UNIVERSITI PUTRA MALAYSIA

IMPACT OF TRADE OPENNESS ON ECONOMIC GROWTH, UNEMPLOYMENT AND ENVIRONMENTAL QUALITY IN OIC COUNTRIES

SAJID ALI

SPE 2021 3

IMPACT OF TRADE OPENNESS ON ECONOMIC GROWTH, UNEMPLOYMENT AND ENVIRONMENTAL QUALITY IN OIC COUNTRIES

By

SAJID ALI

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfilment of the Requirements for the Degree of Doctor of Philosophy

April 2021

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the degree of Doctor of Philosophy

IMPACT OF TRADE OPENNESS ON ECONOMIC GROWTH, UNEMPLOYMENT AND ENVIRONMENTAL QUALITY IN OIC COUNTRIES

By

SAJID AL

April 2021

Chairman : Zulkornain Bin Yusop, PhD
Faculty : School of Business and Economics

Today, the world is in favor of trade openness because open countries grow faster, are more productive, and have improved environmental quality than closed economies. The main objective of the thesis is to analyze the impact of trade openness on economic growth, unemployment, and environmental quality in OIC countries. Many studies argued that cross-sectional dependence exists among countries due to economic shocks and unobserved components as a result of trade openness (Arain et al., 2019; Dogan et al., 2020; Meo et al., 2020). The traditional econometric techniques give ambiguous outcomes in the presence of cross-sectional dependence and heterogeneity. So, in this study, a new technique 'Dynamic Common Correlated Effects (DCCE)" proposed by Chudik & Pesaran (2015), is applied on panel data to deal with the above-mentioned issues. Moreover, for quantile-based analysis, another novel technique, "Quantile-on-Quantile (QQ)", developed by Sim & Zhou (2015), is applied. Out of total 57, 49 OIC countries are selected for panel data analysis due to data availability.

The first objective of the thesis explored the impact of trade openness on economic growth in OIC countries. The results of DCCE estimation state that there is a positive impact of trade openness on economic growth in the overall sample of OIC countries. Trade openness has a positive and significant relationship with economic growth in the case of higher-income OIC countries, whereas it decreases growth in the case of lower-income OIC countries. A quantile-based analysis indicates a positive association between trade openness and economic growth in the majority of OIC countries which support the trade-led growth hypothesis. The results tend to support the call for the continuation of trade openness policy for overall OIC countries and higher-income OIC countries.

The second objective of the thesis has analyzed the impact of trade openness on unemployment in OIC countries. The DCCE estimation shows that trade openness has a negative and significant association with the unemployment rate in overall and lower-

income OIC countries and a positive correlation with unemployment in higher-income OIC countries. A quantile based analysis indicates that trade openness increases unemployment in the majority of capital-abundant OIC countries and decreases unemployment in the majority of labor-abundant OIC countries. The results tend to support the call for the continuation of trade openness policy for overall OIC countries, lower-income OIC countries and labor-abundant OIC countries.

The third objective is related to the impact of trade openness on environmental quality in OIC countries. Results of DCCE estimation identify a negative association of trade openness with CO_2, N_2O and CH_4 emissions, while the positive relationship with the ecological footprint in overall OIC countries and higher-income OIC countries. On the other hand, trade openness has a positive association with all environmental indicators in lower- income OIC countries. A quantile-based analysis indicates a negative impact of trade openness on CO_2 emissions and a positive impact on the ecological footprint in the majority of open OIC countries. It is recommended that if OIC countries continue with trade openness policies, energy sector reforms, and maintain sustainable use of biocapacity, then they will be able to combat environmental issues.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

KESAN KETERBUKAAN PERDAGANGAN TERHADAP PERTUMBUHAN EKONOMI, PENGANGGURAN DAN KUALITI ALAM SEKITAR DI NEGARA OIC

Oleh

SAJID ALI

April 2021

Pengerusi : Zulkornain Bin Yusop, PhD
Fakulti : Sekolah Perniagaan dan Ekonomi

Pada hari ini, dunia menyokong keterbukaan perdagangan kerana negara yang lebih terbuka akan berkembang lebih cepat, lebih produktif, dan mempunyai kualiti persekitaran yang lebih baik daripada ekonomi tertutup. Objektif utama tesis ini adalah untuk mengkaji kesan keterbukaan perdagangan terhadap pertumbuhan ekonomi, pengangguran, dan kualiti alam sekitar di negara OIC (Pertubuhan Kerjasama Islam). Banyak kajian berpendapat bahawa pergantungan keratan rentas wujud di antara negara kerana kejutan ekonomi dan komponen yang tidak dilihat akibat dari keterbukaan perdagangan (Arain et al., 2019; Dogan et al., 2020; Meo et al., 2020). Teknik ekonometrik tradisional memberikan hasil yang tidak jelas dengan adanya pergantungan keraten rentas dan heterogeniti. Maka, dalam kajian ini, teknik baru 'Dynamic Common Correlated Effect (DCCE)' yang dicadangkan oleh Chudik & Pesaran (2015) digunakan keatas data panel untuk menangani masalah yang dinyatakan di atas. Tambahan lagi, untuk analisis berdasarkan ‘quantile’, teknik baru, ‘Quantile-on-Quantile (QQ)’ yang dibangunkan oleh Sim & Zhou (2015) juga digunakan. Dari 57 negara OIC, 49 dipilih untuk berdasarkan kebolehdapatan data.

Melalui objektif pertama tesis iaitu untuk meneroka kesan keterbukaan perdagangan terhadap pertumbuhan ekonomi, hasil analisis DCCE menunjukkan bahawa keterbukaan perdagangan memberikan kesan positif terhadap pertumbuhan ekonomi bagi keseluruhan sampel negara OIC. Keterbukaan perdagangan mempunyai hubungan positif dan signifikan dengan pertumbuhan ekonomi bagi negara OIC yang berpendapatan tinggi. Analisis berdasarkan ‘quantile’ menunjukkan hubungan positif antara keterbukaan perdagangan dan pertumbuhan ekonomi di kebanyakan negara OIC. Hasil kajian ini adalah bertepatan dengan saranandasar keterbukaan perdagangan bagi keseluruhan negara OIC dan negara OIC yang berpendapatan tinggi.

Berdasarkan objektif kedua tesis iaitu mengkaji kesan keterbukaan perdagangan terhadap pengangguran di Negara OIC, analisis DCCE menunjukkan bahawa keterbukaan perdagangan mempunyai hubungan negative dan signifikan dengan kadar pengangguran bagi keseluruhan negara OIC yang berpendapatan rendah dan sebaliknya positif bagi pengangguran di negara OIC yang berpendapatan tinggi. Analisis berdasarkan'quantile'menunjukkan bahawa keterbukaan perdagangan meningkatkan pengangguran di negara OIC yang mempunyai limpahan modal dan mengurangkan pengangguran di negara OIC yang mempunyai limpahan tenaga buruh. Hasil kajian umumnya cenderung menyokong tuntutan untuk melanjutkan dasar keterbukaan perdagangan untuk negara OIC secara keseluruhannya, negara OIC yang berpendapatan rendah dan negara OIC yang mempunyai limpahan buruh.

Objektif ketiga adalah berkaitan dengan kesan keterbukaan perdagangan terhadap kualiti alam sekitar di negara OIC. Analisis menunjukkan hubungan negative di antara keterbukaan perdagangan dengan pelepasan CO_2, N_2O dan CH_4, sementara hubungan positif dengan jejak ekologi di negara OIC keseluruhan dan negara OIC yang berpendapatan tinggi. Sebaliknya, keterbukaan perdagangan mempunyai hubungan positif dengan semua petunjuk persekitaran di negara OIC yang berpendapatan rendah. Analisis berdasarkan 'quantile' menunjukkan kesan negative keterbukaan perdagangan terhadap pelepasan CO_2 dan kesan positif terhadap jejak ekologi di kebanyakan negara OIC. Ini bermakna jika negara OIC terus mengamalkan dasar keterbukaan perdagangan, reformasi sektor tenaga dan memastikan penggunaan 'bio-capacity' yang berkelanjutan, maka mereka akan dapat menangani isu alam sekitar.

ACKNOWLEDGEMENTS

First and foremost, I am thankful to Allah SWT for blessing me with wisdom, good health, strength and support throughout my journey as a PhD student.

I would like to take this opportunity to express my deepest gratitude and sincere appreciation to Prof. Dr. Zulkornain Bin Yusop, for his endless support, motivation and understandings, invaluable suggestions, precious times and generous help as being supervisor for most of the part of my study. I would also like to take this opportunity to express my deepest gratitude and special appreciation to my co-supervisors, Associate Professor Dr. Shivee Ranjanee Kaliappan and Associate Professor Dr. Lee Chin for their valuable advices, constructive suggestions and critical reviews about the thesis and manuscripts. I am also thankful to the internal and external examiners who evaluated this thesis and give valuable suggestions.

Special acknowledgement is given to School of Economics, Bahauddin Zakariya University (BZU), Multan (Pakistan) for giving me the opportunity through Faculty Development Scholarship to pursue my PhD. I am greatly indebted to my parents for their patience, understanding and moral support throughout my study career. Special thanks to my wife, sister and my younger brothers for their support and care towards me. Their sacrifices in the course of my study will never be paid. Finally, I am thankful to Malaysian community that inspired me with their hospitality and kind attitude during my study. Thank you so much to all.

This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfillment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

Zulkornain Bin Yusop, PhD
Professor
School of Business and Economics
Universiti Putra Malaysia
(Chairman)

Shivee Ranjanee Kaliappan, PhD
Associate Professor
School of Business and Economics
Universiti Putra Malaysia
(Member)

Lee Chin, PhD
Associate Professor
School of Business and Economics
Universiti Putra Malaysia
(Member)

ZALILAH BINTI MOHD SHARIFF, PhD
Professor and Dean
School of Graduate Studies
Universiti Putra Malaysia

Date: 09 September 2021

Declaration by Members of Supervisor Committee

This is to confirm that:

- the research conducted and the writing of this thesis was under our supervision;
- supervision responsibilities as stated in the Universiti Putra Malaysia (Graduate Studies) Rules 2003 (Revision 2012-2013) were adhered to.

Signature: _____
Name of
Chairman of
Supervisory
Committee: Professor Dr. Zulkornain Bin Yusop

Signature: _____
Name of
Member of
Supervisory
Committee: Associate Professor Dr. Shivee Ranjanee Kaliappan

Signature: _____
Name of
Member of
Supervisory
Committee: Associate Professor Dr. Lee Chin

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

OIC	Organization of Islamic Cooperation
DCCE	Dynamic Common Correlated Effects
CSD	Cross-sectional dependence
QQ	Quantile-on-Quantile Regression
QR	Quantile Regression
GDP	Gross Domestic Product
TOP	Trade Openness
HCAP	Human Capital
INP	Institutional Performance
PEX	Public Expenditure
PCAP	Physical Capital
FDI	Foreign Direct Investment
UN	Unemployment
INF	CPI Inflation
ENC	Energy Consumption
URB	Urbanization
GHG	Greenhouse Gas
CO_2	Carbon Dioxide
N_2O	Nitrous Oxide
CH_4	Methane
ECF	Ecological Footprint
EKC	Environmental Kuznets Curve

CHAPTER 1

INTRODUCTION

1.1 An Overview

Today, the world is in favor of trade openness because open economies grow faster (Sachs & Warner, 1995), are more productive (Kim & Lin, 2009), and have higher per capita GDP (Antweiler, Copeland, & Taylor, 2001) than closed economies. Trade openness is the core feature of the international theory of trade that can foster economic growth in both developing and developed economies (Grossman & Helpman, 1991; Sakyi, Villaverde, & Maza, 2015). It promotes supply-side growth by helping to use resources more efficiently, fostering competition, and encouraging the ideas and knowledge across national boundaries (Parikh, 2006). There is a significant body of literature providing evidence that trade openness contributes significantly to economic development (Mckinnon, 1973; Sakyi et al., 2015; Gnangnon, 2018; Araz & Wardani, 2019; Raghutla, 2020). Contrary to the benefits of trade, it has also been argued that an increase in openness might restrain economic growth if a country has more focus on those sectors which have a comparative disadvantage (Lucas 1988; Young 1991; Polat, Shehbaz, Rehman, & Satti, 2015). It also adversely affects economic growth in the economies that produce low-quality products (Mendali, 2019).

The recent literature suggests that trade openness affects unemployment in different ways. However, the degree of the impact of trade openness on unemployment is still controversial (Blanchard, 2006; Felbermayr, Prat, & Schmerer, 2011). The theoretical background of trade-induced unemployment is traced back to Ricardo's[1] theory of comparative advantage relying on the relative differences of technology, explaining that trade openness leads to reduce the level of unemployment. Later on, Heckscher-Ohlin's[2] theory of comparative advantages argues that trade-induced unemployment relies on the international variations in relative factor endowments implying that trade openness increases unemployment in capital-abundant economies. Due to trade openness, the relative return of capital increases in such countries (due to the lower price of capital-intensive goods) leads to an enhancement in capital demand compared to labor and hence unemployment increases. In contrast, trade openness decreases capital demand in labor-abundant countries, which leads to enhance labor demand and reduce unemployment (Dutt, Mitra & Ranjan, 2009).

Depending on the extent of industrialization and globalization in an economy, trade openness has a harmful or positive impact on environmental quality through a variety of channels (Destek & Sinha, 2020). Pollution haven hypothesis (PHH) argues that an economy of host country with loose or slack regulations about environment gets dirtier due to trade openness (Copeland & Taylor, 1994; Baek & Koo, 2009). Grossman &

[1] See Ricardo (1817)
[2] See Heckscher (1919) and Ohlin (1933)

Krueger (1991) and Antweiler et al. (2001) decomposed the effects of trade openness on the environment into technique, scale and composition effects. According to scale effect, the economy expands as a result of trade openness. The pollution in the economy rises as more natural resources and energy are consumed. The technology effect describes how the quality of the environment improves as income rises. When a country opens up to trade; the composition effect of trade openness shows a variation in the constituents of its output. If comparative advantages of a country favor clean industries, trade openness will result in a movement away from dirty or polluted goods and services toward clean goods and services. It has been noted that the manufacturing of dirty commodities requires more capital, but the output of clean goods requires more use of human capital or labor. A country that adjusts its production towards capital-intensive items would produce more pollution, whereas an economy that shifts its output towards labor-intensive products or away from capital-intensive products will produce less pollution (Shao, Wang, Zhou, & Balogh, 2019).

There are fifty-seven countries representing the Muslim population in the Organization of Islamic Cooperation (OIC). OIC countries have been selected for this study due to various reasons. OIC countries are lack behind in major macroeconomic indicators i.e. economic growth, unemployment, inflation and environmental quality (SESRIC, 2019a, 2019b, 2019c). Despite their decades of political independence, OIC countries have failed to achieve any remarkable economic achievement. Although OIC countries have sufficient potential and actual resources to make significant contributions to such diverse sectors, none of these is reflected in their visible social and economic development. Indeed, the relevant ratings for the development of a country, i.e. export and import figures, Gross Domestic Product, unemployment rate, environmental quality, and other macro-economic indicators, indicate that OIC countries lag behind other developed and non-OIC developing countries (Ghani, 2011; Kayadibi, 2015; SESRIC, 2019a).

1.1.1 Recent Economic Trends in OIC Member Countries

OIC countries are facing multiple challenges with regard to the key economic indicators. Higher unemployment, low skilled labor, lack of foreign direct investment, lack of investment in new skills, deficits in the balance of trade and the degradation of the environment are some of the economic challenges observed in many OIC countries (SESRIC, 2019a, 2019b, 2019c).

1.1.2 Trends in GDP

The OIC countries have significant economic potential in a variety of disciplines and sectors, including energy, agriculture, and human resources, and they form a vital strategic trade region. Despite 23.4% of the world's population, OIC economies account for only 15.6% of the world's total GDP (SESRIC, 2019). GDP growth in overall OIC countries decreased to 3.9% in real terms in 2018, compared to 6% in 2013 (Figure 1.1). In non-OIC developing countries, GDP growth rates have been above the low-income OIC countries. In 2018, the average growth rate in overall OIC countries, high-income OIC countries and lower-income OIC countries is 3.9%, 3.03%, and 4.53%, respectively. On the other hand, the average growth rates in the world, non-OIC developing countries, and developed countries are 3.8%, 1%, and 2.1%, respectively.

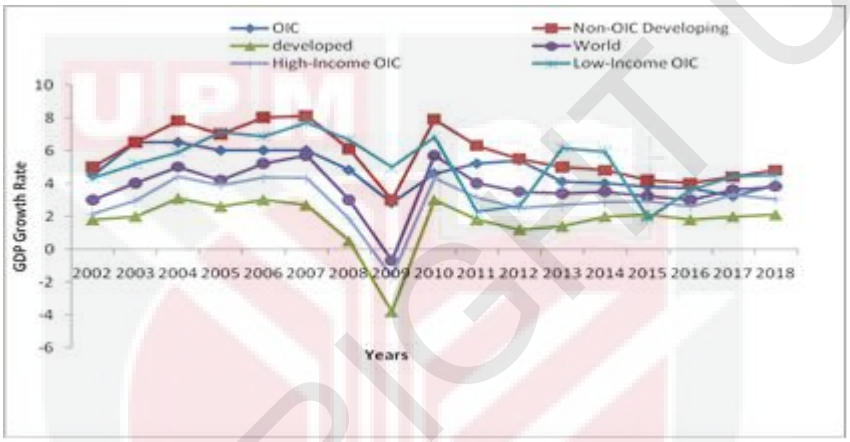

Figure 1.1 : GDP growth in the world versus OIC countries. [Source: Author's own calculation based on SESRIC Economic Outlook of OIC (various issues)]

1.1.3 Trends in FDI

Figure 1.2 reveals the FDI inflows in OIC countries compared to develop and non-OIC developing economies. The total FDI inflows in OIC economies were US$ 51 billion in 2005. The total FDI inflows to OIC countries were estimated as US$ 110 billion in 2015, which was decreased from US$ 142.9 billion in 2012. The share of the OIC group in non-OIC developing economies amounted to 15.4% in 2016.

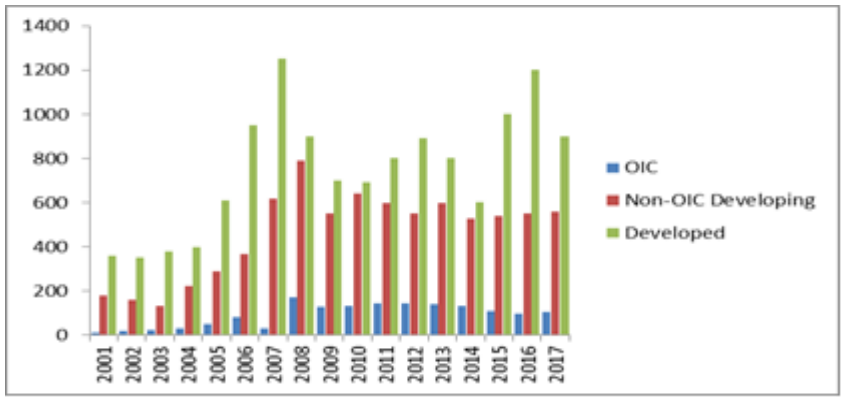

Figure 1.2 : FDI inflows (US$ Billions). **[**Source: Author's own calculation based on SESRIC Economic Outlook of OIC (various issues)]

1.1.4 Trends in Trade Openness

Trade openness of OIC countries is given in figure 1.3. It is shown that since 2005 trade openness in OIC countries is below than trade openness in the world in most time period. Only during 2010-2012, the trade openness is above the world level. The possible reason for high trade openness in OIC countries than world average during 2010-2012 is that mostly non-OIC countries were less affected by the global financial crises of 2008-2010 due to their heavy dependence on oil exports (for oil-producing OIC countries) and agri-based economies (OIC-underdeveloping countries).

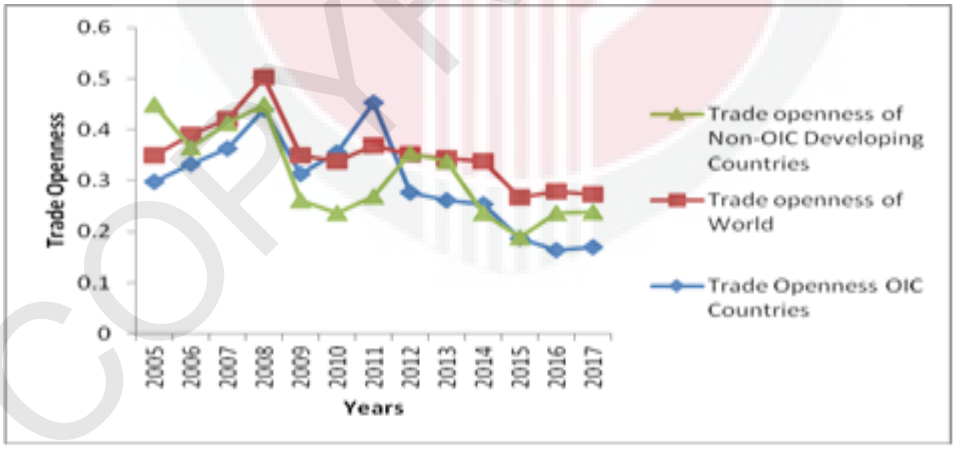

Figure 1.3 : Trade openness (Proxied by exports plus imports divided by GDP). [Source: Author's own calculation based on SESRIC Economic Outlook of OIC (various issues)]

1.1.5 Trends in Unemployment

Between 2000-2009 and 2014-2017, in comparison to the rest of the world, developed economies, and non-OIC developing economies, OIC economies have much higher average unemployment rates (Figure 1.4). During 2000-2009 and 2014-2017, the unemployment in OIC economies is higher than in non-OIC developing countries and developed countries of the world due to various reasons like less-skilled workers, low trade openness and low technological progress in OIC countries than other groups of countries. Only during 2010-2013, the unemployment level in developed countries is higher than both OIC countries and non-OIC developing countries because developed countries were more hit by the global financial crises of 2008-2010 due to more financial development compared to OIC countries, which resulted in higher unemployment in subsequent years. The total unemployment rate in OIC countries has fluctuated between 7.4% and 9.1% since 2000. In developed countries, the average unemployment rate has fallen below the rates which were observed in OIC economies since 2014 and reached 5.9 percent in 2017, compared to 7.5 percent in OIC.

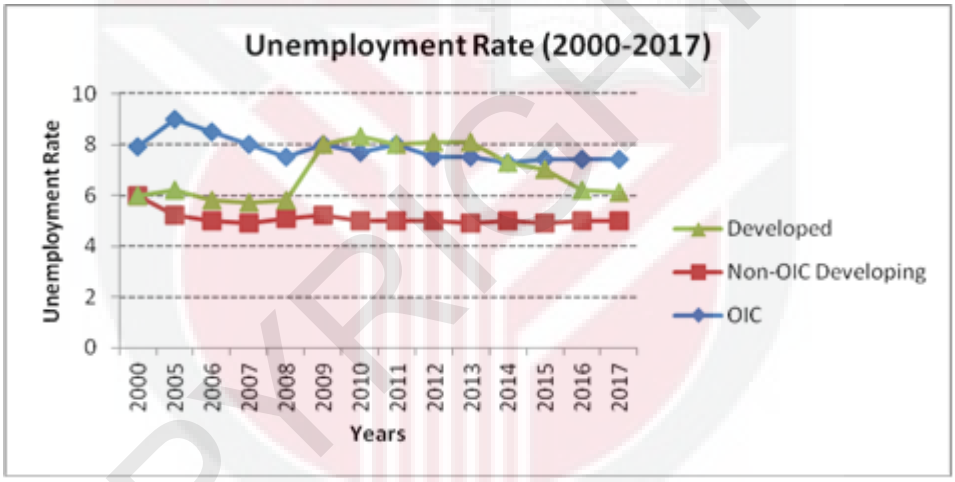

Figure 1.4 : Unemployment rate in OIC countries (2000-2017). [Source: Author's own calculation based on SESRIC Economic Outlook of OIC (various issues)]

1.1.6 Environmental Quality in OIC Countries

Generally, GHG emissions include N_2O, CO_2, CH_4 and F-gases[3]. Figure 1.5 shows that the level of GHG emissions in OIC countries was 3.3 thousand $MtCO_2e$[4] in 1990, while in 2017, it is 7.0 thousand $MtCO_2e$ (World Resources Institute, 2018). Among OIC countries, Iran has the highest level of CO_2 emissions, followed by Indonesia, Turkey and Kazakhstan (see Appendix-Table 2).

[3] fluorinated gases, i.e. perfluorocarbons, sulfur hexafluoride and hydro-fluorocarbons.
[4] metric tons of carbon dioxide equivalent

GHG is mainly produced from transportation, burning fuel, industry and transportation. Indeed, fuel consumption is much higher in oil-exporting countries and newly industrialized emerging economies. As illustrated in Figure 1.5, carbon dioxide (CO2) contributes most of the world's emissions since the 1990s. CO2 is mainly produced from burning fuel for domestic use, industry, and transportation.

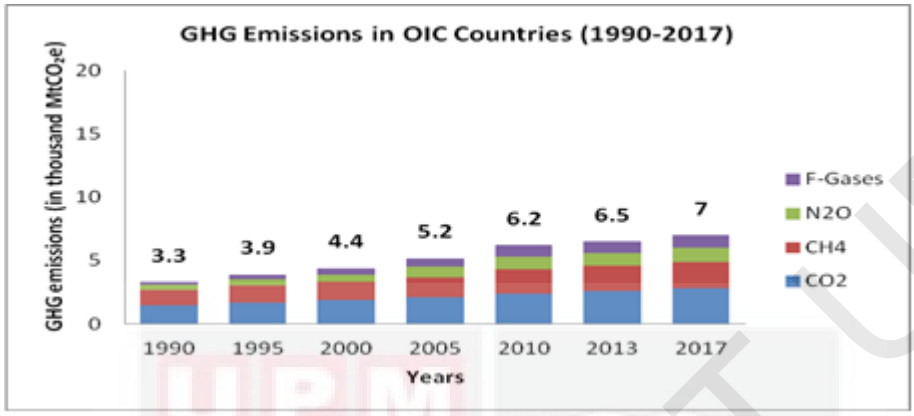

Figure 1.5a : GHG emissions in OIC countries (1990-2017)

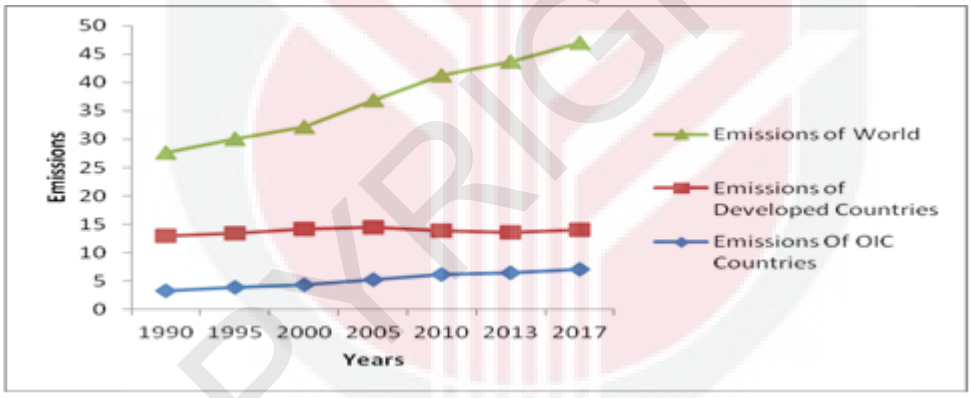

Figure 1.5b : GHG emissions in OIC countries versus world (1990-2017). [Source: Author's own calculation based on SESRIC Economic Outlook of OIC (various issues)]

Figure 1.5b shows that although GHG emissions in OIC countries are below the world and developed countries, the amount of GHG emissions is continuously increasing.

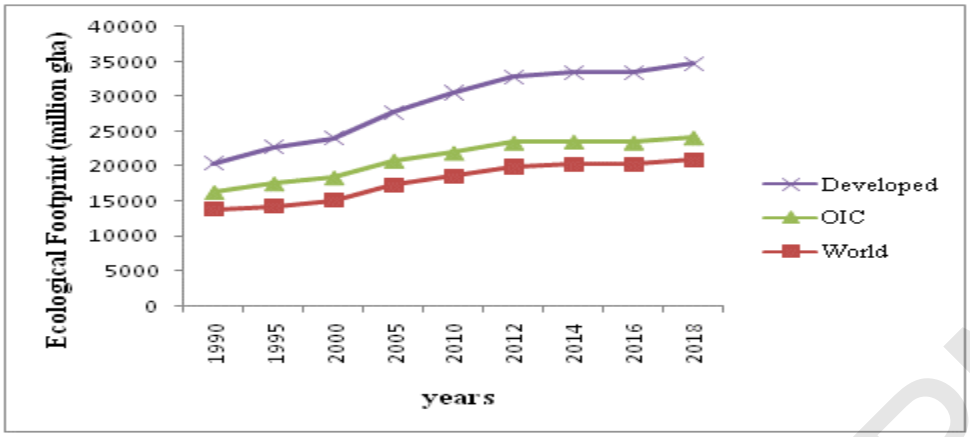

Figure 1.6 : Ecological footprint in OIC countries versus world (1990-2018). [Source: Author's own calculation based on SESRIC Economic Outlook of OIC (various issues)]

Figure 1.6 shows that the ecological footprint in 1990 for OIC countries are 17000 million global hectares (gha), while the average value for the world and developed countries is 14500 and 24000 million gha, respectively. In 2018, the amount of pollution in the form of ecological footprint reached the amount of 22000, 21000, and 35000 million gha for OIC countries, world and developed countries, respectively.

1.2 Relationship of Trade openness with GDP, Unemployment and Environmental Quality in OIC Countries

The relationship of trade openness with GDP, unemployment and environmental quality in OIC economies are shown in the below figures through scatter plots.

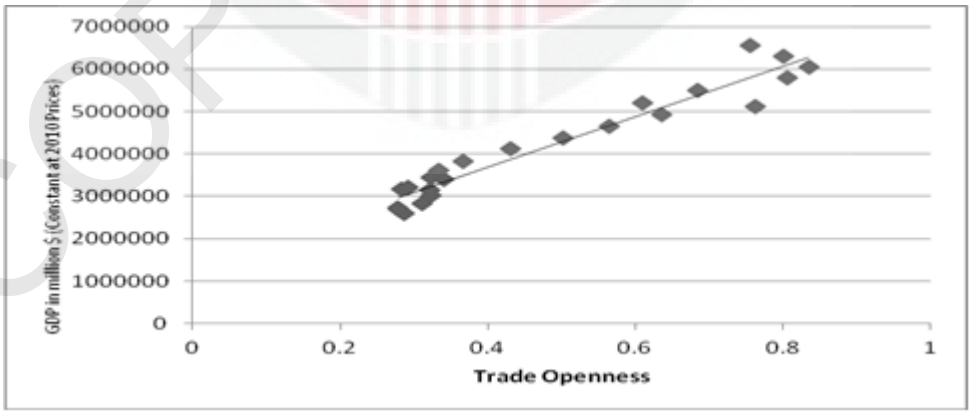

Figure 1.7 : Trade openness and GDP (1995-2017). [Source: SESRIC Economic Outlook of OIC (various issues)]

In figure 1.7, the association between trade openness and GDP in OIC economies is shown. It depicts from the above diagram that there is a positive relationship between trade openness and GDP in OIC countries.

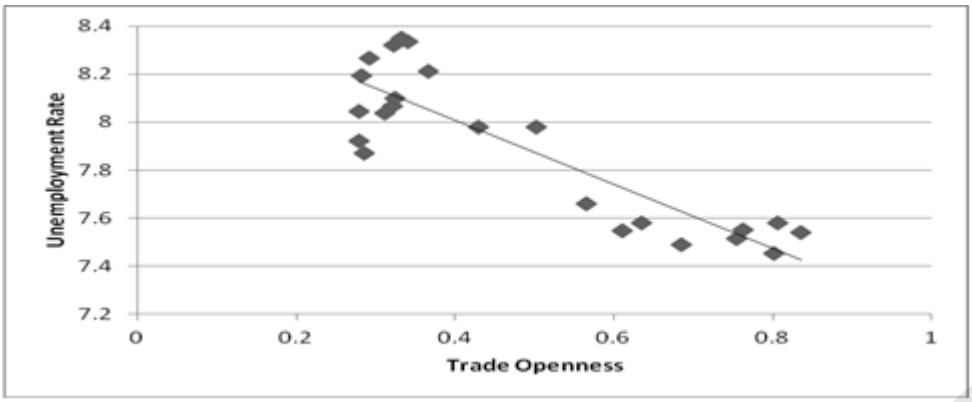

Figure 1.8 : Trade openness and unemployment (1995-2017). [Source: SESRIC Economic Outlook of OIC (various issues)]

In figure 1.8, the negative relationship between trade openness and unemployment in OIC countries is shown.

Figure 1.9 : Trade openness and environmental quality (1995-2017). [Source: SESRIC Economic Outlook of OIC (various issues)]

In figure 1.9, the CO_2 emissions are used as a proxy for environmental quality. It depicts from the above figure that there is a positive association between trade openness and CO_2 emissions in OIC economies.

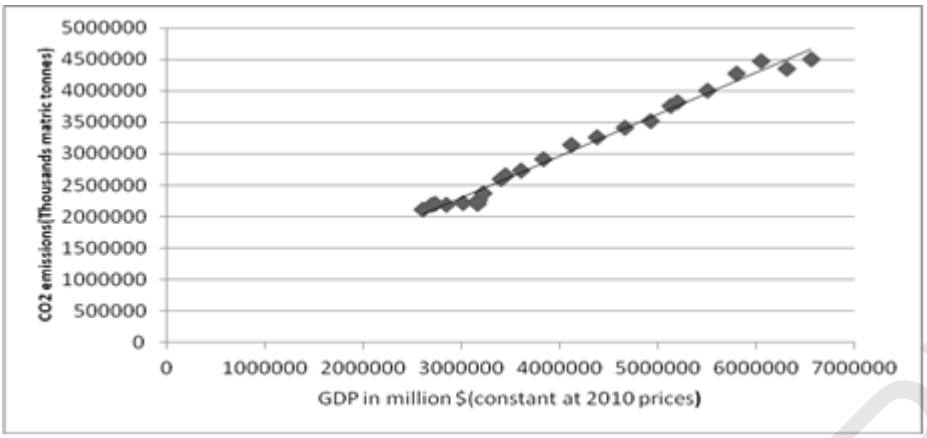

Figure 1.10 : GDP and CO_2 emissions (1995-2017). **[**Source: SESRIC Economic Outlook of OIC (various issues)]

In figure 1.10, the relationship between GDP and CO_2 emissions in OIC countries is shown. It depicts from the above figure that there is a positive association between GDP and CO_2 emissions in OIC countries. According to the technique effect, pollution will be reduced after the increase in income (Grossman & Kruger, 1991; Antweiler et al., 2001). But in the above diagram, the relationship is against this theory in the case of OIC countries.

1.3 Statement of Problem

The macroeconomic performance of the countries can be accessed from various aspects like growth, inflation, unemployment, trade balance and environmental quality. But in the case of OIC countries, the economic growth, unemployment and environmental issues are highlighted due to the poor performance of OIC countries in these areas[5]. Although there are many other factors (inflation, fiscal and monetary policies, interest rate, and debt, etc.) that affect economic growth but trade openness is chosen for this study because in OIC countries, the value of trade openness is less than the world average (see figure 1.3). So, there is a need to see the effect of trade openness on economic growth in OIC countries.

The GDP growth rate of low-income OIC countries is less than the non-OIC developing economies of the world, which is one of the main problems (figure 1.1). So, there is a need to determine the factors which are responsible for this low growth rate in these OIC countries. Trade openness in OIC countries is also below the trade openness in the world (figure 1.3). The association between trade openness and GDP in OIC countries is positive, as shown in scatter plots (figure 1.7). This relationship is according to the theory of endogenous growth, which says that the impact of trade openness on GDP growth is positive through the transfer of technology. So, there is enough reason to still believe that researchers should re-examine the clear relation of trade openness and economic growth in OIC countries.

[5] See SESRIC (2018a, 2018b), SESRIC (2019a, 2019b, 2019c)

High unemployment rates, low skills, high prevalence of skills mismatch, and high informal unemployment are some of the labor market characteristics and problems observed in many OIC economies (SESRIC, 2018b). In comparison to the rest of the world, OIC countries have much higher average unemployment rates (figure 1.4). At the individual country level, the unemployment rate greatly varied among OIC countries, i.e., Qatar, Benin and Bahrain have the lowest unemployment rate (0.2%, 1% and 1.3%, respectively) among OIC countries in 2017. However, unemployment is a serious problem in Gambia, Palestine, Mozambique and Comoros, with an unemployment rate of 29.7%, 24.9%, 24.4% and 20%, respectively (OIC Labor Market Report, 2018). The relationship between trade openness and unemployment in OIC countries is negative, as shown in scatter plots (figure 1.8). Ricardian[6] theory of unemployment relies on the relative differences of technology, explaining that trade openness leads to reduce the level of unemployment. Heckscher-Ohlin's[7] theory of comparative advantages argues that trade-induced unemployment relies on the international differences in relative factor endowments implying that trade openness increases unemployment in capital-abundant countries and decreases unemployment in labor-abundant countries. Mostly, the lower-income countries are labor-abundant while higher-income countries are capital abundant (Samimi, Lim & Buang, 2013). So, there is a need to reinvestigate the determinants, which will define the relationship between trade openness and unemployment under comparative advantage theories in OIC countries by dividing OIC countries into various panels like lower-income, higher-income and overall OIC countries.

Due to trade openness, the volume of production and trade in OIC countries is expanding; hence energy consumption and the use of natural resources are also increasing, which creates pollution. The level of GHG emissions in OIC countries was 3.3 thousand $MtCO_2e$ in 1990, which reach 7.0 thousand $MtCO_2e$ in 2017 (see Figure 1.5a). The ecological footprint in OIC countries has been growing from 17000 million global hectares (gha) in 1990 to 19000 million global hectares in 2010 and 22000 million gha in 2018 (Figure 1.6). So, finding the macroeconomic factors which are responsible for the environmental quality of OIC countries is one of the main problems in OIC countries. Some high-income or oil-producing countries like Saudi Arabia, Kuwait, United Arab Emirates, Bahrain, etc., are highly polluted even without extensive trade. The possible reason for high pollution in these countries may be the use of energy consumption, oil extraction, production of dirty goods etc. So, there is a need to see to which extent trade openness affects the environmental quality of these countries. Trade openness is a most important factor which affects environmental quality according to various hypothesis and theories like pollution hallo hypothesis, pollution haven hypothesis, and environmental Kuznets curve. The association between trade openness and CO_2 emissions in OIC countries is positive, as shown in scatter plots (figure 1.9). According to the theory of Grossman & Kruger (1991) and Antweiler et al. (2001), the relationship between trade openness and pollution is positive under scale effect while under composition effect, this relationship is positive only if a country produces capital-intensive goods (dirty goods). According to the technique effect, pollution will be reduced after an increase in income (Grossman & Kruger, 1991; Antweiler et al., 2001). While examining the trade openness-environmental quality nexus, a great majority of literature uses only CO_2 emissions as a proxy for environmental quality, which is an insufficient measure to capture environmental effects. Policymakers can be misleading when only CO_2 emissions are used exclusively as a proxy for environmental

[6] See Ricardo (1817).
[7] See Heckscher (1919) and Ohlin (1933).

quality. So, more inclusive environmental variables like CH_4, SO_2 and N_2O emissions and ecological footprint should also be used to obtain robust findings. So the relationship of trade openness and environmental quality should be re-examined for OIC countries by using various environmental indicators.

Trade openness also plays a part in the environmental Kuznets curve (EKC). During the growth process, environmental quality first degrades and then begins to improve after reaching a certain threshold. This inverse U-shaped GDP-pollution pattern is called the Environmental Kuznets Curve (EKC)[8] (Grossman and Krueger, 1991, 1995; Antweiler et al., 2001). Generally, the negative impact of economic growth on environmental quality at the initial phase of development is due to the scale effect of trade openness and increased energy consumption. However, it would have a positive impact on the environment at the subsequent stage due to the technique and/or composition effect of trade openness (Mrabet & Alsamara, 2017; Lan, 2017; Destek et al., 2018). It is also evident in theory that the existence and shape of EKC (like turning or threshold point) depends on the level of income of the countries. OIC countries have been placed under different income groups according to the classification of World Bank[9] like lower-income, lower-middle-income, upper-middle income and high-income OIC countries. Various groups of OIC countries may have different effects of trade openness on environmental quality. So there is a need to re-examine the trade-environment nexus to see that how OIC countries with different income groups respond under the EKC hypothesis.

Many studies argued that cross-sectional dependence exists among countries due to economic shocks and unobserved components as a result of trade openness. In this era of modernization, due to trade openness, economic changes in other countries have significantly affected each other. The traditional methodologies like GMM, AMG, fixed effect and random effect ignore the issues of cross-sectional dependence and heterogeneity and assume homogeneity in data, and only permit to change the intercepts of cross-sectional units. Therefore, now there is a need to be more focused on the above issues by using some new methodology that can tackle the above-mentioned issues while examining the impact of trade openness on economic growth, unemployment and environmental quality in OIC countries. Moreover, the previous studies, especially panel-based methodologies, analyze the relationship between independent variables and dependent variables by using absolute or whole variables. On the other hand, the effect of different quantiles of the independent variable on different quantiles of dependent variables may differ. So, there is a need to use some quantile-based approach to study the impact of different quantiles of trade openness on different quantiles of economic growth, unemployment and environmental quality in OIC countries.

After the above discussion, we can conclude that the role of trade openness in explaining the relationship with economic growth, unemployment and environmental quality in OIC countries is still a debatable issue that needs to reinvestigate by using some new econometric techniques.

[8] This relationship resembles the inverse-U shaped GDP- income inequality pattern defines by Kuznets (1955).
[9] See Table 3.5 in Chapter 3.

1.4 Research Questions

After discussing the research problems above, the present study intends to address the following questions:

- Does trade openness has a role to play in stimulating the economic growth of OIC member countries?
- Is there any empirical link between trade openness and unemployment in OIC member countries?
- Does trade openness has any impact on environmental quality in OIC countries?

1.5 Objectives of the Study

The general objective of the study is to analyze the impact of trade openness on economic growth, unemployment and environmental quality in OIC member countries.

Specifically, the study intends to empirically:

1. Analyze the impact of trade openness on the GDP growth of OIC economies.
2. Investigate the impact of trade openness on unemployment in OIC countries.
3. Find the relationship between trade openness and environmental quality in OIC countries and also check this association in the context of the Environmental Kuznets Curve (EKC).

1.6 Significance of the Study

The volume of the literature on the impact of trade openness incorporating growth, unemployment, and environmental concerns in OIC countries is far less (Konac, 2004; Azam, 2016; Ebaidalla, 2016; Mirjalili & Fard, 2019). Hence, this study will contribute to the existing literature by analyzing the impact of trade openness on economic growth, unemployment and environmental quality in OIC countries.

There is currently little consensus on whether openness, rather than other macroeconomic determinants, is the driving force behind economic growth in OIC countries. Such controversies in empirical evidence suggest that there is still more research to do. So this study will bridge the gap in this regard. Both policymakers and researchers are interested in the OIC group of countries since these countries have a smaller proportion of global trade and place less emphasis on economic growth than other non-OIC countries. Very few studies have defined the openness-growth nexus in the context of OIC member countries.[10] This study will also be helpful for making better policies for the

[10] See Ranjbar & Elmi (2010), Ghani (2011), Saba & Abbas (2016).

macroeconomic performance of OIC countries. Hence, this study would be helpful for policymakers to make decisions about the role of trade openness to enhance its effect on economic growth in OIC economies. On the basis of the findings, this research will provide beneficial ideas, opening up new avenues for future research.

The unemployment variable in this study would be able to lend insight as to how trade openness improves or worsens the unemployment situation in OIC countries. The results of this research can be helpful for the implementation of economic policy by OIC countries, particularly regarding adjustments to trade policies to address the nation's unemployment problem. The findings of this study, which relate trade openness with unemployment, will evaluate how OIC countries are using trade openness policies to better understand the potentials of business and employment opportunities in the economy.

It is a crucial study that elaborates the trade-environment nexus with reference to the environmental Kuznets curve (EKC) in OIC countries. A great majority of EKC literature uses only CO_2 emissions as a proxy for environmental quality, which is an insufficient measure to capture environmental effects. Policymakers can be misleading when CO2 emissions are used exclusively as a proxy for environmental quality. So, more inclusive environmental variables are used to obtain robust findings. So, this study addresses the environmental issues in a modern context by considering three GHG emissions, i.e., CO_2, CH_4 and N_2O, along with another important proxy of environmental quality called the ecological footprint.

The findings of the present study would also be a compliment to the methodological context. A new panel data technique, ''Dynamic Common Correlated Effects (DCCE)" is helpful to deal with the issues of cross-sectional dependence, serial correlation and heterogeneity. The quantile-based analysis of the variables has its own importance. The present study also applies the advanced 'Quantile-on-Quantile' method, which has the ability to combine the basics of non-parametric estimation and quantile regression analysis. Thereby, this methodology inclines to estimate the asymmetric impacts of quantiles of one variable on the quantiles of another variab le, and the outcomes have the capability to address the queries enquiring the association of trade openness with economic growth, unemployment and environmental quality at both upper and bottom quantiles of the data distribution and contingent on the size and sign of trade shocks and economic state (recession or expansion).

1.7 Organization of the Study

Chapter one covers the complete introduction of the study. Chapter two will provide a comprehensive review of the theoretical and empirical literature, which is related to the main issues. Chapter three of this study will describe the research methodology and model specification. Empirical results will be presented in chapters four, five and six. In the end, chapter seven will conclude the thesis with an overview of the study, a summary of findings, conclusions, limitations, and recommendations.

REFERENCES

Abachi, T. (1998). Inflation-Unemployment Trade-off in Less Developed Countries (LDCs): The case study of Nigeria. *Unpublished M. Sc. Thesis, Economics Department, Ahmadu Bello University (ABU), Zaria*.

Abdouli, M., & Hammami, S. (2017). Economic growth, FDI inflows and their impact on the environment: an empirical study for the MENA countries. *Quality & Quantity, 51*(1), 121-146.

Ademola, S. and Badiru, A. (2016). The impact of unemployment and inflation on economic growth in Nigeria (1981–2014). Internation Journal of Business and Economic Sciences Applied Research, 1(1): 47-55.

Adetiloye, K. A., and Adeyemo, K. A. (2012). Domestic Investment, Capital Formation and Population Growth in Nigeria. *Developing Country Studies, 2*(7), 37-46.

Affandi, Y., Anugrah, D. F., & Bary, P. (2019). Human capital and economic growth across regions:a case study in Indonesia. *Eurasian Economic Review*, *9*(3), 331-347.

Afzal, M., & Hussain, I. (2010). Export-led growth hypothesis: Evidence from Pakistan. *Journal of Quantitative Economics, 8*(1), 130-147.

Agosin, M. R., & Mayer, R. (2000). Foreign investment in developing countries: Does it crowd in domestic investment? (UNCTAD Discussion Papers, UNCTAD/OSG/DP/ 146, 1–20).

Agovino, M., Garofalo, A., & Cerciello, M. (2019). Do local institutions affect labour market participation? The Italian case. *The BE Journal of Economic Analysis & Policy, 19*(2), 20-42.

Ahmed, K., Shahbaz, M., & Kyophilavong, P. (2016). Revisiting the emissions-energy-trade nexus: evidence from the newly industrializing countries. *Environmental Science and Pollution Research, 23*(8), 7676-7691.

Ahuja, D., & Pandit, D. (2020). Public Expenditure and Economic Growth: Evidence from the Developing Countries. FIIB Business Review, 2319714520938901. https://doi.org/10.1177/2319714520938901

Akeju, K. F. and Olanipeun, D. B. (2014). Unemployment and economic growth in Nigeria. Journal of Economics and Sustainable Development, 5(4): 138-44.

Aktar, I., & Ozturk, L. (2009). Can unemployment be cured by economic growth and foreign direct investment in TURKEY?. http://acikerisim.kku.edu.tr/xmlui/handle/20.500.12587/2090.

Ali, H. S., Law, S. H., & Zannah, T. I. (2016). Dynamic impact of urbanization, economic growth, energy consumption, and trade openness on CO_2 emissions in Nigeria. *Environmental Science and Pollution Research*, *23*(12), 12435-12443.

Ali, S., Yusop, Z., Kaliappan, S. R., & Chin, L. (2020a). Dynamic common correlated effects of trade openness, FDI, and institutional performance on environmental quality: evidence from OIC countries. *Environmental Science and Pollution Research*, 27, 11671-11682.

Ali, S., Yusop, Z., Kaliappan, S.R., & Chin, L. (2020b). Trade-environment nexus in OIC countries: fresh insights from environmental Kuznets curve using GHG emissions and ecological footprint. *Environmental Science and Pollution Research*. https://doi.org/10.1007/s11356-020-10845-6.

Ali, S., Chaudhry, I.S., and Farooq, F. (2012). Human capital formation and economic growth in Pakistan. *Pakistan Journal of Social Sciences*, 32(1), 229-240.

Alola, A. A., Bekun, F. V., & Sarkodie, S. A. (2019). Dynamic impact of trade policy, economic growth, fertility rate, renewable and non-renewable energy consumption on ecological footprint in Europe. *Science of the Total Environment*, *685*, 702-709.

Alper, A. E. (2018). An Analysis on The Relationship Between Political Stability and Economic Performance in BRICS-T Countries. *Business and Economics Research Journal*, *9*(1), 49-56.

Aneja, V. P., Schlesinger, W. H., Li, Q., Nahas, A., & Battye, W. H. (2019). Characterization of atmospheric nitrous oxide emissions from global agricultural soils. *SN Applied Sciences*, *1*(12), 1662.

Anh, N. N., Minh, N. N., & Tran-Nam, B. (2016). Corruption and economic growth, with a focus on Vietnam. *Crime, Law and Social Change*, *65*(4-5), 307-324.

Anjum, N., & Perviz, Z. (2016). Effect of Trade Openness on Unemployment in Case of Labour and Capital Abundant Countries. *Bulletin of Business and Economics (BBE)*, *5*(1), 44-58.

Anthanasios, O. T. (2013). The unemployment effects of fiscal policy: Recent evidence from Greece. *Iza Journal of European Labour Studies*, *2*(11), 234-253.

Antweiler, W., Copeland, B. R and Taylor, M.S. (2001). Is Free Trade Good for the Environment? *The American Economic Review* 91(4), 877-908.

Antwi, S., Mills, E. F. E. A., Mills, G. A., & Zhao, X. (2013). Impact of foreign direct investment on economic growth: Empirical evidence from Ghana. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, *3*(1), 18-25.

Anyanwu, J. C., & Yameogo, N. D. (2015). What drives foreign direct investments into West Africa? An empirical investigation. *African Development Review*, *27*(3), 199-215.

Aoyagi, C., & Ganelli, G. (2015). Asia's quest for inclusive growth revisited. *Journal of Asian Economics*, *40*, 29-46.

Apergis, N., & Ozturk, I. (2015). Testing environmental Kuznets curve hypothesis in Asian countries. *Ecological Indicators*, *52*, 16-22.

Arain, H., Han, L., & Meo, M. S. (2019). Nexus of FDI, population, energy production, and water resources in South Asia: a fresh insight from dynamic common correlated effects (DCCE). *Environmental Science and Pollution Research*, *26* (26), 27128-27137.

Araz, S., & Wardani, D. (2019). Trade Performance Analysis of Indonesia and Malaysia to the Organization of Islamic Cooperation. In *Third International Conference on Sustainable Innovation 2019–Humanity, Education and Social Sciences (IcoSIHESS 2019)*. Atlantis Press.

Arewa, A. and Nwakanma, P. (2012). Potential-real GDP and growth process of Nigerian economy, An empirical reevaluation of Okun's Law. European Scientific Journal, 8(9), 25-33.

Artelaris, P., Arvanitidis, P. and Petrakos, G. (2006). Theoretical and methodological study on dynamic growth regions and factors explaining their growth performance, Economic and Social Research Institute (ESRI).

Asghari, M. (2013). Does FDI promote MENA region's environment quality? Pollution halo or pollution haven hypothesis. *International Journal of Scientific Research in Environmental Sciences*, *1*(6), 92-100.

Awad, A., & Yussof, I. (2016). International trade and unemployment: evidence from selected Arab countries. *Middle East Development Journal*, *8*(2), 198-229.

Aydin, C., Esen, Ö., & Aydin, R. (2019). Is the ecological footprint related to the Kuznets curve a real process or rationalizing the ecological consequences of the affluence? Evidence from PSTR approach. *Ecological indicators*, *98*, 543-555.

Azam, M. (2016). Does Governance and Foreign Capital Inflows Affect Economic Development in OIC Countries?. *Journal of Economic Cooperation & Development*, *37*(4), 21-50.

Azman-Saini, W.N.W., Law, S.H, & Ahmad, A. (2010). FDI and economic growth: New evidence on the role of financial markets. *Economics Letters*, 107(2). 211-213.

Baek, J., & Kim, H. (2011). Trade liberalization, economic growth, energy consumption and the environment: Time series evidence from G-20 economies. *Journal of East Asian Economic Integration*, *15*(1), 30-45.

Baek, J., & Koo, W. W. (2009). A dynamic approach to the FDI-environment nexus: the case of China and India. *East Asian Economic Review*, *13*(2), 87-106.

Bal, D. P., Dash, D. P., & Subhasish, B. (2016). The effects of capital formation on economic growth in India: evidence from ARDL-bound testing approach. *Global Business Review*, *17*(6), 1388-1400.

Balassa, B. A. (1982). *Development strategies in semi-industrial economies*. Published for the World Bank [by] the Johns Hopkins University Press.

Balcerzak, A. P., & Zurek, M. (2011). Foreign direct investment and unemployment: VAR analysis for Poland in the years 1995-2009.

Baltagi, B. H., Feng, Q., & Kao, C. (2012). A Lagrange Multiplier test for cross-sectional dependence in a fixed effects panel data model. *Journal of Econometrics*, *170*(1), 164-177.

Barro, R. J. (1991). Economic growth in a cross section of countries. *The quarterly journal of economics*, *106*(2), 407-443.

Barro, R. J., & Lee, J. W. (2013). A new data set of educational attainment in the world, 1950–2010. *Journal of development economics*, *104*, 184-198.

Barro, R. J., & Sala-i-Martin, X. (1997). Technological diffusion, convergence, and growth. *Journal of Economic Growth*, *2*(1), 1–26.

Bartolucci, F., Choudhry, M. T., Marelli, E., & Signorelli, M. (2018). GDP dynamics and unemployment changes in developed and developing countries. *Applied Economics*, *50*(31), 3338-3356.

Battaglini M,. & Coate S. (2011). Does Government expenditure multiply output and employment in Australia? Griffith Business School Discussion Paper in Economics, No. w17562), Griffith University, Brisbane.

Baumol, W. J., & Oates, W. E. (1971). The use of standards and prices for protection of the environment. In *The economics of environment* (pp. 53-65). Palgrave Macmillan, London.

Bazen, S., & Cardebat, J. M. (2001). The impact of trade on the relative wages and employment of low skill workers in France. *Applied Economics*, *33*(6), 801-810.

Belarbi, Y., Sami, L., & Souam, S. (2016). The effects of institutions and natural resources in heterogeneous growth regimes. *Middle East Development Journal*, *8*(2), 248-265.

Bella, G., Massidda, C., & Mattana, P. (2014). The relationship among CO_2 emissions, electricity power consumption and GDP in OECD countries. *Journal of Policy Modeling*, *36*(6), 970-985.

Belloumi, M. (2014). The relationship between trade, FDI and economic growth in Tunisia: An application of the autoregressive distributed lag model. *Economic systems*, *38*(2), 269-287.

Benhabib, J., & Spiegel, M. M. (1994). The role of human capital in economic development evidence from aggregate cross-country data. *Journal of Monetary economics*, *34*(2), 143-173.

Benmamoun, M., and Lehnert, K. (2013). Financing growth: comparing the effects of FDI, ODA, and international remittances. *Journal of Economic Development*, *38*(2), 43-65.

Bérenger, V., & Verdier-Chouchane, A. (2007). Multidimensional measures of well-being: Standard of living and quality of life across countries. *World Development*, *35*(7), 1259-1276.

Bhagwati, J. N. (1978). *Foreign trade regimes and economic development: Anatomy and consequences of exchange control regime*. Cambridge, MA: Ballinger.

Bilgili, F., Koçak, E., & Bulut, Ü. (2016). The dynamic impact of renewable energy consumption on CO_2 emissions: a revisited Environmental Kuznets Curve approach. *Renewable and Sustainable Energy Reviews*, *54*, 838-845.

Blackhurst, R.(1977). International trade and domestic environmental policies in a growing world economy. In: International Relations in a Changing World. Institut Universitaire de Hautes Etudes Internationales, Geneva.

Blanchard, O. (2006). European Unemployment: The Evolution of Facts and Ideas. *Economic Policy*, 21(45),5-59.

Bleaney, M. and Nishiyama, A. (2002). Explaining Growth: A Contest Between Models. *Journal of Economic Growth*, 7(1), 43-43.

Borensztein, E., De Gregorio, J. and Lee, J-W. (1998). How does foreign direct investment affect economic growth?. *Journal of International Economics*, 45, 115-35.

Bornschier, V. (1980). Multinational corporations and economic growth: A cross-national test of the decapitalization thesis. *Journal of Development Economics*, *7*(2), 191-210.

Boserup, E. (1981). Population and technology, Oxford: Oxford University Press.

Breitung, J. (2005). A parametric approach to the estimation of cointegration vectors in panel data. *Econometric Reviews*, *24*(2), 151-173.

Breusch, T. S., & Pagan, A. R. (1980). The Lagrange multiplier test and its applications to model specification in econometrics. *The review of economic studies*, *47*(1), 239-253.

Brock, W. A., & Durlauf, S. N. (2001). What have we learned from a decade of empirical research on growth? Growth empirics and reality. *The World Bank Economic Review*, *15*(2), 229-272.

Carkovic, M., & Levine, R. (2005). Does foreign direct investment accelerate economic growth?. *Does foreign direct investment promote development*, *195*.

Casillas, L. R. (1993). Kaldor versus Prebisch on employment and industrialization. *Journal of Post Keynesian Economics*, *16*(2), 269-288.

Chang, N. (2012). The empirical relationship between openness and environmental pollution in China. *Journal of environmental planning and management*, *55*(6), 783-796.

Chaudhry, I, S., Malik, Ali & Faridi, M. Z. (2010). Exploring the causality relationship between trade liberalization, human capital and economic growth: Empirical evidence from Pakistan. *Journal of Economics and International Finance*, 2 (8),175-182.

Chaudhry, I. S., Ali, S.., Faheem, M., & Farooq, F. (2020). Institutional Performance and Trade-Led Growth Hypothesis: Evidence from Pakistan. *Review of Applied Management & Social Science*, *2*(2), 59-72.

Chaudhry, I. S., Ali, S., Faheem, M., & Farooq, F. (2019). Institutional Performance and Trade- Led Growth Hypothesis: Evidence from Pakistan. *Review of Applied Management & Social Science*, *2*(2), 59-72.

Chenery, H., & Strout, M. (1966). Foreign assistance and economic development, *The American Economic Review*, 66(3), 679-773.

Chirwa, T.G., Odhiambo, N.M. (2016). What Drives Long-Run Economic Growth? Empirical Evidence from South Africa. *Economia Internazionale/International Economics, Camera di Commercio Industria Artigianato Agricoltura di Genova*, *69* (4), 429–456.

Choi, I. (2006). Nonstationary Panels. In: Patterson K, Mills TC (eds) Palgrave handbooks of econometrics 1. Palgrave Macmillan, New York, 11–539.

Chudik, A., & Pesaran, M. H. (2015). Common correlated effects estimation of heterogeneous dynamic panel data models with weakly exogenous regressors. *Journal of Econometrics*, *188*(2), 393-420.

Cieslik, A., & Tarsalewska, M. (2011). External openness and economic growth in developing countries. *Review of Development Economics*, *15*(4), 729-744.

Cole, M. A. (2004). Trade, the pollution haven hypothesis and the environmental Kuznets curve: examining the linkages. Ecological economics, 48(1), 71-81.

Cole, M. A., & Elliott, R. J. (2003). Determining the trade–environment composition effect: the role of capital, labor and environmental regulations. *Journal of Environmental Economics and Management*, *46*(3), 363-383.

Commander, S., & Svejnar, J. (2011). Business environment, exports, ownership, and firm performance. *The Review of Economics and Statistics*, *93*(1), 309-337.

Cooray, A., & Schneider, F. (2018). Does corruption throw sand into or grease the wheels of financial sector development?. *Public Choice*, *177*(1-2), 111-133.

Copeland, B. R., & Taylor, M. S. (1994). North-South trade and the environment. *The Quarterly Journal of Economics*, *109*(3), 755-787.

Dasgupta, S., De-Cian, E., & Verdolini, E. (2016). The political economy of energy innovation. *The Political Economy of Clean Energy Transitions*, 123.

Davis D. R., & Harrigan J. (2011). Good jobs, bad jobs, and trade liberalization. *Journal of International Economics*, 84, 26-36.

De Bruyn, S. M., Bergh, J. C., & Opschoor, J. B. (1998). Economic growth and emissions: reconsidering the empirical basis of environmental Kuznets curves. *Ecological Economics*, *25*(2), 161-175.

De Mello, L. R. (1999). Foreign direct investment-led growth: evidence from time series and panel data. *Oxford economic papers*, *51*(1), 133-151.

De Sherbinin, A., Carr. D., Cassels. S., and Jiang. L. (2007). Population and environment. *Annual Review of Environment and Resources*, 32,345-73.

Debski, J., Jetter, M., Mösle, S., & Stadelmann, D. (2018). Gender and corruption: The neglected role of culture. *European Journal of Political Economy*, *55*, 526-537.

Destek, M. A., & Sarkodie, S. A. (2019). Investigation of environmental Kuznets curve for ecological footprint: the role of energy and financial development. *Science of the Total Environment*, *650*, 2483-2489.

Destek, M. A., & Sinha, A. (2020). Renewable, non-renewable energy consumption, economic growth, trade openness and ecological footprint: Evidence from organization for economic cooperation and development countries. *Journal of Cleaner Production*, *242*, 11185-11198.

Destek, M. A., Ulucak, R., & Dogan, E. (2018). Analyzing the environmental Kuznets curve for the EU countries: the role of ecological footprint. *Environmental Science and Pollution Research*, *25*(29), 29387-29396.

Devarajan, S., Swaroop, V., & Zou, H. F. (1996). The composition of public expenditure and economic growth. *Journal of monetary economics*, *37*(2), 313-344.

Dhamija, N. (2019). Trade Liberalization and Unemployment in India: A State Level Analysis. MPRA Paper No. 95001, https://mpra.ub.uni-muenchen.de/95001/

Diener, E., & Suh, E. (1997). Measuring quality of life: Economic, social, and subjective indicators. *Social indicators research*, *40*(1-2), 189-216.

Dietrich, H., & Moller, J. (2016). Youth unemployment in Europe–business cycle and institutional effects. *International Economics and Economic Policy*, *13*(1), 5-25.

Dietzenbacher, E., and K. Mukhopadhyay. (2007) .An Empirical Examination of the Pollution Haven Hypothesis for India: Towards a Green Leontief Paradox?. *Environmental and Resource Economics*, 36, 427-449.

Dinda, S. (2004). Environmental Kuznets curve hypothesis: a survey. *Ecological Economics*, 49(4), 431-455.

Ditzen, J. (2016). xtdcce: Estimating dynamic common correlated effects in Stata. *SEEC Discussion Papers*, *1601*.

Ditzen, J. (2019). *Estimating long run effects in models with cross-sectional dependence using xtdcce2*. Technical Report 7, CEERP Working Paper.

Dogan, E., & Turkekul, B. (2016). CO_2 emissions, real output, energy consumption, trade, urbanization and financial development: testing the EKC hypothesis for the USA. *Environmental Science and Pollution Research*, *23*(2), 1203-1213.

Dogan, E., Seker, F., & Bulbul, S. (2017). Investigating the impacts of energy consumption, real GDP, tourism and trade on CO2 emissions by accounting for cross-sectional dependence: A panel study of OECD countries. *Current Issues in Tourism*, *20*(16), 1701-1719.

Dogan, E., Taspinar, N., & Gokmenoglu, K. K. (2019). Determinants of ecological footprint in MINT countries. *Energy & Environment*, *30*(6), 1065-1086.

Dogan, E., Ulucak, R., Kocak, E., & Isik, C. (2020). The use of ecological footprint in estimating the Environmental Kuznets Curve hypothesis for BRICST by considering cross-section dependence and heterogeneity. *Science of The Total Environment*, 138063.

Dollar, D. (1992). Outward-oriented developing economies really do grow more rapidly: evidence from 95 LDCs, 1976-1985. *Economic development and cultural change*, *40*(3), 523-544.

Dollar, D., & Kraay, A. (2003). Institutions, trade, and growth. *Journal of monetary economics*, *50*(1), 133-162.

Dutt, P., Mitra, D., & Ranjan, P. (2009). International trade and unemployment: Theory and cross-national evidence. *Journal of International Economics*, *78*(1), 32-44.

Ebaidalla, E. M. (2013). Causality between government expenditure and national income: Evidence from Sudan. *Journal of Economic Cooperation & Development*, *34*(4), 61.

Ebaidalla, E. M. (2016). Determinants of Youth Unemployment in OIC Member States: A Dynamic Panel Data Analysis. *Journal of Economic Cooperation & Development*, *37*(2), 81.

Edmonds E., & Pavcnik N. (2006). International trade and child labor: Cross-country evidence, *Journal of International Economics*, 68, 115-140.

Edwards, S. (1992). Trade orientation, distortions and growth in developing countries. *Journal of development economics*, *39*(1), 31-57.

Edwards, S. (1998). Openness, productivity and growth: What do we really know? The Economic Journal, 108(447), 383–398.

Ehrlich, I., & Kim, J. (2015). Immigration, human capital formation, and endogenous economic growth. *Journal of Human Capital*, *9*(4), 518-563.

Emeka, A., Idenyi, O. S., & Nweze, N. P. (2017). Domestic investment, capital formation and economic growth in NIGERIA. *International Journal of Research in Social Sciences*, *7*(2), 41-65.

Engle, R. F., & Granger, C. W. (1987). Co-integration and error correction: representation estimation, and testing. *Econometrica: journal of the Econometric Society*, 251-276.

Eriș, M. N., & Ulașan, B. (2013). Trade openness and economic growth: Bayesian model averaging estimate of cross-country growth regressions. *Economic Modelling*, *33*, 867-883.

Ertugrul, H. M., Cetin, M., Seker, F., and Dogan, E. (2016). The impact of trade openness on global carbon dioxide emissions: evidence from the top ten emitters among developing countries. *Ecological Indicators*, *67*, 543-555.

Erum, N., & Hussain, S. (2019). Corruption, natural resources and economic growth: Evidence from OIC countries. *Resources Policy*, *63*, 101429.

Ewubare, D. B., & Ogbuagu, A. R. (2015). Capital Accumulation and Economic Growth in Nigeria "Endogeneous Growth Approach. *IOSR Journal of Economics and Finance*, *6*(6), 49-64.

Fan, S. (Ed.). (2008). *Public expenditures, growth, and poverty: Lessons from developing countries* (Vol. 51). Intl Food Policy Res Inst.

Farooq, F., Yusop, Z., Chaudhry, I. S., & Iram, R. (2020). Assessing the impacts of globalization and gender parity on economic growth: empirical evidence from OIC countries. *Environmental Science and Pollution Research*, *27*(7), 6904-6917.

Feenstra, R. C., Inklaar, R., & Timmer, M. P. (2015). The next generation of the Penn World Table. *American economic review*, *105*(10), 3150-82.

Felbermayr, G. J., Larch, M., & Lechthaler, W. (2013). Unemployment in an interdependent world. *American Economic Journal: Economic Policy*, *5*(1), 262-301.

Felbermayr, G., Prat, J., & Schmerer, H. J. (2011). Trade and unemployment: What do the data say?. *European Economic Review*, *55*(6), 741-758.

Feld, L. P. (2017). Public Spending Reduces Unemployment. In *Economic Ideas You Should Forget* (pp. 45-46). Springer, Cham.

Fetahi-Vehapi, M., Sadiku, L., & Petkovski, M. (2015). Empirical analysis of the effects of trade openness on economic growth: an evidence for South East European countries. *Procedia Economics and Finance*, *19*(2015), 17-26.

Findlay, R. (1984). Growth and development in trade models. Handbook of international economics, 1, 185-236.

Fleisher, B., Li, H., & Zhao, M. Q. (2010). Human capital, economic growth, and regional inequality in China. *Journal of development economics*, *92*(2), 215-231.

Fosu, E. O. and Mangus, F. (2006). Bounds Testing Approach to Cointergration: An Examination of Foreign Direct Investment, Trade and Growth Relationship. Journal of American Applied Science, 3(11), 2079–2085.

Frankel, J. A. (2009). Environmental Effects of International Trade. Faculty Research Working Paper Series No. RWP09-006 (Cambridge, MA: Harvard University).

Frankel, J. A., & Romer, D. H. (1999). Does trade cause growth?. *American economic review*, *89*(3), 379-399.

Frankel, J. A., & Rose, A. K. (2005). Is trade good or bad for the environment? Sorting out the causality. *Review of economics and statistics*, *87*(1), 85-91.

Friedman, M. (1968). The Role of Monetary Policy. *American Economic Review*,58, 1-17.

Funke, M., & Strulik, H. (2000). On endogenous growth with physical capital, human capital and product variety. *European Economic Review*, *44*(3), 491-515.

Genius M., Choga, I., Maredza, A. & Mavetera, N. (2013), Fiscal policy and unemployment in South Africa: 1980 – 2010. *Mediterranean Journal of Social Sciences* 4(6), 1-10.

Ghani, G. M. (2011). The Impact of Trade Liberalisation on the Economic Performance of OIC Member Countries. *Journal of Economic Cooperation & Development*, *32*(1), 1-18.

Ghosh, S., & Gregoriou, A. (2008). The composition of government spending and growth: Is current or capital spending better?. *Oxford Economic Papers*, *60*(3), 484-516.

Global Footprint Network (2018) Global footprint network. Obtenido de Global Footprint Network: http://www.footprintnetwork.org online accessed on 10-10-2019

Globerman, S., & Shapiro, D. (2002). Global foreign direct investment flows: The role of governance infrastructure. *World development*, *30*(11), 1899-1919.

Gnangnon, S. K. (2018). Multilateral trade liberalization and economic growth. *Journal of Economic Integration*, *33*(2), 1261-1301.

Gozgor, G. (2014). The impact of trade openness on the unemployment rate in G7 countries. *The Journal of International Trade & Economic Development*, *23*(7), 1018-1037.

Gozgor, G. (2017). Does trade matter for carbon emissions in OECD countries? Evidence from a new trade openness measure. *Environmental Science and Pollution Research*, *24*(36), 27813-27821.

Grossman, G.M., and Krueger, A.B. (1993). *Environmental Impacts of a North American Free Trade Agreement, in Garber. P.M. ed., The Mexico-U.S. Free Trade Agreement,* MIT Press, Cambridge, Massachusetts.

Grossman, G. M., & Helpman, E. (1991). Trade, knowledge spillovers, and growth. *European economic review*, *35*(2-3), 517-526.

Grossman, G. M., & Krueger, A. B. (1991). *Environmental impacts of a North American free trade agreement* (No. w3914). National Bureau of Economic Research.

Grossman, G. M., & Krueger, A. B. (1995). Economic growth and the environment. *The quarterly journal of economics*, *110*(2), 353-377.

Grundler, K., & Potrafke, N. (2019). Corruption and economic growth: New empirical evidence. *European Journal of Political Economy*, *60*, 101810.

Guandong, B. Y. D., & Muturi, W. M. (2016). The relationship between public expenditure and economic growth in South Sudan. *International Journal of Economics, Commerce and Management*, *4*(6), 235-259.

Gur, B. (2015). An Analysis of Unemployment Determinants in BRIC Countries Department of Economics. *International Journal of Business and Social Science International Journal of Business and Social Science*, *6*(1), 192-198.

Gyimah-Brempong, K., & Wilson, M. (2004). Health human capital and economic growth in Sub-Saharan African and OECD countries. *The Quarterly Review of Economics and Finance*, *44*(2), 296-320.

Hadhek, Z. and Mrad, F. (2015) Trade Openness, Institutions and Economic Growth. European Journal of Economics, *Finance and Administrative Sciences* ,75, 96-104.

Harrison, A. (1996). Openness and growth: A time-series, cross-country analysis for developing countries. *Journal of development Economics*, *48*(2), 419-447.

Harrison, A., & Hanson, G. (1999). Who gains from trade reform? Some remaining puzzles1. *Journal of development Economics*, *59*(1), 125-154.

Harzing, A.-W., & Sorge, A. (2003). The relative impact of country of origin and universal contingencies on internationalization strategies and corporate control in multinational enterprises: Worldwide and European perspectives. Organization Studies, 24(2), 187–214.

Hasan, R., Mitra, D., Ranjan, P., & Ahsan, R. N. (2012). Trade liberalization and unemployment: Theory and evidence from India. *Journal of Development Economics*, *97*(2), 269-280.

Hasnul, A.G. (2015). The effects of government expenditure on economic growth: the case of Malaysia. MPRA Paper. Retrieved from: https://mpra.ub.uni-muenchen.de/71254 (25.10.2018).

Hatzigeorgiou, E., Polatidis, H., & Haralambopoulos, D. (2011). CO_2 emissions, GDP and energy intensity: a multivariate cointegration and causality analysis for Greece, 1977–2007. *Applied Energy*, *88*(4), 1377-1385.

Hausmann, R., Hwang, J., & Rodrik, D. (2007). What you export matters. *Journal of economic growth*, *12*(1), 1-25.

He, J. (2006). Pollution haven hypothesis and environmental impacts of foreign direct investment: The case of industrial emission of sulfur dioxide (SO_2) in Chinese provinces. Ecological Economics, 60, 228-245.

He, L., & Li, N. (2019). The threshold effect of longevity: life expectancy and economic growth. *Applied Economics Letters*, *26*(14), 1210-1213.

Heckscher, E. F. (1919). Utrikeshandelns verkan på inkomstfördelningen. Några teoretiska grundlinjer. *Ekonomisk tidskrift*,26, 1-32.

Heid, B., and Larch.M. (2012). Migration, Trade and Unemployment. *Economics*, 6(4), 1-40.

Helpman, E. (2004). The mystery of economic growth, Cambridge, Massachusetts: Harvard University Press.

Helpman, E., & Itskhoki, O. (2007). VLabor Market Rigidities, Trade and Un $ employment. *NBER Working Paper Series*, *11365*.

Helpman, E., & Itskhoki, O. (2010). Labour market rigidities, trade and unemployment. *The Review of Economic Studies*, *77*(3), 1100-1137.

Herrera-Echeverri, H., Haar, J., & Estévez-Bretón, J. B. (2014). Foreign direct investment, institutional quality, economic freedom and entrepreneurship in emerging markets. *Journal of Business Research*, *67*(9), 1921-1932.

Hobday.A.J and McDonald. J. (2014). Environmental issues in Australia. *Annual Review of Environment and Resources*, 39, 1-28.

Hoffman, R., Lee, C. G., Ramasamy. B, and Yeung.M (2005). FDI and pollution: A Granger causality test using panel data. *Journal of International Development*,17, 311–17.

Hosein, R., Singh, T., & Conrad, D. (2018). CSR as a Hartwick Rule Strategy to Mitigate the Impact of the Resource Curse: Lessons for the Educational Sector in Guyana from Trinidad and Tobago and Suriname. *Social and Economic Studies*, *67*(4), 149-277.

Hufbauer, G. C. (1966). Synthetic Materials and the Theory of International Trade. London.

Hye, Q. M. A., & Lau, W. Y. (2015). Trade openness and economic growth: empirical evidence from India. *Journal of Business Economics and Management*, *16*(1), 188-205.

Ibrahim, M. (2018). Interactive effects of human capital in finance–economic growth nexus in Sub-Saharan Africa. *Journal of Economic Studies*.

Iqbal, Z., & Zahid, G. M. (1998). Macroeconomic determinants of economic growth in Pakistan. *The Pakistan Development Review*, 125-148.

Ilyas, M., & Khan, M. A. (2019). Democracy versus Dictatorship: An Empirical Investigation of Determinants of Unemployment. *Pakistan Business Review*, *20*(3), 525-534.

Im, K. S., Pesaran, M. H., & Shin, Y. (2003). Testing for unit roots in heterogeneous panels. *Journal of econometrics*, *115* (1), 53-74.

Imbs, J., Jondeau, E., & Pelgrin, F. (2011). Sectoral Phillips curves and the aggregate Phillips curve. *Journal of Monetary Economics*, *58*(4), 328-344.

International Monetary Fund (2007). World Economic Outlook: Globalization and Inequality.

Irpan, H. M., Saad, R. M., Nor, A. H. S. M., Noor, A. H. M., & Ibrahim, N. (2016). Impact of foreign direct investment on the unemployment rate in Malaysia. In *Journal of Physics: Conference Series* (Vol. 710, No. 1, p. 012028).

Ismaila, M., & Imoughele, L. E. (2015). Macroeconomic determinants of economic growth in Nigeria: A co-integration approach. *International Journal of Academic Research in Economics and Management Sciences*, *4*(1), 34-46.

Javorcik, B. S. (2004). Does foreign direct investment increase the productivity of domestic firms? In search of spillovers through backward linkages. *The American Economic Review*, 94(3), 605-627.

Jebli, M. B., & Youssef, S. B. (2015). Economic growth, combustible renewables and waste consumption, and CO_2 emissions in North Africa. *Environmental Science and Pollution Research*, *22*(20), 16022-16030.

Jia, J., Deng, H., Duan, J., & Zhao, J. (2009). Analysis of the major drivers of the ecological footprint using the STIRPAT model and the PLS method—A case study in Henan Province, China. *Ecological Economics*, *68*(11), 2818-2824.

Jianfang, Y., Liutang, G., & Qinghua, Z. (2006). Human Capital Formation land its Effects on Economic Growth. *Management World*, *5*, 002.

Jobert, T., Karanfil, F., & Tykhonenko, A. (2019). Degree of Stringency Matters: Revisiting the Pollution Haven Hypothesis Based on Heterogeneous Panels and Aggregate Data. *Macroeconomic Dynamics*, *23*(7), 2675-2697.

Kabundi, A., Schaling, E., & Some, M. (2019). Estimating a Phillips curve for South Africa: A bounded random-walk approach. *International Journal of Central Banking*, *15*(2), 75-100.

Kalaitzidakis, P., Mamuneas, T. P., Savvides, A. and Stengos, T. (2001). Measures of Human Capital and Nonlinearities in Economic Growth. *Journal of Economic Growth*, 6(3), 229- 229.

Kaliappan, S. R., Khamis, K. M., & Ismail, N. W. (2015). Determinants of Services FDI Inflows in ASEAN Countries. *International Journal of Economics & Management*, *9*(1).45-69.

Kamal, M. A., Shad, S., Khan, S., Ullah, A., & Khan, K. (2020). Pakistan's trade performance and potential with ASEAN region: Recent trends and future opportunities. *Journal of Public Affairs*, e2325. https://doi.org/10.1002/pa.2325.

Kaminski, J. J. (2019). The OIC and the Paris 2015 Climate Change Agreement: Islam and the Environment. In *Global Governance and Muslim Organizations* (pp. 171-195). Palgrave Macmillan, Cham.

Kandil, M. (2009). Determinants of institutional quality and their impact on economic growth in the MENA region. *International Journal of Development Issues*, *8*(2), 134-167.

Kao, C. (1999). Spurious Regression and Residual-Based tests for Cointegration in Panel Data, *Journal of Econometrics*, 90, 1-44.

Kapetanios, G., Pesaran, M. H., & Yamagata, T. (2011). Panels with non-stationary multifactor error structures. *Journal of Econometrics*, *160* (2), 326-348.

Kaya, G., Kayalica, M. O., Kumas, M., & Ulengin, B. (2017). The role of foreign direct investment and trade on carbon emissions in Turkey. *Environmental Economics*, *8*(1), 8-17.

Kayadibi, S. (2015). Economic Cooperation Among OIC Countries: A Case Study of Turkey and Malaysia. *Journal of Emerging Economies & Islamic Research*, *3*(2), 28-45.

Kenny, C. and Williams, D. (2001). What Do We Know About Economic Growth? Or, Why Don't We Know Very Much?', *World Development*, 29(1), 1-22.

Kim, D. H. (2011). Trade, growth and income. *The Journal of International Trade & Economic Development*, *20*(5), 677-709.

Kim, D. H., & Lin, S. C. (2009). Trade and growth at different stages of economic development. *Journal of Development Studies*, *45*(8), 1211-1224.

Kimaro, E. L., Keong, C. C., & Sea, L. L. (2017). Government expenditure, efficiency and economic growth: a panel analysis of Sub Saharan African low income countries. *African Journal of Economic Review*, *5*(2), 34-54.

Kohpaiboon, A. (2003). Foreign trade regimes and the FDI-growth nexus: A case study of Thailand. The Journal of Developing Studies, 40(2), 55–69.

Konac, H. (2004). Environmental issues and sustainable development in OIC countries. *Journal of Economic Cooperation*, *25*(4), 1-60.

Kozul-Wright, R., & Fortunato, P. (2012). International trade and carbon emissions. *The European Journal of Development Research*, *24*(4), 509-529.

Krishna P., & Mitra D., & Chinoy S., (2001). Trade liberalization and labor demand elasticites: evidence from Turkey. Journal Of International Economics, 55, 391-409.

Krueger, A. O. (1978). *Foreign trade regimes and economic development: Liberalization attempts and consequences*. Cambridge, MA: Ballinger.

Krueger, A. O., Lary, H. B., Monson, T., & Akrasanee, N. (1981). *Trade and Employment in Developing Countries, Volume 1: Individual Studies* (Vol. 1). University of Chicago Press.

Krugman, P. R. and Obstfeld, M. (2008). International economics: theory and policy, Boston, MA: Pearson.

Kuznets, S. (1955). Economic growth and income inequality. *The American economic review*, *45*(1), 1-28.

Law, S. H., Tan, H. B., & Azman-Saini, W. N. W. (2014). Financial development and income inequality at different levels of institutional quality. *Emerging Markets Finance and Trade*, *50*(sup1), 21-33.

Leamer, E. E., & Stern, R. M. (2017). *Quantitative international economics*. Routledge.

Lee, C. and Wilhelm, W. (2010). On integrating theories of international economics in the strategic planning of global supply chains and facility location', International Journal of Production Economics, 124(1), 225-240.

Lee, E., & Vivarelli, M. (2004). Understanding Globalization, Employment and Poverty Reduction (Eds). New York: Palgrave Macmillan.

Lee, J.-W. (1993). International trade, distortions, and long-run economic growth', Staff Papers-International Monetary Fund, 299-328.

Lerner, A. P. (1952). Factor prices and international trade. *Economica*, *19*(73), 1-15.

Levin, A., Lin, C. F., & Chu, C. S. J. (2002). Unit root tests in panel data: asymptotic and finite-sample properties. *Journal of econometrics*, *108* (1), 1-24.

Li, K. X., Jin, M., Qi, G., Shi, W., & Ng, A. K. (2018). Logistics as a driving force for development under the belt and road initiative–the Chinese model for developing countries. *Transport Reviews*, *38*(4), 457-478.

Liargovas, P. G., & Skandalis, K. S. (2011). Foreign direct investment and trade openness: The case of developing economies. Social Indicators Research, 106, 323–331.

Lim, K. Y. (2019). Modelling the dynamics of corruption and unemployment with heterogeneous labour. *Economic Modelling*, *79*, 98-117.

Lin, F. (2017). Trade openness and air pollution: City-level empirical evidence from China. *China Economic Review*, *45*, 78-88.

Lin, M. Y., & Wang, J. S. (2008). Capital outflow and unemployment: evidence from panel data. *Applied Economics Letters*, *15*(14), 1135-1139.

Lindmark, M. (2002). An EKC-pattern in historical perspective: carbon dioxide emissions, technology, fuel prices and growth in Sweden 1870–1997. *Ecological economics*, *42*(1-2), 333-347.

Ling, C. H., Ahmed, K., Muhamad, R. B. & Shahbaz, M. (2015). Decomposing the trade environment nexus for Malaysia: what do the technique, scale, composition, and comparative advantage effect indicate? Environmental Science and Pollution Research, 22(24), 20131- 20142.

Little, I., Scitovsky, T., and Scott, M. (1975). Industry and trade in some developing countries: A comparative study. *Science and Society*, 39(4),493-497.

Liu, L. (2012). FDI and Employment by Industry: A Co-Integration Study. *Modern Economy*, *3*(01), 16-30.

Lopez, R. & Islam, A. (2008) *Trade and the Environment*. University of Maryland at College Park Working Paper.

Lopez, R., Galinato, G. and Islam, A. (2007) *Government Expenditures and Air Pollution.* University of Maryland at College Park Working Paper.

Lucas, R. E. (1988). On the mechanics of economic development. *Journal of monetary economics*, *22*(1), 3-42.

Lucas, R. E. (1993). Making a miracle. *Econometrica: Journal of the Econometric Society*, 251-272.

Lupu, D., Petrisor, M. B., Bercu, A., & Tofan, M. (2018). The impact of public expenditures on economic growth: A case study of Central and Eastern European countries. *Emerging Markets Finance and Trade*, *54*(3), 552-570.

Madanizadeh, S. A., & Pilvar, H. (2017). The Impact of Trade Openness on Labor Force Participation Rate. *Sharif University of Technology,Iran.*

Madanizadeh, S. A., & Pilvar, H. (2019). The impact of trade openness on labour force participation rate. *Applied Economics*, *51*(24), 2654-2668.

Maddala, G. S., & Wu, S. (1999). A comparative study of unit root tests with panel data and a new simple test. *Oxford Bulletin of Economics and statistics*, *61*(S1), 631-652.

Mahalik, M. K., Mallick, H., Padhan, H., & Sahoo, B. (2018). Is skewed income distribution good for environmental quality? A comparative analysis among selected BRICS countries. *Environmental Science and Pollution Research*, *25*(23), 23170-23194.

Mahmood, H., Maalel, N., & Zarrad, O. (2019). Trade openness and CO2 emissions: Evidence from Tunisia. *Sustainability*, *11*(12), 3295-3310.

Malthus, T. R. (1826). An essay on the principle of population: The sixth edition (1826) with variant readings from the second edition (1803) (The Works of Thomas Robert Malthus).

Managi, S., Hibiki, A., and Tsurumi, T. (2009). Does trade openness improve environmental quality?. *Journal of environmental economics and management*, *58*(3), 346-363.

Mandel, C., & Liebens, P. (2019). The Relationship between GDP and Unemployment Rate in the US. *International Journal of Business and Social Science*, *10*(4), 20-32.

Mankiw, N. G., Romer, D. and Weil, D. N. (1992). A Contribution to the Empirics of Economic Growth. *The Quarterly Journal of Economics*, 107(2), 407-437.

Marelli, E., Choudhry, M. T., & Signorelli, M. (2013). Youth and total unemployment rate: The impact of policies and institutions. *Rivista internazionale di scienze sociali*, *121*(1), 63-86.

Matsumae, T., & Hasumi, R. (2016). *Impacts of Government Spending on Unemployment: Evidence from a Medium-scale DSGE Model* (No. 329). ESRI Discussion Paper Series.

Mckinnon, R. I. (1973). Money and Capital in Economic Development. Brooking Institution, Washington, D.C.

Melitz, M. J. (2003). The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity, Econometrica, 71(6), 1695-1725.

Mendali, G. (2019). The Impact of Trade Openness on Economic Growth in SAARC Countries: A Panel Data Analysis. *Journal of International Economics (0976-0792)*, *10*(1), 3-10.

Meo, M. S., Sabir, S. A., Arain, H., & Nazar, R. (2020). Water resources and tourism development in South Asia: an application of dynamic common correlated effect (DCCE) model. *Environmental Science and Pollution Research*, 1-10.

Meschi, E., & Taymaz, E. (2017). Trade Openness, Technology Adoption and the Demand for Skills: Evidence from Turkish Microdata. *Retrieved on 13th November*.

Mirjalili, S. H., & Motaghian Fard, M. (2019). Climate Change and Crop Yields in Iran and Other OIC Countries. *International Journal of Business and Development Studies*, *11*(1), 99-110.

Mitchell, K., & Pearce, D. K. (2010). Do Wall Street economists believe in Okun's law and the Taylor rule?. *Journal of Economics and Finance*, *34*(2), 196-217.

Mitra, D., and P. Ranjan. (2010). Offshoring and Unemployment: The Role of Search Frictions Labor Mobility. *Journal of International Economics* ,81 (2), 219-229.

Modeste, N. C. (2016). Trade Liberalization and Economic Growth in Guyana: An Empirical Assessment using DOLS and Error Correcting Methodologies. *The Review of Black Political Economy*, *43*(1), 57-67.

Monacelli, T., & Perotti, R. (2010). Fiscal policy, the real exchange rate and traded goods. *The Economic Journal*, *120*(544), 437-461.

Moore, M. P., & Ranjan, P. (2005). Globalisation vs skill-biased technological change: Implications for unemployment and wage inequality. *The Economic Journal*, *115*(503), 391-422.

Mrabet, Z., & Alsamara, M. (2017). Testing the Kuznets Curve hypothesis for Qatar: A comparison between carbon dioxide and ecological footprint. *Renewable and Sustainable Energy Reviews*, *70*, 1366-1375.

Muhammad,F., & Jian, Z. (2016). The Relationship Between Trade Openness and Economic.

Mukhopadhyay, K., & Chakraborty, D. (2005). Is liberalization of trade good for the environment? Evidence from India. *Asia Pacific Development Journal*, *12*(1), 109-136.

Musila, J. W., & Yiheyis, Z. (2015). The impact of trade openness on growth: The case of Kenya. *Journal of Policy Modeling*, *37*, 342–354.

Mutascu, M. (2018). A time-frequency analysis of trade openness and CO2 emissions in France. *Energy policy*, *115*, 443-455.

Myint, H. (1977). Adam Smith's Theory of International Trade in the Perspective of Economic Development. *Economica*, 44(175), 231-248.

Nath, H. K. (2009). Trade, foreign direct investment, and growth: Evidence from transition economies. *Comparative Economic Studies*, *51*(1), 20-50.

Ndjié, A A., Ondoa, H.A, & Tabi,H.N. (2019). Governance and youth unemployment in Africa. *Labor History*, *60*(6), 869-882.

Nowbutsing, B. M. (2014). The impact of openness on economic growth: Case of Indian Ocean rim countries. *Journal of economics and development studies*, *2*(2), 407-427.

Nwakanma P. (2012), Potential Real GDP relationship and Growth Process of Nigerian Economy: An Empirical Re-evaluation of Okun;s Law, *European Scientific Journal*, 25 (1), 1-10.

Nwosa, P. I. (2014). Government expenditure, unemployment and poverty rates in Nigeria. *Journal of Research in National Development*, *12*(1), 77-84.

Ogundari, K., & Awokuse, T. (2018). Human capital contribution to economic growth in Sub-Saharan Africa: does health status matter more than education?. *Economic Analysis and Policy*, *58*, 131-140.

Ohlin, B. (1933). Interregional and International Trade. Cambridge, MA: Harvard University Press.

OIC Labor Market Report. (2018). *Statistical, economic and social research and training centre for Islamic countries (SESRIC).*

Onifade, S. T., Ay, A., Asongu, S., & Bekun, F. V. (2020). Revisiting the trade and unemployment nexus: Empirical evidence from the Nigerian economy. *Journal of Public Affairs*, 20(3), 20-35. https://doi.org/10.1002/pa.2053.

Onuoha, F. C., & Oyeyemi, A. (2019). Impact of Disagregated Public Expenditure on Unemployment Rate of Selected African Countries: A Panel Dynamic Analysis. *Journal of Economics, Management and Trade*, 1-14.

Opoku, E. E. O., Ibrahim, M., & Sare, Y. A. (2019). Foreign direct investment, sectoral effects and economic growth in Africa. *International Economic Journal*, *33*(3), 473-492.

Ozcan, B., & Ozturk, I. (2016). A new approach to energy consumption per capita stationarity: Evidence from OECD countries. *Renewable and Sustainable Energy Reviews*, *65*, 332-344.

Ozcan, B., & Ozturk, I. (2019). Renewable energy consumption-economic growth nexus in emerging countries: A bootstrap panel causality test. *Renewable and Sustainable Energy Reviews*, *104*, 30-37.

Ozturk, I., Al-Mulali, U., & Saboori, B. (2016). Investigating the environmental Kuznets curve hypothesis: the role of tourism and ecological footprint. *Environmental Science and Pollution Research*, *23*(2), 1916-1928.

Pal, L. A., & Tok, M. E. (2019). Global Governance and Muslim Organizations: Introduction. In *Global Governance and Muslim Organizations* (pp. 1-43). Palgrave Macmillan, Cham.

Panayotou, T. (1993). Empirical tests and policy analysis of environmental degradation at different stages of economic development (No. 992927783402676). International Labour Organization.

Parikh, A. (2006). Relationship between trade openness, growth and balance of payments in developing countries: An econometric study. *International Trade Journal*, 20, 429-467.

Pata, U. K. (2019). Environmental Kuznets curve and trade openness in Turkey: bootstrap ARDL approach with a structural break. *Environmental Science and Pollution Research*, *26*(20), 20264-20276.

Pedroni P. (1999). Critical Values for Cointegration Tests in Heterogeneous Panels with Multiple Regressors, *Oxford Bulletin of Economics and Statistics*, 61, 653-670.

Pedroni, P. (2004). Panel Cointegration: asymptotic and finite sample properties of pooled time series tests with an application to PPP hypothesis: new results. *Econometric Theory*, 20(3), 597-627.

Pegkas, P. (2015). The impact of FDI on economic growth in Eurozone countries. *The Journal of Economic Asymmetries*, *12*(2), 124-132.

Persyn, D., & Westerlund, J. (2008). Error-correction–based cointegration tests for panel data. *The STATA journal*, *8*(2), 232-241.

Pesaran, H., Smith, R., & Im, K. S. (1996). Dynamic linear models for heterogenous panels. In *the econometrics of panel data*. Springer, Dordrecht, 145-195.

Pesaran, M. H. (2004). General diagnostic tests for cross section dependence in panels. CESifo Working Papers No.1233, 255-60.

Pesaran, M. H. (2007). A simple panel unit root test in the presence of cross-section dependence. *Journal of applied econometrics*, *22*(2), 265-312.

Pesaran, M. H., Ullah, A., & Yamagata, T. (2008). A bias-adjusted LM test of error cross-section independence. *The Econometrics Journal*, *11*(1), 105-127.

Pesaran, M.H. (2006). Estimation and inference in large heterogenous panels with multifactor error structure. *Econometrica*, 74(4), 967-1012.

Pethig, R. (1976). Pollution, welfare, and environmental policy in the theory of comparative advantage. *Journal of environmental economics and management*, *2*(3), 160-169.

Phillips, A. W. (1958). The Relation Between Unemployment and the Rate of Change of Money Wage Rates in the United Kingdom, 1861–1957. *Economica, 25*(100), 283-299.

Piabuo, S. M., & Tieguhong, J. C. (2017). Health expenditure and economic growth-a review of the literature and an analysis between the economic community for central African states (CEMAC) and selected African countries. *Health economics review*, *7*(1), 23-40.

Pierce, J. R., & Schott, P. K. (2016). The surprisingly swift decline of US manufacturing employment. *American Economic Review*, *106*(7), 1632-62.

Polat, A., Shahbaz, M., Rehman, I. U., & Satti, S. L. (2015). Revisiting linkages between financial development, trade openness and economic growth in South Africa: Fresh evidence from combined cointegration test. *Quality and Quantity, 49,* 785–803.

Prasanna, V. S., and Gopakumar, K. (2007). Inflation and Economic Growth in India- An Empirical Analysis. *International Journal of Sustainable Development*, 15(2), 4-15.

Prebisch, R. (1962). The economic development of Latin America and its principal problems. *Economic Bulletin for Latin America*, 3(1),1-22.

Prieur, F. (2009). The environmental Kuznets curve in a world of irreversibility. *Economic Theory*, *40*(1), 57-90.

Psacharopoulos, G. (1994). Returns to investment in education: A global update. *World development*, *22*(9), 1325-1343.

Qi, X., Han, Y., & Kou, P. (2020). Population urbanization, trade openness and carbon emissions: an empirical analysis based on China. *Air Quality, Atmosphere & Health*, 1-10.

Qureshi, M. A., Qureshi, J. A., Ahmed, A., Qaiser, S., Ali, R., & Sharif, A. (2020). The dynamic relationship between technology innovation and human development in technologically advanced countries: Fresh insights from Quantiles-on-Quantile Approach. *Social Indicators Research: An International and Interdisciplinary Journal for Quality-of-Life Measurement*, *152*(2), 555-580.

Raghutla, C. (2020). The effect of trade openness on economic growth: Some empirical evidence from emerging market economies. *Journal of Public Affairs*, e2081. https://doi.org/10.1002/pa.2081.

Ranjbar, O., & Elmi, Z. M. (2010). Accelerating and Growth Effects of Trade Openness across OIC Countries. *Journal of Economic Cooperation & Development*, *31*(2), 49-64.

Raymond, L. (2004). Economic growth as environmental policy? Reconsidering the Environmental Kuznets Curve. *Journal of Public Policy*, 327-348

.

Raza, S. A., Sharif, A., Wong, W. K., & Karim, M. Z. A. (2017). Tourism development and environmental degradation in the United States: Evidence from wavelet-based analysis. *Current Issues in Tourism, 20*(16), 1768-1790.

Repkine, A., & Min, D. (2020). Foreign-Funded Enterprises and Pollution Halo Hypothesis: A Spatial Econometric Analysis of Thirty Chinese Regions. *Sustainability, 12*(12),1-24.

Revenga, A. (1997). Employment and wage effects of trade liberalization: the case of Mexican manufacturing. *Journal of labor Economics, 15*(3), 20-43.

Ricardo, D. (1817). Principles of Political Economy and Taxation, 3rd ed. London: John Murray.

Richard, T. B., Ching-Fan, C., & Margie, A. T. (1996). Analyzing Inflation by the Fractionally Integrated ARIMA-GAGCH Model for the Period 1960-1992. *Journal of Applied Econometrics*. 11, 23-40.

Rizvi, S. Z. A., & Nishat, M. (2009). The impact of foreign direct investment on employment opportunities: Panel data analysis: Empirical evidence from Pakistan, India and China. *The Pakistan Development Review*, 841-851.

Roberts, T. (2012). Are Macro-Level Relationships between Demography, Economy, and Environmental Impact Significant at Smaller Scales of Analysis? Identifying County-Level Age-Specific Drivers of CO2 Emissions in the US Using Age-Structure and Relative Cohort Size. In *Population Association of America Annual Meeting, San Francisco, available at: www. paa2012. princeton. edu/papers/121274*.

Romer, D. (1996). Advanced Macroeconemics. USA: Mc Graw-Hill.

Romer, P. M. (1986). Increasing returns and long-run growth. *Journal of political economy*, *94*(5), 1002-1037.

Saba, I., & Abbas, K. (2016). Human Capital, Trade and Economic Growth: A Comparative Study of OIC Countries. *International Journal of Economics and Empirical Research*, *4*(7), 348-354.

Sachs, J. D., & Warner, A. M. (1995). *Natural resource abundance and economic growth* (No. w5398). National Bureau of Economic Research.

Sahu, S. K., & Kamboj, S. (2019). Decomposition Analysis of GHG Emissions In Emerging Economies. *Journal of Economic Development*, *44*(3).

Sakyi, D., Villaverde, J., & Maza, A. (2015). Trade openness, income levels, and economic growth: The case of developing countries, 1970-2009. *The Journal of International Trade & Economic Development*, *24*(6), 860-882.

Salahodjaev, R. (2015). Democracy and economic growth: The role of intelligence in cross-country regressions. *Intelligence*, *50*, 228-234.

Saleem, N., Rahman, S.U., and Jun, Z. (2019). The Impact of Human Capital and Biocapacity on Environment: Environmental Quality Measure through Ecological Footprint and Greenhouse Gases. *Journal of Pollution Effects & Control.*7(2), 1-13.

Salman, A. K. (2012). Testing the causal nexus between output and unemployment: Swedish data. *International Business Research*, *5*(10), 29-40.

Salman, M., Long, X., Dauda, L., & Mensah, C. N. (2019). The impact of institutional quality on economic growth and carbon emissions: Evidence from Indonesia, South Korea and Thailand. *Journal of Cleaner Production*, *241*, 118331.

Samimi,P., Lim,G.C and Buang, A.Z. (2013). Globalization and its challenges for OIC countries. *Australian Journal of Basic and Applied Sciences*, 7(1), 237-245.

Samir, K. C., & Lutz, W. (2017). The human core of the shared socioeconomic pathways: Population scenarios by age, sex and level of education for all countries to 2100. *Global Environmental Change*, *42*, 181-192.

Samira, R. Khalil. S. (2015). The Effect of Government Expenditure on Unemployment Rate for Iran. *International Journal of review in life science*, *5*(7), 109-116.

Samuelson, P. A. (1948). International trade and the equalisation of factor prices. *The Economic Journal*, *58*(230), 163-184.

Saqib, N., Masnoon, M., & Rafique, N. (2013). Impact of foreign direct investment on economic growth of Pakistan. *Advances in Management & Applied Economics*, *3*(1), 35-45.

Saraireh, S. (2020). The Impact of Government Expenditures on Unemployment: A Case Study of Jordan. *Asian Journal of Economic Modelling*, *8*(3), 189-203.

Sarkodie, S. A. (2018). The invisible hand and EKC hypothesis: what are the drivers of environmental degradation and pollution in Africa?. *Environmental Science and Pollution Research*, *25*(22), 21993-22022.

Sarkodie, S. A., & Strezov, V. (2019). A review on environmental Kuznets curve hypothesis using bibliometric and meta-analysis. *Science of the total environment*, *649*, 128-145.

Schmerer, H. J. (2014). Foreign direct investment and search unemployment: Theory and evidence. *International Review of Economics & Finance*, *30*, 41-56.

SESRIC (2018a). SWOT Outlook: Prospects and Challenges of OIC Member Countries. *The Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC)*, Ankara.

SESRIC (2018b). OIC Labour Market Strategy 2025. *The Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC)*, Ankara.

SESRIC (2019a). OIC Economic Outlook. *Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC),* Ankara.

SESRIC (2019b). OIC Environment Report. *Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC),* Ankara.

SESRIC (2019c). OIC Labor Market Report. *The Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC),* Ankara.

Seth, A., John, M. A., & Dalhatu, A. Y. (2018). The Impact of Unemployment on Economic Growth in Nigeria: An Application of Autoregressive Distributed Lag (ARDL) Bound Testing. *Sumerianz Journal of Business Management and Marketing*, *1*(2), 37-46.

Shafik, N. & Bandyopadhyay, S. (1992). Economic growth and environmental quality: timeseries and cross-country evidence (Vol. 904). World Bank Publications.

Shahbaz, M. (2012). Does trade openness affect long run growth? Cointegration, causality and forecast error variance decomposition tests for Pakistan. *Economic Modelling*, *29*(6), 2325-2339.

Shahbaz, M., Mutascu, M., & Azim, P. (2013). Environmental Kuznets curve in Romania and the role of energy consumption. *Renewable and Sustainable Energy Reviews*, *18*, 165-173.

Shahbaz, M., Nasreen, S., Abbas, F., & Anis, O. (2015). Does foreign direct investment impede environmental quality in high-, middle-, and low-income countries?. *Energy Economics*, *51*, 275-287.

Shahbaz, M., Zakaria, M., Shahzad, S. J. H., & Mahalik, M. K. (2018). The energy consumption and economic growth nexus in top ten energy-consuming countries: Fresh evidence from using the quantile-on-quantile approach. *Energy Economics, 71*, 282-301.

Shahbaz, S. J. H., Kumar, R. R., Zakaria, M. & Hurr, M. (2017). Carbon emission, energy consumption, trade openness and financial development in Pakistan: A revisit. Renewable and Sustainable Energy Reviews, 70, 185-192.

Shahzad, F., Shahzad, U., Fareed, Z., Iqbal, N., Hashmi, S. H., & Ahmad, F. (2020). Asymmetric nexus between temperature and COVID-19 in the top ten affected provinces of China: A current application of quantile-on-quantile approach. *Science of The Total Environment*, 736,1-12. https://doi.org/10.1016/j.scitotenv.2020.139115.

Shao, Q., Wang, X., Zhou, Q., & Balogh, L. (2019). Pollution haven hypothesis revisited: A comparison of the BRICS and MINT countries based on VECM approach. *Journal of Cleaner Production*, *227*, 724-738.

Sharif, A., & Raza, S. A. (2016). Dynamic relationship between urbanization, energy consumption and environmental degradation in Pakistan: Evidence from structure break testing. *Journal of Management Sciences*, *3*(1), 1-21.

Sharif, A., Afshan, S., & Qureshi, M. A. (2019). Idolization and ramification between globalization and ecological footprints: evidence from quantile-on-quantile approach. *Environmental Science and Pollution Research*, *26*(11), 11191-11211.

Siddiqui, A., & Rehman, A. U. (2017). The human capital and economic growth nexus: in East and South Asia. *Applied Economics*, *49*(28), 2697-2710.

Sim, N., & Zhou, H. (2015). Oil prices, US stock return, and the dependence between their quantiles. *Journal of Banking & Finance*, *55*, 1-8.

Singh, B. P., & Pradhan, K. C. (2020). Institutional quality and economic performance in South Asia. *Journal of Public Affairs*, e2401. https://doi.org/10.1002/pa.2401.

Sinha, A., Shahbaz, M., & Balsalobre, D. (2018). N-shaped Environmental Kuznets Curve: A Note on Validation and Falsification. MPRA Paper No. 99313.

Sjöholm, F., Lipsey, R. E., & Sun, J. (2010). Foreign Ownership and Employment Growth in Indonesian Manufacturing. *IFN Working Paper No. 831*.

Smarzynska, Beata K., and Shang-Jin Wei. (2001). Pollution Havens and Foreign Direct Investment: Dirty Secret or *popular myth?*. The World Bank.

Smith, A. (1776). An Inquiry into the Nature and Causes of the Wealth of Nations, Oxford: Oxford University Press.

Solow, R. M. (1956). A contribution to the theory of economic growth. *The Quarterly Journal of Economics*, 70(1), 65-94.

Song, M. L., Cao, S. P., & Wang, S. H. (2019). The impact of knowledge trade on sustainable development and environment-biased technical progress *Technological Forecasting and Social Change*, *144*, 512-523.

Sriyana, J., & Afandi, A. (2020). Asymmetric Effects of Trade Openness on Economic Growth in Selected ASEAN Countries. E&M Economics and Management, 23(2), 66–82. https://doi.org/10.15240/tul/001/2020-2-005.

Sun, W. Q., Cai, J. J., Mao, H. J., & Guan, D. J. (2011). Change in carbon dioxide (CO2) emissions from energy use in China's iron and steel industry. *Journal of Iron and Steel Research, International*, *18*(6), 31-36.

Swamy, P. A. (1970). Efficient inference in a random coefficient regression model. *Econometrica: Journal of the Econometric Society*, 311-323.

Swan, T. W. (1956). Economic growth and capital accumulation. *Economic Record*, 32(2), 334- 361.

Tagkalakis, A. O. (2013). The unemployment effects of fiscal policy: recent evidence from Greece. *IZA Journal of European Labor Studies*, *2*(1), 11-20.

Talukdar, D., and Meisner.C (2001). Does the private sector help or hurt the environment? Evidence from carbon dioxide pollution in developing countries. *World Development*, 29, 827–40.

Tatoglu Y., (2011), The long and short run effects between unemployment and economic growth in Europe, Doðuþ Üniversitesi Dergisi, 12 (1), 20-31.

Tiffen, M., Mortimore M. and Gichuki F., (1994): Population growth and environmental recovery: policy lessons from Kenya. Gatekeeper Series No 45. London: International Institute for Environment and Development.

Torras, M., & Boyce, J. K. (1998). Income, inequality, and pollution: a reassessment of the environmental Kuznets curve. *Ecological economics*, *25*(2), 147-160.

Tsai, P. L. (1999). Explaining Taiwan's Economic Miracle: Are the Revisionists Right?. *Agenda: A Journal of Policy Analysis and Reform*, 69-82.

Tsurumi, T., & Managi, S. (2014). The effect of trade openness on deforestation: empirical analysis for 142 countries. *Environmental Economics and Policy Studies*, *16*(4), 305-324.

Turner, B. L., & Ali, A. S. (1996). Induced intensification: Agricultural change in Bangladesh with implications for Malthus and Boserup. *Proceedings of the National Academy of Sciences*, *93*(25), 14984-14991.

Uddin, G. A., Salahuddin, M., Alam, K., & Gow, J. (2017). Ecological footprint and real income: panel data evidence from the 27 highest emitting countries. *Ecological Indicators*, *77*, 166-175.

Udeagha, M. C., & Ngepah, N. (2020). The asymmetric effect of trade openness on economic growth in South Africa: a nonlinear ARDL approach. *Economic Change and Restructuring*, https://doi.org/10.1007/s10644-020-09285-6.

Ulaşan, B. (2015). Trade openness and economic growth: Panel evidence. *Applied Economics Letters*, *22*, 163-167.

Umaru, A., Donga, M., & Musa, S. (2013). An empirical investigation into the effect of unemployment and inflation on economic growth in Nigeria. *Interdisciplinary Journal of Research in business*, *2*(12), 01-14.

Umut, U. (2015). The unemployment effects of Fiscal Policy in Netherland. *The Journal of faculty of economics and administrative sciences*, *20*(1), 143-153.

UNCTAD, (2008). World Investment Report. United Nations Publication, New York, NY, and Geneva, Switzerland.

Vamvakidis, A. (1999). Regional trade agreements or broad liberalization: which path leads to faster growth?. *IMF Staff papers*, *46*(1), 42-68.

Vermeulen, J. C. (2017). Inflation and unemployment in South Africa: Is the Phillips curve still dead?. *Southern African Business Review*, *21*(1), 20-54.

Vernon, R. (1966). International Investment and International Trade in the Product Cycle. *Quarterly Journal of Economics,* 80, 190-207.

Vernon, R. (1979). The Product Cycle Hypothesis in a New International Environment. *Oxford Bulletin of Economics and Statistics* 41 (4): 255-267.

Vlastou, I. (2010). Forcing Africa to open up to trade: Is it worth it? *The Journal of Developing Areas*, *44*, 25–39.

Wang, D. T., Gu, F. F., David, K. T., & Yim, C. K. B. (2013). When does FDI matter? The roles of local institutions and ethnic origins of FDI. *International Business Review*, *22*(2), 450-465.

Wang, J. Y., & Blomström, M. (1992). Foreign investment and technology transfer: A simple model. *European economic review*, *36*(1), 137-155.

Wang, Y., & Zhao, L. (2015). Saving good jobs from global competition by rewarding quality and efforts. *Journal of international Economics*, *96*(2), 426-434.

Wang, Z., Asghar, M. M., Zaidi, S. A. H., & Wang, B. (2019). Dynamic linkages among CO_2 emissions, health expenditures, and economic growth: empirical evidence from Pakistan. *Environmental Science and Pollution Research*, *26*(15), 15285-15299.

Wang, Z., Zhang, B., & Wang, B. (2018). The moderating role of corruption between economic growth and CO_2 emissions: Evidence from BRICS economics *Energy*, *148*, 506-513.

Westerlund, J. (2007). Testing for error correction in panel data. *Oxford Bulletin of Economics and statistics*, *69*(6), 709-748.

Widia, E., Ridwan, E., & Muharja, F. (2019). Can Foreign Direct Investment (FDI) Reduce Unemployment in Home Countries? Analysis For Asean 5. In *The International Conference on ASEAN 2019* (pp. 283-291). Sciendo.

Winters, L. A., McCulloch, N., & McKay, A. (2004). Trade liberalization and poverty: the evidence so far. *Journal of economic literature*, *42*(1), 72-115.

World Development Report (2019), "The changing nature of work", available at: https://www.worldbank.org/en/publication/ wdr2019 (accessed 11 September 2020).

World Resources Institute. (2018). *World Resources: People and ecosystems: the fraying web of life*. World Resources Institute. https://www.wri.org/ online accessed on 10-10-2019.

Wu, T. P., & Wu, H. C. (2019). Tourism and economic growth in Asia: A bootstrap multivariate panel Granger causality. *International Journal of Tourism Research, 21*(1), 87-96.

Xiao, Z. (2009). Quantile cointegrating regression. *Journal of econometrics*, *150*(2), 248-260.

Xing, Y., and Kolstad C.D. (2002). Do lax environmental regulations attract foreign investment? *Environmental and Resource Economics*, 21, 1–22.

Xu, B., & Lin, B. (2015). How industrialization and urbanization process impacts on CO2 emissions in China: evidence from nonparametric additive regression models. *Energy Economics*, *48*, 188-202.

Yakubu, Z., Loganathan, N., Mursitama, T. N., Mardani, A., Khan, S. A. R., & Hassan, A. A. G. (2020). Financial Liberalisation, Political Stability, and Economic Determinants of Real Economic Growth in Kenya. *Energies*, *13*(13), 3426.

Yanikkaya, H. (2013). Is trade liberalization a solution to the unemployment problem?. *Portuguese Economic Journal*, *12*(1), 57-85.

Ying, L., Daming. H., Buchanan. S., and Jiang, L. (2009). Ecological footprint dynamics in Yunnan, China. Journal of Mountain Science, 6(3), 286-92.

You, W., & Lv, Z. (2018). Spillover effects of economic globalization on CO_2 emissions: a spatial panel approach. *Energy Economics*, *73*, 248-257.

Young, A. (1991). Learning by Doing and the Dynamic Effects of International Trade. Quarterly Journal of Economics, (106), 369-405.

Yusuf, A. M., Abubakar, A. B., & Mamman, S. O. (2020). Relationship between greenhouse gas emission, energy consumption, and economic growth: evidence from some selected oil-producing African countries. *Environmental Science and Pollution Research*, 1-9.

Zafar, M. W., Zaidi, S. A. H., Khan, N. R., Mirza, F. M., Hou, F., & Kirmani, S. A. A. (2019). The impact of natural resources, human capital, and foreign direct investment on the ecological footprint: The case of the United States. *Resources Policy*, *63*, 101428.

Zahonogo, P. (2016). Trade and economic growth in developing countries: Evidence from sub-Saharan Africa. *Journal of African Trade*, *3*(1-2), 41-56.

Zambrano-Monserrate, M. A., & Fernandez, M. A. (2017). An environmental Kuznets curve for N2O emissions in Germany: an ARDL approach. In *Natural Resources Forum* (Vol. 41, No. 2, pp. 119-127). Oxford, UK: Blackwell Publishing Ltd.

Zeb, N., Qiang, F., & Sharif, M. S. (2014). Foreign direct investment and unemployment reduction in Pakistan. *International Journal of Economics and Research*, *5*(02), 10-17.

Zhang, Q., Yang, J., Sun, Z., & Wu, F. (2017a). Analyzing the impact factors of energy-related CO2 emissions in China: what can spatial panel regressions tell us?. *Journal of Cleaner Production*, *161*, 1085-1093.

Zhang, S., Liu, X., & Bae, J. (2017b). Does trade openness affect CO2 emissions: evidence from ten newly industrialized countries?. *Environmental Science and Pollution Research*, *24*(21), 17616-17625.

Zhang, S. (2016). Institutional arrangements and debt financing. *Research in International Business and Finance*, *36*, 362-372.