InTraders
International Trade Academic Journal
(InTraders Journal)

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !

InTraders Journal

Intraders International Trade Academic Journal is peer reviewed academic journal, open access and accepts "PRINCIPLES OF TRANSPARENCY", follows the practice guidelines prepared by the Publication Ethics Committee (COPE).

Aim

InTraders International Trade Academic Journal aims to be able to publish scientific research of researchers; aims to create a platform that will contribute to academic development and increase the number of qualified academic studies.

Scope

InTraders International Trade Academic Journal is a well-known international journal that publishes original and scientific research in the field of international trade in English. The journal has free and open access to all researchers. The language, science, legal and ethical responsibility of the articles published in the journals belong to the authors. Articles published in the journal can not be used without reference.

Review Process

The articles to be submitted for publication in InTraders must have never been published before, have not been accepted for publication, and have not been submitted for publication.

Review process includes "Preliminary Review "and" Scientific Board "process. The aim is to complete the entire process within maximum 5 months. The ethics committee report should be provided by the writer's institution and / sampling is necessary for studies involving humans and/or animals.

In the Pre-Exam process, the article consists of three phases; formal, academic and written. In the formal review, the "similarity report", the keyword, the JEL code and the author information are checked. The preliminary examination is carried out by the secretariat board. At each stage, the writer is contacted and requested to complete the necessary transactions, and each subsequent step is passed to the next step. It is targeted to complete within 10 days according to the speed of the author.

The Scientific Control is carried out by the co-editor and/or editor with 2 blind referee members in the pre-process completed document. The referees will be provided with the dissemination of the article by "similarity report". It is aimed to complete the referee process in 4,5 months in total by taking preliminary information about the judiciary evaluation process within 1 week. This period may vary in the direction of completion of the author's revisions as necessary.

At least two scientific board member approval needs in favor of accepting the journal. If one of the referees is positive and the other is negative, the article is sent to a third science board member. Publication of the referee review process is completed with the approval of the editorial board of the journal.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !

Plagiarism Control

Plagiarism check is done using software programs.

Publishing Periods

It is published twice a year. It is published in July and December. If it is deemed necessary, specific numbers / supplements may be issued for specific topics and for expanded notifications qualified by InTraders subject to conventions. Articles may always be accepted by InTraders.

Free Open Access Policy

Free access to authors and readers is provided.

Privacy Policy

Information such as names, titles and contact addresses shared through the InTraders website will only be used for the purposes set forth by InTraders; for any other purpose or for the use of third parties.

Copyright

All publishing rights of the articles published in InTraders are deemed to have been transferred to InTraders indefinitely.

Publication Ethics

InTraders is committed to implementing the highest standards of publication and to follow the practice guidelines prepared by the PublicationEthics Committee (COPE).

Archive

The archiving system is provided by DergiPark and InTraders' own web pages.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !

Appreciation

I am gratified to have the honor to put forward the vote of thanks to all the InTraders Journal Committees, Writers and Authors who provided the intensive work performance for the InTraders under the name of InTraders Academic Platform.

InTraders topics; international trade, business, economics and supply chain management.

In upcoming next issue, waiting your studies.

Wish to meet you all in this new international conferences…

Kürşat ÇAPRAZ

Director of InTraders Academic Platform

www.intraders.sakarya.edu.tr

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers

Contents

BORDER TRADE APPLICATIONS IN INTERNATIONAL TRADE:
HABUR BORDER GATE[1]

Vicdan Sonğuralp, İstanbul Medipol University, vsunguralp@gmail.com

Yurdagül Meral, İstanbul Medipol University, ymeral@medipol.edu.tr

Abstract

Border trade, which is a special form of international trade, is an application permitted by the country administrators within the framework of a joint decision agreement to provide their daily needs cheaper and in a shorter time for the local people living in the border regions. Turkey has started border trade for the first time in 1978 after the oil crisis unfolding in the world against goods for Iran oil imports in Ağrı-Gürbulak Border Gate. This study aims to find out the economic added value to Turkey's economy via Habur Customs Gate which is located between Iraq and Turkey border. The methodology of this study is a literature review of border trade and through in-depth interview method with 10 local drivers who carry goods through borders, the in depth interviews were conducted during a three-month internship period between March-May, 2019. As a result of the literature review, it was observed that the export made by border trade decreased by approximately 3 billion dollars in 2014, 2015 and 2016 due to various reasons (security, political and terror etc.) that started in 2014. Among Turkey's borders, the most revenue has been earned from Habur Border Gate, which is a vital point, a commercial bridge between Turkey and Iraq, one of the largest export markets in the Iraqi border. Finally, it is observed that Habur Border Gate increased the value added to the country's economy with the right strategies in foreign policy, and when the relationships between the two countries are strained, export volume is decreased and country's economy and all cities in the region are negatively affected.

Introduction

International trade or foreign trade in general; is the crossing of borders between the sovereign countries according to international rules of goods and services. Foreign trade consists of import and export. In a World, where globalization and regionalization are so common under today's conditions, it would not be a logical decision for a country to want to meet all the needs of its people living in its country, that is, to prefer closed economy. If the country chooses to do so, the diversity in the number of goods she will produce will be very low, which will lead to a decrease in her well-being, as the people in the country cannot access the desired goods. However, the main reason behind countries preferring international trade is to increase the level of welfare in the country.

The reasons of international trade can be summarized as follows; the natural resources in the world are not distributed in a balanced way, therefore they do not want to produce every product due to their limited resources, due to the different climates and geographical conditions, or even if they can produce some products, other countries might produce the same product cheaper

---

[1] This study was presented at The 5th InTraders International Conference on International Trade, 13-14 April 2020, E-Conference, Turkey.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !

1

and might export, local produced products might not be sufficient to the population in the country or if produced more than the necessity, the desire to export them and provide foreign currency inflows to the country.

Especially after the collapse of the USSR and the fall of the Berlin Wall in the 1990s, an increase was observed in the international goods and services movements all over the world. With the globalization phenomenon, the countries started to find new regional mergers and search for new markets and new ways to export more. Border trade, which is a special type of foreign trade, has become a new income method preferred by countries with borders due to their geographical proximity. Turkey has border trade applications like the other the various countries in the World. However, border trade applications in the world are mostly within the scope of cross-border cooperations due to regional mergers.

Turkey: When we look at Turkey in particular; border trade started for the first time in 1978 with the import of oil from Iran against goods exported through the Ağrı-Gürbulak border gate after the oil crises and foreign exchange bottleneck in 1978.

The purpose of starting border trade is to create income for the people in the region and increase the level of welfare due to the fact that the Eastern and Southeastern Anatolia Regions are socially and economically lagging and undeveloped compared to other regions in the country, there are no employment-generating activities, immigration from the region to other regions and the fact of terrorism. Border trade is permitted by those who manage the country to meet the daily needs of residents who live in border regions within two neighboring countries in a cheaper and easier way, to create employment, to develop mutual trade and cooperation, to provide a regional good neighborly and peace environment, to establish mutual trust among border peoples and to develop the region with a special form of trade.

In the provinces where border gates are located, border trade was considered essential because of the lack of production factors, unfavorable climatic conditions, unemployment, being away from big cities, not being able to attract investments due to terrorism, and per capita national income below the country average.

Border trade is seen as an opportunity to reach new export markets with the implementation of an export-based growth policy on January 24, 1980, instead of imported substitution policies that have been implemented since the Turkish Republic was declared. Accordingly, with the dissolution of the Soviet Union, the number of countries increased in our borders in the East. Thus, other provinces have been added under the title of neighboring provinces within the scope of border trade as it means new markets for the economy of the region especially for the national economy. Therefore, it was ensured that the income to be obtained from this trade was used not only in the border provinces but also in other provinces in the region.

To strengthen its position in the region in terms of geography where Turkey also needs to establish good relations politically and economically with neighboring countries. Therefore Turkey's policy namely 'zero problems with neighbors and soft power' which began in 2008 has improved the economic terms and Turkey's export record in subsequent years.

In this study, particularly in the field of export of where Turkey has the most advantages and gained the most revenue through Habur Border Gate, which opens to Iraq, where she earns the most income among neighboring countries will be investigated along with the value added to the regional and national economy, through peace economy and a win-win relationship with

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
2

the neighbours, and how employment and welfare increased, and how Habur Border Gate became a source of income for the other cities in the region as well. Furthermore how it was a traume when the border gate has been restricted by legislation that has been constantly changing over the years. The contribution of the Habur Border Gate, which has a strategic importance in border trade, which is a special form of foreign trade is discussed within the framework of political and security events by the Ministry of Commerce, Turkish Statistical Institute Date, Development Agencies and related theses and articles published on this subject.

Border Trade Advantages

The basic and general objectives of border trade are as follows (Kökçe, 2005; Tan & Altundal, 2008; Yüce Dural & Göktepe, 2010; Çiftçi & Uğur, 2010; Turhan, 2012):

- To bring vitality to the economy of the region by supplying the needs of the people living in the border region from neighboring countries in a shorter time, cheaper and more easily.
- To ensure that the residents in the border region obtain cheaper goods through transportation costs and price differences due to reasons such as transportation and price differences compared to the regions that are not close to the border of the country,
- To expand the trade volume by facilitating the rules and conditions existing in import and export and via reducing bureaucratic obstacles,
- To prevent migration from border regions to other parts of the country,
- To add vitality to the economy of the border provinces as well as the regional economy and to turn these provinces into centers of attraction,
- To minimize activities such as smuggling of goods that may be illegal in the region and to ensure that these goods are imported legally by paying taxes,
- Overcoming the shortage of product shortage in the country by bringing the products that are not possible due to the lack of production factors in the country and geographical reasons, from border countries,
- To increase the export capacity and the amount of foreign currency entering the country by encouraging the development of export-oriented industries through exports to be made on the occasion of border trade,
- To help the employment problem and decrease unemployment both in the country and in the region as a result of the creation of new job opportunities by attracting new investments in the region by increasing exports and foreign currency inflows to the country,
- To reduce the processes required in foreign trade, to increase foreign trade and capital accumulation in the country through foreign capital investments,
- To reduce unemployment and increase the level of welfare of the people with the investments to be made
- To contribute to the formation of the entrepreneurial spirit of the people living in those regions of the countries on both sides of the border,
- To minimize the difference in development and development between regions that are very clearly seen in the country,
- To grant various privileges to the border trade in order to enable the local tradesmen in the region to trade and go into trade,
- To create an environment of mutual trust between the people living on both sides of the border by creating an environment of peace and tranquility in the border regions,
- To contribute to the competitiveness in the foreign markets by enabling domestic producers to supply the inputs at a lower cost at the price in the world markets,

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
3

- To raise economic standards by bringing advanced production and management techniques from abroad to the country,
- To establish the infrastructure of regional collaborations and agreements that may be possible in the coming years,
- To contribute to the development of the established management system in the region and the establishment of a democratic understanding in the region with this system.

Requirements for border trade are less compared to normal trade, and the biggest aim of this trade is to increase the commercial potential with a trade free from high transportation costs (Yardimcioglu et al., 2012).

As imports through border trade increase at low costs and diversify in exports, the economy and trade of the region becomes lively. The aim of this situation is to help minimize the illegal trade. (Sonmez, 1995: 21; Ozturk, 2006: 109).

Border Trade Purpose in Turkey

Among Turkey's seven geographical regions, the Eastern Anadolu and Southeastern Anatolia Region which has no sea border, landlocked border, mountainous, with rugged terrain and which consists approximately 28.5% of Turkey's surface, biggest problem today is that the two regions are socially and economically lagging behind other regions. These factors are not the only reasons why industrialization develops very little in these regions, whether it's the climatic conditions or the geographical structure. Another reason we can see as the main element is the security problem, that is terrorism. For these reasons the main objective of the governments of Turkey is to increase the people's welfare living in the region which they deserve, which are according to the development index, at the lowest places in terms of lifestyle and economics compared to other regions, and which cannot attract investment due to terrorism, are almost at the top of unemployment rate.

Figure 1: The Year 2018 Year Unemployment Rate by Region in Turkey

Source:(https://www.drdatastats.com/turkiye-bolgelere-gore-issizlik-oranlari-2017-ve-2018-yillari/)

Figure 1, according to 2018 data based on the region where unemployment is the highest unemployment rate in Turkey TRC3 region known as Mardin, Batman, Şırnak and Siirt region

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
4

is located in the province. The unemployment rate in this region has reached 25%. TRB2 region located in Van, Mus, Bitlis and Hakkari provinces. With the unemployment rate to 21.5% in 2018 from 12.8% in 2017 was the second of which Turkey is experiencing the highest unemployment. 2018 was the third highest unemployment rate in the region is Turkey with 18.6% of Şanlıurfa and Diyarbakır. The unemployment rate of this region in 2017 is 13.8%. The unemployment rates of industrialized cities are lower compared to these regions. For this reason, border trade is permitted in border provinces in these regions in order to prevent the people living in the Eastern Anatolia and Southeastern Anatolia Regions from migrating due to financial impossibilities, to make these regions a center of attraction, to increase the living standards of the residents here and to ensure the safety of the people by legal means.

Furthermore along with the permission less controls and rules were applied, unlike normal trading. This privilege is based on the 1982 Constitution of Article 2 of this privilege "Republic of Turkey, public peace, national solidarity and justice; respecting human rights, loyal to the nationalism of Atatürk, initially based on the fundamental principles of a democratic, secular and social state of law." Due to the necessity of being a social state, the aim is to minimize inequality between regions.

Authorized Provinces and Customs to Process Border Trade (2016)

Number	Authorized Border City	Authorized Customs Gate	Related Border Country
1	Artvin	Sarp	Georgia
2	Ardahan	Türkgözü	Georgia
3	Kars	Dilucu	Naxcivan
4	Iğdır	Dilucu	Naxcivan
5	Iğdır	Gürbulak	Iran
6	Ağrı	Gürbulak	Iran
7	Van	Kapıköy	Iran
8	Hakkari	Esendere	Iran
9	Hakkari	Derecik	Iraq
10	Hakkari	Üzümlü	Iraq
11	Şırnak	Habur	Iraq
12	Mardin	Nusaybin	Syria
13	Şanlıurfa	Akçakale	Syria
14	Gaziantep	Karkamış	Syria
15	Kilis	Öncüpınar	Syria
16	Hatay	Cilvegözü	Syria

Source: Decision of the Council of Ministers, Official Gazette No. 2016/8478.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
5

Border Trade in the World

Border trade between countries can be affected as per the rule of "Tariffs and Trade Agreement (GATT) for the border trade and with some adjustments in article 24 with the principle that will not threaten the "most favored nation" (Karluk, 2010). Border trade has been afffected in different countries before Turkey. There is limited research and statistics about the applications of border trade in the world. It is known that the first research on this subject belongs to Womack in 1994, examining trade between China and Vietnam (Öztürk, 2006: 109).

It is possible to encounter economic relations based on border trade on different continents of the world such as Asia, Europe and America. Among these, the most prominent are; It is known as the Russian Federation and the Scandinavian countries (Norway, Sweden and Finland) on the European continent, Egypt, Sudan, Pakistan, the former Soviet Union and China on the Asian continent, and the USA, Canada and Colombia in the USA. In addition, after the new regulations in the economy in 1980, border trade is accepted to be institutionalized in countries such as Colombia, Indonesia, Malaysia and Egypt (Kökçe, 2005).

In general, the following conclusions can be drawn when looking at the border trade in the world: Developing countries try to export processed products in exchange for raw materials because they cannot produce with sufficient quality. Slightly industrialized countries import raw materials against industrial products. Countries with some regions less developed than other regions, that is, they have the appearance of dualist structure, perform border trade in order to bring economic vitality to the underdeveloped regions. Some countries, on the other hand, want to enter and stay in foreign markets by using import financing and foreign trade regime as tools (Kökçe, 2005). In addition, border trade practices were seen as a rational form of trade in order to minimize transportation costs. The principle of "mutual and balanced trade" has been applied in the applications of border trade in the world. Continuous trade surplus or deficit by one of the parties endangers the continuation of the trade (Gümüş, 1996).

Habur Border Gate

Habur Border Gate is one of Turkey's four border Gates crossing to Middle East in Şırnak and Hakkari provinces. Habur Border Gate is located in Silopi town of Şırnak province. Habur Border Gate is the border gate where the most intensive transactions with the least disruptions are handled. Habur Border Gate is an indisputable vital issue for our country. In 1973, started as the Customs Administration and continued as the Customs Directorate in 1976, and as Habur Customs Regional Directorate in 1981 since 2011 serves as the Silk Road Customs and Trade Regional Directorate, the Habur Border Gate of Turkey.

Harbur Border Gate has been the only gate opened to Iraq till 2014. It is the land border gate 15 km away from the Silopi District of Şırnak Province, which is at the same the Middle East region opening to the European continent (DİKA Report, 2013). Mutual border trade with Iraq took place in Turkey in mid-1990. After authorizing Mardin, Şırnak and Hakkari provinces for border trade from the Habur Border Gate, the Habur border area of Silopi, named TRC3 opened trade with Iraq which is very important for the on the Silkway. Habur Border Gate is the largest among Turkish border gates in terms of trade according to research of SESA Institutes's (2016: 5).

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
6

Location of Habur Border Gate on the Map

Source: Ntv.com.tr (https://www.ntv.com.tr/dunya/kuzey-irakta-ibrahim-halil-sinir-kapisi-bagdata-teslim-edildi,AmqN0DKjk0G81ZkUs5yQsw)

Habur Border Gate's Contribution

The relations with Northern Iraq have started to be focused on economic and political cooperation since 2000's (Baysan, 2015).

For example,

- Turkey Consulate General 's opening in northern Iraq's capital Erbil in 2010,
- Turkish businessmen investments for structuring and development again and contracting services after the invasion in 2003 in northern Iraq District,
- activation of border trade with Turkey of a large portion of the goods being Turkish origin in this region
- first foreign bank to be opened in that region is being a Turkish Bank,
- direct flights starting with Turkish Airlines to the mentioned region,
- trade volume at the Habur-İbrahim Halil border has increased significantly and high level negotiations between Ankara-Erbil.

According to the description of the relevant ministries in 2018, among the main products exported by Turkey to Iraq are jewelery (jewelery and accessories), wheat flour, chicken meat, eggs, biscuits, furniture, eggs, hygienic towels and diapers, insulated cables and wires, citrus fruits, woven carpets, plastic packaging materials, tomato paste, iron-steel pipes and profiles , sunflower oil, plastic pipes, chocolate products, cigarettes, iron-steel bars, iron and steel construction and components, margarine, ready-to-wear, dry legumes, detergent and paper packaging were the most common. The main products Turkey has imported from Iraq are mostly gold, shale oil residues, cattle leather, scrap plastic and paper (https://ticaret.gov.tr/yurtdisi-teskilati/orta-dogu-ve-korfez/irak/ulke-profil of / turkey-and-trade).

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
7

Table 1: Turkey-Iraq Trade Value (million dollars) betwween 2009-2018

Year	Export	Import	Volume	Trade Balance
2009	5.123	120	5.243	5.003
2010	6.036	153	6.189	5.883
2011	8.310	86	8.396	8.224
2012	10.830	149	10.979	10.681
2013	11.958	146	12.104	11.812
2014	10.896	268	11.164	10.628
2015	8.558	297	8.855	8.261
2016	7.640	836	8.477	6.804
2017	9.057	1.528	10.584	7.529
2018	8.350	1.420	9.770	6.929

Source:https://ticaret.gov.tr/yurtdisi-teskilati/orta-dogu-ve-korfez/irak/ulke-profili/turkiye-ile-ticaret

In the table above, trade with Iraq is given along with Turkey's total foreign trade volume between 2009-2018. When we examine the trade volume realized through Habur Border Gate, the figures show that Habur Border Gate's contribution to the economy is very important. It can be seen that Turkey's trade through Habur, generally with Iraq and specifically with northern Iraq has started after first Gulf War, after the US's invasion of Iraq June 2003.

The most noticeable point in trade relations with Turkey and Iraq is that exports ratio is higher compared with other countries. Turkey's exports to 233 countries and regions that include Iraq, which was commenced in 2003 show that Iraw has increased to 12. Rank in such a short period of 7 months.

The reason for this is mainly Turkey's investment in various fields in the Regional Iraq Kurdistan Management's (namely IKBY/Irak Kürt Bölgesel Yönetimi). These investments include the construction sector, the banking sector, highway, infrastructure works used as an import and export route, and airline and railway investments. Turkey's largest investment is t the construction industry. It is known that Turkish contracting firms carried out 495 projects in total between $ 7.5 billion in Iraq between 2003-2009 (Ekici, 2016).

Following with Turkey's external relations policies adjacent zero problems pursued under the name soft power with the right strategies in 2011, Iraq has become the second country Turkey's highest export income derived following the first country Germany. Therefore, the Habur Border Gate plays a key role in trade relations for both countries. Because Turkey's, Iraq's and Regional Iraq Kurdistan Management's (namely IKBY/Irak Kürt Bölgesel Yönetimi) economic and trade relations will depend on Habur Border Gate.

As of 2015, 80% of Turkey's export to Iraq is affected to the Regional Iraq Kurdistan Management's (namely IKBY/Irak Kürt Bölgesel Yönetimi). In addition, approximately 80% of the products consumed in Iraq and in the Regional Iraq Kurdistan Management's (namely IKBY/Irak Kürt Bölgesel Yönetimi) are Turkish goods that are consumed safely by the people living in this region. Furthermore, tens of thousands of Turkish companies continue their existence there with all kinds of activities and services (Dalar, 2015, p. 59).

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
8

Turkey's total import and export's figures are given in the table 1 covering the years 2018 and 2009. Export volume exceeding $ 5 billion has been affected through Habur Border Gate to Regional Iraq Kurdistan Management (namely IKBY/Irak Kürt Bölgesel Yönetimi) in 2009. After the start of border trade with Iraq in the 1990s, it was obvious that its effect would not only remain at the local level but would spread at the national level. Today it is known that 1400 of 3000 foreign companies are of Turkey origin in the region. At the same time the total volume of 12 billion dollars trade volume with Iraq in 2013 of which 9 billion dollars of this total was realized only with this region. Furthermore, as the land border trade with Iraq was provided through Habur, as the trade volume increased it was difficult for the Habur Border Gate to meet the needs and then the opening of new customs gates was also on the agenda (Sesa Institute, 2016: 3; Beceren and Koç; 2016).

It is seen that it reached the highest export value recorded in 2013 so far. Parallel to the reduction of tensions between the two countries and the improvement of political relations, it has also improved economic relations and the volume of trade has increased continuously with a rising acceleration. The reason of export's increase was due to Turkey's internal politics both in its foreign policy with its neighbours on both sides and to the significant steps taken to live in peace and harmony. The volume of exports in 2013 amounted to $ 11.9 billion with Iraq and 65% of this export was carried out by road through Habur Border Gate to Regional Iraq Kurdistan Management (namely IKBY / Iraqi Kurdish Regional Management). Looking at the data in the table today both Regional Iraq Kurdistan Management (namely IKBY / Iraqi Kurdish Regional Management) and Turkey are at a very strategic location in terms of the trade balance.

It can be said that in terms of economic contribution, Iraqi Kurdistan Regional Management ((namely IKBY/Irak Kürt Bölgesel Yönetimi) is the only candidate which has the potential to add economic contribution to Turkey among her potential border neighbour countries, In addition, it is seen that Turkey has a strong position in the economy of Iraqi Kurdistan Regional Management's (Bölükbaşı, 2016).

As per Turkey's Statistical Institute (TSI) 's of 2019, the annual export figures by country it is possible to say that Iraq has become Turkey's second largest trading partner after Germany between 2011-2014 but decreased to the fourth in the rank due to security problems in following years. It can be seen that Iraq has always been in the top five after EU member countries since 2010. Therefore Regional Iraqi Kurdistan Management's (namely IKBY/Irak Kürt Bölgesel Yönetimi) importance is obvious, and that because of these economic relations both Turkey's and the Barzani administration has gained because of these appropriate policies. Trade potential is so high that tension between relations will put economies in a very difficult situation on both sides of the border and the people who live in the region of both sides as well.

As per DİKA report of 2013, the importance of the Habur Border Gate was stated as follows: Habur Border Gate is a very important border crossing where approximately 1.2 million vehicles enter and exit during the year, when 43% of the major vehicle road transport in our country and exports of $ 10.8 billion affected. The momentum our country has caught up in development, the increasing trade volume in international trade, and with the advantages of the new incentive law to the provinces in the TRC3 region and the projection of 500 billion dollars export volume for 2023 increase the importance of the Habur Border Gate every day. For these reasons, it was stated that Habur Border Gate is a very important border gate especially for TRC3 region, provinces on the silk road line and our country. In addition, it is stated that the operation at the relevant door is healthy and the vehicle traffic is walking at the desired speed,

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
9

and it will contribute to the satisfaction and export increase of exporters receiving service through the door." (DİKA Report, 2013).

Habur Border Gate's Losses Caused by Security and Political Issues

With Turkey's moderate approach, replacing the tension between Turkey and the Regional Iraq Kurdistan Management's (namely IKBY/Irak Kürt Bölgesel Yönetimi) in 2008 followed with the peace settlement process that began in 2010 are the periods when the economy peaked in the sense of the political and economic bilateral relations.

With the destruction of the terror problem, people wanting to live in peace and prosperity in the region were very pleased frm the positive relations between Turkey and the Regional Iraq Kurdistan Management's (namely IKBY/Irak Kürt Bölgesel Yönetimi) and investmented securily in the region and also contributed to the increase of trade volume.

This situation was damaged by the ISIS terrorist organization that emerged in 2014. In the statement made by the Ministry of Trade; It was stated that our exports to Iraq increased by 11.5% in the period from January to May, until ISIS took Mosul in June 2014. It was reported that our exports in this period increased in all the months compared to the same month of the previous year, but after Mosul was taken over by ISIS, our exports started to decrease due to the political and military crisis in Iraq.

Table 2 : 2011 - 2016 Turkey-Iraq Export Volume (Billion Dollars)

Year	2011	2012	2013	2014	2015	2016
Export	8.31	10.82	11.95	10.90	8.56	7.64
Import	0.87	0.15	0.15	0.27	0.30	0.26
Volume	9.18	10.97	12.10	11.17	8.86	8.85
balance	7.44	10.67	11.80	10.63	8.26	6.80

Source: http://www.mfa.gov.tr/irak-ekonomisi.tr.mfa

As can be seen from Table 2, the export value that emerged in 2014 decreased significantly in 2015 due to the ISIS attack. After the extinction of the ISIS danger in 2015 trade, although is was expected that trade would increase between the two countries, Turkey's one of the biggest problems PKK terrorist Southeastern Anatolia Region of the organization 's close to the border starting to ditch politics in the provinces has led to both material and moral losses. The solution process has actually ended as of July 2015, PKK's youth structuring under the name of youth structuring has been declared so-called self-government and they have started civil wars, on 14 December 2015, in Silopi and Cizre district of Şırnak, which led to the curfews in Nusaybin district of Mardin.

Accordingly, due to road safety, the closure of Silkway to traffic also led to the closure of Habur Customs Gate to reciprocal entrances and exits. The border gate, which was not operated for about 25 days, was reopened on January 5, 2016, but it was stated that it could close again if security problems persist (Beceren and Koç; 2016). Habur Border Gate remains closed for about a month due to terrorist acts and political problems and has caused both exporters and and local people's loss of millions of dollars.

According to the data of the Ministry of Commerce, it was stated that 575 thousand trucks in

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
10

2013 and 685 thousand trucks in 2014 entered the Northern Iraq Region through the Habur Border Gate. It was announced that in 2015, there was a decrease in crossing the border due to terrorist incidents and this number decreased to 606 thousand. In addition, when all vehicles are considered, while there were an average of 2500 vehicles output from Habur, it decreased to an average of 1800 vehicles in June 2015 and an average of 1300 vehicles in July 2015 due to recent events (Beceren and Koç; 2016). These emerging security problems due whilst in 2013 about $ 12 billion trade volume has decreased to 10.8 billion dollars between in 2014, and to 8.5 billion dollars in 2015 and 2016 shows that the decline is as much as $ 7.6 billion (Ekici, 2016 Sesa Institute 2016). Considering that the second largest export partner of our country after Germany is Iraq, and that all of the exports are made through the Habur Border Gate, it is clear the huge loss of our country. During this short period of time when the events started and Habur was closed, due to the terror and conflict environment, which caused the people to be 50 percent poor in the whole region, to lose tens of thousands of jobs, and to leave hundreds of thousands of people from their homes, is not only affected the planned tourism as the leading sector in the region it also caused serious problems in production and brought shipments to a halt.

Today, Iraq is in number one among the Middle East Region group of countries of which GAP provinces export most. In recent years, there has been a remarkable increase in the level of exports from the GAP Region, and it has been reported that the export amount, which was 3.3 billion dollars in 2007, rose to 8.7 billion dollars in 2018. It is also stated that the share of exports from this region has increased from 3.1% to 5.2% (http://www.gap.gov.tr/gap-ta-son-durum-sayfa-32.html). While Silopi and Cizre in Şırnak, Nusaybin and Kızıltepe in Mardin have a significant share in the border trade, Gaziantep has the most important share on the city basis with an export of approximately 2 billion dollars (Sesa Institute, 2016: 9). Limiting the border trade with legislation and regulations that have been changed since the day it started across the country and making it no longer possible is another dimension of the processes that put the people at the border in a difficult situation. Border trade, which has been banned day by day due to some irregular transactions that have caused illegal profits in the country's economy via smuggling at the border, imaginary export, heroin trade, has led to the conclusion that it does not realize its real duty among the group carrying out this trade. Therefore, the restriction or cessation of such trade in the Southeastern Region has adversely affected, and obviously, the exporters that produced goods, the transportation companies that mediated the transportation business of these productions, and everyone in the region from Şırnak to Antep.

CONCLUSION
With the border trade starting in border provinces, which requires less formalities than normal trade, not requiring capital and creating employment have made a remarkable increase in these areas such as quality of life, health, education, self-confidence, and investment, and contributed greatly to regional development.
However, with the abuse of border trade in the following years brought bans. Regardless of whether it is a ban or a reflection of political and security problems on trade relations with the border trading country, the people of the region are no longer able to yield from border trade.

When we look at the Habur Border Gate, which is the subject of the study, it is the largest land border gate in the country, it is the gate with the highest income in terms of its neighborhood, being the region's place where the residents' earns bread, opening to Middle East geography, and with Turkmens living in Iraqi lands with oil fields is extremely an important issue for Turkey, because of its proximity to the region where the PKK camps. Habur's opening of the

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
11

Northern Iraq territory, which was under the Barzani administration until 2017, has played a major role in the improvement of Turkey's relations with northern Iraq. With the common sense policy beginning in 2008, has affected commercial and political relations between Turkey and Iraq and northern Iraq positively, which stimulate the economy in the region, has provided investment opportunities, the reduction in terror which shows the importance of Habur Border Gate for the related parties.

When political relations with neighboring countries are managed with the right policy, the real potential of trade with that country makes a very positive contribution to the country's economy.

Likewise, when the relations are bad, this time it will reflect negatively on the economy of the country and the region.

As a matter of fact, it is understood from the efficiency of the Habur Border Gate during the peace period and its low volume potential during the most tense periods of terrorism or political relations. It is obvious how the events that took place affected thousands of people in the region and the economy of the country. Thus, Turkey has to get along well with their neighbors because of difficult geography. However when we look at the other side of the coin, the planned income was not achieved because

- due to continuous interventions of the border trade which started in 1978,
- local people were not fully informed,
- Şırnak, the city where Habur is located, and the surrounding cities, it is understood that they could not show the expected increase in trade due to insufficient infrastructure.

There are also opinions that the people of the region who suffer from terrorist incidents and have no source of income other than the border, and that Habur being used as a threat during the periods when political relations deteriorate will affect everybody, especially the border people, and this situation creates anxiety in the region.

While the trade between these countries increased continuously in the first years, it was supported by in-depth interviews with 10 resident drivers who carried cargo between the borders in that region where the restrictions made with the recent legislative amendments decreased due to instability and security problems. In the interviews, they stated that as a driver in the early 2010s, their income and investments were at a higher level, their quality of life was higher and the unemployment in the region decreased visibly. However, it was stated that the security and political events experienced had a negative impact on every segment of the region.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
12

References

BAYSAN, M. (2015) "Türkiye-Kürdistan Bölgesel Yönetimi: Güvenlikçi Politikadan Enerji İşbirliğine", Süreç Analiz, http://www.surecanaliz.org/tr/makale/mine-baysan-turkiye-kurdistan-bolgesel-yonetimi-guvenlikci-politikadan-enerji-isbirligine.

BECEREN, Y, KOÇ, M. (2016). "HABUR SINIR KAPISININ BÖLGE ÜZERİNDEKİ ETKİLERİ". Yüzüncü Yıl Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 82-101.

BÖLÜKBAŞI, Y. Z. (2016). "2002"den Günümüze Türkiye' nin Kuzey Irak Politikasının Milliyetçilik Perspektifinden Değerlendirilmesi", Bilecik Bilecik Şeyh Edebali Üniversitesi dergisi, Sayı:1, s.198-200.

ÇİFTÇİ, H. ve Uğur, M. S. (2010). Sınır Kapılarının Sınır Ticareti Üzerine Etkileri ve Hassa Sınır Kapısı Önerisi.

DALAR, M. (2015). Türkiye-Irak Kürdistan Bölgesel Yönetimi İlişkileri: Karşılıklı Bağımlılık Teorisi Bağlamında Petrol İlişkisine Dayalı Bir Analiz, Uludağ Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi.(2015).Uludağ Journal of Economy and Society Cilt/Vol. XXXIV, Sayı/No. 1, pp. 47-70.

DİKA. (2013). T.C. Kalkınma Bakanlığı, Dicle Kalkınma Ajansı, "Habur Sınır Kapısı Sorunlar ve Çözüm Önerileri" Raporu.

DURAL, B. Y., Göktepe, H. (2010). "Sınır Ticaretinin Türkiye'de Gelişimi ve Karşılaşılan Sorunlar", Kilis 7 Aralık Üniversitesi, I. Uluslararası Sınır Ticareti Kongresi, Bildiriler Kitabı.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
13

EKİCİ, M. (2016). "Türkiye – Kuzey Irak Ekonomik İlişkileri ve Barış Ekonomisi (2011-2015),T.C. Marmara Üniversitesi, Ortadoğu ve İslam Ülkeleri Araştırmaları Enstitüsü Ortadoğu Ekonomi Politiği Anabilim Dalı, Yüksek Lisans Tezi, Ankara.

GÜMÜŞ, S. (1996). Dünya ve Türkiye'de Sınır Ticareti, Dünya Gazetesi, 26-09-1996.

KÖKÇE, R. (2005). 1994-2000 Yılları Arasında Güneydoğu Anadolu Bölgesi ile Suriye ve Irak Arasında Gerçekleşen Sınır Ticaretinin Bölge Ekonomisine Etkisi, Marmara Üniversitesi Ortadoğu Araştırmaları Enstitüsü, İktisat Anabilim Dalı, Yüksek Lisans Tezi, İstanbul.

ÖZTÜRK, N. (2006). "Türkiye'de Sınır Ticaretinin Gelişimi, Ekonomik Etkileri, Karşılaşılan Sorunlar ve Çözüm Önerileri", ZKÜ Sosyal Bilimler Dergisi, Cilt 2, Sayı 3.

SESA Enstitüsü. (2016). "Türkiye-Irak Arasındaki Sınır Ticaretinin Toplumsal, Siyasal ve Ekonomik Etkileri Projesi Raporu", http://docplayer.biz.tr/14245290-Turkiye-irak-arasindaki-sinir-ticaretinin-toplumsal-siyasal-ve-ekonomik-etkileri-arastirma-projesi-raporu-s esa-enstitusu-ocak-2016.html.

SÖNMEZ, M. (1994). Sınır ve Kıyı Ticareti, Yaylacılık Matbaası, Erzurum

SÖNMEZ, M. (1995). "Sınır ve Kıyı Ticareti", Yüksek Lisans Tezi, Atatürk Üniversitesi, Sosyal Bilimler Enstitüsü.

TAN, M., Altundal, F. (2008). Türkiye'de sınır ticaretinin gelişimi ve mevcut durumu. İstanbul: İTO Yayınları.

TURHAN, G. (2012). "Tekin, Kara Sınırı Komşuları İle Ticaretin Türkiye'nin Kalkınmasına Etkisi-Çekim Modeli Yaklaşımı", Doktora Tezi, Kadir Has Üniversitesi Sosyal Bilimler Enstitüsü.

YARDIMCIOĞLU, M., Kocamaz, H., Şerbetçi, G. (2012). Türkiye'de dış ticaret ve ticari ilişkiler. II. Bölgesel Sorunlar ve Türkiye Sempozyumu, 339-346.

WOMACK, b. (1994). "Sino-Vietnamese Border Trade: The Edge of normalization", Asian Survey, 34 (6), ss.495-512.

https://www.drdatastats.com/turkiye-bolgelere-gore-issizlik-oranlari-2017-ve-2018-yillari/

2016/8478 Sayılı RG, Bakanlar Kurulu Kararı

https://www.ntv.com.tr/dunya/kuzey-irakta-ibrahim-halil-sinir-kapisi-bagdata-teslim-edildi,AmqN0DKjk0G81ZkUs5yQsw

https://ticaret.gov.tr/yurtdisi-teskilati/orta-dogu-ve-korfez/irak/ulke-profili/turkiye-ile-ticaret

http://www.mfa.gov.tr/irak-ekonomisi.tr.mfa

http://www.gap.gov.tr/gap-ta-son-durum-sayfa-32.html

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
14

HOW DOES ECO–EFFICIENCY IMPROVE FIRM FINANCIAL PERFORMANCE? AN EMPIRICAL EVIDENCE FROM INDONESIAN SOEs

Vera Apri Dina Safitri[1]

[1]vera.apridina.safitri@teknokrat.ac.id

Dhiona Ayu Nani[2]*

*Corresponding Author: [2]dhiona.a@teknokrat.ac.id

Accounting Department, Universitas Teknokrat Indonesia

Abstract

The efforts to preserve environmental sustainability need to be noticed by industrial sector since natural resources are limited, therefore it is important for companies to manage natural resources more effectively and efficiently (eco-efficiency) in the company's business processes, in order to maintain their business life cycle. This study aims to examine the relationship between eco-efficiency with environmental performance and firm financial performance. This study consisted of 18 state-owned enterprises listed on the Indonesia Stock Exchange in 2015-2019. SOEs was chosen because it is considered as a company that represents the government/regulator. The results show that eco-efficiency has a positive and significant relationship to environmental performance and firm financial performance. This means that increased eco-efficiency is effective for improving environmental performance and firm financial performance. In addition, the company's environmental performance also has a positive and significant relationship with the firm financial performance.

Keyword: Eco-efficiency, firm environmental performance, firm financial performance

JEL Code: L25

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
15

1. INTRODUCTION

Environmental issues have become a global issue since the Earth Summit was held in Rio de Janeiro in 1992. Environmental conservation efforts are the concern of all sectors, including the business sector, since the business sector is one of the sectors that contributes to environmental damage. The Central Bureau of Statistics (BPS) of the Republic of Indonesia shows that the 2000-2017 Indonesia Greenhouse Gas Emissions (GHG) data increases relatively every year, even if there is a decrease, the value is not too significant. GHG emissions are generated from nature and various development activities mainly from activities in the fields of forestry, peatlands, waste, agriculture, transportation, industry, and energy. The results of the calculation of the national GHG inventory contained in the Greenhouse Gas Inventory Report and Monitoring, the 2018 Verification Report by the Ministry of Environment and Forestry shows the level of GHG emissions in 2017 to be 1,150,772 Gg CO2 e or an increase of 124,879 Gg CO2 e compared to emission levels year 2000.

Figure 2.6. **National GHG Emission Profile for 2000-2017**

Source: Greenhouse Gas Inventory and Monitoring Report, MoEF, 2018
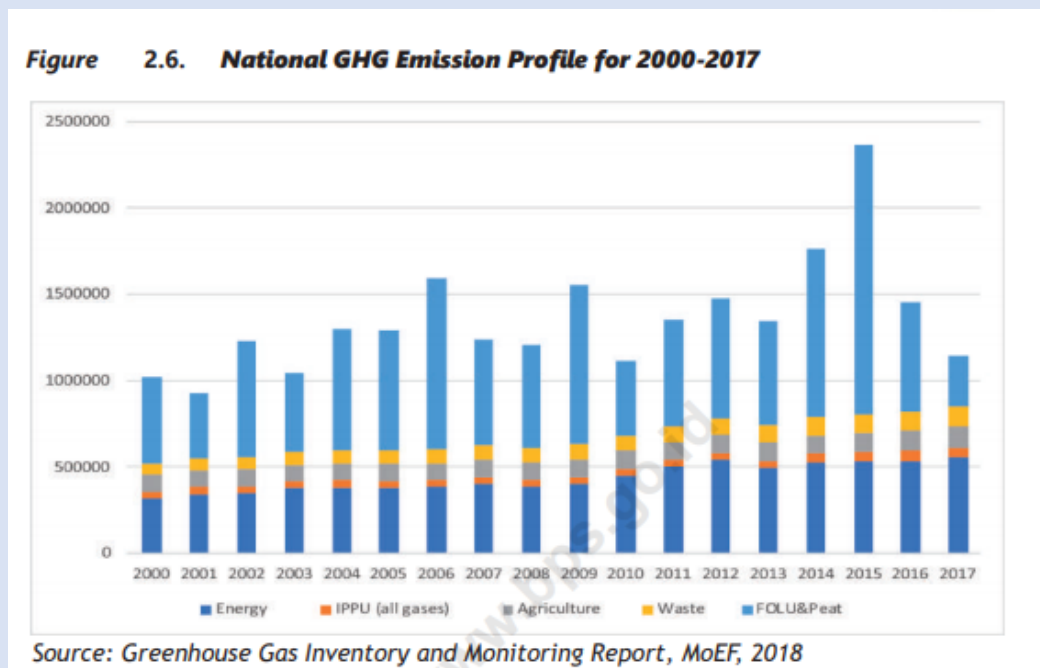
Values of emissions in 2017 each category/sector, are as follows:

1. Energy, amounting to 558,890 Gg CO2 e
2. Industrial Process and Product Usage, amounting to 55,395 Gg CO2 e
3. Agriculture, amounting to 121,686 Gg CO2 e 4. Forestry and Peat Fire, amounting to 294,611 Gg CO2 e.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
16

4. Waste, amounting to 120,191 Gg CO2 e

The increasing attention of companies to environmental problems is also motivated by the awareness that natural resources are limited, so it is important for companies to manage natural resources more effectively and efficiently (eco-efficiency) in the company's business processes, in order to maintain their business life cycle (Anggaraeni, 2015).

Companies that have good environmental performance are good news for the community. Companies that get a positive response from the public tend to have good financial performance, because this can increase profits. Research conducted by Haninun et al (2018) shows the results of environmental performance have a positive and significant effect on the firm financial performance. Meanwhile, Sarumpaet (2005) found the results of a study which stated that financial performance was not significantly related to environmental performance.

When the company is able to make efficiency in the ecological sector, it will have good environmental and financial performance. Research conducted by Lundgren and Zhou (2017) found that energy efficiency and environmental performance are integrated. Meutia et al. (2019) found that eco-efficiency has a positive and significant effect on the firm financial performance. Kamande and Lokina (2013) found that there is a potential advantage in profitability by increasing eco-efficiency in resource use. However, Sutrisno and Wendy (2019) found that eco-efficiency has a negative and insignificant effect on firm performance. Hazudin et al (2015) found that ISO 14001 certificate had no effect on improving financial performance. This study was conducted to confirm the results of previous studies related to the relationship between eco-efficiency on environmental performance and firm financial performance.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2. 1 Theory

The theory used in this research is the theory of legitimacy. Organizations seek to establish conformity between social values related to organizational activities and acceptable behavior norms in the larger social system of which the organization is a part (Dowling and Preffer, 1975). A special feature of legitimacy theory is the social contract between

organizations and society (Campbell et al., 2003). If a company wants to get recognition from the society, it must have a good reputation in the society.

2.2 Hypothesis Development

Eco-efficiency is the saving/efficiency in the ecological sector made by the company as an effort to reduce environmental impact and to maintain the company's business life cycle. According to Hansen and Mowen (2007), eco-efficiency means that organizations can produce goods and services that are more profitable while at the same time reducing their environmental impact, resource consumption, and costs. This definition shows that, when a company applies the eco-efficiency concept, the company is able to improve its environmental performance and financial performance. This is due to the implementation of the eco-efficiency concept besides being able to preserve the environment, it is also able to reduce costs that can increase firm profitability. Lundgren and Zhou (2017) found that energy efficiency and environmental performance are integrated. Meutia et al. (2019) found that eco-efficiency has a positive and significant effect on the firm financial performance. Kamande and Lokina (2013) found the results of a study which stated that there is a potential advantage in firm profitability by increasing eco-efficiency in resource use. In this study, the instrument used to measure the eco-efficiency is ISO 14001 certificate. Based on this explanation, the hypotheses in this study are as follows:

H_1: Eco-efficiency has a positive and significant relationship with firm environmental performance.

H_2: Eco-efficiency has a positive and significant relationship with the firm financial performance.

Based on the theory of legitimacy, a company will get recognition from the society if the company is considered to have a good reputation in the society. The better the environmental performance of the company, the better the society response to the company. According to Haninun et al (2018) environmental performance is an outcome that can be measured by an environmental management system that refers to environmental policies, environmental goals and environmental targets. In Indonesia, one of the instruments that can be used to measure environmental performance is by using a rating given by the Ministry of Environment and Forestry called PROPER. The Ministry

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
18

of Environment and Forestry of the Republic of Indonesia starts the firm environmental performance by giving a PROPER rating, with the following ratings:

1. Gold is for business and/or activities that have consistently demonstrated environmental excellence in the production or service process, conducting ethical business and being responsible to society.

2. Green is for businesses and/or activities that have carried out environmental management more than required in the regulations (beyond compliance) through the implementation of an environmental management system, efficient use of resources and undertaking good social responsibility efforts.

3. Blue is for a business and / or activity that has made the required environmental management efforts in accordance with the provisions or laws in force.

4. Red is an environmental management effort that has not been carried out in accordance with the requirements as regulated in regulations.

5. Black is for businesses and / or activities that deliberately commit acts or neglect resulting in environmental pollution or damage as well as violations of applicable laws and regulations or do not carry out administrative sanctions.

Haninun et al (2018) show results which state that environmental performance has a positive and significant effect on company financial performance. Based on this explanation, the hypotheses are as follows:

H_3: Firm environmental performance can mediate the relationship between eco-efficiency and firm financial performance.

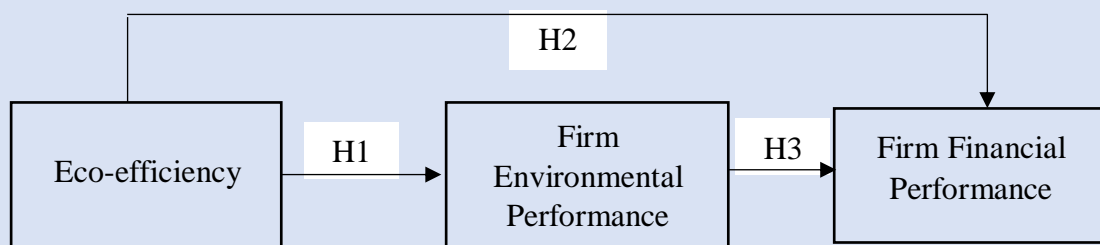The model used to describe this research is as follows:

Figure 1 Research Model

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
19

3. RESEARCH METHOD

The population in this study are companies listed on the Indonesia Stock Exchange (BEI) 2015-2019. The sample used in this research is state-owned enterprises listed on the Indonesia Stock Exchange (BEI) during 2015-2019. State-owned enterprises were chosen as the research sample because SOEs was considered a representative of the government or regulator, so that when SOEs were consistent in implementing the eco-efficiency concept, other private companies would follow. The number of companies studied in this study are 18 companies with a total of 5 years, so that the number of observations in this study are 90 observations.

The independent variable in this study is eco-efficiency which is proxied by environmental management certificate ISO 14001. The dependent variable in this study is environmental performance and firm financial performance. Firm environmental performance variable is proxied by PROPER rating obtained by the company from the Ministry of Environment and Forestry. Meanwhile, the firm financial performance variable is proxied by Return on Assets (ROA).

4. RESULT AND DISCUSSION

This study examines the implementation of eco-efficiency to the firm environmental performance and the firm financial performance of 18 state-owned companies in Indonesia that are listed on the Indonesia Stock Exchange during 2015-2019. Descriptive statistical descriptions of the research variables are described in the following table:

Table 1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ECO	90	.00	1.00	.7222	.45041
PROPER	90	.00	5.00	1.5094	1.79178
ROA	90	-.06	.28	.0442	.05394
Valid N (listwise)	90				

The table above shows that the eco-efficiency variable has a minimum value of 0, a maximum value of 1 and an average value of 0.7222. The eco-efficiency variable is a

dummy variable of ownership of an ISO 14001 environmental management certificate. Companies that have an ISO 14001 certificate will be given a value of 1 and companies that do not have an ISO 14001 certificate will be given a value of 0. Based on the descriptive statistical table above, it is known that 72% SOEs in Indonesia have an ISO 14001 environmental management certificate. This shows that 72% of the SOEs studied have applied the concept of eco-efficiency. The firm environmental performance variable that is proxied by the PROPER rating shows a maximum value of 5, the lowest value of 0 and an average value of 1.5. This shows that SOEs in Indonesia still have to improve the firm environmental performance because the average value of environmental performance during the study year is only 1.5. The firm financial performance variable which is proxied by return on assets (ROA) has a minimum value of -0.06, a maximum value of 0.28 and an average value of 0.0442.

The results of hypothesis testing in this study are shown in the following table:

Table 2 The relationship between Eco-efficiency and Firm Environmental Performance.

		PROPER	ECO
PROPER	Correlation Coefficient	1.000	.518**
	Sig. (1-tailed)	.	.000
	N	90	90

**. Correlation is significant at the 0.01 level (1-tailed).

Based on the above test results, the results show that the application of eco-efficiency has a positive and significant relationship with firm environmental performance, indicated by the Correlation Coefficient value of 0.518 or 51% and Sig. (1-tailed) 0.000 or below 0.01. This shows that Hypothesis 1 (H1) which states that eco-efficiency has a positive and significant relationship to the firm environmental performance is **supported**. The better the efficiency carried out by the company in the ecological field, the better the firm environmental performance. This is because one of the components to measure the firm environmental performance is the firm's ability to carry out environmental management and utilization of resources efficiently and to make good social responsibility efforts. These results are in line with research conducted by Lundgren and Zhou (2017) which

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
21

stated that energy efficiency and environmental performance are integrated. Based on the results of this study, it is important for companies to carry out eco-efficiency in carrying out their business processes, because a good implementation of eco-efficiency will encourage companies to obtain good environmental performance and this will make the companies have a good reputation in society.

Table 3 The relationship between Eco-efficiency, Firm Environmental Performance and Firm Financial Performance

		ROA	PROPER	ECO
ROA	Correlation Coefficient	1.000	.311**	.448**
	Sig. (1-tailed)	.	.001	.000
	N	90	90	90

**. Correlation is significant at the 0.01 level (1-tailed)

Based on the above test results, the results show that the implementation of eco-efficiency has a positive and significant relationship with the firm financial performance, indicated by the Correlation Coefficient value of 0.448 or 44% and Sig. (1-tailed) 0.000 or below 0.01. This shows that Hypothesis 2 (H2) which states that eco-efficiency has a positive and significant relationship with the firm financial performance is **supported**. By implementing the eco-efficiency concept, the company will reduce the costs that must be incurred and so the company will achieve good financial performance. This result is in line with the research of Kamande and Lokina (2013) which states that there is a potential advantage in firm profitability by increasing eco-efficiency in resource use. Meutia et al. (2019) also found results which stated that eco-efficiency has a positive and significant effect on the firm financial performance.

The test results above also show that the firm environmental performance has a positive and significant relationship with the firm financial performance, indicated by the Correlation Coefficient value of 0.311 or 31% and Sig. (1-tailed) 0.001 or below 0.01. This shows that Hypothesis 3 (H3) which states that the firm environmental performance has a positive and significant relationship with the firm financial performance is **supported**. When a company has a good environmental performance, with a high rating from the Ministry of Environment and Forestry of the Republic of Indonesia, the company will have a good reputation in the society. These results are in line with the results of Haninun et al

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
22

(2018) which showed that environmental performance has a positive and significant effect on firm financial performance.

5. CONCLUSIONS

Based on the results of the research described above, it is concluded that eco-efficiency practices are important to be implemented and must be continuously improved by companies in carrying out their business processes, because good eco-efficiency implementation will encourage companies to obtain good environmental performance. The implementation of eco-efficiency can also reduce costs that should be incurred by companies, therefore this encourages the achievement of profitability and good financial performance. In addition, by implementing eco-efficiency, the company will get a good reputation in society.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
23

References

Anggraeni, Yuni Dian. (2015). Pengungkapan Emisi Gas Rumah Kaca, Kinerja Lingkungan, Dan Nilai Perusahaan (Greenhouse Gas Emission Disclosure, Environmental Performance, and Firm Value). Jurnal Akuntansi dan Keuangan Indonesia. 12(2):188-209.

Campbell, D., Craven, B. and Shrives, P. (2003). Voluntary social reporting in three FTSE sectors: A comment on perception and legitimacy. Accounting, Auditing and Accountability Journal. 16(4):558-81.

Dowling, J. and Pfeffer, J. (1975). Organizational legitimacy: Social values and organizational behavior. *Pacific Sociological Review*. 18(1):122-36.

Haninun. Lindrianasari. Denziana, Angrita. (2018). The effect of environmental performance and disclosure on financial performance. *International Journal Trade and Global Markets*. 11:138-148

Hansen, D. R., & Mowen, M. M. (2007). *Managerial Accounting*. Mason: South-Western Cengage Learning.

Hazudin, F. Siti. Mohamad, A. Siti. Azer, Ilyani. Daud, Rozania. Paino, Halil. (2015). ISO 14001 and Financial Performance: Is the Acreditation Financially Worth It for Malaysian Firms. *Procedia Economics and Finance*. 31:56-61.

Kamande, W. Mercyline, & Lokina, B. Razack. (2013). Clean Production and Profitability: An Ecoefficiency Analysis of Kenyan Manufacturing Firms. Journal of Environment & Development. 22(2):169–185.

Llopis, J. Alisenda, & Blasco S. Agusti. (2018). Eco-Efficiency Actions and Firm Growth in European SMEs. *Sustainability*. 10(1):281.

Lundgren, Tommy. Zhou, Wenchao. (2017). Firm performance and the role of environmental management. *Journal of Environmental Management*. 203:330-341.

Meutia, Inten., Ramadhani, Marini., Adam, Mohamad. (2019). Does Eco-Efficiency Improve Financial Performance of Manufacturing Companies in Indonesia?. *Jurnal Dinamika Akuntansi and Bisnis.* 6(2):137-150.

Sarumpaet, S. (2005). The Relationship Between Environmental Performance and Financial Performance of Indonesian Companies. *Jurnal Akuntansi & Keuangan*. 7(2): 89- 98.

Sub-directorate of Environment Statistics. (2019). *Environment Statistics of Indonesia Forests and Climate Change*. BPS-Statistics Indonesia.

Sutrisno, B. & Wendy. (2019). The Effect of Eco-Efficiency and Quality Management System on Firm's Performance: Moderating Role of Profitability and Leverage. Journal of Economics, Business, and Accountancy Ventura. 22(3):372 – 382.

www.menlhk.go.id

Enerji Tüketiminin Ekonomik Yansımaları: Nükleer Enerji Tüketimi Üzerine Bir İnceleme

Muhammet Yunus Şişman[1] ve Abdulhanan Zarify[2]

Özet

Bu makalede, enerji tüketiminin iktisadi etkileri dünyada nükleer enerji üretme kapasitesine sahip 26 ülke üzerinde açıklanmaya çalışılmıştır. Bu ülkelerde nükleer enerji başta olmak üzere yenilenebilir enerji, petrol, elektrik tüketimi ve kişi başına düşen gelir arasındaki ilişki 1995-2017 yılları arasında panel veri analizi yöntemiyle incelenmiştir. Çalışmada elde edilen bulgular, enerji çeşitlerinin iktisadi etkilerinin farklı boyutlarda olduğunu ortaya koymuştur. Özellikle, petrol tüketiminin kişi başına düşen gelir üzerinde anlamlı bir etkisi olmamasına karşın elektrik enerjisi, yenilebilir enerji ve nükleer enerji tüketimlerinin iktisadi büyüme üzerinde anlamlı ve pozitif etkisi olduğu tespit edilmiştir.

Anahtar Kelimeler: Nükleer Enerji, Yenilenebilir Enerji, Panel Veri, Sabit Etkiler.

JEL Kodu: O13, Q42

---

[1] Dr. Öğr. Üyesi, İktisadi ve İdari Bilimler Fakültesi, Uluslararası Ticaret ve Finans Bölümü, myunus.sisman@dpu.edu.tr

[2] Dumlupınar Üniversitesi Lisansüstü Eğitim Enstitüsü, İktisat Yüksek Lisans Programı Öğrencisi, abdulhanan.zarify@ogr.dpu.edu.tr

Economics of Energy Consumption: Evidence from the Nuclear Energy Consumption

Abstract

This article investigates the economic effects of energy consumption in 26 nuclear energy producing countries across the world. Particularly, the nexus between nuclear energy, renewable energy, crude oil, and electricity consumptions and income per capita is analyzed by employing panel data methods during the period between 1995 and 2017. Findings reveal that all types of energy consumption significantly improves income levels except crude oil which has an insignificant impact on income per capita.

Keywords: Nuclear Energy, Renewable Energy, Panel Data, Fixed Effects.

JEL Codes: O13, Q42

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
26

1. Giriş

Sanayi devrimiyle makineleşme, üretim kapsamındaki değişim, ham maddenin elde edilmesi ve uzak yerlere demiryoluyla ulaştırılması, daha önceki dönemlere göre çok hızlı bir şekilde artmıştır. Teknolojinin ve ekonomik gelişmelerin artan bir hızla devam ettiği sonraki yıllarda, ülkeler büyümek için enerji tüketimine gereksinim duymuşlardır. Söz konusu gereksinimi karşılamak için ülkeler farklı enerji kaynakların arayışı için rekabete girmişlerdir. Bu çerçevede, nükleer enerji ve özellikle yenilebilir enerji çeşitleri son yıllarda dünya ekonomilerinin üzerinde yoğunlaştığı alanlar olarak karşımıza çıkmaktadır. Enerji kaynaklarını çeşitlendirmek, temiz, güvenli ve istikrarlı enerji kaynakları bulmak politikacıların ve hükümetlerin temel önceliklerinden biri haline gelmiştir.

Alternatif enerji kaynakları; ekonomi, politika, jeopolitik, iklim ve çevre gibi hususları yakın ilgilendirmektedir. Nükleer enerji, bu enerjiye sahip ülkelerde endüstriyel kullanımın yanı sıra askeri olarak da kullanılması, muhtemel çevre felaketlerine sebebiyet vermesi gibi yönleriyle diğer enerji türlerinden ayrılmaktadır. Örnek olarak, günümüzde de devam eden İran hükümetin patlayıcı ve nükleer silah üretme politikaları, yine geçtiğimiz yıllarda Japonya'nın Fukishma şehrindeki nükleer santrallarda meydana gelen kazalardaki radyoaktif madde salınımı verilebilir. Bahsi geçen kazalar, tüm nükleer enerji üreten ve tüketen ülkelerde, nükleer enerji güvenliği üzerine yeniden uluslararası arenada müzakerelere yol açmıştır (Mbarek, M. B., Nasreen, S. ve Feki, R 2017: 220).

Nükleer enerji, küresel arena da ciddi eleştiriler olmasına rağmen, sanayileşmiş ekonomiler tarafından yoğun bir şekilde kullanılmaktadır. Nükleer enerji ekonomi ve politika gibi konuları doğrudan etkilemektedir. Sosyal bilimler araştırmacıları tarafından literatürde ekonomik büyüme, çevresel etkiler, enerji güvenliği, politik iktisadi etkiler başta olmak üzere nükleer enerji tüketimi ve arzı gibi konular üzerine çalışmalar artarak devam etmiştir. Örneğin, Nükleer Enerji Ajansı'na (2002) göre, geçtiğimiz son 40 yılda nükleer enerji santraller, OECD ülkelerinde elektrik sektörü tarafından üretilen sera gazlarının miktarları azaltmada büyük rol oynamıştır. Yine Nükleer Enerji Ajansı (2002) tarafından yapılan tahminler, nükleer santrallerin OECD ülkelerinde enerji kullanımından kaynaklanan yıllık olarak 1200 milyon ton karbondioksit veya toplam CO_2 emisyonlarının yaklaşık yüzde 10'unu tasarruf ettiğini öne sürmektedir.
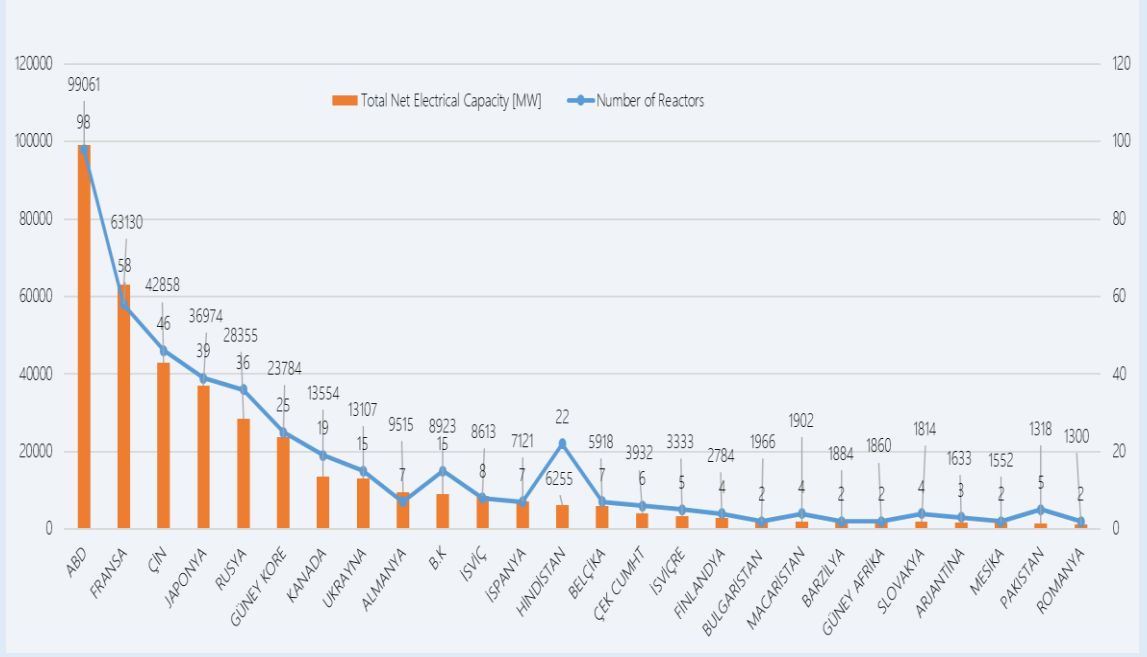
Bu çalışmada nükleer enerji üreten ülkelerindeki, diğer enerji çeşitleri de dahil olmak üzere, enerji tüketiminin iktisadi büyüme üzerine etkileri ele alınmıştır. Çalışmada, 1995-2017 dönemi için yıllık veriler panel veri analiz yöntemleri kullanılarak incelenmiştir. Elde edilen bulgular, fosil yakıt tüketiminin kişi başına düşen gelir üzerindeki anlamlı bir etkisi olmadığını göstermektedir. Bununla beraber, nükleer enerji ve yenilenebilir enerji tüketimlerinin kişi başına düşen gelir anlamlı bir düzeyde arttırdığı gözlemlenmiştir.

Makalenin ikinci bölümünde, dünyada nükleer enerji üretimiyle ilgili bilgiler sunulmuştur. Sonraki bölümde ilgili literatür özetlenmiştir. Çalışmada kullanılan model, veri ve yöntem tanıtıldıktan sonra elde edilen elde edilen ampirik bulgular değerlendirilmiştir. Makale sonuçlar ve politika önerilerinin ele alınmasıyla sonlanmıştır.

2. Dünyada Nükleer Enerji Üretimi ve Ekonomik Etkileri

Nükleer enerji bir ülkenin ekonomisi için büyük miktarlardaki enerjinin daha az maliyetle elde edilmesi yönüyle önem kazanmaktadır. Ve nükleer enerji literatürdeki bir çok çalışmanın da gösterdiği gibi ekonomik büyümeyi önemli derecede etkilenmektedir. Uluslararası Atom Enerjisi Ajansına göre, dünya da 30 ülkede 452 adet nükleer enerji santrali bulunmaktadır. Söz konusu santrallerden 399354 MW elektrik üretimi gerçekleşmektedir (IAEA, 2019). Şekil 1'de bu çalışmaya dahil edilen[3] ve içinde nükleer enerji santrali bulunan ülkelerde santrallerin sayısı ve üretilen elektrik enerji miktarı gösterilmektedir.
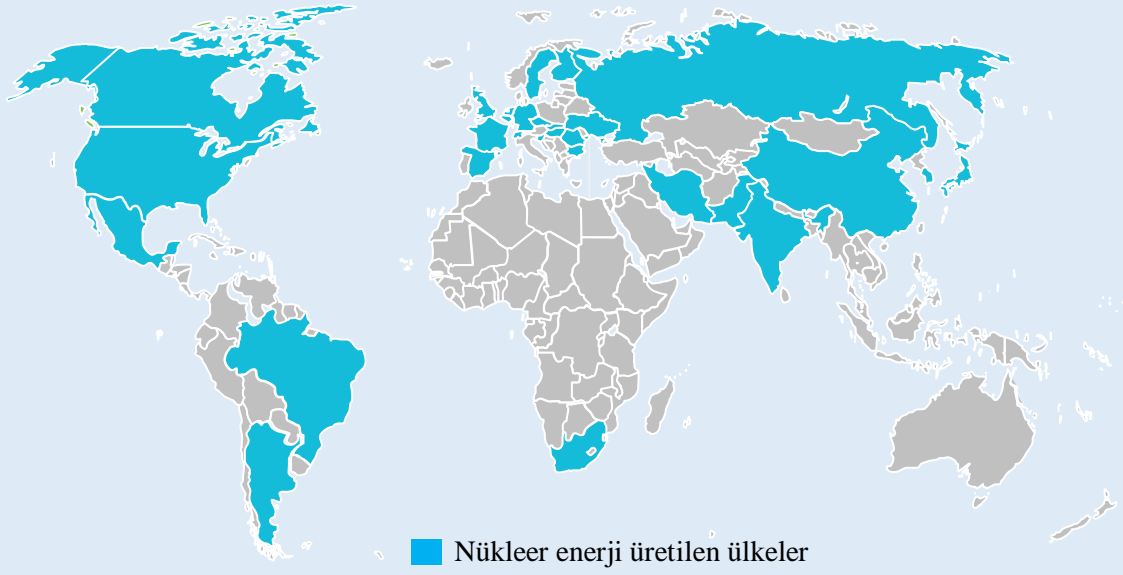
---

[3] Dünya'da nükleer enerji üretimi yapmasına rağmen Ermenistan, Hollanda, İran ve Slovenya araştırma için gerekli verileri tam olarak elde edemediğimizden çalışmaya dahil edilmemiştir.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
26

Kaynak: PRIS veri tabanından alınmıştır.

Şekil 1: Nükleer Enerji Üreten Ülkeler

Nükleer Enerji Enstitüsü'ne (NEI) göre, nükleer santrallerde her yıl ortalama 1.000 megawatt (MW) değerinde enerji üretilmektedir. Bu üretim yaklaşık olarak 470 milyon dolar elektrik satışı ve toplam işgücü gelirinde 40 milyon dolar değerinde gelir elde edilmesine sebebiyet vermektedir. Nükleer enerji iklim değişikliği ile mücadele etmektedir.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
27

Nükleer enerji üretilen ülkeler

Kaynak: Yazarın kendisi tarafından oluşturulmuştur.

Şekil 2. Dünya'da Nükleer Enerji Üretilen Ülkeler

Nükleer enerji kesintisiz olarak karbon içermeyen elektrik sağlanmaktadır. Ayrıca, azot oksit, kükürt dioksit, partikül madde ve civa, havada istenmeyen zararlı salınımların olmadığı bir enerji üretimine olanak sağlaması yönüyle çevreyi korumak için önemli bir kaynak olarak görülebilir. Nükleer enerji aynı zamanda iş imkânı sağlanmaktadır. Nükleer enerji üretiminde 100.000'den fazla kişi iyi ücretli, uzun vadeli istihdam edilmektedir ve yerel ekonomileri milyonlarca dolarlık vergi gelirleriyle destekler (NEI, 2019).

3. Nükleer Enerji Tüketimi ve Ekonomik Büyümeyi İnceleyen Literatür

Dünya üzerinde birçok ülke için en önemli sorunlarından biri cari açık sorunudur. Cari açığın en önemli nedenlerden birisi de enerji ithalatıdır. Enerjinin ucuza üretilmesi veya tedarik edilmesi doğal enerji kaynakları bakımından yetersiz olan ülkelerin dış ticaret açığını azaltmakta önemli rol oynamaktadır. Nükleer Enerji ile ekonomik büyüme arasında ilişki ile alakalı literatüre baktığımızda son yıllar konu ile alakalı birçok çalışma yapılmıştır.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
28

Önder ve Gündüz (2019), nükleer enerji tüketiminin makroekonomik belirleyicilerini "sivil iş gücü, toplam karbon dioksit emisyonu, ham petrol fiyatları, enerji yoğunluğu, fosil yakıt tüketimi, yenilenebilir enerji tüketimi gibi değişkenlerle açıklamaya çalışmıştır. Söz konusu çalışmada, 2000-2015 yıllar arasında OECD ülkeler için dengeli Panel veri ve rassal etkiler tahminci analizi uygulanmıştır. Yapılan analiz sonucunda, CO_2 ve enerji yoğunluğu değişkenleri ile Nükleer Enerji tüketimi değişken arasındaki ilişki pozitif iken, geri kalan diğer değişkenler ile Enerji tüketimi arsında ilişki negatif tespit edilmiştir.

Omri ve Chaibi (2014), nükleer enerji tüketimini 17 gelişmiş ve gelişmekte olan ülke grubu için 1990-2011 yılları arasında incelemiştir. Bu çalışmanın sonucuna göre; Belçika ve İspanya'da büyüme hipotezi; Bulgaristan, Kanada, Hollanda ve İsveç için koruma hipotezi; Finlandiya, Macaristan, Hindistan, Japonya, İsviçre ve Birleşik Krallık için tarafsızlık hipotezi; Arjantin, Brezilya, Fransa, Pakistan ve ABD için ise geri bildirim hipotezi geçerli olduğunu göstermiştir. Ayrıca karbondioksit emisyonlarının Hindistan, Finlandiya, İsviçre, Kanada, Brezilya ve İspanya'da Nükleer Enerjiye olan talebi arttırdığı da tespit edilmiştir.

Apergis vd. (2010), gelişmiş ve gelişmekte olan 19 ülke için 1984-2009, yılları arasında CO_2 emisyonu, nükleer enerji tüketimi, yenilenebilir enerji tüketimi ve ekonomik büyüme arasındaki ilişkiyi panel hata düzeltme analizi ile incelemiştir. Analiz sonuçları, CO_2 emisyonu, nükleer enerji, yenilenebilir enerji ve ekonomik büyüme arsında uzun dönemde nedensellik ilişkisinin var olduğunu göstermiştir. Aynı zamanda uzun vadede Nükleer Enerji ve CO_2 emisyonları arasında istatistiksel olarak anlamlı bir negatif ilişki olduğuna ulaşmıştır.

Apergis ve Payne (2010), çalışmasında 16 ülke için nükleer enerji tüketimi ve iktisadi büyüme arasındaki ilişkiyi panel vektör hata düzeltme ve Pedroni'nin heterojen panel eşbütünleşme testi ile incelemiştir. Panel vektör hata düzeltme modelinin sonuçlarına göre kısa vadede nükleer enerji tüketimi ve ekonomik büyüme arasında iki yönlü bir nedensellik söz konusu iken, uzun dönemde ise nükleer enerji tüketiminden ekonomik büyümeye doğru tek taraflı ilişkinin olduğu sonucuna ulaşılmıştır.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
29

Akhmat ve Zaman (2013), Güney Asya ülkelerinde nükleer enerjinin ticari enerji tüketimi ile ekonomik büyüme arasındaki nedensel ilişkiyi Granger nedensellik testi ile analiz edilmiştir. Söz konusu çalışmada, nükleer enerji tüketiminin Nepal ve Pakistan'da ekonomik büyümeye neden olduğu gösterilmektedir. Seçili ülkeler arasında sadece Pakistan'da nükleer enerji ile ekonomik büyüme arasındaki ilişki iki yönlü olduğuna ulaşılmıştır.

Nazlıoğlu vd. (2014), 14 OECD ülkesi için yaptıkları nükleer enerji tüketimi ile ekonomik büyüme arasında ilişkiyi, ülkeler arasında heterojenliği ve kesit bağımlılığı kontrol eden panel Granger testin yeni bir yaklaşımı ile incelemiştir. Bulgular, tarafsızlık hipotezini destekleyen 11 OECD ülkesinde nükleer enerji ile ekonomik büyüme arasında herhangi bir nedensellik olmadığını göstermektedir.

Chang vd. (2014), 1971 den 2011'e kadar altı gelişmiş ülkelerde Nükleer Enerji ve ekonomik büyüme arasındaki nedensel ilişkiyi, panel analizin farklı bir prosedürü olan Meta-analizi ile incelenmiştir. Çalışmada, G-6 ülkelerinde ekonomik büyümeden Nükleer Enerji tüketimine doğru tek yönlü nedensel bir ilişkinin sonucuna varılmıştır.

Naser (2015), yapmış olduğu çalışmada 4 büyük sanayi ülkesinde (Fransa, Kanada, Japonya ve ABD), nükleer enerji ile ekonomik büyüme arasında nedensellik ilişkisi incelemiştir. Çalışma Toda ve Yamamoto (1995), tarafından geliştirilmiş olan Granger nedensellik testini uygulanmıştır. Modelin sonucunda, Japonya'da nükleer enerji tüketiminden ekonomik büyümeye doğru tek yönlü bir nedensellik olduğuna varılmıştır. Ayrıca reel GSYİH'nın artması Fransa'da nükleer enerji tüketimini artırmaktadır. ABD, Japonya ve Fransa'da petrol ve nükleer enerji tüketimi arasında nedensellik bağlantısının olduğuna ulaşılmıştır.

4. Veri Yöntemi ve Metodoloji

Dünya da nükleer enerji üretilen toplam 30 adet ülke mevcuttur. Fakat gerekli verilerin eksik olmasından dolayı Ermenistan, Hollanda, İran ve Slovenya veri kümemizden çıkartılmıştır (çalışmaya dahil edilen ülkeler Şekil 1'de verilmiştir). Dolayısıyla nükleer enerji ve diğer enerji çeşitlerinin tüketiminin iktisadi etkileri incelemek üzere bu ülkelerden 26 ülke analiz dahil edilmiştir. Tahmin edilen panel veri modeli Eşitlik 1'de verilmiştir.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
30

$$lgGSYIH_{it} = \beta_0 + \beta_1(lgNE)_{it} + \beta_2(lgYINE)_{it} + \beta_3(lgPT)_{it} + \beta_4(lgELT)_{it} + \varepsilon it \quad (1)$$

Eşitlik 1'de yer alan model içerisinde bulunan değişkenlerin açıklaması, nasıl hesaplandığı ve kaynakları ne olduğu anlaşılmak için Tablo 1'de düzenlenmiştir.

Tablo 1: Çalışmada Kullanılan Değişkenlerin Tanımı ve Verilerin Kaynakları

Değişkenler	Açıklama	Kaynak
lgGSYIH	Logaritması alınmış kişi başına gayri safi yurtiçi hâsıla (sabit 2010 ABD $).*	Dünya kalkınma göstergeleri (WDI, 2019).
lgNE	Logaritması alınmış nükleer enerji tüketimi (saat başına düşen Terawatt).	British petroleum statistical review of world energy (BP stats review 2018).
lgYINE	Logaritması alınmış güneş, rüzgâr ve diğer kaynakların yenilenebilir enerji tüketimi (saat başına düşen Terawatt).	British petroleum statistical review of world energy (BP stats review 2018).
lgPT	Logaritmasını alınmış petrol tüketimi (günlük bin varil).	British petroleum statistical review of world energy (BP stats review 2018).
lgELT	Logaritması alınmış elektrik tüketimi (saat başına düşen Terawatt).	British petroleum statistical review of world energy (BP stats review 2018).

*Verilerin analize uygun hale getirilmesi için logaritması alınmıştır.

Tablo 2 modelde yer alan bağımlı ve bağımsız olan değişkenlerle ilgili tanımlayıcı istatistikleri göstermektedir. Buna göre, modelin bağımlı değişkeni olan *lgGSYİH* değişkeninin ortalama değeri 4.17'dir. Bu değişkenin en yüksek olduğu ülkedeki değeri 4.88'e çıktığı ve en küçük olduğu ülkede ise 2.83 olduğu görülmektedir.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
31

Tablo 2: Tanımlayıcı İstatistikler

Değişkenler	Gözlem sayısı	Ortalama	Standart Hata	En Küçük	En Büyük
$lgGSYIH$	644	4.17	0.51	2.83	4.88
$lgNE$	644	1.53	0.60	0.03	2.92
$lgYINE$	644	2.24	0.06	2.22	2.74
$lgPT$	644	6.65	1.45	3.78	9.94
$lgELT$	644	5.32	1.36	2.54	8.77

Modelin anahtar değişkeni olan $lgNE$ ortalama değeri 1.53 iken en yüksek ve en düşük değeri ise sırasıyla 2.92 ve 0.03 olduğu görülmektedir. $lgYINE$ yenilenebilir enerji tüketim değişkeni 2.24 ortalamaya sahip iken en yüksek oran 2.74 iken en düşük oran ise 2.22 seviyelerindedir. $lgPT$ değişkeninde ortalama 6.65 en büyük değeri 9.94 en küçük değeri 3.78'dir. $lgELT$ elektrik tüketim değişkenin ortalama 5.32, en büyük değeri 8.77 ve en küçük değeri ise 2.54'dir.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
32

Tablo 3: Panel Veri Analizi Varsayımların Testleri

Hipotezler	Test ismi	Test istatistiği	Olasılık değeri
H_0: **Sabit Varyanslı** H_1: **Değişen Varyanslı**	Greene Değişen Varyans Testi	627.4341	0.0000
H_0: **Otokorelasyon Yok** H_1: **Otokorelasyon Var**	Wooldrige Otokorelasyon Testi	427.4410	0.0000
H_0: **Kesit Bağımlılık Yok** H_1: **Kesit Bağımlılık Var**	Pesaran Kesit Bağımlılık Testi	17.2420	0.0000

Eşitlik 1'de yer alan modelin tanımlayıcı istatistiklerinden sonra değişkenlerin panel veri analizi için gerekli diagnostik testleri yapılmıştır. Tablo 3'te bu testlere ilişkin sonuçlar yer almaktadır. Değişkenlerde otokorelasyon sorunu olup olmadığı Wooldridge Otokorelasyon Testi ile değişen varyans sorunu olup olmadığı Greene Değişen Varyans Testi ile ve kesit bağımlılık problemi de Pesaran Kesit Bağımlılık testi ile incelenmiştir.

Greene Değişen Varyans Testi sonucunda olasılık değerinin %1'de anlamlı çıkmasıyla alternatif hipotezimiz kabul edilmiştir. Sonuç olarak veri setimizde değişen varyans sorunu olduğu görülmektedir.

Wooldridge Otokorelasyon Testi sonucunda olasılık değerinin %1'de anlamlı çıkması ile yokluk hipotezi red edilip alternatif hipotez kabul edilmiştir. Veri setimizde otokorelasyon sorunu olduğu görülmektedir.

Pesaran Kesit Bağımlılık Testi incelendiğinde %1 istatistiki önem düzeyinde anlamlı çıkmıştır. Olasılık değerinin anlamlı çıkması itibariyle yokluk hipotezi red edilip alternatif hipotez kabul edilmiştir. Bu sonuca göre veri setimizde Kesit bağımlılık sorunu olduğu görülmektedir. Testlerin sonuçları bize mevcut veri setinde değişen varyans sorunu, otokorelasyon sorunu ve kesit bağımlılık sorunları var olduğunu göstermektedir.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
33

Tablo 4: Yöntemin Belirlenmesi

Hipotez	Test Adı	Test İstatistiği		Olasılık Değeri
$H_0: \beta_i = \beta$ $H_1: \beta_i \neq \beta$	F Testi	1408,18		0,0000
$H_{0:} \sigma_u^2 = 0$	Breusch-Pagan Düz. Lagr. Çarpan Testi	Kesit	5709.91	0,0000
		Zaman	0,00173	0,9667
$H_{1:} \sigma_u^2 \neq 0$		Kes.ve Zam	5709,91	0,0000
$H0 : E(\varepsilon it / Xit)=0$ $H1 : E(\varepsilon it / Xit) \neq 0$	Hausman	26,67		0,0000

Panel veri analizlerinde kullanılan havuzlanmış veri (pooled), rassal etkiler (random effect) ve sabit etkiler (fixed effect) modellerden hangisi geçerli olduğunu incelemek için F testi, Breush-pagan düzeltilmiş Lagrange Çarpan testi ve Hausman testleri uygulanmıştır.

F Testi olasılık değerinin istatistiki açıdan %1'de anlamlı çıkması Havuzlanmış Veri Modelinin kullanılamayacağını göstermektedir. Yani modelimizde birim etkilerin varlığını geçerli olmuştur. Birim etkiler rassal ve sabit etkilerdir. Bu etkilerden hangisi geçerli olduğu bize Hausman Testi'nin sonuçları göstermektedir.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
34

Tablo 5: Panel Veri Analiz Sonuçları

Değişkenler	Katsayı	Standart Hata	Olasılık Değeri
lgNE	0,027	0,015	0,095
lgYINE	0,216	0,031	0,000
lgPT	-0,040	0,045	3,379
lgELT	0,316	0,019	0,000
C	2,233	0,155	0,000

Kesit G.: 26   **Göz. Say**: 644 R^2: 0,6032   **F testi**: 1893,85

Olasılık:0,000

Hausman Testi sonucuna baktığımızda istatistiki anlamlılık düzeyinin %1'de anlamlı çıkması sabit etkiler modelinin bu veri seti analizine uygun bir yöntem olduğunu göstermektedir. Toblo 3'den de görüleceği üzere Greene Değişen Varyans Testi, Wooldridge Otokorelasyon Testi ve Pesaran's Kesit Bağımlılık Testi'nin anlamlı çıkması panel veri analizinde hatalı tahminciler üretecektir. Bu nedenle değişen varyans, kesit bağımlılık ve otokorelasyon problemlerine dayanıklı ve Sabit veri analizine uygun tahmincilerden Driscoll & Kraay tahmincisi ile Eşitlik 1'de yer alan model analiz edilmiştir.

Tablo 5'te, Eşitlik 1'de yer alan modelin Driscoll & Kraay tahmincisi ve sabit etkiler veri yöntemi ile analiz edilmiş değerleri raporlanmıştır. Modelin genel olarak anlamlılığını gösteren F istatistiğinin olasılık değeri %1'de olması modelin istatistiki açıdan anlamlı olduğunu göstermektedir. Modelde yer alan bağımsız değişkenlerin açıklama gücünü gösteren R^2 değerinin 0,60 çıkması ise modelin genel olarak iyi bir açıklama gücüne sahip olduğunu göstermektedir.

Modelin Tablo 5 sunulan sonuçlarına baktığımızda tahmin edilen katsayıların bize değişkenler arası ilişkiyi esneklik olarak ifade ettiğini söyleyebiliriz. Bu bağlamda

nükleer enerji tüketimi ($lgNE$) katsayısı 0,027 olarak yüzde 10 anlamlılık düzeyinde tahmin edilmiştir. Yani bu değişkenin gelir esnekliği 0,027 dir. Örneğin, nükleer enerji tüketiminin yüzde 10 artması kişi başına düşen geliri yüzde 0,27 arttıracaktır. Buna karşın, yenilebilir enerji tüketimi ($lgYINE$) değişkeninin katsayısı 0,216 olarak yüzde 1 anlamlılık düzeyinde tahmin edilmiştir. Diğer bir değişle, yenilebilir enerjinin gelir esnekliği 0,216 olarak nükleer enerji tüketimine kıyasla yaklaşık 10 kat daha büyük bir değer olarak karşımıza çıkmaktadır. Bu durum, yenilebilir enerji tüketiminin her yüzde 10'luk artışının kişi başına düşen geliri yüzde 2,16 arttıracağını göstermektedir. Elektrik tüketimi değişkeni ($lgELT$) ile bağımlı değişken arasında istatistiki açıdan yüzde 1 düzeyinde anlamlı ve pozitif bir ilişki olduğunu görmekteyiz. bize olasılık değeri %1'de olması göstermektedir. $lgELT$ değişkeni katsayısı 0,316 olarak tahmin edilmiştir. Elektrik tüketimindeki yüzde 10'luk bir artışın kişi başına düşen geliri yüzde 0,316 kadar artıracağı görülmektedir. Yukarıda bahsedilen enerji türlerinin aksine petrol tüketimi değişkeni ($lgPT$) için tahmin edilen katsayı istatistiksel olarak anlamlı bulunmamıştır.

5. Sonuç ve Değerlendirme

Enerji güvenliği ve iklim değişikliği birçok ülkenin karşılaştığı önemli zorluklar haline gelmiştir. Bu gibi kaygılar, nükleer ve yenilenebilir enerjinin önemini, daha geniş enerji kullanımı tartışmasını ön plana getirmiştir. Nükleer ve yenilenebilir enerji sadece enerji güvenliğinde değil, aynı zamanda emisyonların azaltılmasında da önemli bir rol oynamaktadır. Zamanın ilerlemesi ile beraber enerji fiyatlarındaki dalgalanmalar, sera gazların emisyonları ve enerji güvenliği konularındaki endişeleri hafifletmek için, fosil yakıtlara alternatif enerji kaynakları bir çözüm olarak ortaya çıkmıştır. Bu kaynakların arasında nükleer enerji gücü, 1986'daki Çernobil ve 2011'deki son Fukushima kazalarına kadar, çevreye daha faydalı ve dost bir alternatif olarak kabul edilmektedir. Bu kazalarla birlikte nükleer enerji tüketimi daha fazla eleştirilse de yüksek bakım maliyetleri de olmasına rağmen, gelişmiş ve gelişmekte olan ekonomiler tarafından halen tercih edildiğini görülmektedir.

Bu çalışmada, dünyada nükleer enerji üreten 26 ülkenin başta nükleer enerji tüketimi olmak üzere diğer enerji türleri tüketimleriyle ile söz konusu ülkelerin kişi başına düşen

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
36

gelirleri arasındaki ilişki 1995-2017 yılları arasında panel veri analizi yönetemiyle incelenmiştir. Elde ettiğimiz sonuçlar, nükleer enerji, yenilenebilir enerji ve elektrik tüketimi ile kişi başına düşen gelir arasında ilişkinin anlamlı ve pozitif olduğunu gösteriyor. Bu anlamlı ilişki, nükleer enerji ve yenilenebilir enerji arzına yönelik politikalarının ekonomik büyüme üzerinde olumlu bir etkisi olacağını göstermektedir. Sonuç olarak ülkelerin nükleer enerji ve yenilenebilir enerji potansiyellerini arttırmalarının, sahip oldukları gelir düzeyini yükseltmede önemli bir katkısı olacağı anlaşılmaktadır.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
37

Kaynakça

Akhmat, G., & Zaman K. (2013). Nuclear Energy Consumption, Commercial Energy Consumption and Economic Growth in South Asia: Bootstrap Panel Causality Test. *Renewable and Sustainable Energy Reviews. 25*: 552-559.

Apergis, N., & Payne, J. E. (2010). A Panel Study of Nuclear Energy Consumption and Economic Growth. *Energy Economics. 32*: 545-549.

Apergis, N., Payne, J. E., Menyah, K., & Wolde-Rufael, Y. (2010). On The Causal Dynamics Between Emissions, Nuclear Energy, Renewable Energy And Economic Growth. *Ecological Economics. 69*: 2255-2260.

Chang, T., Gatwabuyege, F., Gupta, R., Inglesi-Lotz, R., Manjezi, N. C., & Simo-Kengne, B. D. (2014). Causal relationship between nuclear energy consumption and economic growth in G-6 countries: Evidence from panel granger causality tests. *Progress in Nuclear Energy*. *46*:187-193.

International Atomic Energy Agency (IAEA):
https://pris.iaea.org/PRIS/WorldStatistics/OperationalReactorsByCountry.aspx

Mbarek, M. B., Nasreen, S. & Feki, R. (2017). The contribution of nuclear energy to economic growth in France: short and long run. *Springer Science+Business Media Dordrecht.51*: 219-238.

NASER, H. (2015). Can Nuclear Energy Stimulates Economic Growth? Evidence from Highly Industrialised Countries. *International Journal of Energy Economics and Policy. 5*1: 164-173.

Nazlıoğlu, S., Lebe F., & Kayhan S. (2011). Nuclear Energy Consumption And Economic Growth in OECD Countries: Cross-Sectionally Depend Heterogeneous Panel Causality Analysis. *Energy Policy. 39*(10): 6615-6621.

Nuclear Energy Agency, (2002). Organisation for economic co-operation and development: nuclear energy and the Kyoto protocol, /http://www.nea.fr/ html/ndd/reports/2002/nea3808-kyoto.pdfS.

Omri A., & Chaibi, A. (2014). Nuclear Energy, Renewable Energy, And Economic Growth in Developed And Developing Countries: A Modelling Analysis From

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
38

Simultaneous-Equation Models. *No 2014-188, Working Papers, Department of Research, Ipag Bu-siness School.*

Önder, H. ve Gündüz, İ. (2019). Nükleer Enerji Tüketiminin Makroekonomik Belirleyicileri: Seçilmiş OECD Ülkeleri Üzerine Panel Veri Analizi. *Marmara Üniversitesi Öneri Dergisi. 14*(51): 18-37.

The Nuclear Energy Institute. Available at: https://www.nei.org/fundamentals/what-is-nuclear-energy.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
39

Factors affecting buyers' behavior decision of mobile phone at Jordan market

(Afield study)

Dr. Iyad A.Khanfar (**Associate Professor**)

E-mail: khanfar37@yahoo.com

Faculty of Economics and Administrative Science

Zarqa University, Jordan

Abstract

This field study paper investigating the factors influence the buyers' behavior decision of mobile phone at Zarqa city. To achieve the objectives of this field study paper, 395 buyers were taken as a sample which used simple random sampling method. Primary and secondary data were examined. Furthermore, five factors i.e. price, country origins, advertising, brand name, and service after sales were chosen and analyzed by using of simple regressions analysis. Analysis shows, price factor widely found as about crucial factor which has an effect on buyers' behavior decision of mobile phone.

Keywords: Buyers' behavior decision, price, country origin, advertising, brand name, and services after sales, Jordan.

JEL Codes: D9, P36

Introduction

Cellular telephone has become as an essential of everyday for people life. Due to increasing usage of developed technology for communicating, however it can be used for individual and organization. In present – day it play a main role since Cellular telephone these days are used by human being by whole levels in the world. The growths of Cellular telephone sector have been an extraordinary element for economic prosperity of both developed and under developing markets. It possesses as an essential part of the developing of information technology. Different business such as hotels sector travels agency and tourism, airlines agencies, and numerous have been affected by using of Cellular telephone positively which prosper their business .So a Cellular telephone service has become a fundamental portion of directly effect on the function of economic. (Deloitte, 2012)

Literature Review

Buyers are individual and household those purchase the company's product for individual consuming (Kotler, 2004). It is used to describe two different kinds of consuming entities: the personal and organization buyer (Krishna, 2013). The activity of these buyers undertakes when gaining, consuming, and dispose of product is known as buyer behavior.

Price

According to (Kotler and Keller, 2016) The Price element extremely influences buyer's behavior decision to buy products. The conception of price element reveals knowledge regarding products and gives profound meaning for the buyers. Thus, price element as significant factor in buying decision, particularly for product which is repeatedly purchased, and in turn, affect the choices of which shop, product, and brand to deal with (Faith and Agwu, 2014).

Country origin

Country origins impact meaning as an n independent factor of this field study should be duly understand. Buyers certainly treating 'country origins' in addition to the fineness, trademark and features of a product while buying. (Cai.y. 2002).

Advertising

According to Rafique et al, 2012 mention that advertising is a tool for communicating with the target market. They are believed that culture extremely affect the buyer behavior decision because each individual have different want and desire. So we can say that advertising is like a magical tool actually advertising change the need and want of the people (Yasir Rafique, 2012).

Brand name

According to Malik, Ghafoor, Iqbal, and Ali (2013) indicated that Brand name have strong advanced rule on buyer behavior decision as it's an implicit way which can change buyer behavior decision in appositive way .

Service after sale

Service after sales have become an essential tool in marketing for different sectors. A rapid change of businesses environment, increasing usage of technology, fierce market competition, and increased prospect profit in services after sale has changed the direction businesses view services after sale (Muhammad et al, 2011)

Consumer purchasing Decision

Buyer behavior decision is a procedure consist of sequent steps which made by buyers before and after buying a product, Pride and Ferrell (2012) mentioned that for understanding buyer behavior decision, marketing people should understand the consuming procedure and the advantage of the product in buyer perceptions. Hoffman & Bateson (2001) characterized buyer behavior decision process in five stages when consider a purchase: they are problem recognition, information search, alternatives evaluation, buying decision, and after buying.

Questions of the field study

This field study paper try to answer questions such as:

- Do price factor has effect on buyers' behavior decision of mobile phone at Jordan market?

- Do country origin have effect on buyers' behavior decision of mobile phone at Jordan market?

- Do advertising has effect on buyers' behavior decision of mobile phone at Jordan market?

-Do brand name have effect ton buyers' behavior decision of mobile phone at Jordan market?

- Do service after sales effect on buyers' behavior decision of mobile phone at Jordan market?

Objectives of the field study

This **field study aims** to:

1- Identifying the effect of price factor on buyers' behavior decision of mobile phone.

2- Determining effect of country origin factor on buyers' behavior decision of mobile phone.

3- Knowing effect of advertising factor on buyers' behavior decision of mobile phone.

4- Knowing effect of brand name factor on buyers' behavior decision of mobile phone.

5- Identifying effect of service after sale factor on buyers' behavior decision of mobile phone.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
43

Framework of field study

The design of this field study to test hypothesis on the based on literature review, the developing of this field model which made by investigator, the field study model includes factors such as (price, country origin, advertising, brand name, and service after sale), which has influence on buyer behavior decision as the independent factor, and buyers behavior decision as dependent factor. The model can be explained as follows in Figure (1)

This present field study is based on 5 hypotheses:

H1: price factor have significant effect on buyer behavior decision of mobile phone at Jordan market.

H2: Country origin have significant effect on buyers' behavior decision of mobile phone at Jordan market.

H3: advertising have significant effect on buyers' behavior decision of mobile phone at Jordan market.

H4: Brand name have significant effect on buyers' behavior decision of mobile phone at Jordan market.

H5: service after sale have significant effect on buyers' behavior decision of mobile phone at Jordan market.

Field study model
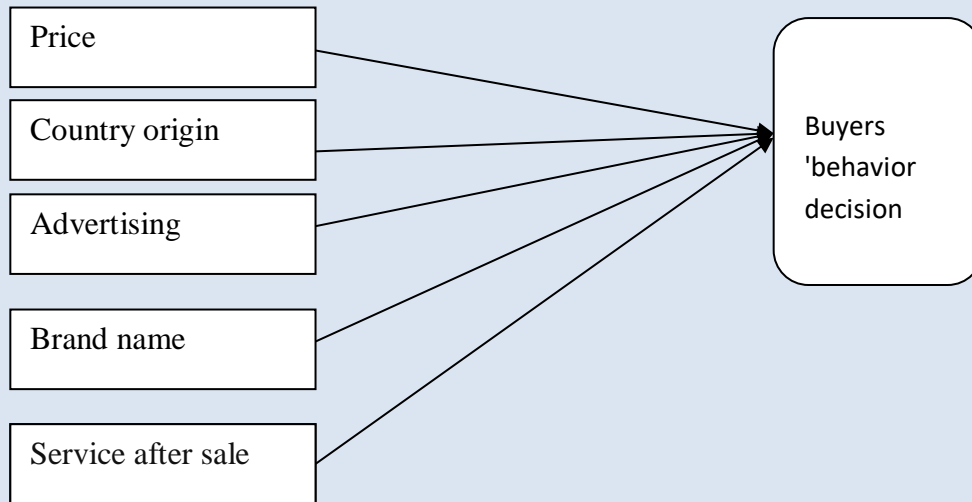
Methodology of field study

This part contain issues like field study design, population of the field study; sample size, sampling method, study hypothesis, questionnaires design, methods of analysis and reliability result. Questionnaires were pre-tested with 35buyers of mobile phone at Zarqa city.

This field study aims explaining to mobile phone buyers for getting feedback related to the questions, some participants suggests that few words in the questions are not easy to understand. Result of pre- testing indicates that questions are real and exact .A simple random sample has been chosen; almost common shape of sampling design in social science studies are random samples Mohr (1990) and give investigator with a reasonable data to use statistical inference techniques. This approach of sampling design is also applicable in marketing studies.

Targeted populations of this field study paper all buyers 'of mobile phone at Zarqa city. 395 questionnaires has been distributed to buyers, however; only (364) of the questionnaires returning with answers and useful for analysis in this field study paper. As stated by Sekaran (2003), 364answers are returning and treat as a reasonable number for investigator to go ahead with analysis of data.

Design of field study Questionnaire

The questionnaires contains 3parts, part (1) is about – personal data of the respondents. Personal information is: education, age, gender, income and status. Part (2) of the questionnaires is about independent factors which are (price, Country origin, advertising, Brand name and Service after sale ,part(3) was regarding the dependent factor – buyers' behavior decision 19 questions was in this part ; therefore, investigator used a Likert scale for measuring factors since the shape is openly used in both marketing and humanities Burns & Bush (2002). However, some investigators announce that using a 5-point shape is valid as another (Churchill and Lacobucci, 2004).

Reliability

Factors accuracy were calculated and table (1) display result for all factors, Cronbach alpha coefficient if it is   more than (0.7) that means it is accepted according to Cavana et al ., (2001), as we can see all factors are overall so the factors are accurate .

Table (1)

Factors	Number of Item	Cronbach Alpha
price	4	0.854
Country origin	3	0.722
advertising	3	0.784
Brand name Services after sale	3	0.721
	3	0.711
Buyers' behavior decision	3	0.738

Finding

Respondents' profile

Table   (2) display that most of respondents are male who perform (63.1%) in this field study than female who constitute (36.9%).most of respondents belonging to the age group 38– 48 who constitute (28.8 %). regarding respondents qualifications display who had graduated constitute   (34,4 %), furthermore , (32.9 %) of respondents with incomes between 492-592 JD. lastly (60.1%) of the respondents were married.

Table   (2)

Characteristics	Title	Frequency	%
Sex	Male	230	63.1%
	Female	134	36.9%
Age	18-27	95	26.1%
	28-37	101	27.7%
	38-48	105	28.8%
	Further than 49	63	17.4%
Qualification	Secondary or less	57	15.6%
	Diploma	83	22.8%
	Bachelor degree	99	27.2%
	Graduated	125	34.4%
Salary	191-289 JD	90	24.7%
	290-391 JD	69	18.9%
	392-491 JD	85	23.5%
	492-592JD and more	120	32.9%
Marital Status	Single	128	35.3%
	Married	219	60.1%
	Others	17	4.6%

Personal data result

Simple regression

Simple regression analysis shows the contribution of every factor on dependent factor (buyers' behavior decision). Table (3) display R2value that explaining the effect and contribution.

Table (3)

Factors	R2
Price	0.282
Country origin	0.158
Advertising	0.167
Brand name	0.176
Service after sale	0.242

Table 3 Simple regression

R^2 value of price factor is 0.282, its meaning price factor has an effect of 28.2% on the buyers' behavior decision, country origin R2is 0.158 meaning it has an effect of 15.8 % on buyers' behavior decision, AdvertisingR2 is 0.167 means it has an effect of 16.7 %, Brand name R^2 is 0.176 means it has an effect of 17.6 %, finally Service after sale R^2 is 0.242 that means it has an effect of 24.2% on the buyers' behavior decision.

Conclusion

This field study examine the factors affecting buyers' behavior decision of mobile phone at Jordan market(price, country origin, advertising, brand name, and service after sales) at Zarqa city, after collection and analysis of the data SPSS has been used , simple regression indicated that all factors have an effect on buyer behavior decision. Among the independent factors, price score the highest effect on buyer behavior decision. Upon these results the investigator recommend for cellular telephone Companies to concentrate more on price in order to reach satisfaction of buyer more as well as to motivate their buying decision.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
49

References

Burns, AC & Bush, RF (2000), Marketing research, Prentice Hall International, Inc., New Jersey.

Cai, Y. (2002). Country-of-Origin Effects on Consumers' Willingness to Buy Foreıgn Products: An Experiment in Consumer Decision Making, B.E.C, NanKai University, China, retrieved March 11 from http://athenaeum.libs.uga.edu/ bitstream /handle/10724/6141/cai_yi_200208_ms.pdf?sequence=1.

Cavana, R. Y., Delahaye, B. L., & Sekaran, U. (2001).Applied Business Research: Qualitative and Quantitative Methods (1st ed.). US & Australia: John Wiley & Sons Australia, Ltd.

Churchill, G., & Lacobucci, D. (2004).Marketing research: methodological foundations (9th e d). Ohio: Thomson south-Western.

Deloitte, 2012. What is the impact of mobile telephony on economic growth? London: Deloitte Touche Tohmatsu Limited (Deloitte LPP).

Faith, D.O. and Agwu, M.E. (2014). A Review of the Effect of Pricing Strategies on the Purchase of Consumer Goods. International Journal of Research in Management, Science & Technology, 2 (2), 88-102.

Hoffman, K. D., & Bateson, J. E. (2001). Essentials of services marketing: Concepts, strategies and cases. Southwestern Pub.

Kotler, P. and Keller, K.L. (2016). Marketing Management. 15ed. New Jersey: Pearson Prentice Hall.

Kotler, P. (2004). Ten deadly marketing sins: signs and solutions. Wiley.

Krishna, A. (2013) Customer Sense. How the 5 Senses Influence Buyıng Behavıor. Palgrave MacMillan, New York.

Malik, M. E., Ghafoor, M., Iqbal, H. K., & Ali, Q. (2013). Impact of brand image and advertisement on consumer buying behavior. World Applied Sciences Journal, 23(1), 117-122.

Muhammad J.N (2011). Customer information driven after sales service management: Lesion from spare parts logistics. PhD Thesis of Erasmus University Rotterdam.

Pride and Ferrell (2012). Marketing (16th edition). Cengage South-Western.

Mohr, L. B. (1990). Understanding Significance Tests. Newbury Park, CA: Sage Publications

Sekaran, U. (2003). Research methods for business: a skill building approach (4th, Ed): New York: John Wiley and sons.

Yasir Rafique, M. N. (2012). Impact of Advertisement on Consumer Behavior of Fmcg in Lahore City. Academic Research International ISSN-L: 2223-9553, ISSN: 2223-9944 Vol. 2,.

InTraders International Trade Academic Journal Vol.3 Iss.2 e-ISSN-2667-4408
www.intraders.org
We caress the soul of researchers !
51

Causal Effect of Potato Production on Export in Nigeria

Chigozirim Ndubuisi ONWUSIRIBE

Department of Agribusiness and Management,

Michael Okpara University of Agriculture Umudike, Abia State, Nigeria

Onwusiribe.chigozirim@mouau.edu.ng

Philips Okore NTO

Department of Agribusiness and Management,

Michael Okpara University of Agriculture Umudike, Abia State, Nigeria

Nto.philips@mouau.edu.ng

Abstract

The quest to increase the export earnings of Nigeria is on with emphasis on diversification from the oil sector. Agriculture is the solution to this quest considering the favourable geographic and demographic status of Nigeria. Potato is one of the staple crops produced in most regions in Nigeria. Potato forms part of international best dishes and this strategically positions it as an export crop. To maximize the export potentials of potato, the increase in production is inevitable. This study reveals that potato production causes potato export ceteris paribus. The study made use of Nigeria potato production and export data made available by Food and Agriculture Organization (FAO). Trend analysis and granger causality tests were used for the data analysis. The trend forecast indicates that exports may continue to grow despite decline in the production level, which implies that potato value chain actors will continue to export potato produced for local consumption. Sustainable potato production guidelines should be implemented by the farmers to ensure increase in production to meet the export demand.

Introduction

In terms of farm land for potato farming, Africa and the America plant about 10% of the world total potato respectively. In terms of output, Africa produces only about 30% of the Americas' output or slightly more than 5% of world production. Potato yields vary in sub-Saharan Africa due to the various ecological zones. The largest producers of potato measured in hectares are Nigeria, Malawi, Tanzania, Kenya and Rwanda, whereas the largest quantities are produced in South Africa, Rwanda, Nigeria, Angola and Tanzania (FAOSTAT 2010). Potato farmers soil enjoy all year round yield., high and increasing market demand for the crop locally and internationally, as potato farming requires a temperate climate with a mid- to high altitudes—roughly 1,000– 3,000 meters above sea level (masl)—to form tubers. In addition, potato farming is important in Nigeria, where the crop is an export commodity to Europe (Nteranya, 2015).

Potato is complex as a staple crop that addresses food security and serves as a means of income at the farm level and at the macro level. Potato has a short cropping cycle of three or four months and it is suitable for the Nigeria farming pattern which is basically rain-fed. Mature potato tubers are ready for harvest 60-100 days after the rainy season began—a major advantage potato has over crops like cassava (FAO, 2005). Potato is an affordable and nutritionally rich staple food for the timing Nigerian population, contributing significantly to the protein, vitamin C, zinc, and iron needs of the peoples diet(FAO, 2003).

Demand for potato is increasing in Nigeria, but the right questions are not been asked but stakeholders have focused on the increase and availability of farm land as the only challenge to increase production. But the question of best and sustainable potato farming practices has not been answered. The viability and profitability of the potato value chain in Nigeria is another grey area seeking attention, this is because for Nigeria to be competitive in the world potatoes export market the local potato value chain has to be well developed to meet international standards.

Potatoes have become a basic part of much of the international best dish and are the world's largest food crop, following rice, wheat and maize. Hence, there potato can become a major export crop for Nigeria. One basic reason for low potato export form Nigeria might be over-reliance on export of crude oil, poor quality of potatoes harvested, weak value chain etc. (Ajetemobi, 2013).

In the study of causal relationship between avocado, apple, mango and orange and the South African economy Bulagi, Hlongwane and Belete (2014) adopted the granger causality test, where the authors found that agricultural exports does not granger cause productivity. Memon, *et al.* (2008) reported a bi-directional granger causality between the total exports and agricultural GDP. A unidirectional causal relationship was found to exist between agricultural export and agricultural output in India (Suresh and Kumar, 2017). Megbowon (2016) and Gutema, Lagat, Daba and Mebata (2015) adopted the granger causality test in testing agricultural exports and economic growth in South Africa and Ethiopia respectively. The causality between productivity and exports in agriculture was studied using granger causality test (Arnade and Vasavade, 1995). Alam and Myovella (2016) in the study of agricultural exports and production adopted the granger causality test. Granger causality test and correlation analysis were used in this study to address agricultural exports, productivity and economic growth.

Data and Research Methodology

Nigeria has a land area of about 923,769km^2 (Federal Office of Statistics 1989). Nigeria water bodies consist of an area of about 13,000 sq. km while the remaining land is about 910,769sq km (Boomie 1998; Cleaver and Schreiber 1994). This article adopted principally secondary data obtained from Food and Agriculture Organization (FAO) database for a period of 1961-2017. The choice of 1961 – 2016 is for a more detailed interpretation of the trends in potato production and exports.

Data Source and Collection Procedure

This study adopted principally secondary data obtained from the Food and Agriculture Organization database, for a period of 1961-2016. Unit Root Test using the ADF test, and Philip-Perron technique to test if the time series data is stationary, the tests were done one by one for confirmation of the presence of constant means. Descriptive statistics was used to describe the nature of data as well as granger casualty test was used

The ADF test consist of estimating the following regression

$$\Delta Y_t = \propto + \beta_t + \gamma Y_{t-1} + \delta_1 \Delta Y_{t-1} + \cdots + \delta_{P-1} \Delta Y_{t-P+1} + \varepsilon_t \qquad \ldots 1$$

Where

Δ, δ, γ = Difference operators

$\propto$ =constant

Y= dependent variables

β = coefficient

$\sum$ = summation sign

e= error terms

t= time

It is an one tail test whose null hypotheses is δ=0 versus δ<o (thus expansive negative estimations of the test measurements prompts the dismissal of the invalid) and Δ is the difference operator. Under the alternative, Yt must be differenced to accomplish stationarity; under the option, Yt is as of now stationary and no differencing is required (Dickey and Fuller,1981), Consider a model

$$Y_t = \theta_0 + \delta Y_{t-1} + a_t \qquad \ldots 2$$

Where

δ = Difference operators

θ =constant

Y= dependent variables

$\sum$ = summation sign

e= error terms

t= time

However, for measuring the acceleration or deceleration in the growth rate, log quadratic trend equation was fitted and stated thus.

$$lnY = a + b_t + f_t^2 + e_t \qquad \ldots 3$$
$$lnq = a + b_t + f_t^2 + e_t \qquad \ldots 4$$

Where

 y = potato production in tonnes

q= Potato export in tonnes

a=constant

b, f= coefficients

u= error terms

t= time

A positive significant value of *f* indicates acceleration while a negative significant value implies a deceleration. A nonsignificant value shows stagnation in the growth process. This is in line with Mbanasor, Nwachukwu, Agwu and Onwusiribe (2015) and Onyenweaku (2004). The model for the causality test is as shown below:

$$Y_t = b_0 + b_1 Y_{t-1} + b_2 Y_{t-2} + \cdots + b_n Y_{t-n} + b_1 Q_{t-1} + \cdots + b_n Q_{t-n} + e_i \qquad \ldots 5$$

Where

 Y = potato production in tonnes

Q= Potato export in tonnes

b= coefficient

e= error term

n= data size

e= error ter

Results and Discussion

Since all the variables are not integrated in the same order, there is a need for a co-integration test. This implies that some linear combinations of the series must be co-integrated, such that even though the individual series may be integrated in the order I(0) and I (1) the series may drift apart in the short-run, and then follow a common trend which permits stable long-run relationship between them.

Table .1 Unit root test of the variables

| | ADF test | | Philips-perron | | |
| | | 1st | | 1st | |
	Level	difference	Level	difference	decision
potato area harvested	-1.11952	-5.6245	-1.05391	-7.46316	I(1)
potato yield	-2.38093	-3.95479	-2.62834	-6.18835	I(1)
potato production	-0.80524	-6.7858	-0.92345	-10.9917	I(1)
potato export	-0.08535	-6.12107	-0.31121	-9.75577	I(1)

-3.7498, -2.5005 & -1.6793 are Mackinnon critical value for rejection of hypothesis of unit root applied at 1%, 5% & 10% respectively. I(0), & I(1) indicates that the variable has a constant mean at the level, first difference & second difference respectively. Source: FAO database, computed using Eviews 9.5

Since all the variables are not integrated in the same order, there is a need for a co-integration test. This implies that some linear combinations of the series must be co-integrated, such that even though the individual series may be integrated in the order I(0) and I (1) the series may drift apart in the short-run, and then follow a common trend which permits stable long-run relationship between them.

The Trend of in the Production and Export Of Potato

After the independence of Nigeria, the production of potato was at 9500 tonnes. The high levels of production from 1961 to 1969 were due to the existing colonial agricultural policies that emphasized more production for the purpose of exports (Iwuagwu, 2008). From 1970 the production of potato started to drop significant, this drop could be attributed to the agricultural policy shift anchored on the National Accelerated Food Production Program (NAFPP) of 1972 and the Integrated Agricultural Development Program (IADP) of 1974 that focused on the production of rice, maize, cassava and wheat. The Operation Feed the Nation (OFN) of 1976 and other subsequent agricultural policies did not lead to increase in the production of potato in Nigeria. The policies were flawed by poor implementation and corruption.
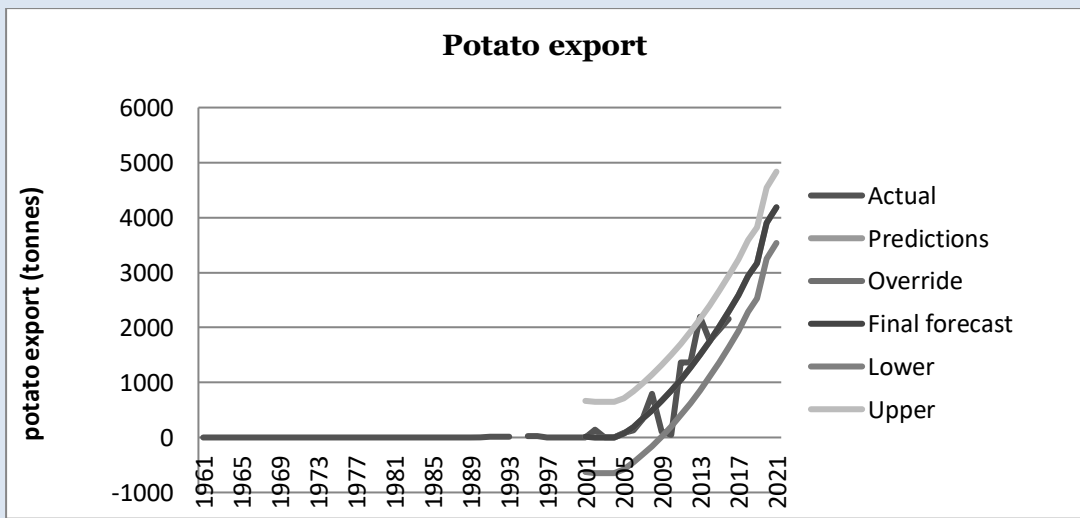
Figure 1: Trend of potato production in Nigeria

Potato production — Potato production (tonnes) with series: Actual, Predictions, Override, Final forecast, Lower, Upper
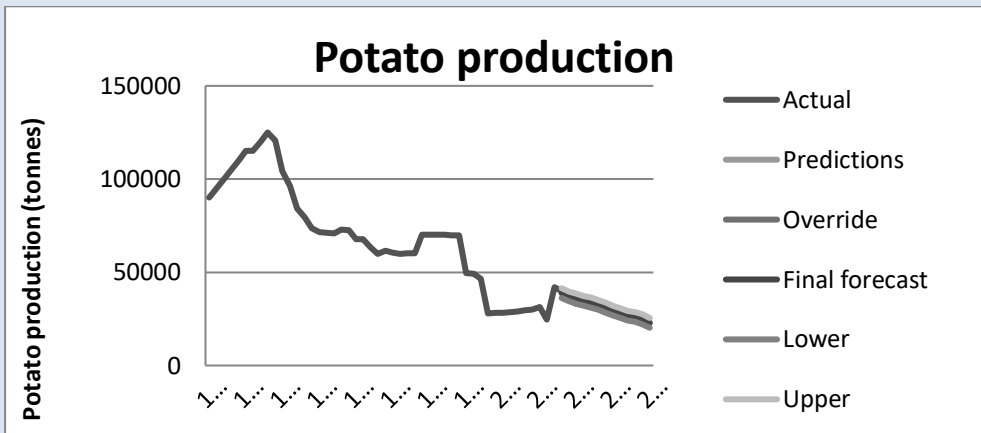
Source: FAO database. Computed by the authors using Ms Excel

Nigeria recorded significant potatoes export from 2005, the potatoes output has continue to gain some growth and the forecast data revealed that the potato exports may continue to grow.

Figure 1: Trend of potato export in Nigeria

Potato export — potato export (tonnes) with series: Actual, Predictions, Override, Final forecast, Lower, Upper

Source: FAO database. Computed by the authors using Ms Excel

The growth rate in production and export of potato was analyzed using a log-quadratic trend. The model revealed the presence of stagnation, acceleration or deceleration in the production and export of potatoes within the study period. The results of the analysis are presented in Table 2.

The result presented in Table 2 showed that potato production, and export recorded positive and significant growth during the period, with compound growth rates of 0.94and 0.65 in production and export of potatoes. It implies that the output of potato in tonnes has been growing over the years. The obvious enabling environment which fosters the country's comparative advantage coupled with the multiplicity of expansion programmess such as the presidential initiatives has played contributory roles to the increase in the production and export of potato. Given that the estimated time terms had significant and positive coefficients, there is an indication of marked acceleration in the growth trend in production and export of potato in the study area.

Table 2 Estimated growth equation in production, import, and exports of potato

Variables	B_0	b_1	b_2	R^2	R^{-2}	F
potato						449.441***
production	1.67E+05	-27379	869.962	0.94432	0.94222	
	(3.891)***	(-7.904)***	(14.77)***			
potato export	391.859	-57.798	1.37812	0.66716	0.65436	52.1148***
	(2.762)**	(-5.000)***	(7.017)****			

Values in parenthesis are t-values; *,**& *** indicates that the values are significant at 10%, 5% & 1% respectively.

Source: FAO database computed using Eviews 9.5

Causal Relationship Between Potato Production and Export

From Table 3 there is a one-way causation running between potato production and potato export with an F- statistics of 6.834 which was statistically significant at 1%. This implies that we reject the null hypothesis that potato production does not granger-cause potato export. We, therefore, conclude that potato productivity causes/ lead to potato exports.

Ugonna et al., (2013) while explaining the linkages of the potatoes value chain, linked potatoes production to the value chain and the eventual export. Ayuba, Kitsche and Oguntola (2014) reported that Nigerian potato wholesalers are basically agents in the potatoes value chain that ensure the potatoes produced by smallholder farmers are aggregated for the purpose of exports and retail.

Table 3 causal relationship between potato export and production

Null Hypothesis:	Obs	F-Statistic	Prob.
POTATO PRODUCTION does not Granger Cause POTATOEXPORT	54	6.83363	***
POTATO EXPORT does not Granger Cause POTATO PRODUCTION		0.12293	

Source: FAO database.computed using Eviews 9.   *** indicate that the value is significant at 1%.

Conclusion

Potato production is the primary cause of potato export. This implies that the production of potatoes results in the export of potatoes. Globally the demand for potatoes is on the increase this is because it forms part of the world best cuisine. The Nigerian potatoes export is expected to increase despite non commensurate increase in the expected production rate. This implies that local producers and value chain actors may focus on the international market more than the local market in order to earn more. The declining trend of potato production is worrisome and the need to increase production through a specific potato famers policy action, since some of agricultural policies in the past focus on staple crops like rice, wheat, cassava and maize. A production for export-focused policy that will entail value chain development and farmers should follow the sustainable potato production guideline for developing countries by Food and Agriculture Organization (FAO) (Lutaladio et al., 2009).

References

Alam, F. & Myovella, G. (2016). Causality between Agricultural Exports and GDP and its Implications for Tanzanian Economy. *Journal of Economics, Finance and Accounting*, Volume: 3 Issue: 1: 1- 18.

Arnade C., & Vasavada U. (1995). Causality between Productivity and Exports in Agriculture: Evidence from Asia and Latin America. *Journal of Agricultural Economics*, 46: 174–186.

Ayuba, S. M; Kitsche, M. & Oguntola, R.F (2014). Economic Development for Peace and Stability in Plateau State, Nigeria: Promotion of Potato Value Chains in Nigeria. Funded by the European Union. https://daserste.ndr.de/panorama/media/potato102.pdf accessed 02/04/2020

Boomie, O. (1998). Motherland Nigeria: Geography. http://www.motherland nigeria.com/geography.html.

Bulagi, M. B; Hlongwane, J. J & Belete, A. (2014). Causality Relationship between Agricultural Exports and Agriculture's Share of Gross Domestic Product in South Africa: A Case of Avocado, Apple, Mango and Orange from 1994 to 2011. *African Journal of Agricultural Research,* Vol. 10(9): 990-994.

Cleaver, K. & Schreiber, G. (1994). Reversing the Spiral: The Population, Agriculture and Environment Nexus in sub-Saharan Africa, Washington: World Bank.

Dickey, D.A., and D.W., Fuller,(1981), "The Likelihood Ratio Statistics for Autoregressive Time-series with a Unit Root," *Econometrica*, 49: 1057-1072

FAO (2005), Food and Agriculture Organization: *Production Yearbook*, Rome Italy: FAO.

FAOSTAT (2010), Food and Agricultural Organization: Agricultural Statistics, Rome, Italy.

Gutema, T.Y; Lagat, J. K; Daba, D. & Mabeta, J. (2015). Causality Relationship between Agricultural Exports and Economic Growth in Ethiopia: A Case of Coffee,Oilseed and Pulses. *Journal of Economics and Sustainable Development,* Vol.6, No.17: 1- 6.

Iwuagwu, O. (2008). Colonial and Post-Independence Agricultural Policies in Eastern Nigeria, 1946 – 1980. Lagos Historical Review Vol. 8 2008: pp. 64-78

Lutaladio, N., Ortiz, O., Harvekort, A. & Caldiz, D. (2009). Sustainable Potato Production: Guidelines for Developing Countries. Food and Agriculture Organization of the United Nations. http://www.fao.org/3/a-i1127e.pdf accessed 04/04/20

Mbanasor, J. A., Nwachukwu, I, N., Agwu, N.M. & Onwusiribe, N. C. (2015). Impact of Climate Change on the Productivity of Cassava in Nigeria. *Journal of Agriculture and Environmental Sciences* June 2015, Vol. 4, No. 1: 138-147

Megbowon, E. T. (2016). Causality Relationship between Agricultural Exports and Economic Growth: Evidence from South Africa. *Journal of Social Science*, 48(1,2): 129-136.

Memon, M. H; Baig, W. S; & Ali, M. (2008). Causal Relationship Between Exports and Agricultural GDP in Pakistan. *Applied Economics Research Center, University of Karachi*. Munich Personal RePEc Archive

Nteranya, S. (2015) Root and Tuber Crops (Cassava, Yam, Potato and Sweet Potato). Background Paper: An Action Plan for African Agricultural Transformation. *United Nations Commission for Africa.* Feeding Africa held at Abdou Diouf International Conference Centre, Dahar Senegal.

Onyenweaku.C.E. (2004). Stagnation, Acceleration and Deceleration in Agricultural Production in Nigeria. 1970-2000. *Journal of Agriculture and Food Science, 2(2): 131-140.*

Suresh, A.& Kumar, P. S. (2017). The Causal Relationship between Agriculture Exports and Agriculture Growth in India. *Bodhi International Journal of Research in Humanities, Arts and Science*, Vol.1 No. 3: 28 – 33.

Ugonna C.U, Jolaoso M. O, Onwualu A. P. (2013) A technical appraisal of potato value chain in Nigeria. *International Research Journal of Agricultural Science and Soil Science* Vol. 3(8) :291-301

InTraders Academic Platform

Topics based on international trade, business, economics and supply chain management. Under InTraders trade mark, we conduct InTraders October Conferences, May Conferences, InTraders International Trade Academic Journal, Economy Blog and International Market Search.

"We caress the souls of researchers"

InTraders Academic Platform

www.intraders.sakarya.edu.tr

October Conferences

www.intraders.org/october

May Conferences

www.intraders.org/may

Academic Journal

www.dergipark.gov.tr/intraders

Economy News

www.intraders.org/news