated that there is a negative and weak relationship between environmental sensitivity and age. With these studies, it can be said that the reason for the difference in our research findings is due to cultural and age group differences.

In the light of the general findings and results obtained from the research, the following suggestions can be made regarding the use and awareness of environmentally friendly products: Consumers should express their preferences and interest in environmentally friendly products more clearly. Through environmental education and various legal regulations, all segments of the society should be encouraged to change their behavior positively in terms of environmental sensitivity. By constantly keeping environmental issues on the agenda, an increase in environmental consciousness, or at least awareness, can be created. Within the framework of rapidly developing technology and changing world, businesses have important duties in protecting the environment and creating environmentally friendly green products. The business that fulfills these tasks will be among the businesses that can survive in the future. In this context, businesses should implement a number of environmentally friendly strategies to stand out in an environment of intense competition. In the face of increasingly environmentally conscious consumers, businesses need to have social awareness and social responsibility in order to survive in this tough competitive environment.

In order to generalize the results, it is important to conduct future studies in different universities and provinces, in different sectors, on consumers in different cultural textures in order to generalize the research.

References


Data Analysis of the Green Economy: Ecological Footprints

Funda H. Sezgin

Abstract

The increase in environmental disasters and the gradual depletion of natural resources have paved the way for quantifying the consumption of ecological resources. It has become clear that measures such as gross domestic product (GDP) used to measure economic performance are not sufficient to comprehend today's environmental problems, and that a more effective quantitative variable that combines human welfare and environmental factors under a single value is needed. Indices, which are developed with a focus on issues appropriate to the field, are performance values of combinations of different indicators that facilitate comparison and interpretation. However, they are focused on environmental or economic issues. Therefore, it is difficult to say that they are adequate measures covering all dimensions of the green economy. As a supporting concept, footprint types allow for a holistic assessment by examining resource consumption and production in various dimensions. Measuring and evaluating the performance of countries regarding the green economy is important for the policies to be implemented. The aim of this study is to propose a guiding inferential presentation for researchers by referring to various indices and footprint types in the literature that will enable the evaluation of the green economy in all aspects.

Keywords: green economy, indices, footprint, ecology, data interpretation

1. Introduction

In the fight against the destruction of nature and global climate change, measurement is vital to achieve the goal. The fact that the measurements made are healthy and the selected variables can reflect the real situation will make the studies much more effective. The most important variable used in academic studies on the environment and considered to represent the level of environmental destruction is the CO₂ emission variable. However, CO₂, which is one of the most important causes of global climate change due to its greenhouse effect, is not the only factor causing environmental destruction and climate change. In environmental studies, using the most inclusive variables possible related to the research topic has an important role in achieving the purpose and increasing the benefit of the research.

A green economy significantly reduces ecological problems and environmental risks, while simultaneously increasing human well-being and social equity. In this context, in an environment where a green economy prevails, income and employment will increase with public and private sector investments, and energy and resource efficiency will improve. In addition, carbon emissions and pollution rates will decrease, while reductions in biodiversity and ecosystems will be prevented. Therefore, as development and income distribution indicators are reconsidered in the transition to a green economy, new measurement methods are needed to promote environmental priorities. In order to measure the impacts of economic activities on social welfare and the environment, some economic sustainability indicators are of great importance as a guide.

The advantages of using well-designed quantitative indicators are that they can be used to assess magnitudes, evaluate the objectives of a project, provide standardized measures, and allow for objective comparison. On the other hand, qualitative indicators are also widely used and are usually based on the impressions and perceptions of the participants. For example, the

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observation that a forest has areas that have been converted into savannah would be an indicator of environmental damage.

Regular data collection every year is difficult and costly in various respects, resulting in many data being collected intermittently or irregularly. This prevents the monitoring of progress over a period of time (Nahman et al., 2016:5). Therefore, when the aim is to monitor the performance development of a country over a certain period, many variables have to be excluded from the index due to the lack of regular data. In such a case, deriving an index with a small but regular set of data may be a solution.

There is therefore a need for indices that aggregate numerical information on many variables into a single value. In the process of index calculation, a four-step approach is generally adopted: selection, transformation, weighting and evaluation of variables. This approach stresses that indices should be designed under certain headings and that there should be different indicators. From this point of view, As a result of the calculation of Footprint values for different areas, it has emerged that resources should be used properly, production should be carried out sustainably and humanity should switch to a sustainable lifestyle in order to reduce footprint values.

The aim of this study is to provide guiding data to researchers by including indices and footprint types that are frequently used in the literature in order to evaluate the green economy and make comparisons between countries.

2. Evaluating the Green Economy with Data

The green economy approach, which is considered to be the basic strategy of sustainable development, is thought to be a way to eliminate the contradiction between environmental concerns and economic goals. Therefore, measuring and evaluating the performance of countries on green economy is important for the policies to be implemented. A review of the literature reveals that indices and footprint types have been calculated under different headings. In this study, the most commonly used index and footprint structures are included.

2.2. Inference Using Footprint Types

Environmental footprints are an indispensable indicator in the assessment of the ecological system. Recently, the concept of Footprint Family has been created by bringing together different disciplines to evaluate the concept of sustainability. Footprints are simple indicators of human pressure on the environment and the environmental impacts resulting from this pressure (e.g. land use change, land loss, river flow reduction, water pollution, global climate change) and the combined effects (e.g. biodiversity loss, human health and the economy) (Hoekstra and Wiedmann 2014:1115).

2.2.1. Ecological Footprint and its Components

With each passing day, it is becoming more and more difficult for future generations to live in the same conditions due to population growth and unconscious consumption of natural resources. In this case, the concept of ecological footprint gains importance as a tool that can calculate the current situation in order to identify and prevent human damage to the environment.

The Ecological Footprint Concept In the mid-20th century, as the damage to the environment reached a noticeable level, sustainability advocate Mathis Wackernagel and ecologist William Rees introduced the Ecological Footprint concept and aimed to create a natural resource accounting tool that measures this damage. It is a method developed to measure the capacity of natural areas that are still productive and to find solutions to reduce and, if possible, eliminate the damage to nature (Wang & Dong, 2019:168). The concept of Ecological Footprint is defined
as the area of fertile land and water required to regenerate the natural resources consumed by an individual, community or activity and to eliminate the wastes it creates (Ulucak & Bilgili, 2018:145).

Every country has an impact on the world ecosystem, but it is not immediately visible, and it is global, not just regional. Therefore, the pressures generated need to be identified and quantified. With the emergence of ecological economics, which reveals that ecology and economics are two inseparable concepts, various methodologies have emerged. The Ecological Footprint is an attempt to develop a biophysically based ecological economy that approaches reality better than many expansionist economic models (Moffatt 2000:361). The ecological footprint measures our dependence on nature. The ecological footprint method provides a systems approach to natural resource accounting based on global, regional, local and individual supply and demand (Wackernagel and Rees, 1998:12). Every nation depends on ecological capacity to ensure sustainability. Each nation has a different ecological footprint as a result of ecological pressures, i.e. the amount of land needed to eliminate these pressures. In addition to this difference, the difference in area calculation methods and units between the plots poses a major problem, leading to erroneous assessments during comparison. The ecological footprint represents the critical natural capital requirements of a defined economy or population relative to biologically productive areas.

The Ecological Footprint expresses in the same unit the results of both a measure of demand and a measure of the biological capacity to meet that demand. This unit represents a biologically productive land or marine area in hectares with biological productivity above the world average in a given year (Goldfinger et al., 2014:764). Ecological Footprint calculations cannot be determined and calculated as the exact location, instead a calculation is made by assigning the data found using the available data. In other words, the calculation system is based on simplifying the waste generated by communities and the pressures they create on nature (Alvarado et al., 2021:3).

It can also be calculated in local hectares without using the factors included in the Ecological Footprint calculation. Some regions are difficult and complex to compare using global hectares, so comparisons are made using local hectares (Nathaniel and Khan, 2020:3). Biologically productive areas, calculated in global hectares, are categorized in order to determine the amounts consumed in the calculation and to enable a comparison on an areal basis.

Today, scientists can calculate ecological footprints with a series of mathematical formulas or in a simplified way such as multiplying production, consumption and population variables. Accordingly, the ecological footprint can be simplified and formulated as follows:

“Ecological Footprint (ha) = Consumption x Production Area x Population”

Ve The “Consumption” variable in the formula is the weight (kg), energy (joules), etc. of the goods consumed. “Production Area” represents the amount of bioproductive area owned for the cultivation of consumed goods, and “Population” represents the number of individuals in the region (Sharma et al., 2021:7). Components of Ecological Footprint in the studies of Rees (1996), Wackernagel et al., (2005) and Ewing et al., (2010) the Components of Ecological Footprint consists of the components ecological footprint; grassland and forest area, fisheries area, farmland, built area and carbon footprint. This can be expressed as the sum of six separate components:

1. **Carbon Footprint:** Carbon dioxide (CO2) gas emission, which comes to the forefront in many of the basic activities of life and is one of the basic wastes, increases with human activities (transportation, energy, etc.) and increases exponentially, especially with industrial activities. This carbon dioxide is reabsorbed by the oceans and forest areas. This is a measure of the
world's capacity for reabsorption, or from a different perspective, the world's capacity for mitigation of the greenhouse gas effect, in terms of the amount of CO2 emitted. It is a measure of CO2 emissions at each stage of the product life cycle (production, transport, use and disposal) (Charfeddine, 2017:357). CO2 is released when fossil fuels (coal, oil and natural gas) are ignited. The carbon footprint includes not only domestic production, but also carbon emitted in the production process of imported products and non-fossil fuel carbon emissions (such as emissions from chemical reactions in cement production). The carbon footprint measures the biological capacity required to absorb CO2 emissions (Tomberlin et al., 2021:3901). However, unlike other types of footprints, there is no calculated biological capacity when it comes to carbon. Instead, the calculations use unharvested forest land to store (through photosynthesis) every ton of carbon released into the atmosphere. If the size and productivity of this forest land is not sufficient to store the amount of carbon released into the atmosphere, an ecological deficit in the carbon sequestration category emerges (Erden Özsoy, 2015: 201).

2. Grassland Area Footprint: It is the measure in terms of the area of the world of the grassland area required for animals to be raised in order to ensure the sustainability of all animal foods consumed by humanity as well as animal resources such as leather and wool. Raising animals to obtain products such as meat, leather, wool and milk requires the use of feed products produced on agricultural land, fish feed grown in natural environments or on farms, and pasture areas set aside for grazing. There are approximately 3.5 billion hectares of natural and semi-natural grasslands worldwide. Grassland footprint is calculated by comparing the amount of animal feed readily available in a given country with the amount of feed required for all animals in a year and obtained from grazing land (Ferng, 2005: 417).

3. Farmland Footprint: It is the measure of the area of the earth required to grow all the plant resources consumed by humanity or, in basic terms, to continue humanity's use of plant resources: The growth of food for human consumption, fiber, oil and rubber production, as well as plants for animal feed, depends on the availability of agricultural land. The area of farmland with the highest biological productivity per hectare covers 1.5 billion hectares worldwide. The agricultural land footprint includes crops used for purposes such as livestock, fiber and material production. Due to the inadequacy of global datasets, soil degradation as a result of unsustainable agricultural practices and techniques, erosion and soil salinization, processes that lead to long-term soil fertility decline, are not included in the agricultural land footprint (Butler et al., 2007: 382).

4. Fisheries Area Footprint: It is a measure of the world's capacity to produce the seafood that people consume or to sustain this level of consumption. The fisheries area footprint is calculated as the area of sea and freshwater required to sustain the fish and seafood consumed.

5. Forest Area Footprint: It is the measure of the world forest area required to obtain forest products such as wood, sawdust, timber, paper, etc. used by humanity in its activities. Forest areas are needed for the production of pulp, timber, industrial wood and firewood. There are approximately 3.9 billion hectares of forest areas worldwide (Yan and Wang, 2022:7). The national forest footprint is the sum of products from foreign and domestic sources. Factors that are not included in footprint calculations, such as degradation of the integrity of forest areas, failure to protect biodiversity, climate change, and the allocation of forested areas that should be protected to wood production, reduce the capacity of forests to maintain ecosystem services (WWF, 2012: 32-33).

6. Built Area Footprint: It is the extent to which the indoor space requirements of residential areas, commercial areas, industrial areas, service areas, etc. used by people for all their needs can be maintained in their current state. The built footprint is the calculation of the area covered by infrastructure and superstructure related to meeting human needs, including housing,
transport (roads, bridges), industrial buildings and power plants. It is assumed that there is an average of 0.2 billion hectares of built-up area worldwide (Schuegraf and Bittner, 2019:5). Hydroelectric dams and reservoirs used for hydroelectric energy use are also included in built footprint calculations (WWF, 2012: 35).

2.2.2. Different Types of Footprints

Each of the indicators used in the context of assessing the green economy can give different results when calculated and compared separately. Each footprint should therefore be assessed using an integrated system. The footprint family is under the heading of Environmental Footprints: Water Footprint (WF), Energy Footprint (EF), Nitrogen Footprint (NF), Land Footprint (LF), Biodiversity Footprint (BF).

**Water Footprint** is the cumulative virtual water content of all products and services consumed by individuals and communities within a given region. The actual water content of a product can, in many cases, be much less than its virtual water content. The Water Footprint thus identifies this embedded energy in a simple way, it can be called "water in shape" (Fang et al., 2014). The Water Footprint consists of three main components: blue, green and grey water footprints. The Blue Footprint (BWF) is a measurement of the impacts of water use by individuals and communities on the Earth's freshwater resources. The Blue Water Footprint (BWF) takes into account water consumption (water quantity), resource stress (water stress index) and quality (water impact index) and expresses water in equivalent volumetric units (Čuček et al., 2012:10). Green Water Footprint is the volume of green water (rainwater) available specifically for crop production. The Grey Water Footprint is an indicator of the degree of freshwater pollution and is expressed as the volume of freshwater required to assimilate the pollution load found in current ambient water quality standards (Mekonnen and Hoekstra, 2012:403).

**The Nitrogen Footprint** is a measurement of the amount of reactive nitrogen (Nr- all nitrogen species other than N2) released as a result of human activities, expressed in units of total N, (Leip et al., 2014:23). Nitrogen, a vital element in the world, is increasing due to human agricultural activities and fossil fuel consumption. Human use of reactive nitrogen (Nr) in the environment has profound beneficial and harmful effects on humans. Its beneficial effects arise from food production and industrial applications. Harmful impacts are caused by the loss of all of the N used in food production and during fossil fuel combustion, a step in environmental change that negatively affects both humans and ecosystems (Leach et al., 2012:43). The term Nitrogen Footprint is used to ensure the management of reactive nitrogen (Nr) that is generated during the consumption and production phase. In order for people to be able to provide this production and consumption, it is necessary to create a sustainable land use by monitoring the changes in the environments they use, i.e. the land, due to the increasing population.

**The Biodiversity Footprint** measures biodiversity loss, land use changes as a result of area change, unsustainable use of biological resources, overexploitation of aquatic ecosystem resources and invasion of exotic species (Lenzen et al., 2012:109). In addition to the pressure on the environment with the increase in consumption, the pressure on ecosystems and living species in nature is increasing day by day. This allocation of natural resources is driven by human needs. This is often negative for biodiversity as it leads to habitat degradation or loss, pollution, climate change, biotic exchange or overuse (Marques et al., 2017:76). The term Biodiversity Footprint is used to eliminate these negativities and take species under protection.

**The Combined Environmental, Social and/or Ecological Footprint** is divided into two sub-concepts: Exergy Footprint (EXF) and Chemical Footprint (CHF). These footprints are used to express the impacts of natural assets such as energy and chemicals on the environment as a
result of their use, consumption and change of form during consumption (Turner et al., 2007:39).

**Composite Footprint.** The concept of composite footprint is a combination of two or more individual indicators or sub-indicators. In this way, complex information is kept together and evaluated with a single index. Ecological Footprint (EF), Sustainable Process Index (SPI) and Sustainable Environmental Performance Indicator (SEPI). (Liu et al., 2021:3).

### 3. Conclusion

The post-2015 debate on the development agenda reflects the high level of need for the production of quality data in order to identify and implement the necessary development policies. The experience gained in implementing the transition to a green economy clearly demonstrates that effective use of data supports development efforts, enables successful interventions to achieve goals, allows performance to be tracked and increases accountability. The sustainable development approach requires a revolution in data collection.

It is clear that achieving objectives will be easier if data flows are available when and where they are needed, are appropriate, of high quality, can be disaggregated or integrated, and are sustainable. It is an important fact that obtaining quality data is an indispensable prerequisite for development. The use of quality data has enabled governments to streamline their development policies, programs and interventions at both national and local levels.

The importance of data collection, especially at the local level, is well understood. It has become easier to focus on local problems and intervene appropriately, increasing the chances of policy success. Data quality will improve with policies that support data provision. It has increased the demand for development data and the use of such datasets. The need for sound execution of efforts to achieve these goals has increased the need to strengthen statistical capacity and methodologies and to develop information systems at both national and international levels.

The existence of such a need has, over time, led to increased coordination of statistical systems between countries and the emergence of new statistical methodologies, as well as an increased supply of more and better quality data.

The need for data has led to the establishment of units at both national and local levels that collect data effectively and receive national or international support. Collecting data effectively at local and national level, getting support from different data sources, sharing data, classifying, disaggregating or integrating data according to purpose has become the most valid means of achieving an assessment of the transition to a green economy. Communication between international agencies and national experts has increased. There has been a significant increase in data collection and sharing in developing countries. This has increased the chances for international agencies to access national data and to exploit the benefits that can arise from it.

While progress is being made, the provision of data critical for development policies is inadequate. Major data gaps continue to exist in a number of development areas.

The most important reasons for data inadequacies are poor quality data, outdated data, data that cannot be disaggregated to reflect the details required for important dimensions, and data that are not in a continuous series because measurements are interrupted. Because of these inadequacies, many national or local governments continue to rely on poor quality, outdated data for decision-making and planning. Eliminating these data deficiencies in the green economy process in the context of sustainable development will allow the process to be carried out properly, accurate evaluations to be made and policies to be produced.
References


The Relationship between Renewable Energy and Economic Growth: Evidence from Developing Countries

Funda H. Sezgin

Abstract
Energy use is the most important input of all sectors, as well as ensuring the social and economic development of countries. Especially in developing countries, energy use areas are increasing significantly. Energy production in the world is mostly met by fossil fuel thermal power plants, hydroelectric and nuclear power plants. The rapid consumption of fossil fuels and the release of greenhouse gases into the atmosphere cause global warming and thus lead to not only an energy crisis but also an ecological crisis. For this reason, the transition to renewable energy use has become mandatory in recent years. The use of renewable energy contributes to energy supply security and mitigation of environmental risks, while attracting attention as a business area for investment. The aim of this study is to reveal the relationship between renewable energy and growth in developing countries with the help of Dumitrescu and Hurlin (2012) causality analysis for quarterly data for the period 2010-2020. According to the findings, there is no causality relationship from renewable energy consumption to economic growth, while there is a unidirectional causality relationship from economic growth to renewable energy consumption.

Keywords: renewable energy, economic growth, panel causality test

1. Introduction
Sustainability of growth and development is only possible with sustainability of the environment. The increasing demand for primary energy worldwide threatens the environment and therefore life with the high carbon and greenhouse gas emissions generated by these energies. However, the targets set, the current situation and progress do not give an optimistic outlook for achieving them. In fact, despite being much more advantageous in terms of renewable energy resource capacity, the fact that even renewable energy-poor countries lag behind the rates of clean energy use is an issue that should be emphasized (Leitao, 2014:393).

Energy is one of the most fundamental factors in the sustainable socioeconomic development of countries and increasing the welfare of individuals. The very existence of modern societies is linked to the use of energy. From this point of view, in today's conditions, the level of development of a nation is evaluated in terms of the amount of energy consumption per capita (Magazzino, 2014:137).

Energy is derived from various elements in different forms. These elements are generally referred to as energy resources. In the literature, energy resources are mostly classified into two different categories: non-renewable and renewable energy resources. Non-renewable energy resources refer to energy resources that are scarce on earth and deplete as they are used and cannot renew themselves, while renewable energy resources refer to energy resources that are abundant on earth and do not deplete as they are used and can renew themselves (Huang et al., 2008:43). Due to these characteristics, non-renewable energy resources consisting of fossil energy resources such as oil, natural gas and coal are referred to as “stock energy resources”, while renewable energy resources consisting of energy resources such as hydraulic, solar, wind,

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geothermal and biomass are referred to as “current energy resources”. Fossil-based energy sources (fossil fuels) have a large share in world energy consumption. This raises three different debates. The first issue discussed is that these intensively used resources are in danger of being depleted due to their scarcity. The second issue is that these resources, which are unevenly distributed across the globe, are predominantly located in democratically contested or politically unstable regions. The third issue is that the consumption of these resources leads to greenhouse gas emissions, and greenhouse gas emissions lead to environmental pollution. These three debates can be evaluated under the headings of scarcity, security of supply and environmental factors (Chontanawat et al., 2008: 211; Apergis and Payne, 2009:215; Bhattacharya et al., 2016:735).

The use of renewable energy is a good alternative to overcome these problems caused by fossil resources. First, there is no danger of depletion as renewable energy sources are continuous. Secondly, since these resources are indigenous, there is no need to procure them from other countries and therefore no dependence on other countries. Third, because these resources are clean, they do not emit greenhouse gases, i.e. pollute the environment (Sadorsky, 2009:4023). Renewable energy production is expected to contribute positively to the external balance in the long run by contributing to the reduction of imported energy resources. In addition to its economic contributions, the use of renewable energy also has foreign policy implications (Tiwari, 2011:2358). The widespread use of these resources can reduce a country's vulnerability to fluctuations in the price of fossil fuels and instability in the countries where these resources are located, and increase its bargaining power in terms of energy resources to be procured from foreign markets (Li et al., 2021:5).

The results of the studies investigating the relationship between renewable energy use and economic growth in the literature can be discussed under four headings. The “growth hypothesis” applies when there is a unidirectional causal relationship from renewable energy consumption to economic growth, the “conservation hypothesis” when there is a unidirectional causal relationship from economic growth to renewable energy consumption, the “feedback hypothesis” when there is a bidirectional causality between renewable energy consumption and economic growth, and the “neutrality hypothesis” when there is no causal relationship between renewable energy consumption and economic growth (Apergis and Payne, 2009b:642; Leitao, 2014:393; Armeanu et al., 2017:3). When the growth hypothesis holds, policies on renewable energy are expected to have an impact on economic growth, while policies on economic growth are expected to have no impact on renewable energy. When the conservation hypothesis holds, policies on economic growth are expected to have an impact on renewable energy and policies on renewable energy are expected to have no impact on economic growth. When the feedback hypothesis holds, the use of renewable energy is expected to affect economic growth and economic growth is expected to affect renewable energy use. In the null hypothesis, neither an effect from renewable energy use to economic growth nor an effect from economic growth to renewable energy use is expected. The valid hypothesis can guide those concerned in determining the economic policy to be followed (Alvarez-Herranz et al., 2017:388; Menegaki et al., 2017:1256).

2. Literature

The relationship between renewable energy and economic growth has been the subject of panel analyses in recent years. In their work on 20 OECD countries, Apergis and Payne (2010a), 13 Euroasian countries, Apergis and Payne (2010b), 6 Central American countries, Apergis and Payne (2011a), 80 countries, Apergis and Payne (2012), 80 countries, Apergis and Danuletiu (2014) found that there is a reciprocal causality relationship between economic growth and renewable energy consumption. In their study on Malaysia, Bobinaite vd. (2011), India;
Khoshnevis Yazdi and Shakouri (2017), Iran; Haseeb et al. (2019) found that there is a unidirectional causality from renewable energy consumption to economic growth. In their study for Russia, Azad et al. (2014), Australia; Burakov and Freidin (2017) concluded that there is a unidirectional causality relationship from economic growth to renewable energy consumption. In their studies on Brazil, Pao and Fu (2013), on China, Lin and Moubarak (2014), on Germany, Rafindadi and Øztürk (2017) found bidirectional causality between renewable energy consumption and economic growth.

Menegaki (2011) studied 27 European countries and concluded that there is no causality between renewable energy consumption and economic growth. In their analysis for 16 emerging market economies, Apergis and Payne (2011b) found that there is unidirectional causality from economic growth to electricity consumption from renewable sources in the short run and reciprocal causality in the long run. Bhattacharya et al. (2016) found that there is a unidirectional causality from renewable energy consumption to economic growth in the 38 countries with the highest renewable energy consumption and Inglesi-Lotz (2016) in 34 OECD countries. Armeanu et al. (2017) found that there is a unidirectional causality from economic growth to renewable energy production for 28 EU countries. When the results obtained in the panel analyses that are prominent in the literature are evaluated, it is seen that there is a bidirectional causality relationship between renewable energy consumption and economic growth. Soava et al., (2018) examined the relationship between economic growth and renewable energy consumption using panel cointegration and causality tests with data for the period 1995-2015 for 28 EU countries. The study demonstrated the positive impact of renewable energy consumption on economic growth and revealed the existence of bidirectional or unidirectional Granger causality between the aforementioned indicators for each country in the panel. Chen et al., (2019) examined the 1980-2014 period of China using ARDL bounds test and vector error correction model (VECM) Granger causality test methods and found a unidirectional causality relationship from economic growth to renewable energy production in the short run.

3. Data and Econometric Methodology

The main purpose of the study is to examine the causality relationship between technological development and economic growth with the help of Dumitrescu-Hurlin (2012) panel causality test, through annual data for the 2010-2020 period in developing countries. All the series are annual and obtained from World Bank databases.

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<tr>
<th>Variables</th>
<th>Variables Description</th>
<th>Data Source</th>
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<tr>
<td>GDP</td>
<td>Real GDP (in 2010 constant US dollars)</td>
<td>World Bank</td>
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<tr>
<td>RE</td>
<td>Renewable Energy Consumption</td>
<td>World Bank</td>
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The study sample includes 16 developing countries (Brazil, Chile, Colombia, Mexico, Peru, Egypt, Hungary, Poland, Russia, South Africa, Turkey, China, India, Indonesia, Taiwan, Thailand). To analyze the causal relationships between Renewable Energy Consumption and economic growth panel causality test developed by Dumitrescu and Hurlin (2012) was used. Before carrying out this test, we first tested the existence of cross-sectional dependence between variables employing Breusch-Pagan (1980) (Lagrange Multiplier-LM) and Pesaran (2004) (Cross-section Dependence-CD) and Pesaran, Ullah and Yamagata (2008) (Bias-Adjusted Cross Sectionally Dependence Lagrange Multiplier- CDLM) tests. And then, based on the
results of the cross-sectional dependence tests, we performed second generation panel unit root tests of CIPS test. In addition, the homogeneity of delta tilde tests of Pesaran and Yamagata (2008), and the test results were presented in Table 2. Finally, we applied the Dumitrescu-Hurlin (2012) Panel Causality Test.

The Dumitrescu-Hurlin test can predict cross-section dependence and cross-section independence situations. When we examine the traditional panel Granger causality tests, it can be seen that if there is a causal relationship in a sub-group of the variable, due to the lack of cross-sectional information, that is because of the homogeneous null hypothesis. The null hypothesis means that there is no Granger causality relationship in cross-sections, and the alternative hypothesis expresses a Granger causality relationship for at least one cross-section (Dumitrescu and Hurlin, 2012). Dumitrescu and Hurlin (2012) used the following equation for panel causality test considering the linear heterogeneous model:

\[ y_{it} = \alpha_i + \sum_{k=1}^{K} y_{i,t-k} + \sum_{k=1}^{L} \beta_{i}^{k} x_{i,t-k} + \varepsilon_{it}, i = 1,2,...,N; t = 1,2,...,T \quad (1) \]

Where \( \alpha_i \) denotes individual effects, \( y_{i}^{k} \) and \( \beta_{i}^{k} \) represents the lag and slope parameters, and \( L \) supposed to be the lag orders. We can summarize the model's assumptions as; the individual effects are constant, besides the same lag length in cross-section, the coefficients of slope and lag parameters vary across units and especially a balance panel must be required for the Dumitrescu-Hurlin test. The null and alternative hypotheses equation are as follows:

\[ H_{0}: \beta_{i1} = \cdots = \beta_{iK} = 0 \forall i = 1,...,N \]
\[ H_{1} = \beta_{i1} = \cdots = \beta_{iK} = 0 \forall i = 1,...,N_1 \]
\[ \beta_{i1} \neq 0 \text{ or } \beta_{iK} \neq 0 \forall i = N_1 + 1,...,N \quad (2) \]

When we consider the null hypothesis, it can be seen that there is no Granger causality relationship between variables for all units. In contrast, the alternative hypothesis represents at least one unit that there is evidence of Granger causality between variables. Individual residues are independent for each cross-section unit. Therefore, while the alternative hypothesis supports heterogenous results, the null hypothesis is a heterogenous model providing homogenous results. This test is usually distributed and allows (Dumitrescu and Hurlin, 2012). To determine the outcome of the Dumitrescu-Hurlin panel causality test hypotheses, one can use a test statistic, which is the mean of all test statistics of cross-sectional units.

\[ W_{N,T}^{HNC} = \frac{1}{N} \sum_{i=1}^{N} \sum_{t=1}^{T} (W_{i,t}^{HNC} \text{ (HNC: Homogeneous Non-Causality) } \quad (3) \]

Where \( W_{i,t} \) represents the test statistics of each cross-sectional unit. In this test, one can obtain two different test statistics based on whether \( T \) is greater or less than \( N \). These test statistics are \( Z_{N,T}^{HNC} \) and \( Z_{N}^{HNC} \) obtained from \( W_{N,T}^{HNC} \). When \( T>N \), we use \( Z_{N,T}^{HNC} \) statistics. On the other hand if \( T<N \) we use \( Z_{N}^{HNC} \) statistics. Furthermore, the following equations give these statistics.

\[ Z_{N,T}^{HNC} = \sqrt{\frac{1}{N} \sum_{i=1}^{N} (W_{i,N,T}^{HNC} - K)^{T}, N \rightarrow \infty, N(0,1) \quad (4) \]
\[ Z_{N}^{HNC} = \sqrt{\frac{(N(W_{N,T}^{HNC} - N^{-1}\sum_{i=1}^{N} E(W_{i,T}))}{\sqrt{N^{-1}\sum_{i=1}^{N} \text{Var}(W_{i,T})}}} \rightarrow \infty, N(0,1) \quad (5) \]
4. Findings
The cross-sectional dependency between the series was analyzed with the LM CD test developed by Pesaran (2004) and the LM adj. test whose deviation was corrected by Pesaran et al. (2008) and the test results are presented in Table 2. Since the probability values of the test results were below 5%, null hypothesis (there is no cross-sectional dependency) was rejected and it was determined that there was a cross-sectional dependency between the series. In addition, the homogeneity of the co-integration coefficients was tested using the delta tilde and corrected delta tilde tests of Pesaran and Yamagata (2008), and the test results were presented in Table 2. Since the probability values of the test results were below 5%, null hypothesis (slope coefficients are homogeneous) was rejected and it was determined that the co-integration coefficients were heterogeneous.

Table 2: Cross-sectional dependence tests and homogeneity test results

<table>
<thead>
<tr>
<th>Cross-sectional Dependency Test (H0: There is no cross-sectional dependency)</th>
<th>Test</th>
<th>Test Statistics</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>LM (Breusch and Pagan, 1980)</td>
<td>32.675</td>
<td>0.011</td>
<td></td>
</tr>
<tr>
<td>LM adj (Pesaran et. al, 2008)</td>
<td>34.907</td>
<td>0.004</td>
<td></td>
</tr>
<tr>
<td>LM CD (Pesaran, 2004)</td>
<td>36.022</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Homogeneity test (H0: Slope coefficients are homogeneous)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test</td>
</tr>
<tr>
<td>Delta_tilde</td>
</tr>
<tr>
<td>Delta_tilde_adj</td>
</tr>
</tbody>
</table>

In this study, second-generation unit root tests should be used as cross-sectional dependency is determined. The second-generation unit root test of CIPS was used in this study. The results of the CIPS test are given in Table 3.

Table 3: Results of CIPS panel unit root test

<table>
<thead>
<tr>
<th>Variables</th>
<th>Level</th>
<th>First Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Constant</td>
<td>Constant + Trend</td>
</tr>
<tr>
<td>GDP</td>
<td>-1.147</td>
<td>-1.198</td>
</tr>
<tr>
<td>RE</td>
<td>-1.128</td>
<td>-1.175</td>
</tr>
</tbody>
</table>

*significant at 5% level

In CIPS tests, the maximum lag length was taken as 1 and the optimal lag length was determined according to the Schwarz information criterion. It is seen that hypothesis zero is rejected at 1% and 5% significance levels. Unit root test results show that the series are not stationary at the level, in other words, the variables are stationary at level I(1).

Table 4: Dumitrescu and Hurlin (2012) causality test results

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Test</th>
<th>Statistics</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLogGDP does not granger cause DLogRE</td>
<td>Whnc</td>
<td>7.563</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Zhnc</td>
<td>8.106</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Ztild</td>
<td>8.677</td>
<td>0.000</td>
</tr>
<tr>
<td>DLogRE does not granger cause DLogGDP</td>
<td>Whnc</td>
<td>1.193</td>
<td>0.137</td>
</tr>
<tr>
<td></td>
<td>Zhnc</td>
<td>1.365</td>
<td>0.202</td>
</tr>
</tbody>
</table>
As can be seen from Table 5; The RE variable is not the granger cause of the GDP variable. On the other hand, the GDP variable is the granger cause of the RE variable. Unidirectional causality running from GDP to RE has been determined.

5. Conclusion

The industrialization process has increased the demand for energy. Today’s developed countries meet a significant portion of their increasing energy demand from fossil fuels. However, the depletable nature of fossil fuel resources and the damage they cause to the environment have revealed the necessity of alternative energy sources. In this context, there has been a shift from fossil fuels to renewable energy sources to ensure sustainable economic growth and development.

For this purpose, in this study, the relationship between renewable energy use and economic growth in developing countries and the direction of the relationship are examined with the help of Dumitrescu and Hurlin (2012) causality test for the period 1990-2020. According to the causality test results conducted to determine the direction of the relationship whose existence is tested, there is a unidirectional causality from economic growth to renewable energy use and the “conservation hypothesis” is valid in developing countries.

Renewable energy is an expensive energy source for developing countries. Because it requires a lot of research and feasibility studies. In order for renewable energy sources to be used as energy sources and to have a positive effect on growth in the long term, investments should be made in these sources.

In parallel with the analysis results of the study, the following policy recommendations can be made: policies should be implemented to reduce renewable energy installation costs, domestically produced materials should be used for renewable power plants, the proportion of rail systems in public transport should be increased, the use of electric vehicles should be increased, tax reductions and tax exemptions should be applied for renewable energy, the state should subsidize renewable energy when necessary, convenience should be provided in obtaining licenses for renewable energy, the purchase of energy produced from renewable energy to the grid should be guaranteed at high prices, it should be ensured that new buildings are built in accordance with renewable energy, regional investment incentives for renewable energy should be introduced, suitable land use opportunities should be created for renewable energy, more share should be allocated to R&D studies on renewable energy, bureaucratic obstacles in renewable energy license applications should be reduced, courses on renewable energy should be taught in some undergraduate and graduate programs, suitable conditions should be provided for the transmission and storage of energy produced with renewable energy, and most importantly, importance should be attached to efficiency and energy saving in energy consumption and the society should be made aware of this issue through mass media.

References


Impact of Knowledge Sharing and Organizational Learning on Organizational Performance: Evidence from Health Sector

Pınar Tokal

Abstract

Organizations need to manage information effectively in order to survive and gain competitive advantage. Because knowledge management plays a key role in helping organizations adapt to an increasingly fast and ever-changing environment and gain competitive advantage. Organizations will increase their competitiveness and performance through the processes of acquiring knowledge, transforming knowledge into usable knowledge, applying knowledge and protecting knowledge. The main purpose of this study is to investigate the effect of knowledge management process and organizational learning on organizational performance in organizations. The study sample consisted of 700 healthcare personnel in different positions. As a result of the analysis, knowledge management and organizational learning were significantly related (p<0.05) on organizational performance dimension. As a result of the analysis, the knowledge management dimension was positively and significantly related to organizational performance (β=0.258, p<0.01), and organizational learning was positively and significantly related to organizational performance (β=0.221, p<0.01). The most effective variable to increase organizational performance was determined as knowledge sharing and secondly as organizational learning.

Keywords: talent management, knowledge management, organizational learning, organizational performance, structural equation modeling

1. Introduction

In today's information and technology-driven markets, knowledge has an important role to play in gaining and maintaining competitive advantage and improving organizational performance. Since knowledge is the most important competitive advantage tool, effective management of knowledge will increase organizational performance. The knowledge management process is a process that includes activities related to the systematic acquisition, transformation, use and protection of knowledge in order to better achieve organizational goals. This process develops depending on technology, culture, organizational structure and human factors (Philips and Edwards, 2009:42).

Knowledge management is the planning and implementation of all processes related to the conceptualization, creation, acquisition, review, use and sharing of knowledge in any business. In order to create a knowledge management model, it is also very important to identify the strategies required to manage organizational knowledge. Through the systematic and collective collection, creation, development, sharing and use of knowledge, organizations can grow profitably, competitively and sustainably (Marques and Simon, 2006:145). Since learning in an organization takes place through individuals, it should be taken into account that knowledge management is a social process as well as a technical one. Therefore, its effectiveness will increase when people with different education and skills come together.

When the literature on the relationship between organizational learning and performance is examined, it is seen that organizational learning can be considered as both a process and an outcome. However, the general consensus in the literature is that organizational learning is a

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prerequisite for successful organizational performance and change. In this context, organizational learning is thought to have a positive impact on individual job performance as a dynamic process of creating, acquiring and integrating knowledge that aims to develop skills and resources. It is also a strategic element for sustainable advantage and organizational renewal. The study aims to investigate the effects of knowledge management and organizational learning on organizational performance for healthcare professionals in different positions working in private hospitals.

2. Conceptual Framework

2.1. Knowledge Management

The fact that human beings are the main element in the creation of knowledge, which is the main determinant of the challenging competitive environment in which businesses are involved today, necessitates a human-centered management approach based on knowledge production in today's organizations. In order to clarify the structure and functioning of knowledge creation, it is necessary to explore the nature of a business's knowledge and to address what elements comprise the existing knowledge resources, and ultimately to link the development of corporate knowledge to the strategic goals of the organization (Inkinen, 2016:232).

Businesses can produce knowledge in-house as well as by utilizing methods such as purchasing, imitation, outsourcing, comparison, derivation, alternative generation and exploration (Hsiao et al., 2011:646). The provision of knowledge by the enterprise can be through the purchase of another organizational system as is or through the recruitment of knowledge-holding personnel. Outsourcing takes place by outsourcing a part of its own actions to another business that has knowledge in that field instead of wasting time to produce the knowledge. Derivation is defined as the application of knowledge from one project to another project; alternative creation is defined as generating options that can be used instead of existing knowledge; and discovery is defined as the creation of tacit knowledge within the organization (Kessel et al., 2012:149). The accumulation of knowledge from previous times is seen as the main source for the production of new knowledge. The most important input to knowledge production is knowledge itself. The knowledge that constitutes input for the production of new knowledge by passing through the evaluation of the scientific thought structure is referred to as "productive knowledge" (McIver et al., 2013:599).

Organizational knowledge refers to the common knowledge that the enterprise uses in solving the problems it encounters while fulfilling its predefined tasks. It is seen as a type of knowledge that is formed as a result of experiences from the past and can be carried to the decisions to be taken in the future, which includes the personal memory of business employees, corporate culture, standardized operating procedures, expected role behaviors and internal memory arising from environmental factors, which consists of organizational learning and memory, which constantly changes and develops depending on the results of the behaviors of solving the problems encountered in the enterprise (Mills and Smith, 2011: 158). Businesses transform the information they obtain as a result of their relations with their environment into information and perform the functions defined for them by integrating this information with organizational experiences, common values and corporate rules.

If knowledge management is to be an enduring managerial tool rather than a fad, it must prove itself in terms of competitive advantage and economic value creation (Yang, 2011:17). Because the key to success is competitive advantage, and the key to competitive advantage is to be aware of what the business knows and how much more it needs to know. At this point, it is critical for businesses to be aware of what they need to know in order to accomplish what they want to accomplish and to understand how this knowledge creates value (Turulja and Bajgoric, 2018:258).
Beijerse (1999)’s definition of knowledge management is that knowledge motivated by business strategy is used to improve the ability of employees to attribute meaning to and evaluate information and data and to achieve organizational goals by making use of these skills. Another definition of knowledge management is that it is a system designed to simplify the capture, collection, storage and reuse of information from previous decision-making experiences in order to increase the effectiveness of the business and to selectively apply it to current and future decision-making processes (Jennex, 2007:57). Knowledge management refers to all practices of systematic management of intellectual assets (such as documents, policies and procedures, databases) and information belonging to the enterprise in a way that creates competitive advantage.

The common point of the definitions of knowledge management is the provision of internal and external information within the organization and the application of knowledge to create new products and services, to develop capabilities to discover new value-adding resources, and to provide competitive advantage in order to make the services provided more efficient for internal and external customers (Andreeva and Kianto, 2012: 619).

2.3. Organizational Learning

In a rapidly changing and increasingly competitive environment, learning organizations have advantages. These are; being faster and more effective in the face of change, creating innovative products and services and getting ahead of competitors. The most important of these advantages is that they attract and retain the best employees. Learning organizations have the advantage of being able to recruit the best staff and offer them more attractive opportunities. This is due to the fact that when a choice is made, employees want to work in organizations that give them the chance to develop and grow (Beauregard et al. 2015:716). From a historical perspective, organizational learning theory can be classified into three main streams of research at the micro and macro levels where organizational reality can be understood. These are: organizational and societal level dynamics (organizational structures, etc.), micro-level approaches that focus on individual and group level dynamics (e.g. internal-external changes), and mid-level approaches that work towards the integration of the two (Calantone et al., 2002:517).

In learning organizations, the element of learning should be spread throughout the organization. This results in organizational learning. Organizational learning is the process of collecting and sharing the information obtained from different sources by the employees within the enterprise and developing and reusing this new information in the enterprise (Goh, 2019:45). Organizational learning is the work of accessing and sharing knowledge. The basic element of organizational learning is the dissemination of knowledge and its common use within the enterprise. When this occurs, then we can talk about organizational learning. With the act of learning, a change occurs in organizational behavior (Kaminska and Borzillo,2018:96). Organizational learning is a phenomenon that needs to be created through developmental processes that involve all actors in the business, that needs to be sustained continuously and that needs to be "socially" constructed. Rather than using a theory or a structural template, the aim is to create meanings derived from discourse and shared experiences of a business (Marquardt, 2019:35).

2.4. Organizational Performance

The concept of performance is defined as a set of tasks performed with the help of efforts, practices and activities for defined business objectives (Al Aina and Atan, 2020:5). Technically, performance is defined as the capacity of a system to perform the tasks expected of it to the extent and in the time required, even if it is subjected to more than normal load (Darroch, 2005:103). As a concept that forms the basis of business and management theory, performance is explained as the ability to design and manage the organization in a way that it can reach its
goals through efficient and effective use of resources (Ferraris et al., 2018:6). Performance is a concept used to quantitatively or qualitatively determine what is achieved as a result of a planned and purposeful activity. Organizational performance refers to the level of realization of the institutional task/objective based on the output or results achieved within a certain period of time; organizational performance evaluation refers to the determination of the effectiveness and efficiency in terms of the realization of the planned organizational actions by using a set of criteria and the production of a certain output with minimum cost. There are many definitions of the concept of performance by different disciplines (Gholami et al., 2013:206).

Organizational performance is a measure that expresses the success of an organization in achieving its goals at the end of a certain period. Organizational strategy, human resources, marketing, production and even suppliers are important in organizational performance (Ho, 2008:1236). In addition, organizational performance is considered to be the most general type of performance. This is because organizational performance is the totality of performances that cover all economic and human dimensions (Kontoghiorghes, 2015: 1835).

Organizational performance is the process of achieving the desired results by determining the priorities of the enterprise by planning strategically and spreading from the top management to the lower departments in order to realize the plans it has made. In addition, organizational performance is the most appropriate tool to ensure transparency and accountability of the organization and to ensure that efficiency principles have an impact on management. Some of the criteria used to measure organizational performance are time, quality, labor, cost, reliability and service (Kuhlmann and Bogumil, 2018: 545). In other words, organizational performance is a type of performance that encompasses all the processes that the business spends from plans to business results and connects them with technological infrastructure.

3. Statistical Analysis

3.1. The Purpose and Importance of the Study

The information age requires organic organizations with the ability to adapt quickly to changing environments. Individuals and organizations that produce, use and own knowledge have become key players in the development of societies. This situation shows us that the concept of knowledge has emerged as a strategic value in addition to traditional production factors as a sine qua non of global competition. In order to create a knowledge management model, it is also very important to identify the strategies required to manage organizational knowledge. Through the systematic and collective collection, creation, development, sharing and use of knowledge, organizations can grow profitably, competitively and sustainably. Since learning within the organization takes place through individuals, it should be known that knowledge management is a social process as well as a technical one.

Healthcare professionals are at risk within their scope of work, as the smallest mistake or error based on protecting human health can cause irreparable harm. For this reason, it is of great importance that the health institutions to which healthcare professionals are affiliated provide the conditions for healthcare professionals to learn and to learn about their own field of work and other health issues. The necessity of individual learning, team learning, being a learning organization and continuing the organizational learning process for health institutions stems from the fact that even the most unqualified mistake made in health institutions can bring irreparable damages and, accordingly, make the reputation and legitimacy of health institutions questionable. From this point of view, the aim of the study is to determine the effect of knowledge management and organizational learning on organizational performance for the employees of 4 private hospitals serving in Istanbul. Thus, it will be revealed which of the new generation concepts; knowledge management and organizational learning, which are important
on performance, are more effective for the health sector. This will give direction to strategic plans as important information for managers and organizations.

3.2. Study Population and Sample

The research is a non-experimental quantitative correlational survey method. The study was prepared with a survey design from quantitative research methods. The survey design enables a quantitative description of the tendencies, attitudes and opinions in the general population through studies conducted on a sample selected within a population. A survey design is the determination of a group's views on a particular issue or problem through a series of questions. The population of the study consists of healthcare personnel working in 4 private hospitals in Istanbul. The population of the study was determined as 3782 people. The number of samples to be drawn from a given population was determined as 333 people for p=0.50 and q=0.50 for a sampling error of 0.05 in the table developed by Yazıcıoğlu and Erdoğan (2004). In this study, 700 healthcare personnel constitute the sample. Due to the pandemic, most of the surveys were conducted online and a limited number of face-to-face interviews were conducted on a voluntary basis. Simple random sampling was used as the sampling method.

3.3. Data Collection Tool

Organizational Learning Scale: It was developed by Calantone, Çavuşgil and Zhao (2002) to measure the level of organizational learning. In Sezgin and Karabetyan (2019) study, the adapted version was taken into Turkish. The organizational learning scale consists of four dimensions and 17 statements: commitment to learning (4 item), shared vision (4 item), open-mindedness (4 item) and organizational knowledge sharing (5 item). Participants were asked to indicate their level of agreement with each statement on a 5-point Likert scale (1= Strongly Disagree, 2= Disagree, 3= Neither Agree nor Disagree, 4= Agree, 5= Strongly Agree).

Knowledge Management Scale: We aimed to determine general perceptions on knowledge management. This section consists of a single dimension and 6 statements. This scale is taken from Choi’s (2000) doctoral thesis in which he investigated the factors affecting knowledge management. In addition, its Turkish validity and reliability was conducted in Sezgin and Karabetyan (2019). Participants were asked to indicate their level of agreement with each statement on a 5-point Likert scale (1= Strongly Disagree, 2= Disagree, 3= Neither Agree nor Disagree, 4= Agree, 5= Strongly Agree).

Organizational Performance Scale: With the organizational performance scale, the performance of the enterprise is tried to be evaluated with a total of 12 statements. Based on Kılınç et al. (2010), validity and reliability studies were conducted by Sezgin and Karabetyan (2019). Participants were asked to indicate their level of agreement with each statement on a 5-point Likert scale (1= Strongly Disagree, 2= Disagree, 3= Neither Agree nor Disagree, 4= Agree, 5= Strongly Agree).

3.4. Research Model and Hypotheses

The main hypothesis of the study is that knowledge management and organizational learning are significantly related to organizational performance.

H1: There is a statistically significant relationship between knowledge management (KM) and organizational performance (OP)

H2: There is a statistically significant relationship between organizational learning (OL) and organizational performance (OP)
4. Findings

4.1. Descriptive Statistics for Participants

65.6% of the participants were female and 34.5% were male. 29% of the participants were between the ages of 21-26, 35.9% between the ages of 27-32, 24% between the ages of 33-38, 8.6% between the ages of 39-44, and 2.5% were 44 years and older. 54.5% of the participants were single and 45.5% were married. Of the participants, 32.7% had high school education, 48.7% bachelor's degree, 8.8% master's degree, and 9.8% doctorate. Of the participants, 14.4% were nurses, 4.3% were allied health personnel, 9.5% were technicians/technicians, 40.1% were administrative staff, 1.1% were technical staff, 14.5% were doctors, 0.6% were midwives, 0.2% were pharmacists, and 12.4% were support staff. 47% of the participants have been working for 0-5 years, 38.6% for 6-10 years, 11.4% for 11-15 years and 3% for 15 years or more. 75.1% of the participants work continuously during the day, 6.6% work continuously at night and 18.2% work in shifts.

4.2. Exploratory Factor Analysis (EFA)

Factor analysis is a multivariate statistic that aims to find and discover a small number of unrelated and conceptually meaningful new variables (factors, dimensions) by combining p related variables. In the explanatory factor analysis process for the scales, firstly, the suitability of the data for factor analysis was tested. After the suitability of the data set was confirmed by the tests, the "Principal Component Analysis" method was applied with the "Varimix" rotation method as the factor retention method in order to reveal the factor structure.

Table 1: Results of Exploratory Factor Analysis

<table>
<thead>
<tr>
<th>Organizational Learning Scale</th>
<th>Variance Explanation Percentage</th>
<th>Cronbach-Alpha (CA)</th>
<th>Response Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commitment to learning</td>
<td>26.38%</td>
<td>0.921</td>
<td>3.489</td>
</tr>
<tr>
<td>Shared vision</td>
<td>20.14%</td>
<td>0.918</td>
<td>3.693</td>
</tr>
<tr>
<td>Open-mindedness</td>
<td>15.87%</td>
<td>0.915</td>
<td>3.891</td>
</tr>
<tr>
<td>Intra-organizational knowledge sharing</td>
<td>10.43%</td>
<td>0.912</td>
<td>4.012</td>
</tr>
</tbody>
</table>

KMO= 0.927; Bartlett $\chi^2$=7842.99 and p= 0.000; Variance Explanation Percentage: 72.82%
In the factor structure, 4 factors for organizational learning, 2 factors for organizational performance and 1 factor for knowledge management were obtained with eigenvalues higher than 1. The Kaiser-Meyer-Olkin (KMO) sampling adequacy for the organizational learning scale was obtained as 0.927, 0.930 for the organizational performance scale and 0.929 for knowledge management, which is above the value of 0.70, indicating a good level. The results of Bartlett’s test of sphericity to measure the consistency of the variables to be analyzed were statistically significant for the organizational learning scale ($\chi^2= 7842.99$ and $p= 0.000$), for the organizational performance attitude scale ($\chi^2= 8573.16$ and $p= 0.001$) and for knowledge management ($\chi^2= 6931.44$ and $p= 0.001$). According to the results of the anti-image correlation matrix, the cross-correlation coefficients of the statements were obtained above the critical level of 0.5. On the other hand, there are no questions below 0.20 in the extraction column for all three scales, so no questions were extracted. Factor loading were obtained between (0.64-0.78) for organizational learning scale, between (0.67-0.81) for organizational performance scale and between (0.59-0.79) for knowledge management.

### 4.3. Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) is an analysis method that is frequently used in the development of measurement models and provides important conveniences. This method is a process of creating latent variables (factors) based on observed variables through a previously created model. CFA is an extension of exploratory factor analysis (EFA) that assesses the underlying structure of the data. While EFA is used to provide information for hypothesizing, CFA is used to test whether there is a sufficient level of relationship between these factors, which variables are related to which factors, whether the factors are independent of each other, and whether the factors are sufficient to explain the model.

**Table 2: CFA Goodness of Fit Results**

<table>
<thead>
<tr>
<th>Measurement (Fitness Statistic)</th>
<th>Good Fitness</th>
<th>Acceptable Fitness</th>
<th>Research Model Value</th>
<th>Fitness Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Model Fit</td>
<td>$\leq 3$</td>
<td>$\leq 4-5$</td>
<td>2.29</td>
<td>Good fit</td>
</tr>
<tr>
<td>$X^2 /sd$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparative Fit Statistics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NFI</td>
<td>$\geq 0.95$</td>
<td>0.94-0.90</td>
<td>0.932</td>
<td>Acceptable</td>
</tr>
<tr>
<td>TLI (NNFI)</td>
<td>$\geq 0.95$</td>
<td>0.94-0.90</td>
<td>0.985</td>
<td>Good fit</td>
</tr>
<tr>
<td>IFI</td>
<td>$\geq 0.95$</td>
<td>0.94-0.90</td>
<td>0.989</td>
<td>Good fit</td>
</tr>
</tbody>
</table>
In Table 2, $X^2 / sd = 2.29$, and since it meets the condition $\leq 3$, it was decided as "good fit". Since it falls between the 0.94-0.90 interval with NFI=0.932 an “acceptable fit” occurs, and “good fit” since it provides $\geq 0.95$ with TLI (NNFI)=0.985, “good fit” since it provides $\geq 0.95$ with IFI =0.989, “acceptable fit” since it provides $\geq 0.95$ with CFI=0.962, “good fit” since it provides $\leq 0.05$ with RMSEA=0.022, “good fit” since it provides $\geq 0.90$ with GFI=0.948, “good fit” since it provides $\geq 0.90$ with AGFI=0.934, and “good fit” since it provides $\geq 0.90$ with AGFI=0.934. The factor structure was confirmed for the 3 scales considered in the analysis. After this stage, the structural equation model estimation was started.

### 4.4. Structural Equation Modeling (SEM)

Structural equation models are a combination of a structural model and a measurement model. The structural model includes structural equations that summarize the relationships between latent variables (factors and their sub-dimensions). All structural equations in the model define structural relationships.

#### Table 3: Goodness of Fit Results of SEM Estimates

<table>
<thead>
<tr>
<th>Measurement (Fitness Statistic)</th>
<th>Good Fitness</th>
<th>Acceptable Fitness</th>
<th>Research Model Value</th>
<th>Fitness Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Model Fit</td>
<td>$\leq 3$</td>
<td>$\leq 4-5$</td>
<td>2.09</td>
<td>Good fit</td>
</tr>
<tr>
<td>Comparative Fit Statistics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NFI</td>
<td>$\geq 0.95$</td>
<td>0.94-0.90</td>
<td>0.981</td>
<td>Good fit</td>
</tr>
<tr>
<td>TLI (NNFI)</td>
<td>$\geq 0.95$</td>
<td>0.94-0.90</td>
<td>0.944</td>
<td>Acceptable</td>
</tr>
<tr>
<td>IFI</td>
<td>$\geq 0.95$</td>
<td>0.94-0.90</td>
<td>0.939</td>
<td>Acceptable</td>
</tr>
<tr>
<td>CFI</td>
<td>$\geq 0.97$</td>
<td>$\geq 0.95$</td>
<td>0.984</td>
<td>Good fit</td>
</tr>
<tr>
<td>RMSEA</td>
<td>$\leq 0.05$</td>
<td>0.06-0.08</td>
<td>0.031</td>
<td>Good fit</td>
</tr>
<tr>
<td>Absolute Concordance Indices</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GFI</td>
<td>$\geq 0.90$</td>
<td>0.89-0.85</td>
<td>0.954</td>
<td>Good fit</td>
</tr>
<tr>
<td>AGFI</td>
<td>$\geq 0.90$</td>
<td>0.89-0.85</td>
<td>0.927</td>
<td>Good fit</td>
</tr>
<tr>
<td>Residual Based Concordance Index</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RMR</td>
<td>$\leq 0.05$</td>
<td>0.06-0.08</td>
<td>0.025</td>
<td>Good fit</td>
</tr>
</tbody>
</table>

In Table 3, $X^2 / sd = 2.09$, and since it meets the condition $\leq 3$, "good fit" was decided. The results of “good fit” since it provides $\geq 0.95$ with NFI=0.981, “acceptable fit” since it provides 0.94-0.90 with TLI (NNFI)=0.944, “good fit” since it is in the 0.94-0.90 range with IFI =0.939, “good fit” since it provides $\geq 0.97$ with CFI=0.984, “good fit” since it provides $\leq 0.05$ with RMSEA=0.031, “good fit” since it provides $\geq 0.90$ with GFI=0.954, “good fit” since it provides $\geq 0.90$ with AGFI=0.927, and “good fit” since it provides $\leq 0.05$ with RMR=0.025.
As a result of the SEM estimated goodness-of-fit criteria, it was determined that the estimated coefficients were suitable for interpretation.

Table 4: SEM Model Estimation Results

<table>
<thead>
<tr>
<th>Structural relationship</th>
<th>Direction</th>
<th>Estimated coefficient</th>
<th>St. Error</th>
<th>t statistic</th>
<th>p</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>OL→OP</td>
<td>+</td>
<td>0.221</td>
<td>0.038</td>
<td>5.815</td>
<td>0.000*</td>
<td>Significant relationship</td>
</tr>
<tr>
<td>KM→OP</td>
<td>+</td>
<td>0.258</td>
<td>0.041</td>
<td>6.292</td>
<td>0.000*</td>
<td>Significant relationship</td>
</tr>
</tbody>
</table>

According to SEM estimation results, the OL dimension has a significant positive effect on the OP ($\beta =0.221$, $p <0.01$). The KM dimension has a significant positive effect on OP ($\beta =0.258$, $p <0.01$). The most influential variable on OP was determined as knowledge management. $H_1$ and $H_2$ hypotheses were accepted.

5. Conclusion

In this study, the effect of knowledge management and organizational learning on organizational performance was revealed with the help of structural equation modeling for healthcare personnel working in different positions in private hospitals serving in Istanbul. Analyses were conducted for 700 healthcare professionals in the study.

In the literature, there is no study that carries out an investigation by taking the variables we have included in the study, but it has been observed that the variables have been studied with different combinations.

In the study, a significant positive relationship was determined between knowledge management and organizational performance. This finding provides support for the existence of a relationship between knowledge management strategies and firm performance and is in line with the results of the related literature (Darroch, 2005; Marques and Simon 2006; McKeen et al., 2006; Ho, 2008; Imran et al., 2018; Ferraris et al., 2019). In today's knowledge-based economic order, where technology and technology-based innovations determine the conditions of competition, pursuing technology and people-oriented strategies in line with the effective utilization of information assets in order to realize business goals and objectives is a vital element of firm performance.

On the other hand, Goh, 2019; Marquardt, 2019; Kaminska and Borzillo, 2018; Reese and Sidani, 2018 and Rose et al., 2020 are studies that found that organizational learning and organizational performance are positively related.

From an organizational perspective, the development of people's mental models, the information they perceive, and the interaction and synergy between business units are possible with a systematic approach. From this point of view, organizations and managers need to exhibit flexible and encouraging behaviors in order to be able to renew themselves in the face of changing conditions over time and not to face resistance when introducing current innovations into organizational life. In order to create a perspective open to knowledge, innovation and progress, the appropriateness of trainings should be developed and made sustainable with the help of many managerial tools such as programs, periodicity, horizontal and vertical structures, information flow between business units, feedback, and continuity of improvement. In addition, organizational learning should involve the whole of an organization. Development can be achieved by updating the skills of both employees and business managers. It should be
implemented together throughout the organization and the learning environment should be supported. The ideas presented by employees should be taken into account, and existing errors should be approached from a solutional point of view. The trust-based culture created throughout the organization must be permanent.

Improving organizational performance is the ultimate goal of knowledge management. When knowledge management processes are analyzed in terms of organizational performance, it is seen that the processes of obtaining knowledge, transforming knowledge, applying knowledge and protecting knowledge do not all yield the same results. While knowledge acquisition, knowledge transformation and knowledge application have a positive effect on organizational performance, studies have shown that knowledge retention does not have a positive effect on organizational performance. Based on this fact, it is of great importance for managers to create company knowledge flow and organizational learning strategies in a shared manner. Within the organization, the sharing of the learning process by every unit, from the lowest unit to the top management positions, is a fundamental requirement for organizational learning to take place. The learning process will enable employees and organizations to develop their skills and expertise, which will lead to job satisfaction and enable organizations to provide better quality services. In line with all these results, this study proves that businesses that want to increase employees' job satisfaction levels cannot ignore the learning level of the organization.

References


The Impact of Trade Facilitation Indicators on Trade between CEFTA-2006 Members

Katerina Toshevska-Trpchevska1 Elena Makrevska Disoska2 Irena Kikerkova3 Jasna Tonovska4

Abstract

The European financial and economic crisis interrupted the boost of trade within CEFTA-2006, and diverted trade flows from within the region toward the EU market. Currently, Western Balkan economies record a high level of economic integration with the EU which accounts for almost 2/3 of their total trade exchange of goods, while the trade exchange within CEFTA-2006 falls between 10-15% of the total trade exchange of goods of its member-states.

Changes in the legal texts of CEFTA-2006 initiated by the so-called Berlin Process, and the effort for deepening regional integration according to the latest Action Plan (2020) envisaged the creation of a Common Regional Market based on EU rules by 2024. The impact of the creation of a Common Regional Market within CEFTA-2006 upon the economic welfare of each of the member-states is still unclear. Thus, all estimations provided vague, ambiguous, and unclear results and recommendations which did not help overcome the already present reluctant attitude. The latest 2021 Open Balkan Initiative in which participate only Albania, Macedonia and Serbia brought even more confusion and resentment by the other four CEFTA-2006 member-states.

The aim of this paper is to elaborate the possibilities that might be open by the latest regional integration initiatives in regard of boosting regional trade exchange of goods. In the last two decades, it was recognized that enhanced trade liberalization might be achieved by undertaking trade facilitation measures. The effects of the implementation of these measures are expected to be of greater significance for increasing regional trade exchange in comparison to the elimination of all other trade barriers, including tariffs. Previous research in this field confirmed that the elimination of certain customs and administrative barriers within the Western Balkan region had a significant positive impact on trade.

We apply the gravity model of international trade to estimate the impact of OECD Trade Facilitation Indicators on trade among CEFTA-2006 members: Albania, Bosnia and Hercegovina, Montenegro, Moldova, Macedonia, and Serbia. These indicators cover a great spectrum of border procedures for more than 160 economies across different income levels, geographical regions, and levels of development. Each Trade Facilitation Indicator is composed of several specific, precise, and fact-based variables related to existing trade-related policies and regulations and their implementation in practice. The analysis will be based upon eleven Trade Facilitation Indicators, separately evaluated by the individual relevance of each of them for the regional trade exchange.

Keywords: CEFTA-2006, OECD trade facilitation indicators, trade facilitation, gravity model

1. Introduction

Like never before in recent history, the COVID-19 pandemic, as well as the latest Ukrainian crises, pointed out to dysfunctional operational problems of global value chains, which suffer the more as they are spread over greater geographic distances. Taking in consideration these latest aspects of international trade, invigorating regional initiatives among neighboring countries that all belong to a small, compact geographic space or region became even greater importance. Currently, this also applies to CEFTA-2006 regional initiative, which should be

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transformed from a common Free Trade Area (FTA), as perceived back in 2006, into a Common Regional Market (CRM) based upon EU laws. To serve this purpose, in 2021, CEFTA member-states passed an Action Plan for a CRM due to be fully enacted by the end of 2024. The creation of a CRM within CEFTA-2006 is supposed to enable companies from the region to get well embedded into European value chains, thus strengthening their competitiveness both on the EU market and on the global market. By estimation of the World Bank, in case the integration level within CEFTA at a certain point reaches that of EFTA member-states, it would generate an increment of 2.5% of GDP in the region. If it occasionally reaches the EU level of integration, it will lead to an increment of 6.7% of the GDP annually (World Bank, Western Balkans Regular Economic Report, fall 2020).

The Action Plan is focused on four key areas (CEFTA-2006 Secretariat, Brussels, 2021):

- Creation of a functional regional trade area enabling free movement of goods, services, capital and working force by introducing a cross-cutting measures in compliance with EU rules and standards, such as Green Lines which provide trade facilitation to benefit companies and individuals.

- Creation of a regional investment area compliant to the EU investment policy, standards and best practices, that would increase the interest of foreign investors for the region.

- Creation of a regional digital area by integrating the Western Balkans region into the European digital market; and

- Creation of a regional and industrial innovation area which will support the transformation of the industrial sectors by shaping them to the value chains they belong to, thus helping them to adjust to the current and expected trends in near future.

If one looks closer to each of the key areas the realization of most of the pointed goals is connected to the implementation of a whole set of trade facilitation measures, especially in the trade in goods. Economic literature broadly defines trade facilitation as a way of decrement of all delivery costs of a certain good calculated from the facility in which it is produced to its final consumer (the definition excludes production costs of the goods). If trade and customs procedures are inefficient, they increase trading costs, thus making a pressure on importers to pay a higher price for the imported good, on the one hand, and by forcing exporters to decrease sales prices to keep customers and market share, on the other hand. It is confirmed that inefficient cross-border procedures may have a stronger negative impact on trading costs in comparison to unfavorable tariff rates, as at the end paid tariffs become an income to the Government of the national economy. Some measurements point out that trading costs in developed economies create the same effect upon the trade exchange in goods as tariff rates of 134% ad valorem, while in developing countries the effect equals to tariff rates of 219% ad valorem (WTO, 2015). Elimination of inefficient cross-border procedures and decrement of trade costs is said to be a win-win situation for both importers and exporters – the first ones will import with lower prices, and the second ones will be able to cash in better prices for the traded goods. The trade facilitation model applied in different economic theories (Heksher-Olin, Krugman) points out that although beneficial for all economies, positive effects by its implementation would be especially significant for the work-intensive industries and for less developed small economies. Also, due to the decrement of trade costs that cumulate along the value chain in the case of products with high level of finalization or sophistication, less developed countries could also gain from the decrement of both fixed and variable costs, which would ease their integration within the value chain of the certain industry.
The trade facilitation process which started about 5 years ago based on the ratification of WTO’s Trade Facilitation Agreement, clearly apostrophizes the need of replacing trade documents in physical paper form with paperless trade. For that purpose, the focus of the most important international organizations and institutions involved in international trade in goods is especially directed to the possibility of full digitalization of the trade exchange of goods by the establishment of compatible digital platforms and standardization of the digital form of the most important trade documents. Without compatibility and standardization of the processes and of digital documents, international trade would be burdened with additional barriers that would prevent liberal trade exchange of goods.

The aim of this paper is to define the impact of OECD Trade Facilitation Indicators (TFIs) on trade between CEFTA-2006 members for increasing regional trade integration. For this purpose, we apply gravity model upon eleven OECD Trade Facilitation Indicators for six CEFTA member parties: Albania, Bosnia and Herzegovina, Montenegro, Moldova, Macedonia, and Serbia. For Kosovo there are no TFIs.

The structure of the paper is as follows: after the introduction in the second section, we provide relevant literature review on the implementation of TFA measures and the effects thereof. In the third section we provide stylized facts on the implementation of trade facilitation measures in CEFTA-2006 member parties. The fourth section explains the model and the data applied. In the fifth section we provide the results and in the last section we give conclusion and some recommendations.

2. Literature Review

Trade facilitation refers to a set of policy measures focused on the reduction of the costs of international trade exchange well beyond the traditional market access policy toolkit. In that sense, the empirical evidence points to the trade costs reduction and the increase in exports and imports as the most visible benefits of trade facilitation. Even though the relevant literature predominantly measures the effects of trade facilitation in terms of trade costs and trade flows, other potential advantages may occur as well, such as an increase in export diversification, productivity, employment, FDI inflows, etc. This section reviews the relevant literature and discusses the main findings on the impact of trade facilitation measures.

The first stream of research examines trade facilitation measures in general and estimates their influence on trade flows and trade costs. The first major study of the effects of the implementation of the WTO Trade Facilitation Agreement uses two distinct methodological approaches - a gravity model and a general equilibrium model and indicates substantial economic benefits (WTO, 2015). Under the conservative scenario, the gravity model predicts an increase in exports under the intensive margin of trade of at least 9.1%. Also, the estimates imply that the largest gains should be expected for the developing and low-income countries, with additional potential benefits in the form of increased FDI, larger government revenues and reduced customs fraud and corruption. In the paper by Beverelli et al. (2015), the estimated impact of trade facilitation on export diversification as measured by extensive margins of trade amounts to at least 0.23%. In addition, despite the fact that all countries and geographical regions are expected to reap the gains from trade facilitation measures by reducing trade costs, developing and least-developed countries are considered to benefit the most.

The second stream of literature explores in detail the contributions of the particular kinds of trade facilitation measures to trade flow increase and trade cost reduction. Extensive research by Moïse et al. (2013) incorporates the separate OECD trade facilitation indicators into a gravity model for a large sample of countries. The authors identify the formalities in border procedures and documents as some of the most important factors for reducing trade costs, and
simultaneously, as drivers for increasing the intensive margin of trade in developing countries. In addition, their analysis also proves that information availability has one of the strongest impacts on exports of middle and low-income countries. Further empirical evidence showing that measures aimed at simplifying border procedures have positive effects on trade flows through a decrease in trade costs includes the studies by Fernandes et al. (2015) and Fernandes et al. (2016), Volpe Martincus et al. (2015) and Persson (2013). Fernandes et al. (2015) investigate the manifold impacts of the reduction of annual physical inspection rates on imports in Albania. Firstly, this has resulted in a reduction in the import clearing time, followed by positive effects on imports in Albania across the intensive margin of trade (increased volume of imports), as well as across the extensive margin (rise in the number of importing firms and the number of trading partners). Another paper by Fernandes et al. (2016) is focused on the evaluation of the effects of in-house clearance in Serbia, a reform that allows selected firms in the country to clear customs in their own warehouse instead of the customs office. The only statistically significant gain of the in-house clearing program is the reduced variability of clearance times, with a lack of visible benefits in terms of clearance times, inspection rates, and total imports. Volpe Martincus et al. (2015) estimate the effects of custom-related delays on firms’ exports in Uruguay and their results suggest that delays have a significant negative impact on firms’ exports, especially to newer buyers. The paper by Persson (2013) tests whether trade facilitation affects the extensive margin by counting the number of exported products from developing countries to EU countries. Their results suggest that a decline in the number of days needed to export leads to an increase in the diversity of exported products, with more pronounced effects on differentiated products.

The empirical literature provides insights into another important dimension of trade facilitation, which is related to the improvement of information availability, harmonization and integration. The study by Fontagné et al. (2016) analyzes French firm-level data and shows that information availability and advanced rulings on the product classification and origin of goods, have a positive impact on the exports of small firms in both intensive and extensive margin of trade. In addition, the research by Fernandes et al. (2017) shows that product standards significantly affect access to foreign markets. In particular, the restrictiveness of the product standards results in a lower probability of firms exporting, reduced values and quantity of their exports, discourages firms from entering new markets and increases the probability of their exit.

The modernization of border operations through automation and ICT implementation is considered to bring many advantages for trade, but the empirical literature on this topic is still rather scarce. Still, some studies offer clear evidence of the benefits of automation in terms of the reduction of the border time, thereby reducing trade costs for developing countries (Hillberry et al., 2015, Moisé et al., 2013). More recently, the UNECE report on the Global Survey on Digital and Sustainable Trade Facilitation shows that the average implementation rates of digital trade facilitation measures are still relatively low. According to the report, that could be related to the low level of digitalization, the inadequate ICT infrastructure, challenging regulatory environments or gaps in resources and skills (UNECE, 2021).

3. Stylized Facts

This section presents some stylized facts about the implementation of trade facilitation measures in the CEFTA-2006 member parties, for which data from the OECD Trade Facilitation Indicators database are available. Separate trade facilitation areas covered by each of the indicators are considered. Therefore, this section highlights the most important country variations and their implications for country performance.
Figure 1 provides a global overview of the implementation of trade facilitation measures in the CEFTA-2006 member parties. The average value of trade facilitation indicators across the sample is slightly beyond 1, suggesting a rather satisfactory level of trade facilitation. There are no significant differences in the overall performance across the countries. Also, these results point to an improvement in the state of trade facilitation (average score of 1.262 in 2019, compared to 1.119 in 2017).

**Figure 1. Average Trade Facilitation Performance in CEFTA-2006 members**

![Graph showing trade facilitation performance](image)

**Source:** OECD Trade Facilitation Indicators database.

Figure 2 enables more granular analysis of the level of the separate trade facilitation indicators across CEFTA-2006 member parties. The countries in the sample appear to significantly lag in the areas of both external and internal cross-border agency cooperation, suggesting that there is a need for further improvement with regard to information availability through a greater degree of harmonization and integration (average scores of 0.668 and 0.611, respectively). On the other hand, the most favorable results are evident in the areas of advance rulings and fees and charges, followed by appeal procedures and formalities - documents (average scores of the latter indicators at the level of 1.692, 1.639, 1.449 and 1.428, respectively).

**Figure 2. Trade Facilitation Performance in CEFTA-2006 members, 2019**

![Graph showing trade facilitation indicators](image)

**Source:** OECD Trade Facilitation Indicators database.
In summary, countries in the CEFTA-2006 exhibit improvement in their trade facilitation performance, as evidenced by the scores in OECD’s Trade Facilitation Indicators. Nevertheless, cross-border agency cooperation is pointed out, as an area where more efforts for further enforcement of trade facilitation is required.

4. Empirical Model and Data

In this paper we apply panel gravity model of international trade for six parties, members of CEFTA-2006. Parties included in the analysis are Albania, Bosnia and Herzegovina, Moldova, Montenegro, Macedonia, and Serbia. The database is constructed by taking the bilateral trade flows among them in the period 2006-2020 (405 unbalanced panel observations). The panel data gravity model is used to estimate the impact of trade facilitation indicators on trade between the members of CEFTA-2006. The estimates are made in E-views based on OLS model, without effects.

We use the following specifications of the gravity model:

\[
\ln(EXP_{ijt}) = \beta_0 + \beta_1 \ln(GDP_{imp_{jt}}) + \beta_2 \ln(GDP_{exp_{it}}) + \beta_3 \ln(BORD_{imp_{jt}}) + \beta_4 \ln(Dis_{ij}) + \beta_5 \ln(LANG_{ij}) + \beta_6 \ln(TFA_X) + \mu_{ij} + \lambda_t + \epsilon_{ijt}
\]  

The variables in the specification are as follows: \(EXP_{ijt}\) is the exports from country \(i\) to country \(j\) expressed in millions of US dollars, \(GDP_{exp_{it}}\) is the real gross domestic product of the exporter country expressed in millions of US dollars in prices from 2015, \(GDP_{imp_{jt}}\) is the real gross domestic product of the importer country expressed in millions of US dollars from 2015, \(Dis_{ij}\) is the geographical distance between the main economic centers of countries \(i\) and \(j\) expressed in km, \(LANG_{ij}\) and \(BORD_{ij}\) are dummy variables. The variable \(LANG_{ij}\) is a dummy variable equal to 1 for countries that share a common language and 0 otherwise and \(BORD_{ij}\) is a dummy variable equal to 1 for countries that share a common border and 0 otherwise.

The variable \(TFA_X\) is referring to trade facilitation indicators. We made eleven specifications using different trade facilitation indicators: information availability, involvement in trade community, advanced ruling, appeal procedures, fees and charges, documents, automatization, procedures, border agency cooperation internal, border agency cooperation – external and impartiality.

Trade facilitation indicators (TFIs) are published by OECD and have been constructed, corresponding to the main policy areas under negotiation at the WTO, with the aim to estimate the impact of addressing specific facilitation hurdles in the trade procedures of a given country. The indicator ranges from 0 (lowest) to 2 (highest). For the purpose of this model, we rescale it from 0-10. The variable \(TFA_X\) is constructed as natural logarithm of product of the corresponding variable for importer and exporter and make it possible to see jointly how changes in the choice of variables affect exporters and importers. The letter X notes the specific trade facilitation indicator (A, B, ..., K). Since we analyze in total 11 trade facilitation indicators, we run 11 regressions.

Specifications 1-11 of the gravity model are based on the recent study by Wilson (2010) who argues that different specifications of the model are needed because of the high correlation among the trade facilitation indicator variables. This is the reason why we estimate separate equations for each of these variables.

The analysis is based on annual data. The source for exports data is the International Monetary Fund, Direction of Trade Statistics. Data on GDP are from the World Bank Database. Data on geographical distance between the economic centers of two countries are from the website http://www.worldatlas.com. Data for the Trade facilitation indicators is obtained electronically.
and directly from OECD. The indicators are published every two years and we have included in the database all available indicators for the years 2012, 2015, 2017 and 2019.

5. Results

The results from the regressions are given in Table 1. The results indicate that GDP of both, the exporter and the importer countries, is important for increasing mutual trade among the countries. These results are expected and common for this type of studies. The variable distance is also important but bears negative sign which is the main logic of gravity models: countries that are closer to each other trade more or are more luckily to trade more. Increasing the distance between the countries increases the transaction costs and decreases the possibility to trade.

The dummy variables: language and border are also positive and significant. This means that countries that speak the same or similar language have higher possibility to trade more. The coefficient for the variable language is statistically important and positive in all cases. Also, countries that share the same border are more luckily to trade more among themselves. The coefficients for this variable are positive but not statistically significant in all regressions. They are significant in seven out of eleven regressions.

Table 1. Results from the gravity model

<table>
<thead>
<tr>
<th>Model(1)</th>
<th>Model(2)</th>
<th>Model(3)</th>
<th>Model(4)</th>
<th>Model(5)</th>
<th>Model(6)</th>
<th>Model(7)</th>
<th>Model(8)</th>
<th>Model(9)</th>
<th>Model(10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ln(Export)</td>
<td>0.2072***</td>
<td>0.2024***</td>
<td>0.2097***</td>
<td>0.2056***</td>
<td>0.2070***</td>
<td>1.9784***</td>
<td>0.1984***</td>
<td>1.9939***</td>
<td>0.2004***</td>
</tr>
<tr>
<td>ln(Import)</td>
<td>1.2948***</td>
<td>1.3689***</td>
<td>1.3224***</td>
<td>1.3316***</td>
<td>1.2784***</td>
<td>1.2361***</td>
<td>1.2057***</td>
<td>1.2664***</td>
<td>1.3189***</td>
</tr>
<tr>
<td>Ln(Dist)</td>
<td>1.7414***</td>
<td>1.4028***</td>
<td>1.9486***</td>
<td>1.3917***</td>
<td>1.5168***</td>
<td>1.1813***</td>
<td>1.3253***</td>
<td>1.1965***</td>
<td>1.3624***</td>
</tr>
<tr>
<td>Ln(SEE)</td>
<td>0.4819*** (0.0074)</td>
<td>0.2548 (0.155)</td>
<td>0.3076 (0.061)</td>
<td>0.4656*** (0.061)</td>
<td>0.4714*** (0.0575)</td>
<td>0.4573*** (0.0629)</td>
<td>0.4368*** (0.1077)</td>
<td>0.4176 (0.3202)</td>
<td>0.4287*** (0.0806)</td>
</tr>
</tbody>
</table>

Note: Numbers given in parenthesis are corresponding standard deviations. *** : p< 0.01; **:p< 0.05; * : p < 0.1 Source: Authors’ calculations

The results for the indicators show that of eleven indicators analyzed, eight are statistically significant for increasing trade among CEFTA-2006 members. Highest statistical significance (at 99% level) have the following three indicators: Fees and charges, Documents and Procedures. This implies that 1% improvement in the Fees and charges indicator could lead to 0.49% increase in bilateral export among CEFTA-2006 member-parties. 1% improvement in the Documents indicator could lead to 0.66% increase in bilateral export. And 1% improvement in the Procedures indicator could lead to 0.67% increase in bilateral export. These results indicate in which areas CEFTA-2006 member parties could invest most and introduce trade facilitation measures to increase bilateral trade.
Also important at 95% level are the indicators: Involvement of the trade community and External border agency co-operation. These results are in line with the fact that these are the areas, especially external border agency co-operation, where the values of the indicators are lowest. The least importance for increasing bilateral export have the indicators: Appeal procedures, Automation, and Internal border agency co-operation. The indicators: Information availability, Advance ruling, and Governance and Impartiality appear to be nonsignificant for increasing mutual trade. The robustness of the results is done with the consecutive running of eleven regression where we can see that all the variables are stable and bare the same sign throughout all regressions.

6. Conclusion and Recommendations

In this paper we try to measure the impact of eleven OECD Trade Facilitation Indicators (TFIs) on trade between CEFTA-2006 members for possible boosting of their regional trade integration. The results from the analysis indicate that there is still place for improving trade facilitation measures for increasing mutual trade, and thus increasing regional integration and obtaining positive results from it.

Highest statistical significance have the following three indicators: Fees and charges, Documents and Procedures. Highest positive effects on increasing trade could be visible by decreasing costs, decreasing the number of documents, and decreasing the procedures and formalities. 1% improvement in the Fees and charges indicator could lead to 0.49% increase in bilateral export among CEFTA-2006 member-parties. 1% improvement in the Documents indicator could lead to 0.66% increase in bilateral export. And 1% improvement in the Procedures indicator could lead to 0.67% increase in bilateral export. These measures should have highest priority in the creation and implementation of different regional and national initiatives.

The results show that although the free trade area among CEFTA-2006 members was established by the end of 2010, still, there are many administrative and other non-trade barriers that impede mutual trade. What we recommend is that CEFTA-2006 members implement additional trade facilitation measures to deepen the regional cooperation and obtain further trade liberalization and deeper economic integration. For this purpose, we consider that additional efforts by all CEFTA-2006 parties should be possible directed for the following trade facilitation measures:

➢ Expanding the concept of green corridors and green lanes in all border crossing points;
➢ Increasing the number of joint customs control points;
➢ Expanding the Mutual Recognition Programs in different areas (which to some extent has been already happening);
➢ Enabling fast implementation of the Mutual Recognition Agreements of Authorized Economic Operator programs;
➢ Enabling the implementation of compatible digital platforms for smooth cross-border paperless trade within the region, etc.
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Business Transformation Projects: The Integration of Cloud Business Platforms (ICBP)

Antoine Trad

Abstract

The hyper-evolution of information technology and business dependent domains have given the need for Cloud Business Platforms (CBP) to support agile and distributed agile business practices. The Integration of CBP (ICBP) is the most important factor for an enterprise to ensure its business robustness, sustainability, and continuity. Such an integration process is the kernel for the enterprise’s transformation project. Therefore, the stability of an enterprise or organization (simply an Entity), depends on a holistic clouds’ based strategy, like the one proposed in this article, or the ICBP strategy, used to support the Entity’s continuous transformation projects. The ICBP includes a framework, methodology and a concept to manage the Entity’s internet based distributed ICBP. This article proposes a ICBP concept for Business Transformation Projects (BTP, simply a Project), which uses critical success factors and areas, natural programming language environment and a dynamic decision-making system, which are used to improve the Entity’s Time To Market (TTM) related activities. The author proposes the use the ICBP concept to be used in various phases of a Project. The ICBP concept, is mainly based on existing major cloud environments, methodologies, and best practices. The actual, high level of competition, forces Entities to integrate cloud(s), agile product(s), and services in all of its value chains. A Holistic Cloud Management (HCM) approach forces the used transformation framework, and the related set of existing standard frameworks, to synchronize all types of transformation activities, like the deployment of Entity wide components. Such a synchronization process may generate many problems, which are difficult to trace and which can damage the Entity’s business processes. The HCM can be used in all Project’s phases and for any type of ICBP problem, where its main responsibility is to synchronize ICBP’s activities. The main limitations are the Entity’s capacity to restructure and unbundle its legacy environments; and to integrate the ICBP in all of its environments.

Keywords: business transformation projects, cloud technologies, business models, strategy, enterprise architecture, artificial intelligence, and holism

1. Introduction

Cloud computing is the on-demand availability for innovative Information and Communication System (ICS) and its resources, like data storage (or cloud storage) management subsystem, and processing unit(s) capacities, which can be accessed without any direct human interaction. Entity wide clouds have business operations and functions distributed over many locations, where each location is a data center. Cloud computing or the ICBP, is based on sharing of resources to support business coherence and uses the pay-as-you-go business model; such a model reduces capital expenses but can also generate unexpected operating expenses, when the ICBP and HCM are badly used. As shown in Figure 1, cloud computing, include a group of networked elements providing services, which do not need to be individually located, addressed or managed by ICS specialists. The ICBP provides an entire managed suite of ICS platform elements (hardware and software), which can be thought as an amorphous cloud distributed environment (Wikipedia, 2022a).

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Entity’s parc of technologies or the ICS, enables the processing and coordination of its various business activities, which include a large set of applications and resources. The Entity’s set of applications and resources are managed by the HCM and synchronized by the ICBP. These ICBP coordinated applications, are used in order to serve business analysts, leaders, clients and executive management, who are also supported by an adapted and integrated Decision Making System (DMS). The DMS’ and ICBP’s evolutions have enabled the transformation of Entity’s archaic business system. The ICBP supports the Entity’s business capability’s evolution process by making it possible to operate in parallel, many ICS, financial and business engineering fields, like, business data management, security management, business services, policy making, regulatory and governance activities. The HCM uses central domains, like Enterprise Architecture (EA), platform management and services’ coordination. This article’s Research and Development Project (RDP) will offer a resultant set of recommendation to support the ICBP for Projects.

2. The Research and Development Project for the ICBP

This article’s Research Question (RQ) is: “Can an ICBP and HCM, support an Entity transformation project by innovating its business capacities and optimize its distributed resources?” The Research’s Literature Review’s (RLR) forwarded ICBP gaps, which are related to the Entities’ capacities to support complex integration operations, respecting Project requirements and also ensuring the Entity’s cloud distributed requirements.

2.1. The Research’s Literature Review

The author’s RDP and framework are very mature in the domains of Project’s ICBP and HCM; and the related RLR results showed that a small number of relevant scholar resources exist on this article’s RQ and its related subjects, with the only exception of The Open Group Architecture Framework (TOGAF) and some global cloud vendors. These credible findings relate to various EA based cloud strategies, concepts, technology areas and standard interfaces for existing enterprise wide frameworks. The RLR confirmed that there is a relevant and important gap, between existing cloud concepts and the ICBP/HCM. In this researched domain, knowledge and methodology gaps exist, mainly because of the lack of a holistic approach, where there is practically no insight on a holistic approach to design an HCM and to implement the ICBP in Projects. In this article the following resources are used: 1) Major cloud concepts, environments and vendors; 2) Articles related to Entity cloud management; 3) The author’s general works and framework, the Transformation Research Architecture Development framework (TRADf); 4) An initial set of factors; 4) A large set of HCM and ICBP related literature, standards and frameworks; and 5) Uses an empirical engineering method, which are more than just literature scanning and concrete engineering projects. The RDP uses an empirical engineering method, which is optimal various types of engineering projects like the ICBP one.
(Easterbrook, Singer, Storey, & Damian, 2008). The main goal is to deliver a holistic approach for an interactive mixed method that is based on Critical Success Areas (CSA), Critical Success Factors (CSF) and Heuristics Decision Tree (HDT).

2.2. Critical Success Area

CSA is a set of CSF, where a CSF is a set of KPIs. A KPI corresponds to a single Project or ICBP requirement. For a ICBP requirement, an analyst identifies an initial set of CSFs. CSFs are the most important relation between an ICBP construct, organizational predisposition and the DMS (Trad, & Kalpić, 2020b). Therefore, CSFs reflect control areas that must meet strategic goals and defined constraints. Measurements are used to evaluate cloud Risks (cRisk) in each CSA, where CSFs can be internal or external. For a given HCM problem type, the ICBP analyst, must identify the initial set of CSFs to be used for the DMS and its HDT. Hence the CSFs are the most important mapping/relation between the ICBP, HCM status, organizational predisposition and THE DMS. The proposed ICBP delivers a set of recommendations and solutions for the Entity’s evolution process, which depends on the selecting the right ICBP and HCM CSFs.

2.3. Selecting the Entity’s ICBP and HCM CSFs

Selecting the Entity’s ICBP and HCM CSFs are based on the following facts and resources: 1) Cloud data stores; 2) Distributed ICS resources; 3) Actors and cloud boundaries; 4) Used and connected cloud components; 5) Technical and business functional requirements; 6) Established cloud strategies, objectives and goals; 6) Cloud security policies; 7) Business sustainability, robustness, proactivity and competition; 8) Business market competition; 9) Cloud based DMS and Artificial Intelligence (AI) capabilities; and 10) The Entity’s Ethical and Regulatory Pattern (EERP) for the determination and the evaluation of major cRisks. DMS and AI are important systems to integrate, because just analyzing cloud data and historical events is a partial, limited and offers solutions. A dynamic proactive qualitative heuristics’ method is needed, like the author’s HDT. There is also a need to control cRisks activities, which can be an important part of the ICBP; and to proactively detect any probable violations, respecting awareness and ethics. These operations are supported by a mathematical model.

2.4. The Applied Holistic Mathematical Model for the ICBP and HCM

The Applied Holistic Mathematical Model for ICBP (AHMM4ICBP) nomenclature is showed in Figures 2 and 3, in a simplified form to be understandable on the cost of a holistic formulation vision (Trad, & Kalpić, 2020a). The ICBP uses the AHMM4ICBP that is formalized as shown in Figure 1, and AHMM4ICBP’s main artefacts are:

- Basic cloud actions = support various Entity’s business/organizational and ICS operations.
- ICBP = A set of basic Entity’s business/organizational and cloud actions for a set of services.
- HCM = A set of basic Entity’s management schemes.
- Business platform = Includes various ICBP operation sets.
- Entity distributed business capability = ∑ Distributed business platform.
2.5. The Architecture Development Method and Cloud Computing

In the actual age of agile distributed ICS that supports business intelligence, complexity, transactions, knowledge and dynamic DMS, where the ICBP is the most important building block. The ICBP and HCM synchronize with the Architecture Development Method (ADM) to deliver agile just-in-time cloud solutions. TOGAF’s ADM is the most used EA delivery process and this article presents which ICBP’s artifacts are relevant to ADM’s phases, this makes the cloud an integrated part of the Entity’s EA blueprints. This article, case study and its Proof of Concept (PoC), which shows how to implement, manage, and govern an EA based ICBP concepts for an Entity. TOGAF’s Cloud Ecosystem Reference Model (CERM) confirms the credibility of an EA based ICBP, and the goal is to show how to apply the ADM to support the ICBP. The used case study, for the PoC, describes a generic approach to develop an EA based ICBP by using the Architecture Building Blocks (ABB), like in the CERM. TOGAF and its CERM standard defines an approach to identify Solution Building Blocks (SBB), used to address the architectural capabilities of ABBs for the ICBP. The following section describes the relation of ABBs and SBBs for the case of rapid provisioning and data protection in the ICBP (The Open Group, 2021a, 2021b): 1) An SBB for rapid provisioning can be provided by any actor of the Entity CloudEcoSource delivering Cloud Services. The ABB for the requested capabilities, is a part of the EA/ICBP blueprint for the consuming Entity. Because ICBP’s requirements for rapid provisioning remain, if another Entity in the CloudEcoSource provides the needed SBB; and 2) A data protection ABB appears in EA/ICBP blueprint’s instances. From the perspective of the Entity, each instantiation (or SBB) for ICBP’s building block is another participant with which there is a relevant evolution.
### 2.6. ICBP’s Evolution

![Figure 4: Magic Quadrant for Cloud Infrastructure and Platform Services (Bala, Gill, Smith, & Wright, & Ji, 2021).](image)

Entities have accelerated their use of public cloud providers, in order to scale and become agile in the postpandemic period. Major differences between cloud providers implies careful consideration as Project Managers make strategic cloud provider selections. Where one public cloud Infrastructure as a Service (IaaS) is needed to offer services under the following criteria(s) (Bala, Gill, Smith, & Wright, & Ji, 2021):

- **If the cloud offering has publicly available for more than three years;** knowing that a minimum of $1 billion USD in the year 2020 was made in the public cloud by using IaaS and Platform as a Service (PaaS). This revenue (excludes partner-operated and/or distributed/hybrid/private cloud infrastructure that is deployed outside of a cloud provider’s data centers). It excludes also all managed and professional services. Added to that, an estimated $250 million USD of the cloud contract revenue must come from outside of the country, where more than 50% of data centers are located.

- **If the cloud solution offering has been openly available for less than three years;** than the limit to be considered is, the minimum of $500 million USD in the revenue of the year 2020, excluding all managed and professional services, as well as a growth rate of at least 50% of exiting year 2020.

### 2.7. ICBP and Business Process Automation

The ICBP supports workflow and Business Process Management (BPM) usage in the context of cloud’s technologies. There are many BPM solutions for cloud environments, whereas most BPM platforms are not optimally re-designed for the cloud. The most advanced BPM platforms for the cloud are Appian, Pegasystems, and ProcessMaker. The mentioned platforms are Amazon Web Services (AWS) Technology Partners, who have significant cloud and BPM expertise. The necessity of cloud integrating workflow and BPM software, bring the Entity many tangible benefits, like: 1) Speed in development and design of workflows and BPMs, also speed in their execution, and added ICS related reliability; 2) The ICBP provides the most reliable and available environment for BPM platforms and workflows, with an estimated 99.9% uptime; 3) The use of redundant servers based on load balancing, auto-scaling capacity based on predetermined thresholds; and 4) Pay-as-you-go pricing concept, makes Entities pay for the resources they consumed. By selecting a BPM platform with a optimal cloud support and Project architects to ensure the following activities (McClintock, 2020):

- **Scalability and low maintenance,** as an Entity evolves, knowing that on-premises platforms cannot scale easily. They often need to purchase extra ICS components to support the increased usage and data storage needed when their operations grow. On-
premise installations also require an on-site team to support and manage such platforms. That consumes valuable time, money, and Project resources; all that are significant investments, especially if the Entity is not ICS-focused one. Finally, on-premise platforms need constant communication with their BPM solutions provider, for various maintenance needs. If the Entity does not have the right skills, then Projects are highly risky. ICBP based solutions, on the other hand, support multi-tenancy without generating extra costs. As the infrastructure is off-site under the ownership of a third party, its cloud platform be enhancing as the usage and data storage needs to increase without supplementary costs. In addition, cloud enabled BPM solutions include maintenance activities, which keep downtime at a minimum. ICBP offers advanced monitoring and management capabilities, and maintenance operations can remain at acceptable speed, even during peak periods. Upgrades are also managed by the ICBP and may adapt to clients’ requests. By avoiding short-term firefighting efforts, the Project team can concentrate on long-term strategic topics.

- Business automation enables to be accessible anywhere, at any time, by using cloud BPM solutions. Such solutions allow users to access the Entity’s from practically anywhere, and at any time. Most cloud solutions can be accessed using the internet and BPM platforms can be even accessed from devices like smartphones. An important advantages of using a cloud BPM solution, is that vendors support remote support and management; and final clients no longer have to plan and manage BPM installations and upgrades. Added to that, there is the optimizations of time and resources to maintain ICS. The ICBP ensures that data stores are saved automatically on remote dedicated servers and the activities are not lost, even the network connection is lost.

- Agility and connectivity, transforms legacy BPM platforms, which are dedicated to static monolith processes that are difficult to transform. They are rigid chunks and are not easy to integrate with other Project artefacts or business workflow. Cloud BPM platforms are in general low-code, so the Entity has the capacity to transform their business processes as business requirements change and evolve with time. This crucial agility and flexibility, makes the implementation and deployment of business processes very robust and quick. Cloud BPM platforms make the ICS more agile and transformable; and they can interface other components using services endpoints. Services based technology improves the Entity’s Return On Investment (ROI) for BPM platforms (internal and external). The Entity’s connections between different components, enables the integration of BPM platform features into its ICS.

- Security, or more precisely Entity’s data security is a complex task, especially when it does not have in-depth Cybersecurity knowledge and skills. If a data security breach happens, the ICS is responsible for protecting sensitive information, working with cRisk management and governance/legal enforcements to ensure privacy statute concerns. When data is in the ICBP, providers like AWS, Microsoft Azure, and Google Cloud Platform (GCP) are responsible for security concerns. These Entities have Project teams and ICS resources dedicated for preventing security breaches. ICS’ security services costs and costs of server hosting, can be minimized by using the ICBP. Large-scale public cloud providers, like Amazon, Microsoft, and Google, are compliant with industry standards and are ISO-certified. Data Sovereignty, and regulations like the General Data Protection Regulation (GDPR) should be integrated, but it is a complicated task; in some cases these requirements block the usage of the ICBP. But, the benefits of the ICBP will force Entities and cloud providers to find concepts to solve these issues and stay compliant with all applicable challenges, laws and regulations.
2.8. ICBP Resources and Challenges

The ICBP is internet-based networking and computing, where shared resources, components and information are on-demand provided to ICS nodes and other devices. The ICBP is the peak of the evolution of distributed ICS with access to virtually limitless computing resources, and has the following features (Ramamurthy, & Madurai, 2011):

- Evolution that includes, on-demand computing, utility computing, ubiquitous computing, autonomic computing, platform computing, edge computing, elastic computing, grid computing, …
- Alignment with Entity’s business, users, non-computer specialists, community, and society …
- Support ICS’ scalability with, large scale data, high performance computing, process automation, acceptable response time, credible and rapid prototyping, and rapid Time To Production (TTP).
- To improve: cycle of obsolescence, support heterogeneity, and rapid changes in requirements.
- Transform and unify data sources into intelligence to support Entity’s users and Managers.
- To provide cost-effective approach, especially when using growth in applications like, biomedical, space exploration, business analytics, social networks.
- Support extreme scale content generation like in, e-science and e-business data deluge.
- Support extraordinary rate of digital content consumption like in digital gluttony.
- Support exponential evolution in ICS capabilities like, multi-core, storage, bandwidth, virtual machines.
- Provide short cycle of obsolescence in implementation technologies.
- The use of avant-garde architectures like, web services, persistence models, distributed file systems, multi-core, wireless and mobile infrastructure.
- Provide needed knowledge and skill levels to support the ICBP.

2.9. ICBP Structure

ICBP’s structure contains the following blocks and facts (Gupta, 2019):

- Basic elements: 1) A single-site cloud (or a datacenter) consists of: compute nodes, switches, a network, storage (backend) nodes connected to the network, front-end for submitting jobs and receiving client requests, three-tier architecture, and software Services; 2) A geographical ICBD consists of: Multiple cloud sites, each site has a different structure, and set of services; and 3) The ICBD is = Lots of storage + computing cycles.
- Cloud’s evolution facts: 1) Forrester in 2010, noted that cloud computing will go from $40.7 billion in 2010 to $241 billion in 2020; 2) Goldman Sachs says ICBP will grow at annual rate of 30% from 2013-2018; 3) Hadoop market to reach $20.8 B by 2018; and 4) Most Entities are using ICBP now.
- Main providers: AWS, Microsoft Azure, GCP, EMC, Gigaspaces, Oracle, VMWare, Yahoo, Cloudera, IBM… As shown in Figure 4.
- Categories: 1) Private clouds are accessible only to Entity’s employees via internal nodes; and 2) Public clouds provide service to external clients.
- Facts about benefits assertions: 1) Dave Power, Associate Information Consultant at Eli Lilly and Entity noted: With AWS, Powers said, a new server can be up and running in three minutes (it used to take Eli Lilly seven and a half weeks to deploy a server internally) and a 64-node Linux cluster can be online in five minutes (compared with
three months internally). ... It's just shy of instantaneous; 2) Ingo Elfering, Vice President of Information Technology Strategy, GlaxoSmithKline, noted: With Online Services, we are able to reduce our ICS operational costs by roughly 30% of what we’re spending; 3) Jim Swartz, CIO, at Sybase, noted: At Sybase, a private cloud of virtual servers inside its datacenter has saved nearly $USD 2 million annually since 2006, Swartz says, because the entity can share computing power and storage resources across servers; and 4) 100s of startups in Silicon Valley can harness large computing resources without buying their own nodes.

- Handles massive processing: 1) Intensive Computing, like in the areas of, MPI-based, High-performance computing, Grids. Typically run on supercomputers; 2) Data-intensive, to store data at datacenters, using distributed nodes, to run computation (web)services; 3) In data-intensive computing, the focus shifts from computation processing to the data, where Central Processing Unit’s (CPU) utilization is not the most important resources’ metric, instead I/O (of disk and/or network) is the newest metric.


- On demand strategies: 1) Resembles to renting a cab vs. renting a car, or buying one; like the example of AWS Elastic Compute Cloud (EC2): a few cents to a few $ per CPU hour, AWS Simple Storage Service (S3): a few cents per GB-month; 2) Hardware as a Service (HaaS): gives access to hardware nodes; 3) Infrastructure as a Service (IaaS), gives access to flexible computing and storage infrastructure; 4) PaaS, gives You get access to flexible computing and storage infrastructure, coupled with a software platform; 5) Software as a Service (SaaS), gives access to software services based on SOA (Service Oriented Architectures), like MS Office 365 Online.

- Using combined models: 1) Typical models combine PaaS, SaaS, IaaS, Services-based Application Programming Interface (API); 2) A ICBP provides one or more of services domains for a cost; using pay-as-you-go model of business; 3) A public cloud’s model is similar to renting a property and not owning one; 4) An Entity can maintain a private cloud, or use both models; 5) A single site cloud, is to own one; and 6) Small Entities use mainly cloud providers. Knowing that there are many innovation models.

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**Figure 5:** Cloud’s platform evolution (Gupta, 2019).
3. ICBP’s Innovation Models

3.1. The Role of Avantgarde Technologies

The HCM promote a systematic approach for determining which type of ICBP will support the *Entity*. Investments are financially driven by business managers which endangers ICBP’s lead. The ICBP and HCM have to prioritize CSAs to enable a systematic and holistic approach and should adopt a services-based strategy. ICS and other CSFs will dramatically transform business competition, because of: Cybertechnologies, electronic/automated business and other. Public investments in HCM is a crucial CSF and some ICS areas lack commercial interest, where the *Entity* needs to invest in Business Process Automation (BPA), Secure Development and Operations …

3.2. Secure Development and Operations

The Development and Operations (DevOps) processes must continuously update the *Entity’s* infrastructure patches, software applications, operating system… The *Entity* should benefit from the latest methodologies that support applications’ changes and which can be opportunities for Cyberattacks, that makes security a critical CSFs. To enforce ICBP against Cyberattacks, Secure DevOps (SecDevOps) can be integrated with the ADM. SecDevOps integrates security in the *Project*, by using sets of best practices designed to support *Entities’* implementation processes. Applications’ implementation is coordinated by SecDevOps process managed by agile methodologies. The ICBP uses agile methodologies to identify patterns for managing requirements (Mees, 2017; Trad, 2021a). The main advantages of SecDevOps on a ICBP are (Bhandari, 2021): 1) To start fast, by using existing Internet of Things (IoT) services; 2) To use fully managed services, which advantage of ICBP’s resources without the need for prior settings or installing software or operating infrastructure; 3) To build for scale, where it manages a single instance, scales up to thousands using ICBP services. These services make more flexible ICS resources by directly provisioning, configure and scale; 4) Enforcing programmability, where it has an option to use each service via an ICBP interface; 5) The ICBP uses automation to implement Project artefacts faster and more efficiently; by using services, to automate task (or process), such as deployment, development & test workflow manually and configure; and 6) To secure, by setting user permissions and policies. So, the user accesses particular ICBP services, resources and defines how a user accesses those services.

3.3. The Role of AI

ICBP is similar to Google Cloud AI Platform (GCAIP), which is a suite of services, which are specifically targeted at building, deploying, and managing Machine Learning (ML) models in the cloud environment. It is a hyper-accessible ML environment; where the GCAIP is designed to support data scientists and data engineers to streamline ML workflows, and access AI modules; and is with AutoML (Google’s ML engine). GCAIP services are designed to support the activities seen in a typical ML workflow, as shown in Figure 6, these services are available for ML operations (Green, 2020):

- **Prepare**: Generally, data is first prepared that includes ingest, clean, feature engineer operations in *BigQuery Datasets*, which is a collections of tables in GCP hyper-scale data storage. *BigQuery* is an interface to the *Entity’s* data storage, and an AI service. But it’s the backbone of ML workflows. GCP includes a *Data Labelling Service* for labeling experimental/training data; which uses human labelers to generate highly accurate labels for a collection of data that can be used in ML models; such a process is used for the classification of images, video, audio, and text. In the of images for example, labeling options may include: 1) Classification of images information; 2) Image box bounding; 3) Image segmentation; and 4) Data labeling characteristics.
- **Build**: Concerns AutoML, the zero-code platform for ML training models, where machines train machines. Cloud AutoML enables teams with limited ML skills to train high-quality ML models with an intuitive client. It uses transfer learning and neural architecture search technology; leveraging extensive research technology to support ML models to achieve faster performance and more accurate decisions.

- **Validate**: Explainable and manageable AI environment supports Projects to understand model’s decisions, verify the model’s behavior, recognize bias in models, and finding manners to improve models and related training data. This eliminates random decisions, activities, and recommends models’ tuning. The AI Platform Vizier has an advanced approach where it offers a black-box optimization service, to tune hyperparameters and optimize used model’s output.

- **Deploy**: When a model was trained using no-code AutoML, or an advanced Tensorflow model built using AI Platform Notebooks, AI Platform offers a set of services to support the deployment of models and generate solutions, decisions and predictions. AI Platform Prediction manages the Entity’s infrastructure needed to process the model and to make it available for of Project requests.

The previous operations support ML Pipelines (MLOps), which are important for the ICBP; where it is the practice of deploying robust, repeatable, and scalable ML pipelines to manage the pool of Entity’s models. The AI Platform offers a set of services to support the Entity’s pipelines. The AI Platform Pipelines support for creation of ML pipelines, using processors like, Kubeflow Pipelines or TensorFlow Extended (TFX). Project’s continuous evaluation supports the monitoring the performance of implemented models and provides continual return on how these models are performing in various Project’s phases. Deep Learning (DL) Virtual Machines (VM) or image supports the provisioning of cloud VMs for ML applications. Finally, DL provides preconfigured and optimized containers for AI based Projects (Green, 2020). Such a heterogenous needs a design strategy.

**Figure 6**: Google Cloud AI capacity (Green, 2020).

### 3.4. Designing the ICBP

The ICBP is modelled as a set of hosting and cloud models by using Archimate notation. The On Premises Hosting Model, as shown in Figure 7, presents, the Entity is responsible for its ICS at all levels (Charles, 2017).
The IaaS Hosting Model, represents hosting in both On Premise and in the Cloud, where the Entity manages its ICS with all its components like the operating system on a server, as shown in Figure 8.

4. ICBP’ Advanced Topics

4.1 Capacity building – Skill & Competence Development

The ADM supports the ICBP to create capacity building, best practices, and Entity-specific cloud capabilities, which supports Project experts to avoid and evaluate critical cRisks. This article offers recommendations on the needed skills to carry out ICBP activities. The ICBP is treated as a separate domain within the EA and distributed ICS, which is used to integrate all business resources. ICBP is the enforcement of the Entity’s ICBP policies which includes the following skills and characteristics (The Open Group, 2011b): 1) Services based methodology; 2) Management of viewpoints, where ICBP is a separate one; 3) To design internal non-normative ICBP scenarios; 4) To design single-purpose ICBP components; and 5) To develop coordinated EA, ICBP and ICS models.

4.2. Guidance on Security

ICBP’ Security (ICBPS) requirements are pervasive in all EA, ICS and business domains and to all ADM phases. The ICBPS focuses mainly on the infrastructure that is not visible to other functions; it also focuses on the protection of the ICS and Entity’s assets. ICBP manages single-purpose components and measures the quality of the ICBP and the common artifacts are: 1) AI modules and rules for handling of data/information assets; 2) Defined ICBPS policies, 3) Codified data/information management policies; 4) cRisk analysis and evaluation scenarios; 5)
VM, load balancers and other artefacts management; 6) Internet of Things (IoT) artefacts management; and 7) Data classification policy documentation. The ICBPS has its types of unique building blocks, collaborations and interfaces; these blocks must interface with the Entity’s ICS in an optimal manner, in order to support global security policies and to avoid interfering with business operations. ICBPS is effective to design and implement controls in the Target Architecture in the initial development cycle to support reengineering development and deployment. The ICBPS manages the services flow’s fallout, abnormal flows, failure modes and the possibilities in which the ICS and applications can be interrupted or attacked. All Entities have security concerns and they should dedicate an ICBPS to support the Project. In all ADM phases, recommendations are given on ICBPS’ management (The Open Group, 2011b). That all should be supported by unified logs.

4.3. Unified Security Monitoring and Logs

Unified cloud logging enables to centrally manage Entity’s log data collected from all ICBP resources. Logged data is essential for maintaining, measuring, and optimizing ICBP monitoring performance and security. But it is extremely complex to leverage logged data from heterogenous multi-cloud architectures. Simplicity and granular visibility are critical for supporting unified ICBP logging. That is why it is important to use multi-cloud logging strategy that include tooling, determining organizational structure, and implementing logging processes. ICBP supports in leveraging log-based insights to improve ICS’ performance and billing activities. ICBP logging is a practice that enables the Entity to collect and correlate logged data from its applications, services, and platform/infrastructure. It supports the Project team to identify issues, measure performance, and optimize configurations. ICBP activities logging relies on the management of log media, collections of data that document events occurring in the Entity’s ICS. Log media can contain a wide variety of data, including requests, transactions, user information, and credible timestamps. Specific data sets that ICBP logs collect, depends on how the ICS components are installed and configured. ICBP logging englobes various types of log media that the ICS should collect; these include event logs, security logs, transaction logs, message logs, and audit logs. To achieve a cohesive collection and robust aggregation process, the Entity should implement an ICBP log management environment to ingest, process, and correlate logged data. The ICBP needs to build a Multi-Cloud Logging Strategy that includes: Tooling, structure, and processes. ICBP logging can be complex, Multi-Cloud Logging Strategies enable unique issues due to the distribution of or incompatibilities between services and data medias (NetAPP, 2020). The ICBPS is not dedicated to any specific HCM environment and it offers to support: 1) Performance and availability; 2) Reliability and recovery; 3) Attack’s tracing; 4) All cloud classical activities; and 5) Cybersecurity fundaments. The ICS is controlled and monitored in real-time, using the ICBP’s Unified Logging Subsystem (EULS) and is integrated in order to support the ICBPS. EULS’ exist and are powerful monitoring subsystems that support the presentation, sorting and tuning of stored logs. EULS can be designed to analyses, collect and store security related data from various ICS sources to support the central logging system. An ICS continuously needs to manage massive central logging system that persists: event logs, sorts security logs for security purposes and system performances. An EULS supports the complex distributed environments.

4.4. Distributed Financial Environments

Entities need to implement business transformation across financial sectors like banking, capital markets, insurance, and payments to support data-driven innovation, customer expectations, and security and compliance needs with ICBP. Where ICBP’s main activity is to Consolidated Audit Trail (CAT), and to use regulatory reporting obligation(s), which will increase ICS power and storage requirements for such Entities. While it’s a complex undertaking, CAT supports
the streamlining of older regulatory reporting systems like, the Order Audit Trail System (OATS), Electronic Blue Sheet (EBS), Large Trader Reporting, CBOE Rule 8.9 and PHLX Rule 1022,1; and also legacy systems used to support such requirements (Google, 2022a). The main goal is to avoid financial pitfalls which are related to cRisks, which can damage permanently the Entity. The proposed strategic approach based on standards, englobes various frameworks, which are needed to support the detection of financial irregularities, locked-in traps and crimes. Organized Global Financial (OGF) gigantic financial crimes like the ones, which are related to fraud and money laundering that damage many Entities and countries. These OGF misdeeds are intentional, like the case of the Swiss, Union des Banques Suisse (UBS) (Stupples, Sazonov, & Woolley, 2019), in which 32 trillion US dollars are hidden. The integration of Finance for Technologies (FinTech) and ICS standards are crucial for ICBPs. Today such FinTech standards and related engineering fields are robust, resilient and can be applied as automated synchronized (block)chains; to enable the traditional financial environments to become a part of an ethical (even legal) networked financial enterprise. Such a standardized FinTech platforms can be applied to support a financial based cRisk concept and vision, to avoid locked-in (Investopedia, 2017b). The integration of ICBP is crucial for an Entity and its financial controls critical system(s). Today such FinTech standards and fields are robust, resilient and. FinTech platforms can be applied to support an ICBP and cRisks mitigation, in order to avoid locked-in situations. EERP locked-in scenarios, when building the financial structure of the future transformed Entity, must be blocked. The Project team and ICBP must be cautious of eventual financial locked-in situation(s), which is a major stability and ICBP problem. This locked-in Swiss EERP model, combines: 1) Specific culture and mentality; 2) The power of OGF law, like the Swiss one; 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; 8) Cloud’s vendors unwillingness to confront such phenomena; and 9) A finance supportive political environment for collective plundering. OGF banks and 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. It is probably wiser to pay more taxes and social services, than to face such phenomena and traps. The major problem with combating such a EERP based system that is has a hermetically closed environment. Financial havens target to become leaders in FinTech, which is not very assuring; because ICBP and FinTech should combat state criminality and enforce security and international law. It is recommended to avoid any form of financial and technological collaboration using ICBPs. Such environments need strict governance and legal constraints.

4.5. Governance and Legal Constraints

The ICBP offers limit support for the Entity’s legal integration, governance, and constraints and in order to achieve this legal support, CSFs are selected and asserted, to monitor the used artefacts. These CSFs manage the differences in ICBP related local and international laws. An Entity must have the capacity to proactively recognize erroneous business transactions and security attacks, in a systemic manner (Daellenbach & McNickle, 2005).

5. Business Innovation

5.1. The Business Cloud

Projects related to business clouds are complex, because it is not based on a single technological domain, but on the combination of many implementations, innovations and improvements, most notably: 1) The development of virtualization; 2) The increasing capacity of the Internet; and 3) The growing sophistication of IoT-based technologies. The ICBP has five main
characteristics: 1) On-demand internal self-service, Entity wide network access, resources planing & pooling, rapid elasticity, and optimized services. ICBP has main backbone services models: IaaS, PaaS, and SaaS; and has four deployment models: private cloud, public cloud, community cloud, and hybrid cloud. ICBD type of cloud computing, has various forms and it can be implemented in different ways in which it can benefit the Entity’s business evaluation. To apply ICBP successfully, depends on the transformation process, where stakeholders must be involved and advised. Like in the case of classical/traditional outsourcing, needed skills may be required to replace old skills. The Project may imply a large change-management process. The Entity’s Managers have to build a common strategy and share partly the same understanding; because many of its units are affected, and there are Project strategic decisions to take. The strategic change to ICBP requires a holistic corporate team effort. Entities can use standard ICS methodologies, tools and services to integrate ICBP and HCM. The majority of Entities are using ICBP, and some of them have internal private ICBP solutions; with time they are gaining experience needed for the ICBP. ICBP has important potential, to confirm that potential, an Entity must use the form of ICBP that is the most suited to its needs, and in the way that will give it the best business advantage. This article’s goal is to offer recommendations to support Entities in maximizing business benefits from ICBP and HCM. As shown in Figure 9, main financial models presenting revenue, capital and operational expenditure, and costs are the main models from which ROI is calculated. Using ICBP in Projects, indicators and CSFs of health of the four ROI drivers, which already described are: utilization, time compression, scale, and quality; which are often the leading indicators of the Project’s ROI (The Open Group, 2021b).

![Figure 9: The Characteristics and Models of Cloud Computing (The Open Group, 2021b).](image)

5.2. The Main Business Advantages

ICBP is one of the first mainstream technology environments for Entities, who want to eliminate the need for in-depth technological expertise or to use an optimal platform. Which is highly beneficial for Small and Medium sized Enterprises (SME), who need affordable, on-demand service that provides robust/secure data and storage solutions, and heavily improves overall business productivity. With ICBP based services, Entities’ ICS solutions are physically close to these Entities. Self-service ICBP access means that Entities specialists can at any time retrieve and store data, in real time. These facts increase the collaboration between Project members and improves document handling, as all work files stored in one location. The flexibility and efficiency of ICBP extends to its instant ability to offer high bandwidth requests, without supplementary costs of standard ICS technology. For Entities, ICBP is essential for disaster recovery. Without ICBP, relying on complex disaster recovery scenarios plans is time consuming and lessens the reliability of business vital data backup. Changing to ICBP based services will enhance Entity’s performance, reduce costs and offer space for core business activities; it will also provide robustness for valuable business data and ICS infrastructure, which have to be protected. The inception of HCM, makes limitations of traditional ICS
infrastructure, which are apparent. Entities are trying to adapt to marketplace transformations and innovative business models as their ICS are expensive and inefficient at sensing and responding complex situations. ICBP-based services offer scalable and reliable ICS infrastructure that is specifically implemented to streamline business performance, support development and growth; and ICBP’s main advantages are (LeadingEdge, 2022; AIM Consulting, 2021a):

- **Flexibility**: A high level of flexibility must be provided to Entities, which invest in ICBP-based services. Remote ICBP servers should offer unlimited bandwidth and storage space, which allows Entities to instantly scale up and down their capacities to support growth and cope with IoT traffic increases. This cancels the need to buy and install equipment and upgrades in the Entity’s ICS. ICBP allows the improvement of Project’s conditions/flexibility; as Project members can access applications and data on a remote server remotely, from anywhere and at any time; with solid internet connection.

- **Business continuity**: Investing in ICBP, Entities guarantee reliable disaster recovery and backup solutions without the need for setting a physical platform. The Entities which invest in complex disaster recovery plans can be a costly undertaking and backing up data is time-consuming. The ICBP is designed in a manner that data stored in it is mirrored on various the servers, and if one fails, data is instantly backed up. The capacity to access data again quickly after a system failure, minimizes IoT downtime and the loss of productivity and hence business continuity.

- **Cost efficiency**: The most important advantage of ICBP is the ICS cost savings related to operations. Using remote/cloud servers removes the need for in-site storage equipment and application requirements, and overhead costs such as application updates, management, and data storage. ICBP-based services are cost effective because they are deployed on a pay-per-use basis, which implies that Entities can rent precisely they need and guarantee on the ROI. SMEs with small budgets recognize ICBP’s benefits.

- **Improved collaboration**: ICBP and HCM environments can significantly increase collaboration between Entity’s teams, groups and communities who use shared files. The ICBP optimizes communication limitations of traditional ICS models and makes it faster and more simple for Projects members in various locations to access data, information and collaborate with team members and Managers; this supports streamline processes and optimizes Project work and resources.

- **Scalability and performance**: ICBP based platforms are designed to be scaleable to support Entity’s changing Project’s requirements. As an Entity transforms, storage space and bandwidth will be required to cope with changing traffic and space. ICBP servers can be automatically deployed to support Entities scale up and down and ensure optimum performance under high processing loads. ICBP based services improve ICS’ communication speed and minimizes downtime.

- **Automatic software updates**: ICBP based service providers regular and needed system updates to ensure ICS requirements; they also ensure continuous maintenance of remote servers, ensuring up time and resources that Entities, which are spent in in-house solutions. Research shows that in the year 2010, Entities in the UK have spent 18 working days per month managing their in-house ICS security.

- **Environmentally friendly**: Entities want to maintain a small carbon footprint, ICBP-based services are environmentally friendly; by using a pay-per-use virtual environment for data storage and running web applications, implies less energy consumption and
carbon emissions in Projects. ICBP also reduces physical ICS’ hardware equipment’s, which implies that ICS equipment is required in-house.

- **Automatic software integration:** A Project’s key benefit of using ICBP, is the integration of software components, which is automated in the ICS. This removes the need for Entities to use their resources to integrate their applications. Using ICBP based services, software applications can be easily customized, allowing Entities to select the services that will best map to Project’s requirements.

- **Usability and accessibility of information:** ICBP is defined as outsourced access to Entity’s data and services that are available anytime, anywhere. Key benefits of the ICBP is that Project members can access the data/information sets they need from any remote workspace.

- **Streamlining applications and processes:** Entities can take advantage of the opportunity available with ICBP’s capacity to streamline applications and processes, in order to reduce the costs associated with maintenance operations. ICBP based migration Projects force Entities to rationalize the applications they need to support their business activities; this enables Entities to remove redundant/non-critical applications and to optimizes streamline processes.

- **Compliance and security:** Are a major Project challenge, whereas the benefits of ICBP are significant, the increasing number and severity of data breeches have alarmed Entities; that made security an absolute high priority for Managers. Entities that use e-payments are required to apply strict compliance standards, and an increasing number of Entities are required to respect and integrate GDPR compliance standards. Such standards can secure Entity’s business models.

### 5.3. Business Models

The major and real disruptive power of ICBP based platforms, lies in its ability to manage innovative business and operating models. Applying rapid scaling of innovative capabilities and concepts, supported by the ICBP that has made it an innovative operating model that Entity Managers want to integrate. What is interesting, the development of such applications, has made it possible for innovative entrants in the ruthless environment of business to provide new value propositions, and to allow them to disrupt the existing value chain in ways that was not done before, and which was impossible to do previously. But, aside from new Entities it was noticed that major industry actors can make use of the ICBP by inventing new ICBP-enabled services and tools. The major CSFs that can be mapped to ICBP’s innovative operating models, as shown in Figure 10, which can support the Project (Digital Innovation Junction, 2020):

- **The use of ICBP-enabled business model:** In transformations that use business model innovation, it is difficult to predict the outcome, because of many specific cases; added to that, in many research studies conducted several topics that have emerged, throws spotlight on ICBP’s potential as an innovative operating business model that includes: 1) ICBP services and final products, and it has been proven that when leveraged, the ICBP delivery model can help improve the final product that exists and it can also offer a complete new version of that product. The type of innovations included in such ICBP-enabled services and products include QR codes that offer value-added product features, like the scannable recipes on a product; 2) ICBP services/products and rapid positioning of brands; due to the viral nature of ICBP-based platforms, when used to implement a planned and well executed digital campaign that can reach clients everywhere. This implies that this feature of this type of platform can be effectively used by an innovative business to attract clients and create new brand(s); it can be also used by existing Entities to reposition their brand’s value(s). For example, Dollar Shave Club established an entirely innovative business model for shaving products, which included the launch of
an entertaining promotional YouTube video that became a trending story on Twitter and lead to attracting of 18,000 new clients. Another case is, Old Spice which uses series of online viral videos showing an innovative Old Spice Guy character which changes the perception of an old person’s brand in the mind of the younger clients; 3) ICBP based services and its direct-end-customer impact, where the use of ICBP allows Entities in many end-product segments to directly interact with clients in terms of final business transactions. Like in the case of, Procter and Gamble (P&G), which offers clients a wide range of end-products through their eStore. Actually many brands have use similar concepts on a high frequency range; and 4) The ICBP provides alternative business retail methods, where in the actual digital transformation era, end-clients are increasingly making use of web stores to purchase products at lower prices, making the use of ICBP as an definitive alternative for traditional retail methods. Global retailers like, Best Buy already using what is known as the endless aisle concept, to increase direct engagement with end-clients, by using ICBP based online platforms.

- The use of ICBP-enabled operating model: Due to the fulgurant evolution of ICS related technologies, it is optimal and even recommended to integrate ICBP solutions. Because this type of solutions supports a business, in order to deliver non-core functions efficiently, with less focus on Project Managers’ interventions and it even reduces resources overheads and total costs. Added to that, there is a potential in using ICBP solutions, in end-client focused Entities, to drive business areas like, merchandising, marketing, and analytics that in turn enforce sales operations. That implies that actually the optimal manner for Entities to expand their interaction with external partners and outsourcing providers. Unfortunately, complexity and cRisk in implementation ICBP-based partnerships are a major barrier for such a business model. The landscape for ICBP-based services offers a lot of potential and is immensely growing. Projects use social networks like, Facebook and Google, as crucial partners, because these partners have the unique capacity to understand and profile clients and explore their needs; thereby they can reach out to targeted categories. For this reason, ICBP-based operating model(s) helps Entities to find innovative business opportunities with partners, more specifically in small and high growth Entities’ segment. The most important business benefit for these Entities, is the cost of flexibility and fast/real-time scalability that ICBP provides. Like in the case, of the US-based retailer 3balls.com as a start-up which has become the leader in selling golf equipment on eBay. Due to its fulgurant financial growth, managing its gained wealth became a risky and challenging activity. In order to solve woes related to financial management, 3balls.com incorporated a subscription-based F&A platform solution that is based on ICBD based services. This platform provides on-demand scaling capacities that support growth that is required with no major investments in the Entity’s ICS infrastructure, these facts supported 3balls.com to improve back-office productivity by 25%, which is very significant. It also supported in reducing the time spent by the Entity’s retail unit on reconciling accounts and running financial reports, from 12 hours per week to four hours per month. The most important improvement is the continuous availability and the emergence of ICBP-based Enterprise Resources Planning (ERP) solutions, which supports Entities to optimally use ICBP-enabled ICS applications.

- The use of ICBP technology and enrichment of shopping experience: ICBP based solutions which are used by retailers and their brand partners, can support them in creating differentiated and value-added retail shopping experiences for end-clients. The hyper-evolution of ICBP development that created innovative opportunities for the traditional store shopping model. Actually there is a lot of prototyping Projects related to the use of ICBP-based services and solutions. That caused that many traditional
retailers from various client segments focusing on exploring innovative concepts like, digital fitting rooms, dynamic displays expanded aisle kiosks, VIP concierge applications, and even same-day home delivery. The main reason for this evolution is due to the fact that ICBP-based services promise capacities for creating a dynamic and differentiated shopping experience for end-clients. Like in the case of an ICBP-based application that provides an end-client support for an exceptional shopping experience, by using Aisle 411, which also supports them to locate products in online stores, manage a shopping list, and connect via social media and make tangible gains. It supports also the back-end to gather useful data insights on end-client’s behavior (especially shopping habits), which can be shared with participating brands, partners and retailers. The PoC will try to prove this article’s feasibility.

![ICBP Models](Image)

Figure 10: ICBP Models (Digital Innovation Junction, 2020).

6. Proof of Concept

6.1. The Preparation

This article’s PoC uses a fictitious Entity using CloudEcoSource as its HCM, which launches three separate transformation initiatives, or Projects, which use TOGAF and ADM phases, to apply the ICBP. Entities must have robust and strong ICS based functions, therefore CloudEcoSource, which wants an ICBP-based solution, needs to engage several external Cloud Service Providers and Partners, to the transformation of its heterogeneous ICS and distributed infrastructure platform and software services; and also to support its critical business needs. The Entity intends to use the TOGAF standard for EA practices and ABBs, which are used to manage its ICBP based services as patterns. As already mentioned, CloudEcoSource has three distinct ICBP-specific initiatives which are based on the following sub-systems: IaaS, PaaS, and SaaS; these sub-systems are for basic CloudEcoSource operations. This PoC describes how CloudEcoSource plans to use EA and ICBP to create and evolve various business models. The following features present CloudEcoSource’s initiatives (The Open Group, 2021a): 1) The IaaS initiative, concerns the Entity’s infrastructure’s modernization, optimization and consolidation; with the expectations on how to transform, manage and regulate dynamic resources consumption in a multi-tenant ICS infrastructure, with real-world effective management of security and privacy of its tenants, like for example the Entity’s clients; 2) The PaaS initiative, is related to the concept of Rapid Application Development (RAD) platform, where the PaaS-focused initiative is used to identify and describe EA based ICBP capabilities of a platform for CloudEcoSource business solutions. Dynamic instances of the ICBP platform(s) could be
deployed and operated by a team, Entity or by partners of ICBP’s Ecosystem; and 3) The SaaS initiative, concerns mainly an enhanced collaboration among multiple external service providers; where the ICBP assembles business capabilities for business collaborations that extend the Entity’s traditional applications’ boundaries, to support extended users (both internal and external users). The PoC’s development uses an adapted implementation environment.

6.2. The Implementation Environment

The PoC was implemented using TRADf which was developed exclusively by the author and uses microartefacts on the basis of the fine-grained granularity approach 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++; 2) Java Enterprise Edition development environments; 3) Sparxsysten EA tool; and 4) An external cloud platform.

6.3. Defining Principles

The Project’s ICBP and HCM related principles are a set of principles that are associated to the implemented EA blueprints; and they reflect the consensus across the Entity, and contain the essence of existing Entity’s major principles. The defined principles govern the Project, affecting all its phases. In ADM’s Preliminary Phase, EA Principles were defined, which form part of the constraints on the Project; and they are in conjunction with stakeholders. The defined principals are included in the Project and are output of the Preliminary Phase and were examined in the context of the Cloud Ecosystem for completeness and applicability. There were several scenarios to be applied (The Open Group, 2021a): 1) Existing principles, which were obsolete and had to be modified or erased; 2) The relevant ones, which needed to be updated, which implied that existing Business Principles had to be revisited; 3) Existing principles whose use needed to be given priority in ICBP’s context; 4) New principles which needed to cope with new ICBP features; 5) EA principles for the ICBP, which were categorized as Motivation Extension viewpoint of the ArchiMate standard. As shown in Figure 11, the main viewpoint of an Entity’s presents the ICBP ecosystem. The selected principles fueled the literature review’s process.

Figure 11: ICBP Models (Digital Innovation Junction, 2020).

6.4. The Literature Review’s Process

The RLR 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 analysed using a specific interface; where each link can then be reviewed, archived, weighted parsed into an Microsoft Excel file. After selecting the sets of CSA/CSFs, tags are linked to various ICBP 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 ICBP or HCM problems. The HDT process is an iterative rule of thumb and a guide to
implement ICBP problem solving using a goal function and constraints. The ICBP uses the AHMM4ICBP instance to manage microartefacts mechanics’, which in turn uses the internal initial sets of CSFs’ that are used in phases 1 and 2.

6.5 The ICBP-S’ CSFs Phase 1

<table>
<thead>
<tr>
<th>Critical Success Factors</th>
<th>KPIs</th>
<th>Weightings</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Research and Development Project</td>
<td>ROBUST</td>
<td>From 1 to 10. 10</td>
</tr>
<tr>
<td>HCM and ICBP Services Fundaments</td>
<td>POSSIBLE</td>
<td>From 1 to 10. 09</td>
</tr>
<tr>
<td>HCM and ICBP Innovation Models</td>
<td>POSSIBLE</td>
<td>From 1 to 10. 09</td>
</tr>
<tr>
<td>HCM and ICBP Advanced Topics</td>
<td>COMPLEX</td>
<td>From 1 to 10. 07</td>
</tr>
<tr>
<td>HCM and ICBP Business Innovation</td>
<td>LIMITED</td>
<td>From 1 to 10. 08</td>
</tr>
<tr>
<td>HCM and ICBP Feasibility</td>
<td>COMPLEX</td>
<td>From 1 to 10. 07</td>
</tr>
</tbody>
</table>

Table 1: The ACS’s CSFs that have an average of 8.3.

All CSAs’ CSFs values are defined by the EA, ICBP and HCM expert(s); and based on the RLR and the related evaluation processes (phase 1) the most important CSFs are used and processed by the internal HDT. The results are presented in Table 1 (Trad & Kalpić, 2020a). As shown in Table 1, this fact keeps all CSAs that helps to make this article’s conclusion. If the automated evaluation of RLR outcomes is 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 ICBP 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 concrete ICBP problem is selected and an HDT process is launched to find a set of solutions. Phase 2 starts with the selection of the case study.

6.6. 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 EA blueprints.
- Sub-phase B or the Business Architecture phase shows how the ICBP 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 ICBP’s concept implementation. This phase is the most important one for the ICBP.
- Sub-phases E and F, or the Implementation and Migration Planning; where the transition architecture, proposing possible intermediate situation and evaluates ICBP’s integration status.

6.7. Experiment’s Processing of a Concrete Tree Node

In phase 2, the HDT was used, to find a combination of HDT’s action, used to solve a select ICBP problem, which is related to this chapter’s RQ. A specifically selected CSF is linked to a ICBP problem type and a related set of actions; where the processing starts in the root node. Each ICBP problem, like in this case, is the ICBD Business Model’s Integration (IBMI), which related to the PRB_ICBP_IBMI problem, and has the following set of actions:

1) ACT_ICBP_Define_ProblemType;
2) ACT_ICBP_Verify_ProblemType;
3) ACT_ICBP_Match_ProblemType
4) ACT_ICBP_Validate_ProblemType.

For this ICBP related PoC, the author has selected the CSF_ICBP_IBMI as the active CSF, that was taken from ICBP’s CSAs. In this PoC the goal is to find solutions related to this selected
CSF(s) which are related to a set of ICBP problems. Such ICBP problems can be only researched and solved by using the HDT based mixed-model that is very similar to the (re)scheduling of Project’s activities. Solving the given ICBP problem is done by a set of actions and delivers solutions.

6.8. Selected Node Solution in Phase 2

TRADf’s scripts make up the processing logic of the ICBP 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 RDP, the AHMM4ICBP and its related CSAs/CSFs were selected as demonstrated previously and interact.

9. Conclusion

Because of the acceptable score (of 8.3, shown in Table 1), which signifies that ICBP’s implementation is possible and that the transformation process is nevertheless complex. An inhouse only framework, methodology and ICBP, like TRADf, can be built to support Projects. In this article, the author proposes the following set of managerial and technical recommendations:

- The ICBP supports a distributed online business in order to ensure an efficient growth.
- Private HCM and ICBP should replace public solutions; to avoid locked-in situations.
- A holistic security concept should fit in the Entity’s ICBP.
- ADM’s integration with the ICBP enables the automation of all its cloud activities.
- Entities are the ones who drive major business transformation trends.
- ICBP has to find the right balance between cloud’s: technology, strategy, components, decision-making, knowledge management, and scalability.
- Holistic ICBP strategies are the basis of innovative business models.
- Entities are using technologies and methodologies as the kernel of their ICBP.
- ICBP’s implementation can be coordinated by using the ADM.
- Actually, ICBP’s Evolution is fulgurant and supports Business Process Automation.
- ICBP’s resources and challenges support the cloud’s global platform evolution.
- ICBP’s structure supports the development of various innovative business models.
- The Project must implement Secure Development and Operations.
- The Role of AI is central for the designing of the ICBP.
- The Project must implement Capacity building, skills development and unified logging.
- The Project must implement a distributed financial environment, using governance and legal controls.
- The ICBP ensures important business advantages by delivering efficient business models.

TRADf englobes TOGAF and other standard methodologies and artifacts, which facilitates the transformation process.
References


Internationalisation of Russian Higher Education: The Case of Altai State University

Fahri Türk

Abstract

In recent years Russia has given priority to the internationalization of its universities. Especially after establishing Russotrudnichestvo in 2008, Russian government created a grant program for foreign students in order to study in Russian universities. This grant program annually enables to study 15 thousand students in Russian universities indeed, which gained importance within the framework of the soft power policy. As a result of these circumstances nearly every Russian university has established preparatory departments for their foreign students.

This research paper focuses on the internationalization issue of the Altai State University (Altaiski Gosudarsvenni Universitet) that is founded 1973 in Barnaul, capital city of altaiski krai. This university is a member of Asian University Association which consist of 70 universities from nine countries. Altay State University signed academic cooperation agreements with 250 various universities. Like the other higher education institutions Altai State University also makes a great effort for attracting students from abroad. Thus this university has especially a lot of students from neighboring countries such as Mongolia, China and Kazakhstan, where one can meet students from Latin America, Africa and Near East as well. According to Alena Kintzel, the head of the department of preparatory department, Altai State University signed many cooperation agreements with various Chinese universities.

Keywords: higher education, internalization of higher education, Russian Federation, Altai State University

Introduction

In recent years Russia has given high priority to the internationalization of its universities. Especially after establishing Russotrudnichestvo in 2008, Russian government launched a grant program to support foreign students for studying in Russian universities. This grant program annually enables 15 thousand foreign students to study in Russia, that gained great importance within the framework of the Moscow’s soft power policy in recent decades. The aim of this paper is to analyse the internationalisation of the Altai State University using the data gathered during the fieldwork in Barnaul/Russia 2019.

Altai State University

This research paper focuses on the internationalization of the Altai State University (Altaiski Gosudarsvenni Universitet) that is founded 1973 in Barnaul, the capital city of Altaiski Krai located South-West Siberia. This institution is the biggest university in the Altaiski Krai, that owns branches in the towns such as Bisky and Belokruhe. In the founding year this university had three faculty within nine departments, which is consisted of 14 faculties in 2019. This university enrolled 14.000 students in the mentioned year. 19,3 per cent of this total figure were foreign students, which equals to 2.702 students. The university library owns more than one million books. Altai State University gave out one journal namely “For Science” for 41 years. Moreover, this university founded its own museum in 1985 as well. This university manages branches in more than 13 institutions abroad that has implemented a policy directed at attracting other regional countries. Within this framework there were some projects launched by the Altai

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State University as follows: a series of Central Asian Students Congress between 2015 and 2018 and Intercultural Dialog attended by the foreign students.

**Pax Altai**

Altai State University is a founding member of the Association of Asian Universities which consist of 70 universities from nine countries. Moreover, Altay State University signed various academic cooperation agreements with 250 higher education institutions abroad. In this context it can be indicated that this university focused on the region “Bolshoi Altai” that is translated as “Greater Altai” into English. In a further consideration “Bolshoi Altai” refers to the countries such as Russia, Mongolia, China and Kazakhstan. In recent years Russia has designed the concept of Balshoi Altai that has two main aspects. Although this concept refers in narrower sense to the Altai region of the countries such as Russia, Mongolia, China and Kazakhstan, which focuses in a wider sense on the Central Asian States, Pakistan, Afghanistan and Iran as well. With other words in narrower sense Altai region reaches from the West Siberian Plains to the desert Gobi and Dzungaria. In this region nowadays live a lot of ethnic groups, which is known as fatherland of nations such as Altai, Kazakhs, Mongols, Tuvan and Uyghurs. Due to the Altai State University’s strategy designed for the Bolshoi Altai region, one can create a friendly atmosphere for the coexistence of different ethnic groups that can be considered as Pax Altai. In that case Pax Altai can contribute to the World peace and intercultural dialog between nations by influencing the other regions.

**Cooperation with the Kazakhstani Universities**

As the Altai Krai borders to Kazakhstan, Altai State University gives high priority to the cooperation with the Kazakh universities. Consequently, this university signed a row of agreements with the Kazakhstani universities. This university signed 16 bilateral cooperation agreement with the Kazakhstani educational institutions. For instance, Altai State University cooperates with the Pavlodar State University on tourism, biology, nature protection, ecology and industrial development as well. However, Altai State University launched information offices for Kazakh students in the cities and towns such as Pavlodar, Semipalatinsk, Ust-Kamenogorsk, Ridder and Shemonaiakh. As a result of this activities the figure of Kazakh students in the Altai State university increases as time goes on. For instance, in the Altai State University there were only 174 students in the term 2012-2013. In the 2013-2014 this figure increased to 303 and one year later there were 430 Kazakhstani students in this institution.

**Foreign Students in the Altai State University**

Altai State University like the other higher education institutions of Russia also makes a great effort for attracting foreign students. Thus, this university enrolls a lot of students from neighboring countries such as Mongolia, China and Kazakhstan, where one can meet students from Latin America, Africa and Near East as well. However according to the Alena Kintzel till 2014 there were nearly no foreign students in the Altai State University. However, in that year came a lot of students from the neighboring countries, Africa and Latin America as well. These students get a grant from the Russian state, namely Rossotrudnichestvo for their living expenses in this country. As the Russian government realized the importance of the soft power instruments, it launched a grant program for 15 thousand foreign students in the second half of the 2000’s. The majority of the foreign students come from under-developed Central Asian countries such as Tajikistan. Especially Tajik and Mongolian students show great willingness to study in Russia. Because in these countries the living standards are very low compared with that of Russia. With other words the students from above mentioned countries are not able to afford to study in Russia on their own expenses. On the other hand, for Russia also very important to hold contact with the elites of the neighboring countries. Within this framework it can be indicated that Afghanistan enjoys also high priority regarding Russian soft power policy.
Those students who came from the big cities of the Central Asian countries can learn Russian language easier and faster than students coming from periphery or Mongolia and China as well. The students who cannot speak Russian or not to be able to speak this language properly have to attend a preparatory class at the university in order to obtain this language. These courses last at least one year or two semesters. At the end of these courses the students have to take an exam which enables them to start with their study. The students who cannot pass this language exam, consequently they should repeat the courses in the next year. However, in this case they have to pay course expenses at their own budget. On the other hand, Russian authorities do not support that students attend this preparatory classes two-fold. Because this brings extra burdens for the Russian state.

On the other hand, there are also students that came at their own expenses to Russia in order to study in this country. For instance, a lot of Chinese students come to Russia in order to study at their own expenses. China considers Russia as an important actor in the World politics, therefore she supports youth for studying in this country. According to Alena Kintzel, the head of the preparatory department, Altai State University signed a lot of cooperation agreements with a row of Chinese universities. In this context it can be stressed that Altai State University took advantages from its closeness to the Balshoi Altai region.

Western students do not use the opportunity to get grant for a study in Russia, that is first of all attractive for the students coming from poor countries of Asia and Africa. Because they consider getting a diploma from a Russian university as a first step of their career. West European students do not prefer to continue their studies in Russia. Because the grant is not enough to live on with especially in the Russian metropoles such as Moscow and St. Petersburg. As we consider that Russia realized the importance of the soft power instrument just in recent years like Turkey and China, it can be assumed that Russia would update its policy towards foreign students.

References
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