THE ROLE OF INSTITUTIONAL QUALITY AND TRADE OPENNESS IN INDUSTRIAL GROWTH: COMPARISON OF DEVELOPING AND DEVELOPED ECONOMIES

By

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NATIONAL UNIVERSITY OF MODERN LANGUAGES, ISLAMABAD

November 2018

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A THESIS SUBMITTED IN PARTIAL FULFILMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE

In **BUSINESS ADMINISTRATION**

To

FACULTY OF MANAGEMENT SCIENCES

NATIONAL UNIVERSITY OF MODERN LANGUAGES, ISLAMABAD

November 2018

NATIONAL UNIVERSITY OF MODERN LANGUAGES
FACULTY OF MANAGEMENT SCIENCES

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Thesis/ Dissertation Title: The Role of Institutional quality and Trade Openness in Industrial Growth: Comparison of Developing and Developed Economies.

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Master of Science
Degree Name in Full

Business Administration
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ABSTRACT

Thesis Title: Role of Institutional Quality and Trade Openness in Industrial Growth: Comparison of Developing and Developed Countries.

This research analyzes the impact of quality of institutions and trade openness on the industrial growth of developing and developed economies. The study used the panel data of 15 developing and 17 developed countries from the period 1996 to 2016. Data collected from different sources such as World Development Indicators (WDI), International Financial Statistics. Pedroni and Johnson co-integration regression models are used to check the relationship between the variables. Furthermore FMOLS technique is used to check the long run relationship between the variables. The results of this study indicated that the institutional quality create a positive and significant effect in industrial growth and trade openness has a negative and significant effect in the industrial growth in the developing countries. The study also shows that the institutional quality and trade openness has a positive and significant effect in industrial growth in industrial growth in the developed economies. The research suggested the indicators of institutional quality are governed well by the government then it creates the better effect on the industrial growth in developing and develop economies.

Keywords: Institutional Quality, Industrial Growth, Trade Openness,

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God never spoils any efforts. I set my unfeigned and meek thanks before Him, Who is the only supreme authority and whose presence has been figured on the two words ′Kun Faya Kun′. Every tiny or massive entity moves with His permission. Countless thanks to Him, Who bestowed upon me the potential and ability to contribute a drop of material in the existing ocean of knowledge.

But the real success for any person in this world is that for which I have no words to pay in the court of **JESUS CHRIST** that I am in his ummah, and his moral and spiritual teachings enlightened my heart, mind and flourished my thoughts towards achieving high ideas of life. In the view of his saying,

"He, who does not thank to people, is not thankful to Allah"

From the formative stages of this thesis to the final draft, I owe an immense debt of gratitude to my supervisor, **Dr. Safdar Husain Thair** (Associate Professor Lyallpur Business School Government Collage University Faisalabad), who is gifted with all traits of an excellent teacher and guide. His benevolent attention, kind supervision, inspiring guidance, useful suggestions, keen and continued interest and inexhaustible inspiration enabled me to attain my research objectives without any difficulty. His untiring attitude towards work has given me enthusiasm to follow this approach towards life. No expression, verbal or written, can be conclusive interpreter of my feelings of thanks for him.

I am highly indebted to Mr. Syed Hassan Raza who has been always there to listen and give advice. I am deeply grateful to him for the long discussions that helped me to sort out the technical details of my work.

Most importantly, none of this would have been possible without the love and patience of my family. My family, to whom this dissertation is dedicated to, has been a constant source of love, concern, support and strength all these years. I would like to express my heart-felt gratitude to my family. My extended family has aided and encouraged me throughout this endeavor.

Now I am trying to acknowledge a tremendous debt of feelings for my parents whose prayers, sympathies stress my way towards success, whose hands always rise in prayers for me. Who always wish to see me successful in every field of life and without their moral supports, the present distinction would have merely been a dream. They always act as a light house for me in the dark oceans of life path.

I am very grateful to my Father, Mr. Yaqoob Rehmat Masih who loves me a lot and supports me morally as well as financially. At the end, I want to record my cordial thanks to those who could not but wanted to do so, during the conduct of this research work. May God bless all mentioned above with long, happy and peaceful lives, (Aameen).

Shahzad Yaqoob

DEDICATION

I dedicate this thesis to my Parents. Without their patience, understanding, support and most of all love, the completion of this work would have not been possible.

CHAPTER NO.1

INTRODUCTION

1.1 Introduction

Growth of industrial sector is very important for the economic prosperity of a country. Per capita GDP and the industrial sector productivity is very low in the south Asian countries as compared to the developed countries. In the previous studies, various aspects of economic prosperity had been discussed like international trade, geographical differences and the quality of institutions (Roderick et al., 2004), similarly most of studies have also pointed out that the trade openness (TO) is one of the aspects that stimulates the economic prosperity or growth (Kreueger, 1997; Grossman and help man, 1990; Lucas 1988; Young, 1991 and Romer, 1990). The basic problems in increasing the growth of trade sector of developing countries are the poor quality of institutions and corruption (Anderson and Marcuiller,2002). Weak political conditions and economic institutions are the major problems which has insignificant impact of the economic prosperity of south Asian countries (Kemal et al., 2002).

Trade openness and quality of institutions both are important to achieve the central galaxy in explaining the economic prosperity. Recently, many policymakers paid attention to the role of trade openness on the growth of economy by adding the institutional quality in the growth model (Rassekh, 2007).The growth of industrial sector and its productivity, trade sector growth and institutional quality (IQ) plays an important role in attaining the sustainable economic development in the developing countries. Weak political and economic institutions are the main hurdles in the economic prosperity of a country (Aron 2000; Myint and Lal 1996; Acemoglu at al., 2013). The industrial value added and GDP growth has long run association of the country.

Trade openness (TO) have a statistically significant influence on the industrial sector growth and technological innovation.

Trade openness uplifts the industrial growth of a country whenever the institutional quality not taken into account. Trade openness deals with the manufacturing sector which enhances the economy of scale and when there is large economies of scale the industrial sector productivity and efficiency increased in the long run (Bhegwati and Srinivasan,1978;Bhagwati et al., 2004).

Trade openness is discussed as an essential predictor for economic prosperity and the best debate subject in the growth literature. Initially, in the world, the developing countries followed the restrictions on the trade policies but due to the passage of time the concept of the globalization increased. All the nations feel to liberalize the term of trade openness, trade openness is an important factor for the uplift of the country's industrialization (Hultman.1967). An experiential analysis by Aden Ikinju and Olefin (2000) recommended development of industrial sector can be improved through trade and trade policies. There are a number of methods through which a statistically significant relationship between industrial sector growth and policies of trade can be determined. The scale efficiency can be increased by expanding the scope of domestic industrial sectors of a country.

Adam Smith (1776) and David Ricardo (1973) are economists; they have acknowledged the positive and effective role of trade openness on economic prosperity. When the country is concentrating in producing goods it encourages the financial development such as technological innovation, product diversification, increasing in economies of scale, efficient use of resources in the economy, it promotes the trade and trade directly increase the per capita income. Hence it can be stated that the connection between the openness to trade, institutional quality and growth of industrial sector has become a concerning point for policy makers and research scholars.

The most critical situation which is well-known in the nineteen centuries that the force of trade accelerates the economic prosperity in the growing economies. But the past literature and current studies showed that the overall economic performance of a country substantial affected by the quality of institutions. (Mamoon and Murshed, 2006). The results of this study recommended that the well quality of institutions and well-functioning of institutions is an essential to boost the foreign trade and the growth of industrial sector. There is a long and well-known statement of literature that considered that the institutions are the center of analysis. The institutions, particularly in the form of property right protection and less distortionary policies, create the

impact on investment incentives to attain desired economic conclusions (North 1990). These results are supported to that econometric results which is presented by recent practical papers, such as Acemoglu *et al.,* (2001), Rodrick et *al.* (2004). And Hall and Jones (1999),

The second school of thought gives importance on the part of international trade as the main channel of economic development. Powerful studies in this school include such as Warner (1995), Dollar and Kraay (2003), and Frankel and Romer (1999). In these studies, trade powerfully raises economic convergence between countries and regions. Afonso (2001) recommended that trade-openness tends to be helpful to growth, as it facilitates exchange of technology and improves the movement of goods and services. Yanikkaya (2003), analyzed the 100 developing and developed countries. Panel data was used period from 1970 to 1997. Fixed and random effect model are used on data. The study used the different measures of trade openness the results of this study indicated that. That trade openness import shares, export shares in GDP have positively and significant impact on growth. Trade barrier proxies Measures of trade barriers are positively and significantly related with growth except boundaries on current account payments, which is negatively but irrelevantly associated with growth.

Countries are divided into two major categories by the United Nations (UN) which are developed countries and developing countries. The classification of countries is based on the economic status such as GDP, GNP, per capita income, industrialization, the standard of living, etc. **Developed Countries** refers to the soverign state, whose economy has highly progressed and possesses great technological infrastructure, as compared to other nations. The countries with low industrialization and low human development index are termed as **developing countries**. Developed Countries provides free, healthy and secured atmosphere to live whereas developing countries, lacks these things Human Development Index (HDI) statistics rank the countries on the basis of their development. The country which is having a high standard of living, high GDP, high child welfare, health care, excellent medical, transportation, communication and educational facilities, better housing and living conditions, industrial, infrastructural and technological advancement, higher per capita income, increase in life expectancy etc. are known as Developed Country. These countries generate more revenue from the industrial sector as compared to service sector as they are having a post-industrial economy. Developing Countries depend upon the Developed Countries, to support them in establishing industries across the country. The country has a low Human Development Index (HDI) i.e. the

country does not enjoy healthy and safe environment to live, low Gross Domestic Product, high illiteracy rate, poor educational, transportation, communication and medical facilities, unsustainable government debt, unequal distribution of income, high death rate and birth rate, malnutrition both to mother and infant which case high infant mortality rate, poor living conditions, high level of unemployment and poverty (HDI 2018)

There is a big difference between Developed Countries and Developing Countries as the developed countries are self-contained flourished while the developing countries are emerging as a developed country. Developing Countries are the one who experience the phase of development for the first time. If we talk about developed countries, they are post-industrial economies and due to this reason, the maximum part of their revenue comes from the service sector. Developed Countries have a high Human Development Index as compared to Developing Countries. The former has established itself in all fronts and made itself sovereign by its efforts while the latter is still struggling to achieve the same.

The role of trade openness, institutional quality and industrial growth has received widespread attention over the past two decades from researchers and strategy makers. Trade openness encourages economic prosperity through different stations, because export-oriented policies attract foreign direct investment (FDI) strengthen advanced technologies of home production, create economic and financial combination, improve comprehensive factors, and achieve proficiency in resource allocation. Productivity. In this study, researcher said that there is a long-term relationship between trade openness and financial sector capital labor development and economic prosperity in Shabaz, (2012).

Imports are very important factor of the industrial growth which further have a positively effect of the economic prosperity of any country. Import export or trade openness are not the only determinants of the economic prosperity of any country even that the industrial value added not taken into account Ellahi at el (2013) Globalization enhance the economic prosperity through different factors, enhancement of technology entrepreneurship, increase in efficiency, increase in productivity Doller and Kraay (2001) and also analyzed that trade also improve the productive economic.

Trade openness has considered a very important determinant for the growth of any economy in developing and developed countries and in recent literature it’s a well deliberated issue.in the past mostly in the growing countries follow the trade policies with restrictive behavior but with

the passage of time the world economies turned into the globalization. And overall the economies of the growing and developed economies need to change the restrictive policies in liberalize in term of openness to trade. For the enhancement of the industrialization of every country trade openness has a very important determinant. Moreover a country changes the trade structure in the basis of competitive advantage and endowments (Hultman 1967).

An experimental investigation by the Adenikinju and Olofin (2000) recommended that that the industrial sector development can be analyzed through the trade policies and trade openness. The positive connection among the openness to trade and growth of industrial sector can be defined through different ways such as, the scale of efficiency of trade increased through the expansion of scope in domestic industrial sector and further more trade openness become the cause of high competition in the world market for government which boost the firm to take up the modern technology. It's observed by the developed nations that if the government relax the trade constraints that causes the foreign exchange.in the last but not least high development caused the technology progress. (Grossman and Helpman, 1989; 1991; Lucas, 1988 and Romer, 1990). Milner (2006) and Noland and Pack (2003) suggested that the domestic policies such as development of institutions macroeconomic management, education, health, infrastructure etc. are mostly unrelated to trade. But the main obstacles to get the benefits of trade reforms in developing countries.

Rodrik et al. (2002) discuss the effect of institutions in role of institutions in defining the economic development and comparison it to other aspects. The literature shows that institutions show a very important part in decreasing uncertainty and helps in justifying economic instability (for details, see North, 1990; Mobarak, 2005; Aceomglu et al., 2003; Klomp and Haan, 2009; Rodrik, 1999; Brousseau and Glachant (2008), Furubotn and Richter (2005) Quinn and Wooley, 1996, 2001;). and Kirman (2007) describe that the institutional quality literature has been very popular to enhance the economic prosperity over the time.

Economic, political and legal institutions are three types of institutions. Political institutions are those responsible for the development of legal and order conditions, rules and principles: life safety, respect, and property and agreement implementation. Economic systems are a very necessary system because it's very necessary to determine the investment decision in human and physical capital. Manufacture processes and technological innovation. Economic institutions have achieved fruitful results in the effective and better use of economic resources. Legal

institutions have the power to enforce laws, regulations and rules established by political institutions to defend lives, respect, and property and enforce contracts. These institutions ensure the existence of security, protection of property rights, implementation of contracts, accountability and transparency, examination and balance, regulatory rules, political stability and corruption control, and provide a business-friendly environment. If the business is vulnerable, it may lead to poor policy making, low allocation efficiency and unfavorable law enforcement, which will lead to changes in the way the economy prospers. Considering the importance and role of companies in the financial boom, it is necessary to conduct more research on this place. This helps us to provide a business environment conducive to financial growth by properly allocating current resources. In this way, this view particularly analyzes the quality impact of such institutions, namely first-rate currency, political and criminal institutions. In addition, it leverages a first-rate, holistic organization; the economic boom of Asian economic growth. Therefore, the institutional quality index created by principal component analysis (PCA) was used in the econometric test.

Trade openness was an important part of policy guidelines for the development of international sites for the last few years. Openness for trade is taken into account as an important component of globalization, which is usually defined as the growing interaction or integration of national monetary structures with the help of growth in global trade and other macro-economic variables. It is linked to increasing internationalization of production, advertising and marketing of products and services, and related growing manufacturing and industrial sports. Trade openness includes the elimination of all types of tariff structures such as quotas and tariffs, export and import duties, and various restrictions to the unlimited amount of goods and services in the nations. However, the impact of trade policy reforms on economic growth is controversial in the remaining decades of developing countries. There are some empirical studies that have tested the openness of changes in financial growth in developing countries through the use of a range of econometric tools, but the actual indicators are inconclusive. On the one hand, the largest collaborative research contributes to the close relationship between trade openness and economic prosperity, such as Dollar (1992), Sachs and Warner (1995), Gwartney et al. (2000), Dollar and Kraay (2001).

The current empirical literature shows that there are four most important channels for the impact of liberalization on financial growth; improving capital mobility, equalizing material charges,

information spillover effects and exchange impact technologies. The impact of trade on growth can be characterized by affecting the openness of technology trade. Afonso (2001) suggests that openness and communication contribute to prosperity because it promotes technical exchanges and improves the flow of products and services.

In different cases, a practical literature showing the close link between trade openness and growth has been reviewed, with many motivations; subtle issues of dimensions and information, inequalities of inequality, biased neglect of variables, and may not contain differences the rule of. The link between openness and overall performance of prosperity is influenced by everything, including countries, regions and different attributes. Therefore, some actual findings seem to contradict the life of high-quality hyperlinks between free trade and development. The neoclassical growth version does not have direct hyperlinks that identify openness and economic growth (Krueger, 1997, 1998). The model describes that the only determinant of long-term growth is external overall component productivity, which recommends that long-term financial growth cannot be stimulated by communication with different countries

Rodrik and Rodriguez (2000) highlight that free trade can bring fruitful results to growth. They concluded that they would like to conduct additional research to demonstrate the benefits of loose changes. Brock and Durlauf (2001) and Rodrik and Rodriguez and (2001) describe the growth of the only result that geographic variables may wish to achieve exchange openness in economic growth. Despite the fact that these questions were only answered by Frankel and Rose (2002), he again explained the instrumental variable approach and showed that the basic outcome was full of life, incorporating geographic and institutional variables into the growth equation. This suggests that openness clearly plays a role when geographic variables are also used in the growth equation. Esterly and Levine (2001) studied more than a decade of empirical research on growth. They believe that trade regulations do affect growth, but it will affect what is not clean. It is clear from the above dialogue that more empirical research may be needed to verify whether trade openness policies play an important role in economic prosperity, or is it not now?

The dynamic system that began in a country evolved with the manufacture of the first product, and then turned into development through the use of secondary commodity manufacturing and subsequent expansion of its tertiary industry service area until certain sectors of the economic system were included, Because development requires the integration of different sectors of the family economic system in the first area (Wade, 2005). It can be concluded that trade openness,

industrial growth and openness are all important factors in improving the financial performance of the whole people.

1.2 Institutions

Much of the pioneering effort into institutional high-quality has been finished by means of Douglass North (1981, 1990). North defines institutions as humanly developed constrictions that form interplay between human beings. Essentially, in North's framework, institutional best improves with the constraints imposed on executive power. Such obstacles may be either formal rules or informal constraints and their energy is shaped via the traits of enforcing them. The idea being that obstacles to government power lessen the de jure position of a country's executives to put themselves above the regulation. And that guarantees people, marketers, challengers of the prevailing economic gadget, that they are protected by means of the regulation of their ventures and their investments in human and bodily capital in addition to new technological endeavors. Such endeavors are critical to hurry up i) the good sized adoption of frontier technology to be had someplace else and ii) to push out the technological frontier through investing in research and improvement, particularly in disruptive technologies. Such endeavors are quite unsure by using nature, and their disruptive individual additionally makes them a assignment to those in positions of formal and casual power, be that political or financial. Hence the need for sufficiently excessive first-rate establishments to make sure that challengers and incumbents obtain identical prison protection. The literature is far from constrained to North, however, in which the definition of establishments is involved.

Acemoglu, Johnson and Robinson (2001, 2002, 2005) do now not so much study de jure government power, however follow a much broader angle that takes into account both de jure and de facto power. Also, a distinction is made among no longer simplest into formal and casual power, however additionally into political and monetary strength. In one of these greater complex institutional putting –which we are able to tricky upon later on– it suffices for there to be a right stability of energy, be it formal or informal, that guarantees people, entrepreneurs, challengers of the existing economic device, that they may be included de facto in their ventures and their investments in human and bodily capital as well as new technological endeavors. Empirically, Acemoglu et al. (2001) use the perceived threat of expropriation as key indicator of institutional exceptional. The distinction of this institutional view relative to that of Douglass North may additionally appear small, but its miles critical in settings where de jure political

energy is focused in one-of-a-kind businesses than de facto economic electricity, restricting the exercise of the de jure political energy. As we'll see underneath, this nontrivial distinction additionally performs a enormous function within the ongoing debate about the course of causality between institutions and financial progress.

Yet some other addition has been recommended by using William Easterly (2001, 2013), who stresses the rights and the possibilities of the man or woman. Easterly (2013) builds the case that any form of monetary development that is to be lasting should be constructed on appreciates of the rights of the man or woman. His recognition is on the very bad people in developing international locations; however the line of enquiry applies to the bad and wealthy alike. The key message is as simple as it's far critical: lasting progress is constantly and everywhere the fruit of funding. Investments are almost inevitable sunk, be they investments in education, in physical capital, or in new generation. A funding is made based on an expectation of the conditions underneath which its fruits may be loved. This can be the right to take a profession for which a person has been studying for a few years, the proper to operate a plant into which numerous bodily investments have been made, or the right to develop and market new products and services that derive from the generation that a person has been financing research into. If these person rights are (expected to be) effortlessly violated, the investments will not be made and concomitant development will not materialize.

There is an intimate link right here with the strand of research focusing on 'accept as true with societies' (Algan and Cahuc 2010), wherein believe among individuals in monetary transactions and believe of individuals in their criminal rights is prime in determining the institutional placing that generates economic development. Legal rights in this feel can be interpreted as styles of formalized agree with. In the road of enquiry pursued by Acemoglu, Johnson and Robinson (2005) such criminal rights generate 'inclusive institutions,' establishments whose rights and protection loosely speaking include all, irrespective of role in society or origin. This is against 'extractive institutions,' which loosely speak me most effective serve to extract sources from the loads for the extra advantage of the ruling elite.

However no longer least, Easterly (2013) includes powerful public offerings as a critical element of excessive nice institutions. From the factor of view of developing nations, Easterly argues that felony and political rights are pretty unproductive if they're faced with negative public offerings.

Envisage machines no longer going for walks due to chronic electricity screw ups because of a lack of public funding and maintenance of electricity supply infrastructure. The importance of such public offerings is without problems extended to excessive(er) income countries, in which as an instance infrastructure shortages, or cumbersome and useless bureaucracy bog down the overall exploitation of commercial enterprise possibilities (e.g. Giordano et al. (2015) for an application to Italy).

1.3 Problem Statement

Industrial sector growth, its production, growth of trade division and quality of institutions plays a very central role in achieving the sustainable economic prosperity in the growing and developed economies. In these days the several organization and development economic prosperity in the growing nations. (North 1990; Acemoglu et al., 2003, 2005, and 2014). The industrial growth and GDP growth have a long-run increasing relationship in a country. Openness to trade are very vital for technological revolution and industrial value added. But the economy of any country does not grow with the enhancement of trade sector whatever the growth of industrial sector is not taken into account. Trade openness encourages specialization in manufacturing sector which can operate on huge economies of scale. Due to large economies of scale efficiency and productivity of industrial sector is improved in long run (Bhagwati and Srinivasan, 1978; Bhagwati et al., 2004)

Hence we can say that association between institutional quality, free trade, and industrial growth has become a topic of concern for research intellectuals and strategy makers. If the institutions are poor, they may cause poor rule making, inefficient allocation and poor regulation enforcement that can in turn retard the method of economic prosperity. Keeping in view the importance and position of institutions in economic boom, there's a need to conduct more research in this region. The researcher wants to know how trade openness and institutional quality create dynamic effect on industrial growth in developing and developed countries. Although it is also established during the nineteen century that trade is driving force for economic prosperity but the last current practical literature on the subject recommends that a country overall economic performance besides other variables is also significantly affected by the quality of institutions (Mamoon and Murshed, 2006).

1.4 Research Questions

Following are the questions of this research.

1. Does institutional quality determinant of industrial growth?
2. Does the trade openness determinant of industrial growth?
3. Is there is any difference between developing and developed countries regarding institutional quality and trade openness?

1.5 Objectives of the study

The objectives of the study are following

1. To check the impact of trade openness on the industrial growth of developing and developed economies.
2. To investigate the impact of quality of institutional on industrial growth of developing and developed economies.
3. Comparison of the impact of intuitional quality and trade openness on industrial growth in developing and developed countries.
4. To suggest the policies regarding the trade openness, quality of institutions and industrial growth.

1.6 Significance of the study

Institutional quality and trade openness play a very important part in the economic prosperity of any country. These are very important determinants of the industrial growth of the country. Better intuitional quality and increase in trade promote the investment and this effect the industrial growth of the country. With the enhancement of the industrial growth, new job opportunities are created in the country and the living standards of the people enhanced the overall economy of the country. Trade openness deals with the enhancement of the production. Through economy of scale trade will be maximize. Institutional Quality deals with good governance, law and order, political stability, regularity authority, government effectiveness that leads to the efficient use of resources.

Countries commenced to get rid of constraints on the motion of products, offerings and capital with the growing globalization after the Second World War. Trade and economic liberalization contributed to growing international exchange quantity and cross-border capital flows. World change extent, as a percent of GDP, expanded from 25.62% in 1960 to about 60% in 2013 (World Bank, 2015a).

CHAPTER NO. 2

REVIEW OF LITERATURE

2.1 Introduction

Literature review is the text scholarly papers that consist of the current knowledge which includes the substantive finding, as well as methodological and theoretical contribution to a particular subject. The literature review shows your reader that how much you study in depth about your variables. This research discusses study variables trade openness, institutional quality and industrial growth and their relationship and impact. What are the econometric techniques are used by the past researchers? What are the models used and what the suggested and concluded abbot the variable? Area of research time period of the research also discussed.

2.2 Trade openness and growth

Adamu (2017) Suggested the impact of trade openness on industrial growth evidence from Nigeria. There is a confident relationship among the openness to trade and industrial production. In this research quarterly was used the time series data period from (1986 to 2008). He employed the ARDL model and ECM (error correction model). He suggested that the result of short run and long run had a significant and positive influence on industrial performance. He used the effect exchange rate inflation rate as a control variable. The result of this study showed that the inflation rate and nominal effect exchange rate had no effect on industrial growth equally in short run and long run.

Ellahi et al. (2011) suggested that trade liberalization and trade openness improve the economic prosperity in the developing nations. They investigated the nexus of openness to trade industrial value added and the economic evolution of Pakistan. They analyzed that the trade openness is

not only the indicator of economic prosperity, economic prosperity of a country is high when industrial value added also taken into account. They used the time series data from (1980-2009). The data sources were the World Development Indicators (WDI) and International Financial Statistics (IFS), and they used the econometric model and investigated the effect of openness to trade on the economic prosperity. It was suggested that openness to trade and industrial value added have the significant and positive relationship with economic prosperity of country. For the achievement of sustainable of real GDP must reduce the tariff and non-tariff barriers on the imports and exports. Some policies should be introduced to encourage the import and exports advanced technology should be introduced to promote the industrial production.

Semanckova (2016) analyzed that trade openness and trade have the helpful and significant effect on micro economic variables. In this paper the writer used the descriptive and comparative analysis on empirical studies from the past decades. The writer suggested that the appropriate trade polices is the major source of the economic prosperity of any economy.in this research the writer says that the trade openness and trade has the significant and positive effect on microeconomic variable both developing and developed countries through the past empirical studies.

Shahbaz (2012) suggested that trade openness enhance the economic prosperity through the different challenges such as attaining proficiency in allocation of resources, attracting foreign direct investment providing advance technology access for the enhancement of the domestic production, enhance the total factor op productivity. The writer analyzed that trade openness have a positive impact of the economic prosperity in the long run. He uses the cobb-Douglas production function and ARDL bound testing approach used for the long run relationship. He used the data period from 1971 to 2011 from different sources such as economic survey of Pakistan WDI etc.

Ellahi et al. (2013) suggested that the developing republics must be implement pursue trade openness and liberalization to uplift their economies and also improve the living standard of their population.in this research they used the time series data (1980 to 2009) annually to observe the connection between the trade openness, industrial worth added and economic prosperity of Pakistan. Unit root test applied to regulate the time series properties and OLS technique are used to estimate the granger causality test.

Yao (2006) studied the nexus between the export, foreign direct investment and economic growth. This study used the panel data period from 1978 to 2000.different panel data techniques are applied on the data. Pedroni unit root test and Arellano and Bond's dynamic panel data techniques are used. The outcomes of this study suggested that the two polices adopted by China are very fruitful for chine that are the export promotion and the use of word best technology for the development of business sector.

Chandrasekhar et al. (2018) studied the relationship among the financial expansion, openness to trade and economic development in India. this study the researcher used the secondary annual data period from (1975- 2014). The study variables are GDP per capita, trade openness, financial development and economic prosperity and he used the data from WDI (world Development indicator). Phillips and Perron PP test used to check the integration of the variables and apply the both Johannes co-integration and granger causality techniques to checked the long run association and causality among the variables. The researcher analyzed that there is long run association between the openness to trade, development of financial sector, and economic prosperity. Result showed enhancement of trade openness directly affected per capita growth and trade openness will increase through economy of scale, higher productivity and capital accumulation.

Umar (2014) analyzed that influence of trade openness on economic prosperity. Researcher used the data period from (1960 to 2011) and used the ARDL technique to study the influence of trade openness measure and societal development measures on economic prosperity. ADF test used to check the data stationarity. Researcher used the GDP per capita as dependent variable and to check the impact on economic prosperity trade volume human capital and investment, tariffs and tax on trade, as dependent and control variables. The result of this study suggested that policies of trade liberalization plays a very central role to uplift the economic prosperity of Pakistan. According to his research increase in human resources and physical capital promote the economic prosperity in Pakistan.

Siddiqui and Iqbal (2005) investigated the empirical results in Pakistan the how the openness to trade effect the on-productivity growth. In this research trade growth, population growth, investment growth and trade volume are used. Data used period from (1972 2002). Co-integration and ADF are used in this research. The outcome of this study indicated the trade growth and GDP growth has a negative association in long run. And if the volume of trade is

separated in the term of import and export then we find the positive and insignificant among the GDP and import and export. The model shoes that the positive and significant connection among GDP and investment.

Thair and Azid (2015) analyzed the association among openness to trade and economic prosperity focused on developing countries by using the new proxies of trade openness. Researcher used the panel data of 50 developing countries dated from 1990-2009 and applied the fixed and random effect appropriate techniques of panel data. Industrial productivity as a ratio of GDP are used a new degree of openness to trade. The source of data was WDI (World development indicator) Economic growth used as a dependent variable. Trade openness, domestic investment and labor used as the independent variables. The outcome of this study suggested that trade openness has a positive and important effect on economic prosperity in developing countries. Domestic investment labor force are also the determinants of economic prosperity played a dynamic role in the growth. Developing countries are suggested that the enhancement of trade liberalization and trade openness is very favorable to attain the high economic prosperity.

Edwards (1993) studied the connection among the openness to trade and GDP growth. Data used period from 1970 to 1982 of thirty developing countries. Tis study used the two measure of openness to trade fist is trade openness and trade policy this model created by Leamer (1988). Tariff and non-tariff obstacles which hamper imports. He recommended that all trade openness (TO) meters has the positive effect on economic prosperity. The conclusion supported that if there is higher trade openness that enhance the technology and high technology increase the economic prosperity.

Sarkar (2005) analyzed that there is no significant effect among the trade openness and per capita real GDP. Time series data of two Asian countries are used in this research. And co-integration techniques are applied on this data. India and Korea has no long run relationship to uplift the economic prosperity.

Parikh and Stirbu (2004) examined the relationship among the trade balance and trade liberalization growth. Researcher used the panel data of 42 developing nations such as Asia, Africa and Latin America dated from 1970 to 1999. Fixed affect and random effect are applied on the data and outcomes shows that trade liberalization has the significant influence on the economic prosperity.

Prabirjit Sarkar (2008) studied the connection among the trade openness and growth researcher used the panel data of 51 cross countries by applying the panel data techniques. Reacher analyzed that the openness to trade and the GDP growth has positive connection in sixteen developed economies but the developing countries such as East Asian countries did not show the significant and positive association among openness to trade and GDP growth.

Effiong (2016) analyzed the impact of financial development on monetary prosperity and studied as properly the oblique effect via the IQ channel. This research used the panel statistics of twenty one international locations of sub-Saharan Africa period from 1986–2010. The sensible final results showed that financial development has no enormous effect on economic prosperity, at the same time as institutional quality definitely and appreciably outcomes economic prosperity. Results additionally concluded that the indirect combined impact of economic improvement and institutional pleasant definitely effect monetary prosperity. However, this insignificant effect advocated that the institutions did no longer enhance the relationship among finance and increase on this location

Rachdi and Mensi (2012) investigated the nexus among the development of financial sector and economic prosperity, this study used the panel data of thirteen economies period from the 1990 to 2008 by presenting five indicators of institutional quality institutional. Authors determined that financial development and institutional quality equally impact economic prosperity in a positive way.

Kiani and Munir (2011) studied the nexus among inflation and openness to trade in the context of Pakistan. For this research the annual time-series data from the period 1976 to 2010 are used. To check the Romer's hypothesis is the basic objective of this research. Agriculture growth, real exchange rate, openness to financial market, exports and openness to trade are the variables that are used in this research. Johansen (1998), Johansen Juselius are the techniques which are used to check the co-integration between the variables. VECM also used in this study. The results showed that the inflation and openness to trade have a significant and positive relationship. This study rejected the Romer's hypothesis.

Njikam (2009) investigated the nexus among Cameroon's trade openness and industrial development performance, and tried to find out whether there is a relationship between infrastructure and industrial performance before and after trade opening through two time periods. Values after the era of substitution (1986-94) and trade reform (1995-2003). This study

used panel data samples from 29 industrial sectors. By applying panel data technology, the results of this study show that improvements in infrastructure can increase production in the industrial sector, while in the trade open time frame, better infrastructure quality must be valued.

Dutta and Ahmed (2007) determined the nexus among trade liberalization, industrial growth and trade policies in Pakistan. Researcher verified that trade liberalization and growth of industrial production rate through the Lucas an industrial production function that is specially for the Pakistan.in this study time series data was used period from (1973 to 1995). Reacher used the two measures of trade liberalization in this study first the real exports and the second is average imports tariff collection rate. Capital, labor, exports, tariff, and education were the variables which are used in this research. The techniques that are used on this data are error correction model and cointegration. Results indicate that there is an exclusive long run nexus in growth of industrial sector, growth function and the elements of capital stock, labor force and real export and in the short run relationship Pakistan growth function and industrial value added has the positive and significant effect. He suggested that the better trade liberalization polices pull up the sustainable economic prosperity.

Rousseau and Onofrio (2017) analyzed that the international trade and financial development helps each other to enhance the economic prosperity a century ago. He used the panel date of 17 countries of the first wave of economic globalization to investigate these linkage among the countries.to achieve his research objectives financial development (M3), trade and GDP variables are used. Researcher used the VAR (vector auto regression), for individual time series and LSDV (least square dummy variable) and GMM for pane. Results shows that the development of financial sector create directly a positively effect on trade and growth.

Kumar and Rani (2018) investigated the relationship among FDI inflow, openness to trade, and economic prosperity in the Brazil, Russia, India and china (BRICS) researchers used the panel data period from 1993 to 2015. Money supply and domestic credit also the variables that are used in this research to determine the effect of financial openness on economic prosperity. pedroni panel co-integration are used to check the long run relationship and to analyze the co-integration between the coefficient dynamic least square (DOLS) and Fully Modified Ordinary Least Square (FMOLS) are used. In the BRICS economies pedroni results indicates that there exist a long run relationship among the variables. The FMOLS and DOLS shows that trade openness and economy create a positive effect. On the other hand the FDI had a negative impact

on economic prosperity in BRICS countries. This study recommended that BRICS countries if they are liberalize there trade openness then they can get a strong position in the world economy.

Bayar Y. (2017) examined the impact of economic freedom and openness to trade on the economic prosperity. Researcher used the panel data of European Union period from 1996 to 2012.development of financial sector, GDP per capita real and openness to trade and economic freedom are the variables which are used in this research. Basher and Wasteland (2009) Co-integration Test, Panel Augmented Mean Group (AMG) panel data techniques are used in this this research. The results indicated that the openness to trade and the economic freedom creates a long run relationship and these study variables has a positive effect on the economic prosperity. The financial openness creates a negative effect on economic prosperity. Study suggested that countries get the benefits from the financial openness.

Signorelli and Marelli (2011) analyzed the influence of openness to trade openness on economic prosperity in China and India combination with global economy. Researcher used the panel data of two countries India and China. Trade openness, economic prosperity, Gross fixed capital formation are the variables which are used in this research. Panel data techniques are used in this research such as fixed random effect. This study shows that the trade-openness and FDI (foreign direct-investment) has positive and significant impact on economic prosperity. The results in indicate that China and India has the positive growth effect which is integrated to the world economy.

Alam and Umer (2013) investigated the nexus among the openness to trade and FDI on the growth of the industrial sector in the context of Pakistani economy. He analyzed that the industrial sector growth effected by the trade openness. Trade openness, industrial sector growth, consumer price index, foreign direct investment(FDI), and real exchange rate and are the variables that are used in this research. Time series data for the period 1960 to 2011 annually used in this study. Vector Error Correction Mechanism (VECM) approach and Johansen and Juselius co-integration techniques are used to find out the short-run and long run connection between the study variables. This study examined that that the micro economic indicator such as FDI and real GDP has a positive long run effect on the growth of the manufacturing sector. But this study indicates the negative relationship among the growth of industrial sector and the inflation. And the real exchange rate has the in significant results in long run. Real GDP has a positive and significant impact on industrial growth. He suggested that government should

formulate the effective policies to stabilized macro-economic conditions to reduce the landing rates and to enhance the agriculture sector.

In the fast-growing economies such as BRIC-T (India, Brazil, china, Turkey and Russia,) investigated the impact of openness to trade and the economic prosperity. (Mercan et al 2013). Proxy of trade openness used in this study (import + export/GDP). Panel data are used in this research period from 1989 to 2010 data collected from World Bank. Breush-pagan LaGrange multiplier test and Two-way fixed effect model are applied on panel data. This study examined that trade openness positively and significantly effect the economic prosperity in BRIC-T countries. These countries have the huge contribute in the world economy he suggested that to get the sustainable growth in the countries there should be the increase in foreign trade especially in exports.

Lee et al. (2015) analyzed that the financial development determinants in asia.in this study the panel data was used of 26 Asian and Pacific economies. Institutional quality Trade openness financial development are the variables that are used in this research. GMM (generalized method of moments) technique of panel data is applied. Study examined that that better institutional quality and good governance are the factors that enhance the financial development in the developing countries. Trade openness and economic prosperity has the main factors of financial depth in the developing economies.

Vijil et al. (2018) used some new proxies of openness to trade and investigate the nexus among the openness to trade and economic prosperity. This research used the unbalanced panel data of 169 countries period from 1988 to 2014.GDP per capita, education life expectancy export quality and export quality are the variables which are used in this research. The data of selected variables collected from World Bank and World development indicator (WDI). GDP per capita used au dependent variable. Researcher analyzed the affiliation among the trade openness and economic prosperity and researchers study that trade openness not fully characterized through the trade ratio. This study talked about the two new dimensions such as trade integration, export quality and export verity. GMM (generalized method of movements) of panel data technique is applied on this data. The results indicate that when the export quality taken in to account then the trade openness and the economic prosperity showed inverse effect among each other. And when the export quality is ignored then the trade has an increasing effect on the growth. The verity of

export of goods also enhance the growth and have a positive and significant and positive impact on growth.

Golley and Dowrick (2004) analyzed the effect of the foreign trade on the economic prosperity of a country. The researcher investigated the bad effect of primary exports on the growth. This study used the data from the 1960s to 1970s of developed and under developed economies. While the trade openness has a positive impact on growth. Study showed that the trade gets the benefit through productivity growth.

Refaei and Razmi (2013) investigated the effect of economic freedom and trade openness on economic prosperity. Panel data of 17(Middle East, East Asia) countries period from 2000 to 2009. This study examined that the openness to trade and economic prosperity create increasing and statistically significant impact. The economic freedom has a significant effect in economic prosperity. Economic freedom impact has five categories and economic freedom negatively correlated with growth.

Peck and Abbas (2008) examined the nexus among the human resources and economic prosperity in Pakistan. Researcher used the time series data of Pakistan from the period 1960 to 2003.by using the Johannes approaches and other techniques of time series data that human capitals enhance the economic prosperity.

Again, as defined via Plekhanovand and Lehne (2014), a country's openness to worldwide economic interplay determined institutional satisfactory. Openness to global economic system creates demand for higher institutions and additionally improves the transfer of skills and information from global nice practices. Education also counts as an important variable in improving institutional fine. It is argued that knowledgeable workers are very vital to internalize effective externality from openness to global financial system and to evolve them to home truth.

According to Jalilian et al. (2007) studied government efficiency and regulatory quality are two of the World Bank's six global governance indicators that can be used to capture the quality of regulatory agencies. According to them, these two variables include both the quality of the results and the process dimensions of the regulation. The regulatory quality index can be used as a representative of the quality of the application of regulatory tools because it measures the burden of business regulation associated with inefficient quantitative control.

P Sarkar (2008) studied the link between openness and growth by using the co-country group factual assessment using a model of 51 countries. The impact of the group record analysis implies a substantial and high-quality relationship between the alternating openness and GDP growth in the sixteen rich countries, but the results of male or female countries indicate that most developing countries, including East Asian countries, do No longer show exciting long-term pursuits in openness and growth

H. Kim (2011) also revealed a differential effect of alternate openness on economic increase. The consequences of the observe, which changed into done by using the use of records on 61 nations that cover the period from 1960 to 2000, display that at the same time as openness has a tremendous effect on growth in excessive income economies, it has the opposite effect in low-profits economies. The authors use fixed consequences fashions to attain the outcomes

M. Olufemi (2004) showed that economic prosperity and trade openness were included through the use of the Johansen co-integration method and the annual records from 1970 to 2000. However, the Granger causality test implies that there may be an optimal causal relationship from economic growth to openness, and this is not the opposite.

Kneller et al. (2008) used the liberalization indicators developed by Wacziarg and Welch (2003) to study nonlinear dating between trade openness and monetary growth. Their results confirm that these countries are gaining greater benefits from exchange liberalization, which has high levels of human capital, lowering alternative tax rates and importing uncooked materials to stimulate its commercial and production sectors other than that.

Recently, Singh (2011) investigated the use of strong Australian time series estimates in alternate openness and monetary growth. He used the single equations IV-GMM, DOLS, FMOLS, NLLS, and system-based ML programs, and the results indicated that there were long-term appointments for most variables. The consequences indicate that exports have a satisfactory and comprehensive impact on monetary growth and contribute to export-promoting proposals to increase exports and output. VECM Granger causality analysis identifies a one-way causal relationship from import to economic prosperity, even if the purpose of exporting and importing Granger is each exclusive. The poor 13 import estimates seem to imply that Keynesians call for a reduction in the impact of imports on domestic production.

Adhikary, (2011) enriched alternative literature, including investigating useful resources during trade and financial booms, including foreign direct investment, which is a unique stimulus for

Bangladesh's fiscal growth. Empirical evidence confirms long-term dating and reports that trade openness has hampered financial prosperity, while foreign direct investment and capital formation have had a first-rate impact on the currency boom. The results of the study encourage Bangladeshi authorities to provide incentives to increase direct funding in foreign destinations and to ensure better capital formation to achieve a large number of alternate open results

Edward (1992) investigated the members of the family between alternate openness (trade intervention and distortions) and GDP increase of 30 growing international locations over the period 1970 to 1982. In his version he used two simple units of exchange coverage signs, constructed via Leamer (1988). The first set refers to openness and measures of exchange policy (tariff and Non-Tariff Barriers - NTB) which limit imports. The 2d set measures exchange intervention and captured the extent to which alternate coverage distorted trade. The results of the model, expected by using OLS, showed that each one the four openness signs were undoubtedly associated with actual per capita GDP increase, even as alternate intervention indexes have been located appreciably negatively related to GDP growth. These researches guide the speculation that international locations with a greater open change regime have tended to develop quicker, and an extra distorted exchange regime will tend to grow slower.

Ann Harrison (1996) used a sophisticated production function to study the relationship between openness and GDP boom. He regards GDP as the capital stock, the number of years of primary and secondary education, the characteristics of population, labor, cultivated land and technological transformation. He used seven open measures to check the statistical agreement between openness and GDP growth. The segmentation estimate shows the worst black market costs and the logo is not good. The final results of the National Time Series team confirmed that the three variables used in the poorly signaled US dollar, the high-quality mark on tariff and non-tariff borders, the black market fee and the rate distortion index, have been widely disseminated. Estimated annual statistics show variables, tariff and non-tariff barriers, and black market prices, as large as negative signals. Therefore, he concluded that the choice of length of analysis, the relationship between change in open measure and GDP growth is crucial.

Chittedi et al. (2018) examined that the relationship between the trade openness, financial development and economic prosperity in India. This study used the panel data of the selected variables period from the 1975 to 2014.This research used the variables that is GDP per capita (economic prosperity proxy) trade openness (some of import and export as percentage of GDP)

Financial development indicator M1, M2 and M3. To check the integrated order between the variables Phillips-Peron (PP) is used. Johansen co-integration technique is applied to check the co integration between the variables. The results indicated that there is a long run relationship among the trade openness, financial development, and growth. The results also supported that the trade openness increase the productivity that directly associated with growth.

Moskalyk (2007) analyzed the impact of technology transfer, trade openness on the productivity growth in the developing countries. This study used the panel data of 72 countries period from 1991 to 2005 fixed effect are applied on this data. The researcher introduced the concept of technology intensive trade openness (TITO) which is measured by the import of highly technological products to GDP. The results indicated that the import of technological products from the high innovative countries effecting the growth in the developing countries.

Shafiul Islam et al. (2016) analyzed the empirical relationship between the industrial value added, trade openness, and economic prosperity in Bangladesh. Researcher used the time series data period from the 1981 to 2015.unit root test used to check the integrated order of the variables. GDP import, export industrial value added are the variables that are used in this research. The ordinary least square (OLS) estimation technique applied on the data. The results showed that import create a negative impact on the economic prosperity and export have a positive effect on the economic prosperity and industrial value added also have a positive impact on the economic prosperity. Researcher suggested that Bangladesh should increase their exports and subtraction their import for the better growth of their economy and this will enhance the living standard of the peoples.

Amor (2018) studied the relationship among the development of financial sector, poverty and quality of institutions. This research used the panel data of 132 countries period from 1980 to 2014.least square method are used in this research. The results of this study showed that poverty cannot improve by the financial development. While the impact of quality of institutions on poverty and development of financial sector depends upon the indicators that are used in the research.

Yosra et al. (2018) studied that the nexus between the openness to trade and economic prosperity of Tunisia. Time series data used from the period 1975 to 2010. Foreign direct investments, openness to trade human capital are the variables which are used in this research. The results

showed that the openness to trade and foreign direct investment has the significant and positive effect on economic prosperity.

Sachsida et al. (2003) study gives support to the Romer's proposition of inverse relationship between openness and inflation. Panel data regression technique is used to analyze the relationship between inflation and openness among 152 countries for the period 1950 – 1992. Natural logarithm of GDP deflator is taken as the measure of inflation and rate of imports to GDP as a degree of openness is used in the study.

Zakaria and Mukhtar (2010) analyzed the nexus among the inflation and openness in the context of Pakistan. Time series data period from 1947 to 2007 are used. After controlling the effects of variables like fiscal deficit, money supply, depreciation, foreign inflation, terms of trade, exchange rate foreign debt and democracy, a positive relationship is observed among openness to trade and inflation in Pakistan.

Fatima et al. (2013) studied the relationship among the inflation, openness and growth in Pakistan. This study used the time series data for the period 1970-71 to 2008-09.This study applied the ARDL technique on the data and data collected from the WDI. The results indicated that in the short-run the openness and inflation has a negative relationship but in long run that is positive. Study concluded that the policy makers of Pakistan should follow such type of policies that enhance the openness and inflation can be controlled due to this and economic growth also speeded up.

Mukhtar (2012) investigated in the same country has shown a significant negative long-run relationship between inflation and trade openness for the period 1960 to 2007. The results were analyzed through multivariate co-integration and Vector Error Correction Model (VECM) techniques.

Lin (2010) examined the impact by using panel data from 106 countries for the period of 1970-2007. The study used GDP deflator and share of imports (percentage of GDP) as a proxy for inflation and openness. After controlling for the country size and indebtedness of countries due to 1980 debt crisis, the results show a negative effect of trade openness on inflation.

Thomas (2012) examined the impact of openness on inflation among eight small Caribbean economies using annual data for the period 1980 to 2009. The study found a positive influence of

openness on inflation. The study also concluded that larger fiscal deficits and growth in per capita income has resulted in higher inflation levels

Samimi et al. (2012) studied the relationship between developed and developing countries during 1990–1999 and 2000–2009. The study used KOF index as a new measure of economic globalization and supported an inverse relationship between openness and inflation.

Sheehan and young (2014) analyzed the relationship among the foreign aid, institutional quality and industrial growth by using the different measures of institutional quality. Researcher used the panel data of 116 countries period from 1970 to 2010.foriegn aid is connected with the unorganized political and economic institutions. Foreign aid also had a connection between the deterioration of the property rights and legal system as well as the trade openess.by the controlling of the political and economic institutions.one panel of institutional quality directly affected to the economic prosperity.

Sharma and Sahu (2018) investigated the relationship among the trade openness and inflation in India. Time series quarterly data used period from 2000Q1 to 2016Q3 which is collected from the reserve bank of India database. Variables which are used in this research whole sale price index (WPI) used for the inflation, trade openness (sum of import and export percentage of GDP) export openness (total export of goods and services percentage of GDP) import Openness (total import of goods and services percentage of GDP) M3 real exchange rate deprecation. ARDL technique applied on the data results of long run and short run indicated that there is a positive and significant relationship between the trade openness and inflation he suggested that when the imports are high the relationship is positive so that India should reduce the imports and enhance exports to reduce the inflation.

Alipourian and Gorgi (2008) examined the relationship between the trade openness and economic prosperity in Iran and as well as the OPEC (organization of the petroleum exporting countries).Panel data were used for this study of 11 countries period from 1988 to 2001.the results showed that trade openness positively affect the economic prosperity and results also indicated that oil export negatively effect on the economic prosperity.

Chang et al. (2018) analyzed the long run relationship between the political stability, environment performance and trade openness. This study used the panel data of 126 countries of OECD and non-OECD countries period from 2002 to 2014.panel co-integration, FMOLS (fully modify ordinary least square) and panel error correction model applied on the data. The results

indicated that the trade openness and political stability have a negative impact on environment performance in case of non-OECD (organization for economic co-operation and development) countries. And trade openness and political stability have a positive effect on environment in case of OECD countries. Researcher suggested that the trade regulation supported that the environment performance government should try to adopt the policy to reduce the pollution.

Serrano et al. (2017) investigated the impact of corruption on trade using the gravity equation. Panel data of 139 countries are used over the period 1975 to 2012. Researcher used the different measure of corruption such as corruption perception index (CPI), Control of corruption index (CCI) and structural corruption index (SCI) the results indicated that the CPI and CCI have the different impact from the SCI. CPI and CCI have the positive impact on trade and the SCI had a negative impact on the trade.

Chalvatzis and pappas (2017) analyzed the energy and industrial growth in India. India is frequently introduced to as the following improvement superpower and is generally observed as a potential goal for expansive scale producing centers. In this work researcher draw correlations between India, Indonesia and China and locate that all nations have a carbon escalated vitality area. Be that as it may, there is an amazing contrast between mechanical vitality force between them where India and Indonesia require twofold the measure of vitality to deliver indistinguishable yield from China. We investigate the decayed modern parts and locate that iron and steel and non-metallic minerals present the most astounding vitality power in India. We contend that a creation change from China to India and Indonesia would result in a hazardous worldwide discharges development which must be countered with quick selection of creative vitality advances and approaches.

Knutsen (2012) has concluded that democracy does have a strong effect on economic prosperity particularly in countries with lower state capacity such as Sub-Saharan Africa, but not in higher state capacity nations. Furthermore, this study suggests that state capacity which is measured by bureaucratic quality index from the ICRG dataset stimulates growth only in dictatorships. However, by using annual institutional data from 1960 to 2004 for 169 countries and at the same employing system-GMM estimator.

Yiheyis and Musila (2014) analyzed the impact of trade openness on the investment and economic prosperity rate in Kenya. This study used time series data for the period from 1982 to 2009 and data collected from the World Bank and African development indicator. This study

used the two measure of trade openness such as aggregate of openness and trade policy induced openness. The results indicated that that the measure of policy induced openness has a negative effect on the level of investment and the rate of economic prosperity and the aggregate trade have a positive effect on the level of investment.

Wright et al. (2002) investigated the impact of trade liberalization on the growth in developing countries. The study used the panel data of 73 countries in this research. Researcher used the three different measure of trade liberalization. The results of this study concluded that trade liberalization has a positive impact on the growth.

Bejan. M (2006) analyzed the effect of trade openness on output volatility.researcher find that exchange openness usually multiplied output volatility, despite the fact that this effect became more potent and greater significant in the course of 1950-1975 than at some point of 1975-2000. However, if we split the sample into developed and growing countries, we take a look at that more openness improved volatility in developing international locations, even as it helped easy output in advanced international locations. We additionally find that the size of the authorities may also have extended volatility in much less advanced nations. Part of the high-quality relation between openness and volatility may be explained through the positive relation between openness and authorities' size. Another crucial finding of this paper is that after we manage for authorities' size and a few measures of external danger, including phrases of change volatility and export awareness index, the effect of openness at the output volatility seems to be negative.

Hye (2012) investigated the practical long run relationship among the openness to trade and economic growth in the context of Pakistan. This study used the time series data from the period 1971 to 2009 by using the trade openness index which is generated through PCA (principal-component analysis) ARDL and OLS techniques are applied for the analysis of data. The results of this study indicated that openness to trade has a negative and significant impact on the economic prosperity. According to this new study human capital and openness to trade has a strong relationship to promote the real GDP.

Birinci (2013) analyzed empirically the linkages between trade openness, economic increase, and the scale of the informal economic system. this study hires panel VAR techniques in a quarterly panel information set composed of 12 superior economies over the period from 1964:1 to 2010:4 permitting bi-directional interaction between the variables in the device with a view to deal with the indigeneity problem. The results provide evidence that there may be a wonderful bi-

directional relationship between GDP increase and trade openness. Second, fluctuations of GDP boom are defined with the aid of the dimensions of the casual economic system, while the effect of GDP increase on the size of the informal economic system isn't always found to be robust with recognize to alternate in VAR order. Moreover, the size of the informal economy affects GDP boom extra than openness, and the causality from openness to GDP increase is barely more potent than the causality from GDP increase to openness. Finally, there is no conclusive, sturdy evidence regarding the interplay between the size of the casual financial system and trade openness.

Sinclair (2002) analyzed the casual relationship between the economic prosperity, inward foreign direct investment (FDI) and trade in china. This study used the quarterly panel data 1981:1 to 1997:4. Import, Export, Inward foreign direct investment and GDP are the variables that are used in this research. The data of these variables are collected from the sources such as International financial statistics, journal of international trade and China state statistical bureau. Multivariate causality test are applied on the time series data and the results indicated that there is two way causality between the FDI export and economic prosperity.

Singh (2011) used Australia's robust time series estimates to study the link between change openness and financial growth. He used the single equations IV-GMM, DOLS, FMOLS, NLLS and a system-based full ML strategy, and the results showed long-term courtship in the variables. These effects indicate that exports have a high quality and wide-ranging impact on economic growth, supporting export advertising regulations to increase exports and output. The VECM Granger causality assessment reveals a two-way causal relationship from import to financial growth, while the motivations for exporting and importing Granger vary. A negative estimate of imports seems to suggest that Keynesians reduce the demand for domestic output from imports.

Gylason (1998) examined the connection among the inflation export and growth. This study used the panel data of 160 countries period from 1985 to 1994.Income per capita, agricultural sector, primary exports, growth and export are variables that are used in this research. The results of this study found that a persistent high level of inflation would reason of recession in exports and growth. This study determines that important investments don’t guarantee sustainable or rapid growth.

Wu et al. (2013) further elaborated the role of intellectual property rights (IPR) and trade flows in the growth process. The results suggest that IPR and trade flows have positive effect on economic prosperity, moreover it is pointed out that to get higher economic status a country should focus on both trade and IPR.

Zhang et al. (2015) evaluated the role of private property rights protection on intellectual property rights (IPR) and economic prosperity relationship. The purpose of study was to examine the role of financial markets in IPR-growth relationship. The findings suggest that underdeveloped markets affect the role of IPRs in the growth process. Moreover, the results show that there is strong IPR-growth relationship by combining IPR and private property rights.
Edwards (1998) examined the nexus among the openness to trade and total productivity growth. This study used the panel data of ninety three different countries period from 1970 to 1990. To check the relationship between these variables this research used the nine indicators of trade policy by using the two measure of trade policy one is trade openness index and second is trade distortion. The results of this study showed that openness to trade positively and significantly connected with the growth of productivity and distortion index is insignificant. The results also indicated that the more open countries are faster in productivity as compare to the protective countries.

Paulson and Osili (2008) studied the impact of the institutional quality on the development of the development of financial market. This study used the data of immigrants, financial decisions natives and of the United States of America. The results of this study indicated that immigrants which were lived under the efficient quality of institutions are the well-organized in protesting the property rights and other rules. Effect of home countries institutions create a positive impact on the immigrants of US. And it also create a positive effect on the development of the financial markets.

Reza et al. (2018) observed the long run and short run forceful relationship between the infrastructure, technological innovation and industrial growth in Bangladesh. This study used the time series data of period from 1974 to2016. Industrial development, infrastructure and technological innovation are the variables that are used in this research. Data collected form the sources World development indicator and World Bank. Cobb- Douglas production function used in this research. ARDL bounds and additional crosses checking techniques are used on the data.

The results indicated that infrastructure has a positive impact on industrial growth and the technological innovation has a negative impact on industrial growth. VECM granger causality test are also used in this research. The result of this test showed that there is two way connection between the industrial growth, technological innovation and infrastructure.

Asif. M et al. (2018) investigated the impact of foreign direct investment (FDI) on the Asian region of commercial Asia's development. Samples of six Asian countries consisting of Bangladesh, China, India, Malaysia, Sri Lanka and Pakistan were adopted from 1991 to 2013 and a panel record version was used. Use the panel diagnostic check and the Chow check, the Hausman specification test and the Breusch-Pagan check to determine which panel version to use. These exams recommend the Pooled OLS version because it gets better votes. In this study, the impact of four explanatory variables, including foreign direct investment (FDI), trade openness, hobby fees, and infrastructure, was measured using the pooled OLS model for industrial improvement. The results of the study show that foreign direct investment has a good relationship with commercial development, which indicates that foreign direct investment is a very important factor in the improvement of any US industry. The relationship between trade openness and business improvement is negligible. Interest rates have a lot of negative links with industrial development, suggesting that if the government raises the price of amateurs, it will hinder traders from investing. Infrastructure and business development have a comprehensive and terrible relationship. In the case of infrastructure, negative signals indicate that, despite the poor infrastructure, it is a good sign that overseas traders are funding these international locations. The results of frontier research are comparable to the neoclassical economic growth theory. The current observations show that overseas direct financing is good for business development because it has a positive correlation.

Mohtadi and Ruediger (2014) examined the relationship between IPR, human capital and economic prosperity and found a negative effect of IPR on economic prosperity when there is human capital below the threshold level. And there is positive impact of IPR on economic prosperity when human capital is above of threshold level.

Sawyer (2011) investigate the problem that poor economic growth in Latin America .this study relate the total factor of productivity with the slow economic growth. This research also relate this problem with the institutional quality. The results of this study indicated that economic growth effected the public policy in Latin America.

Omojolaibi et al. (2009) investigated the long-run and short-run nexus between the trade openness, FDI and economic progress in Nigeria. This research used the time series data period from 1970 to 2006in Nigeria. Labor, capital, output, foreign direct investment and openness to trade are the variables that are used in this study. Autoregressive distribution lag used to check the connection between the variables. A two way causality are found between the openness to trade to output and foreign direct investment to output by using the Toda-Yamamoto estimation technique. .the results of this study indicated that output growth are significantly and positively correlated both by the trade openness and foreign direct investment in Nigeria. This research recommended that openness to trade and foreign direct investment are very fruitful for the output growth more than the any other thing.

Shabbier and Naveed (2006) studied the influence of trade openness(TO), foreign direct investment on GDP growth. This study used panel data of twenty three developed countries period from 1971 to 2000.in this study two techniques are used that are fixed effect and control set of variable. The outcome of this research indicated that trade openness has an increasing and significant influence on GDP.FDI create an insignificant on GDP.

Sinha D and Sinha T. (2000) examined the consequences of GDP transparency and capital development in 15 Asian nations somewhere in the range of 1950 and 1992. They proposed a novel component of the GDP blast, or, in other words of expanding cites. Transparency (send out in addition to import), lodging venture and populace. The results of the Automated Regression Model (ARMA) demonstrate that for Israel, China, Hong Kong, Myanmar, Iran, Pakistan Iraq, and Singapore, the open success coefficient is gigantic and altogether different. For Japan, Hong Kong, China, Israel, Indonesia, Jordan, the Philippines, Singapore and South Korea, the coefficient of family capital development is good, and it is particular from 0. Now and again, the coefficient of well-known success is negative. Be that as it may, in these cases, it isn't totally not the same as zero. In this manner, they discovered help for the case that GDP development costs are without a doubt identified with the development expenses of open and household reserves. Nonetheless, the connection between GDP blast costs and well known thriving rates isn't so self-evident.

Anoruo and Ahmed (2000) examined the long run connection between GDP development and transparency for five South East Asian nations that is Thailand, Malaysia, Philippines, Singapore and Indonesia,. Board information were utilized for this examination period from 1960 to 1997.

Intermediary of receptiveness utilized as import in addition to send out partitioned by GDP. The results of Johansan estimation dismissed the theory that there is no coordination between monetary (GDP) development and openness while the speculation that mistake adjustment term is critical couldn't be rejected. This Vector Error Correction model demonstrated bi-bearing causality.

Lau and Hye (2015) analyzed the impact of openness to trade on the growth on the context of India by using the new generated openness index. ARDL and rolling window regression are applied to check the long-run and short run connection between the study variables. This study used the annual-time series data period from the 1971 to 2009.the researcher used the economic growth proxy such as real GDP. The data of study variables collected from the WDI and World Bank. Physical and human capital is used as control variables. The results indicated that the relation among the openness to trade and growth is negative in short run but in the long run they creates a negative connection. But the human and physical capital creates a positive impact on the economic prosperity.

Iscan (1998) examined the impact of trade liberalization of the productivity in the Mexican manufacturing industry. This study used the panel data of Mexican countries period from 1970 to 1990. This research used the panel data techniques and results indicated that liberalization of trade and productivity if industrial sector has a positive and significant connection. The study also showed that human and physical capital and labor force also create a positive impact on the productivity.

Mayo et al. (2018) analyzed the nexus among the openness to trade and economic prosperity in Nigeria and Ghana. Openness to trade, GDP inflation, exchange rate and incorporated investment are the variables that are used in this research. This study used the data from the period 1980 to 2016.ADF (1981), Phillips and Perron (1988) and DF-GLS are techniques that are used to check the stationarity of the data. And to investigate the long-run link among the study variables researcher applied the ARDL technique. The outcomes of this research indicated that openness to trade and economic growth are positively correlated and show the significant effect in Ghana. But in the Nigeria openness to trade showed a negative and insignificant effect on economic prosperity.

2.3 Hypothesis 1

The hypothesis is directly related to a theory but contains operationally defined variables and is in testable form. Hypotheses allow us to determine, through research, if our theory is correct On the basis of the literature review and the identification of variables. Trade openness shows the positive relationship on the growth in developing and developed countries. The researcher develops the hypothesis on the base of the literature review.

H_1: There is a positive relationship between the trade openness and industrial growth

2.4 Institutional Quality and growth

Asgharat et al (2015) analyzed that institutional quality and economic prosperity have the positive effect. In this research he used the data of the thirteen Asian developing countries. He used the panel data period from (1990 to 2013) to determine the impact of quality of institutions on economic development. Institutional quality index created through the principal component analysis (PCA). The researcher used the panel ARDL and panel causality for the statically analysis. He suggested that higher institutional quality related with advanced level of economic prosperity. Also suggested that there is a need to take definite steps enhancing the quality of institutions.

Le. T (2008) investigate the role of remittance, trade and institutions on economic development of different developing countries by using the panel data of the large numbers of developing countries over thirty years GDP per capita used as the dependent variable and education, remittance institutions are used as independent variable. Through applied the panel data techniques he found that growth powerfully associated with the better quality of institutions and high level of trade. Trade positively effect on economic development in long run but in short run it does not support it because it affected on fluctuation of exchange rate and interest rate. Trade positively effect on institutions and that effect on growth it suggested to the policy makers that formulate the appropriate policies to enhance the both the institutional quality and trade openness.

Law et al. (2012) investigated the connection among quality of institutions and financial development. The study used the panel data of developing and developed over the period 1996–2004, GMM (Generalized Method of Moments**)** was applied as an estimation technique. By using this model the researcher determined the digital institutional quality to test the no liner relationship. The authors recommended that with the development of the stock market the

institutional quality follow the U shape normal. The results of this study shows that institutional-quality leads to enhanced expansion of the banking sector.

Hasan et al. (2009) determined the nexus among the legal institutions, economic prosperity, and Financial Development, by using the data of 31 provinces. Panel data was used for this study period from 1986 to 2002.He suggested that enhancing the financial markets, awareness of property rights, the legal environment and political stability leads to higher growth

Yahyaoui & Rahmani (2009) examined the relationship among FD, IQ and financial prosperity. Our goal is to demonstrate the importance of a sound institutional framework in the financial growth relationship. In this context, we first presented theoretical implications for this topic, while trying to define the concept of governor and determine its different measures. Next, we empirically tested Solow's growth model using human capital and discussed the connection among financial development, institutions, and economic growth. For 22 developing countries, various estimates were made for the group data methodology for the period 1990-2006. Based on these estimates, it seems that when studying the relationship between the financial sector and the real world, the quality of the organization is considered an important factor that should not be overlooked.

Balach and Law (2015) studied the affiliation among Financial Development, the institutional exceptional, human capital, and monetary overall performance, in four states of the South Asian Association for Regional Cooperation (SAARC) length from 1984–2008. The writers debated that the institutional fine has a huge effect on economic performance, completely when the monetary quarter is attached to an established institutional framework and has suitable human capital. The effects also uncovered that the aggregate of the best financial development, right institutional first-class, and exact human capital, delivered huge worth to financial improvement.

Tsaliki, and Osman (2014) examined the long run and short run relationships among institutional and economic prosperity in Sudan period from 1972 2008.They suggested that the institutional quality environment is one of the most key factors in determining economic prosperity.

Also, Asghar, Qureshi, and Nadeem (2015) examined the impact of quality of institutions on economic prosperity in under developed economies in Asia using an annual panel data from 1990-2013 for 13 selected developing economies. Their results of Panel ARDL show that quality of institutions positively impacts economic prosperity. Again, their panel causality test outcomes indicated that the quality of institutions and the economic prosperity has the twoway relationship.

They, therefore, concluded that there is a need to enhance institutional-quality in these under developed economies to ensure high economic prosperity.

Kebede and Takyi (2017) studied the connection among quality of institutions and economic prosperity. This study used the panel data of 27 countries period from 1996 2014. Padroni panel co- integration, panel causality and GMM techniques are applied on this data.co integration shows the positive long run results among the institutional quality and growth. Researchers studied that the trade openness, institutional quality, financial development and debt create the positive effect on the economic prosperity. He suggested that enhancement of development of financial sector, quality of institutions, openness to trade and reducing the debt services are very important in achieving the satisfactory level of economic prosperity in Sub-Saharan Africa.

Siddiqui and Ahmed (2009) used the Granger causality test and the Johansen Juselius co-integration test to analyze the nexus between the quality of institutions and economic development. The results of these tests showed that the economic prosperity and quality of institutions has a long run relationship. In addition, their Granger causality test outcomes indicated that the link among institutional quality and economic prosperity is one-way, causality from institutional quality to economic prosperity.

Lee and Kim (2009) analyzed the relationship between institutions and economic prosperity. They are absolutely related, but they operate through different networks in different environments. This study used time series data from 1965 to 2002. By applying different estimation techniques, the results of this study show that education, technology and institutions are the main factors for long-term growth. The study also shows that secondary education supports the growth of developing countries, and that higher education and technology are suitable for the growth of middle-income and high-income economies. The results of causality indicate that there is a two-way causal relationship between institutions and development.

Li et al. (2014) examined that the nexus among the Quality of institution, development of financial sector and OFDI. Panel data was used of 73 cross countries period from 2000 to 2008.gmm techniques are applied on the data. The researcher analyzed that the institutional quality play the mediating role on impact the economic development on OFDI. He found that the financial development promotes the OFDI but in that sense when the institutional quality with in the certain range.

Sathyamoorthy and Tang (2016) examined that the influence of institutional quality on the export led growth. The frame work of this works shows that the role of exports in pulling up the growth through the institutional quality. This research used the panel data of 119 countries period from 1990 to 2010.fixed and effect models are used on the data labor, capital and real exchange rate are used as control variables in this research. The study analyzed that the better institutional quality is the source in good relationship between the export and growth. This research further showed that the legal quality of institutional has the positive and substantial impact on export led growth but on the other hand the economic and political institutional quality has the significant but negative impact on ELG.

Neuhaus et al. (2006) examined that institutional quality play a very important role in accelerate the trade. This research used the variables institutional quality, trade and gross national income to check the relationship between trade and institutional quality. The researcher use the six indicator of institutional quality such as (governance, control of corruption, voice and accountability, regulatory quality, political stability, rule of law,) Data of 146 countries are used in this research.by using the different approaches the researcher analyzed those aspects of institutional quality that create a positive connection between trade and growth. Researcher concluded that the low quality of institutions does not attain the trade advantages so far.

Lee et al. (2015) analyzed that the financial development determinants in asia.in this study the panel data was used of 26 Asian and Pacific economies. Institutional quality Trade openness financial development are the variables that are used in this research. GMM (generalized method of moments) technique of panel data applied on the data. Study examined that that better institutional quality and good governance are the factors that enhance the financial development in the developing countries. Trade openness and economic prosperity has the main factors of a financial depth in the developing economies.

Zhou (2018) analyzed that the relationship between the human capital, institutional quality and industrial upgrading. Researcher used the 92 cross countries panel data of 15 industrial categories period from the 1970 to 2010.the results showed that the human capital enhance the industrial upgrading with the reliant level of institutional quality(IQ).

The foremost determinant of the differences in economic increase across international locations is monetary establishments which might be collective picks and are results of political techniques (Acemoglu et al. 2005). The nature of political group and distribution of political strength in a

society determines monetary institutions. These economic institutions not only bring about extraordinary stages of economic prosperity thru distinctive levels of monetary efficiency but additionally outcomes in different stages of distributions of the economic profits across individuals and distinct social corporations in a society affecting economic opportunity and allocation efficiency. Moreover, political competitions like checks and balances restriction the capacity of governments to have interaction in lease in search of while responsibility of governments to the taxpayers leads to extra commercial enterprise pleasant and policies and guidelines and hence improves government effectiveness and regulatory great (North, 1990)

Empirically, Alexiou, Tsaliki, and Osman (2014) investigated the short-run and lengthy-run relationships among institutional and financial boom in Sudan from 1972 to 2008.They determined that the first-rate of the institutional surroundings is one of the maximum vital factors in figuring out monetary boom. Also, Asghar, Qureshi, and Nadeem (2015) tested the impact of institutional great on economic prosperity in developing economies in Asia the usage of a panel annual statistics from 1990-2013 for 13 selected developing economies. Their outcomes of Panel ARDL show that institutional excellent undoubtedly influences monetary growth. Again, their panel causality takes a look at consequences indicate that there is two-way interconnection running from institutional satisfactory to financial boom. They, consequently, concluded that there may be a need to improve institutional high-quality in these growing countries to make certain excessive economic prosperity.

Kilishi et al. (2013) did an empirical research in sub-Saharan Africa to find out whether institutions certainly count number for boom inside the vicinity and if it does, which one's topics most? Their effects show that establishments honestly count number for financial overall performance, amongst which regulatory high-quality seemed to be the most essential and that they encouraged that economic overall performance of the place might be better through enhancing regulatory great.

Law et al. (2012) tested the relationship between the best institution and FD. The study reported samples from 2developed and developing countries during the period 1996-2004, and GMM was used as an estimation technique. The authors describe the square of the virtual place that satisfies its model to test for nonlinear relationships. The author completed the development of the stock market, the system quality indicators follow the U-Normal form. The consequences of the model show that the quality of the system leads to a higher improvement in the banking industry.

Zofio et al (2018) studied the relationship how the quality of institutions effects the two-way flow of trade. This study used the data of 186 economies period from 1996 to 2012.for the econometric results Poisson pseudo-maximum likelihood estimation method is used. The result of this study indicated that the effect of quality of institutions at distance and destination on export and import of the countries are two-way effect. Connection are related with the countries and destination. The economic growth of country enhances through the higher agriculture value and raw material for production.

Rogers (2008) synthesized the complementary influences of human capital and institutional best on financial improvement (proxies by means of in keeping with capita GDP). He argues that, whilst variables along with years of education and enrolment rates are often used as proxies for human capital, education isn't necessarily a strong indicator of effective abilities or human capital as educated people do now not always find their way into sports that upload value inside the domestic financial system; as an alternative, institutional satisfactory is an essential conditioning issue that determines the effectiveness and productiveness of human capital. Sound establishments may also facilitate the efficient employment of workers by means of imparting a properly-functioning and informative labor market that responds actively to modifications in labor deliver and demand, in each declining and developing sectors. High-fine institutions might also assist to mild entry and exit obstacles, ensuring that human capital and different resources are guided toward their maximum productive makes use of. Macroeconomic stability fosters an environment with decrease uncertainty in which human capital can be used in efficient sports and can obtain excessive returns.

NG et al. (2018) examined the impact of environmental quality on economic prosperity taking the institutional quality into account of 100 developing and developed countries. This study used the panel data of 100 developed and developing countries period from 2002 to 2014.GDP per capita.FDI (foreign direct investment), CO2 emissions, trade and institutional Quality are the variables that are used in this research. GMM (generalized method of moments) technique applied on data. The results indicated that the economic prosperity and carbon dioxide have a u-shaped relationship in developed countries it also showed that control of corruption and rule of law reduce the CO2 and have a beneficial effect on environment in high income countries. Overall results showed that the institutional quality reduce the CO2 and have a positive impact on environment and economic prosperity.

Doh et al. (2013) analyzed the impact of institutional quality on the export performance of the firm. Primary data used more than 10000 firms of 81 developed and emerged economies in six geographical regions. Researcher used the six indicator of institutional quality proxy such as (voice and accountability, government effectiveness, Rule of law, regulatory quality, political stability and control of corruption).The results showed that some indicator of institutional quality have a good impact on export performance of the firms then others.

Vijayaraghavan and Ward (2001) analyzed the experimental relationship among institutions and economic prosperity. Study used the panel data of 43 countries for the period 1975 to 1990. Researcher used the different measure of the institutional quality such s structure of governance, size of the régime, political freedom and property rights.by using the different techniques on the data the results indicated that well clear property right and the size of the régime are significant factors of institutional quality which improve economic presentation.

Hasan et al. (2009) analyzed the relationship between the institutional quality development deepening of finance and growth in china economy. Panel data was used in this research over the period 1986 to 2002. OLS and GMM techniques are applied on the data. The results indicated for the developing countries that main institutional developments for a developing country are authorization and development of market economy. The results also showed quality of institutional quality development, financial deepening, and legal environment have positive impact on economic prosperity.

Aron (2000) finds that institutional quality does influence investment as well as growth. The institutional variables considered in this study include respect for contracts and property rights. It is found that the institutional quality affects economic prosperity indirectly through its impact on the amount of investment

Subramanian (2007) analyzed that public institutions in specifically play four significant roles in promoting and sustaining long-run development. First, public institutions help to create market by protecting property rights, providing law and order and so forth so that a friendly business environment can be created. Second, institutions can regulate markets by correcting market failures and fulfilling some social objectives such as providing education to the needy. Further, institutions like central banks can stabilize markets by ensuring macroeconomic stability in a particular country.

Gradstein and Chong (2008) argue that a low level of income inequality leads to high institutional quality that can in turn stimulate better economic prosperity. On the other hand, if income inequality is high, then institutional quality is weak and growth would be slow. The author believes that weak institutional quality which is coupled with slow economic prosperity can persist if nothing is to be done to improve economic condition by reducing income inequality. This can explain why most of the attempts to import some constitutional features such as land reform from the developed to the developing world.

Ibrahim et al.(2013) analyzed the relationship among the growth effect of financial development In countries with distinct level of institutional improvement differ the panel data used of 85 countries in this study over the period 1980 to 2008. Regression model are applied to check the co-integration between the institutional quality, financial development and economic prosperity. The empirical results indicated that the institutional quality threshold effect the relationship between the financial progress and economic prosperity. Per capita income, gross domestic product (GDP) ratio, population growth rate and human capital are the variables that are used in this research. The results indicated that with the level of institutional quality threshold financial development effect the economic prosperity.

Addison and Baliamoune-Lutz (2006) suggested that an inverted-U relationship is confirmed between institutions and economic prosperity for the case of three Maghreb‘s nations (Algeria, Morocco and Tunisia). The result indicates that as countries shift from the poor institutional quality to partial freedom, the per capita income tends to increase initially. However, within the second half of the partially free range, income tends to decline because institutional quality does not show much improvement. This implies that a partial improvement may be more inferior to a weak institutional quality in terms of economic performance. According to the researchers, there are two main reasons for the inverted-U relationship. First, productivity suffers as people may be unhappy with government policies since they perceive these policies benefit only the minority who are in power as corruption and human rights abuse still exist. Second, the rich and wealthy may feel threatened with improved institutional quality. Hence, they are encouraged to contribute less to the development of the country and even shift their productive resources abroad.

Siddiqui and Ahmed (2013) investigated the level to which institutions affect growth by using 31 institutional indicators covering 84 countries for 5-year period from 2002-2006. Various categories of institutional factors namely, political rents, institutional and policy rents, and risk-

reducing technologies have been extracted from the indicators based on principal component analysis. The results obtained by applying the methodologies of panel OLS and GMM have supported the fact that good institutions lead to better economic prosperity. In particular, institutional and policy rents are more important factors contributing to growth than the other two factors in developing countries.

Majeed et al. (2016) investigated the relationship among the institutional governance and economic prosperity. This study used the panel data of 91 countries over the period 1999 to 2014.Rndom effect model and GMM (generalized moment method) technique applied on the data. Institutional governance index is used in this research. The results showed that the institutional governance has a positive and essential effect on the economic prosperity on the selected countries. This research includes the role of institutional quality by the channel of population and institutional governance create the direct impact in economic prosperity through the population channel.

Flachaire et al. (2014) analyzed the role of political and economic institutions in economic prosperity Panel data of 79 developed and developing economies with time series sample spanning 1975-2005. The study found that are: the role of economic institutions in growth is larger in low democracy regime as compare to that of in high-democracy regime, indicating that in low-democracy regime, the growth is more responsive to change in economic institutions. The analysis has further shown that economic institutions have significant and positive impact on growth, but political institutions have not direct impact on growth, rather these institutions indirectly affect the growth by determining the regime.

Nawaz (2015) examined the institutional effects on economic prosperity for 56 countries comprising 22 developing and 34 developed countries using the six disaggregated measures of institutions. The results concluded that all the disaggregated measures of institutional quality have significant positive effect on economic prosperity

Young and Sheehan (2014) investigated the link between foreign aid, institutional quality and growth for 116 countries using the annual time series sample of 1970-2010. The study was aimed to examine the effect of institutional performance on economic prosperity, effect of aid on institutional quality and effect of aid on growth. The results showed that only economic institutions have positive effect on growth. Moreover, aid flows cause deterioration in the legal system, property rights and volume of international trade flows.

Esfahani and Ramirez (2003) analyzed the impact of institutions and infrastructure on GDP per capita growth rate for 75 countries. The empirical results show that institutions cause effectiveness and credibility in government policy which leads development through the channel of infrastructure growth. In this way institutions play a mediator role in the economic prosperity.

Bonnal and YaYa (2015) analysed the relationship between political institutions, trade openness and economic prosperity. The purpose of the study examine the political institutions hamper economic prosperity? And whether GDP per capita and trade openness limit the persistence of institutions? They explored that there is weak evidence of impact of political institutions on economic prosperity, increase in GDP per capita and trade openness lead to competitive elections, which implies that GDP per capita and trade openness lead to more democratic political system.

Glaeser et al. (2004) examined the role of institutions on economic prosperity. They concluded that there is no direct impact of institutions on growth while human capital has strong impact on growth. Furthermore, it is pointed out that poor countries gain from dictators' policies, which leads to high income as a result it promotes quality of institutions. Literature on institutions and economic prosperity analyses the role of political and economic institutions in determining the growth. Most of the studies show that institutions have direct positive impact on economic prosperity, whereas some studies point out that institutions play their role in growth through indirect channels by affecting human capital, physical infrastructure and innovations.

Intartaglia et al. (2017) studied the practical analysis that how the enhancement of quality of institutions effect on financial development and its effects to the poverty by using the samples of under developed countries period from 1984 to 2012. Data for this study collected from World-Development Indicator this study used the OLS and GMM for the estimation of the data. The results of this study indicated that if the quality of institutions efficiently does work. Then the financial development will be weak and where the intuitional quality will poor then the financial development will strong.

Cherif and Gazdar (2014) studied the impact that how institutional quality influence the development of financial sector. This study used the panel data of north Africa and middle east (MENA) economies period from 1984 to 2007. By using the International Country Risk Guide the researcher constructed the yearly composite index of quality of institutions. By applying the panel data techniques, the results indicated that quality of institutions plays a dynamic role

development of banking sector and stock market. Moreover, the indicators of quality of institutions separately influence the development. For the development of banking sector the law and order are very important determinant and control of corruption and portfolio investment has the less importance

Sawyer.C (2010) analyzed the impact of quality of institutions on economic prosperity in Latin America. The problem is that the low economic prosperity in the Latin America and this study relates the total factor of productivity with the economic prosperity. This study widely reviews the past studied and literature on the determinants of economic prosperity and concluded that total factor of productivity is the basic problem in economic prosperity in Latin America. Furthermore, this problem is linked with the institutional quality.

Ismail et al. (2013) studied the impact of institutions on the economic development. This study used the panel data of sixty countries. This study used the two data sheets of quality of institutions first is international country risk guide and world development indicator. Panel data techniques are applied on the data and result indicated that there is two way connection between the economic performance and good institutions on different level of incomes. With the enhancement of institutional quality, the economic development also increases in the higher income countries and in the lower income countries for enhancement of economic development there is need to enhance the intuitional quality.

Ngendakuriyo.F (2013) examined the dynamic interplay between civil society organizations and the authorities in a representative developing financial system. Government fails to set up efficient institutions by means of favoring corruption. On its aspect, civil society exerts strain to constrain government to stop corruption. I distinguish among an authoritarian authorities and an unrestrictive one; the latter does now not repress protests from the civil society at the same time as the previous implements punishment mechanisms. I show analytically the lifestyles of a completely unique domestically strong equilibrium by using fixing a linear quadratic differential sport for three regimes: respectively, the premier manipulates hassle, non-cooperative, and cooperative game. Everything closing regular; numerical assessment indicates that each civil monitoring and government pressure continually growth because the government's capability to extract rents and the effectiveness of institutions increases. The authorities' pressure additionally will increase with a growth inside the marginal utility of hire. Both authorities' strain and civil society's monitoring effort lower with the increase inside the cooperation weight. Total Factor

Productivity outcomes constantly dominate the destructive effect of civil monitoring on growth, besides while the government's potential of hire extraction will increase in the 2d regime and below a few restrictions in the first. In a nutshell, I display that civil society contributes to the improvement of establishments fostering growth.

Tang and Sathyamoorthy (2018) analyzed the empirical effect of institutional quality on export leg-growth. This study used the data of 119 countries period from 1990 to 2010.the variables that are used in this study are export, economic prosperity and institutional quality random and fixed effect models are employed on the data to get the statistical results. The results of this study indicated that the three components of institutional quality that are political, legal and economic create a significant impact on the export ledge growth and export growth also enhance the GDP growth.

Butkiewicz and Yanikkaya (2006) illustrated the impact of institutional quality on economic prosperity for 100 developed and developing countries. The empirics concluded that rule of law and democratic institutions both have positive role in economic prosperity. Moreover, they pointed out that democratic institutions are important especially for developing economies.

Seputiene (2008) was aimed to analyse that how much variations in economic prosperity are explained by the institutional environment. Aggregate Governance Index (AGI) is used to capture all dimensions of governance. The most of the variations in economic prosperity are explained by institutions. There is positive relationship between institutions and economic prosperity in 60 countries, where institutional environment is positive and this relationship is weak for 93 countries where institutional environment was negative

Dahmardeh and Kacho (2018) examined the association between quality of institutions, financial development and economic prosperity. This study used the panel data of middle east, north Africa and (MENA) countries period from the 2002 to 2014. The variables that are used in this study are the Institutional quality that is measured by the six indicators such as(political stability, regulatory quality, rule of law, control of corruption, voice and accountability and government effectiveness),financial development measured by the (domestic credit to private sector percentage of GDP, private credit by deposited money bank percentage of GDP). By using the panel data techniques and GMM model on the data the results indicated that the institutional quality and financial development has negative and significant impact in MENA economies.

Glaeser et al. (2004) investigated the role of institutions on economic prosperity. They concluded that there is no direct impact of institutions on growth while human capital has strong impact on growth. Furthermore, it is pointed out that poor countries gain from dictators' policies, which leads to high income as a result it promotes quality of institutions. Literature on institutions and economic prosperity analyses the role of political and economic institutions in determining the growth. Most of the studies show that institutions have direct positive impact on economic prosperity, whereas some studies points out that institutions play their role in growth through indirect channels by effecting human capital, physical infrastructure and innovations.

Busse and Hefeker (2007) examined the role of political risk and institutions in Foreign Direct Investment (FDI) inflows. The findings expose that in cross sectional analysis, government stability, democratic accountability and religious tensions in the host countries have negative and significant impact on FDI inflows, whereas GMM technique suggests that internal and external conflicts, law & order, ethnic tensions and bureaucratic quality are significant factors determining the FDI inflows.

Haan and Klomp (2009) studied the effect of political institutions on the volatility of economic growth. This study used the panel data of 100 different countries period from 1960 to 2005 by using the different control variables that are used in past literature. The results of different panel techniques showed that the rule of democratic government reduce the economic volatility and also recommended that the uncertainty of policies, political instability uplift the volatility of economic growth.

Aixala and Fabro (2008) attempted to identify the most important institutional variables to be included into a growth model for both rich and poor countries.First they confirm that institutional quality is a vital determinant for economic prosperity of countries. Further, the results indicate that among the six variables examined, control for corruption' is the most significant variable for poor countries while the most important factor for rich countries is rule of law'. These findings are consistent with the results of some previous studies. By using a panel data of 25 years, the study by Addison and Baliamoune-Lutz (2006) for the case of three Maghreb's nations (Algeria, Morocco and Tunisia) suggests that an inverted-U relationship is confirmed between institutions and economic prosperity. The result indicates that as countries shift from the worst institutional quality to partial freedom, the per capita income tends to increase initially. However, within the second half of the partially free range, income tends to decline because institutional quality does

not show much improvement. This implies that a _partial improvement' may be more inferior to a weak institutional quality in terms of economic performance.

Knack and Keefer (1995) examined the effect of property rights on monetary growth by institutional indicators. These institutional indicators encompass nice of forms, belongings rights, and the political stability of a rustic compiled by means of us of a hazard evaluators to capability foreign investors. They find a statistically big advantageous dating among establishments and financial growth. Similarly, Mauro (1995) and Easterly (1999) display that corruption affects the economic prosperity manner negatively. The two famous research which have tested the impact of quality of institutions economic development are Hall and Jones (1999) and Acemoglu et al. (2001). The former specializes in social infrastructure and the later emphasizes the threat of expropriation that modern and capacity traders face. Given the indigeneity between institutions and increase, each the studies use instrumental variables to have a look at the relationship between establishments and growth.

Hall and Jones (1999) examined the hypothesis that the difference comparative study of the country's overall economic performance is primarily based on versions in inputs (bodily capital and human capital). Their results show that the huge amount of variant inside the level of the Solow residual throughout nations cannot absolutely give an explanation for the differences in bodily capital and educational attainment. They conclude that the differences in capital accumulation, productivity and therefore output in line with worker throughout countries are determined via variations in establishments and authorities rules, which they call societal structure. Acemoglu et al. (2001) discussed that European immigrants recognized appropriate institutions in international locations where the ailment surroundings allowed them to settle, even as they installed extractive institutions in countries wherein they couldn't settle themselves

Esfahani and Ramirez (2003) They examined the influence of institutions and infrastructure on GDP per capita growth rate for 75 countries. The empirical results show that institutions cause effectiveness and credibility in government policy which leads development through the channel of infrastructure growth. In this way institutions play a mediator role in the economic development.

Bonnal and YaYa (2015) studied the nexus among political institutions, trade openness and economic prosperity. The purpose of the study was to examine; whether political institutions hamper economic prosperity? And whether GDP per capita and trade openness limit the

persistence of institutions? They explored that there is weak evidence of effect of political institutions on economic prosperity, increase in GDP per capita and trade openness lead to competitive elections, which implies that GDP per capita and openness to trade lead to more democratic political system

Huang (2010) studied the nexus among the political institutions and development of financial sector. This study used the panel data from the period 1960 to 1999 0f ninety developed and growing countries.by applying the panel data techniques the results indicated that political institutions create a significant and increasing effect on the development of financial sector development in short run the study also showed that the democratic transformation enhance the financial sector

Azman-saini and law (2012) studied the effect of quality of institutions on the development of financial sector by using the indicators of stock market development and banking sector development. Thy study used the data of sixty three developed and developing economies from the period 1996 t0 2004.data of quality of institutions and governance indicators collected from the WGI(world governance indicator). For the statistical analysis of panel data GMM estimation technique are used and result of this study indicated that the high institutional quality very important for the development on financial sector.in development of stock market the institutions and governance plays a dynamic role.

Law and Balach (2015) analyzed the impact of human capital, quality of the intuitions, development of financial sector, on the performance of economic situations of any country. This study comprises the Asian economies included that (Sri-Lanka, India, Pakistan, and Bangladesh) the researcher used the panel data of these economies period from 1984 to 2008. Data was collected of study variables from the World-Development Indicator that is the most reliable source for data.in this study the growth model which is called neo-classical augmented growth model developed by the (Mankiw et al 1992) used for the panel data framework. Cobb-Douglas production function are also used in this study. The results indicated that the development of financial sector has a great influence to enhance the performance of economic environments in the (SAARC) countries. This research also showed that the quality of institutions create an imperative impact on economic performance. Quality of institutions also plays a dynamic role to promote the human-resources and due to that human capital, quality of institutions and financial progress promote the performance of the economic circumstances.

Doucouliagos and ulubasoglu (2004) investigated the impact of institutions on the growth by the simultaneous equations. The study used the panel data of 119 countries and final sample that are used in this research was twenty-two (OECD) economies.by using the GMM panel data technique the results of this study indicated that the nexus among political freedom and TFP are progressive and significant with the increase of human resources and with the increase of physical capital the political freedom create an inverse and significant effect on TFP. Moreover the economic freedom and TFP are positively correlated and both economic and political freedom create a positive impact on productivity

2.5 Hypothesis 2

The hypothesis is directly related to a theory but contains operationally defined variables and is in testable form. Hypotheses allow us to determine, through research, if our theory is correct On the basis of the literature review and the identification of variables. Institutional quality shows the positive relationship on the growth in developing and developed countries. The researcher develops the hypothesis on the base of the literature review.

H_2: There is a positive relationship between the Institutional quality and industrial growth

2.6 Theoretical Framework

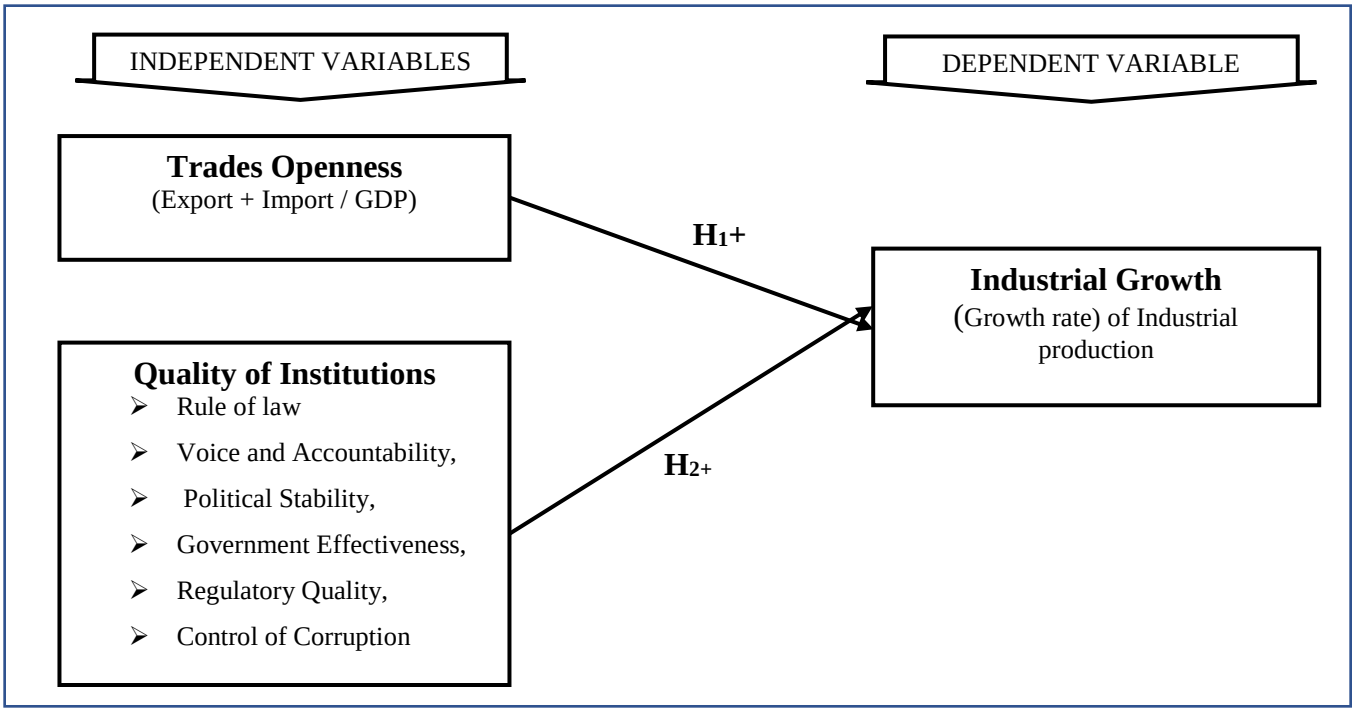

Figure 2.1

CHAPTER NO. 3

RESEARCH METHODOLOGY

3.1 Research Methodology

In order to achieve the objectives of the study this chapter discusses the types of data, collection of data, research methodology and estimation techniques which are used in our research to fulfill the targeted research objectives. The first objective of the study is to check the role of institutional quality in industrial growth a comparative study between developing and developed economies and the second is the role of trade openness in industrial growth to make a comparison between the developing and developed economies. To get a better result and understanding of the study and what changes occurring in our economy the econometrics models offer useful approximation.

Panel data methodology begins with the use of panel unit root tests. To evaluate the long-run association between variables, different panel data techniques like Pedroni (2004), Johansen Fisher developed by Maddala and Wu (1999), Fully Modified Ordinary Least Square (OLS) are used to check the causality.

3.2 Sources of Data Collection and Sampling

On the basis of availability of data fifteen developing countries namely Pakistan, Bangladesh, India, Malaysia, Turkey, Mexico, Cameroon, Algeria, Jordan, Romania, Serbia, El Salvador, Tunisia, Bulgaria and Nigeria are taken for empirical estimation and seventeen developed countries namely United Kingdom, France, Japan, Spain, Italy, Sweden, Switzerland, Germany, Norway, Netherland, United States, Finland, Luxembourg, Belgium, Austria, Canada and Korea are taken for the empirical estimation. Purposive sampling technique will be use in this study.

The study covers the period from 1996 to 2016. For this research, panel data is used in which the behavior of different cross-sectional units over a period of time is observed. There is the advantage of panel data which controls the effect of unobservable effects of variables which creates the problem of heterogeneity (Reppas and Christopoulos, 2005).

3.3 Identification of variables

After writing the literature review and theoretical framework, variables are divided into three categories first one is dependent variable second is independent variable and third one is the control variable to check the role of trade openness and institutional quality on industrial growth. Following are the proxies of all these variables.

3.3.1 Dependent variable

The dependent variable and the variation of the dependent variable does not affect the variables which is measured in research. For analyzing the impact of institutional quality and trade openness in industrial growth the following variable has been taken as a dependent variable on the basis of the literature review in this study.

3.3.1.1 Industrial Growth

Growth industries are often associated with new or pioneer industries. Their growth is related to consumer demand for new products or services that firms within the industry are beginning to offer. Industrial growth is measured by the industrial production index which is used by (Dogan and Adamu 2017).

3.3.2 Independent variables

Independent variable is a variable that stands the alone and is not change by the other variables that you are trying to measure. Following are the variables that are taken as an independent variable in this study.

3.3.2.1 Trade openness

In this study trade openness used as independent variable to check the impact of openness to trade on industrial growth. Trade openness measure by (import + export/GDP) this measure of trade openness has been used by the different researchers such as (Semancikova 2016, Azid and Thair 2015, Dogan and Adamu 2017)

3.3.2.2 Institutional quality

Although the overall importance of institutions for economic prosperity has been highlighted inside the past studies, there may be less clearance on how to measure the nice institutional quality. For a long term, researchers who assumed experimental studies at the consequences of institutions needed to depend upon honestly few sources, which includes the Global Competitiveness Report (World Economic Forum, 2005) or International Country Risk Guide (PRS Group, 2005). While both establishments post a massive form of applicable signs, they retrieve their facts from government and resident opinion polls and for this reason degree the perceived stage of institutional first-rate. For most people of those signs, they do no longer use real data to degree variations in institutional best throughout nations

In a comparable method, Kaufmann et al. (2005) created six signs measuring the high-quality of establishments by using connecting correct governance through economies. Rendering to their category, governance itself may be commonly described because the set of traditions and establishments with the aid of which authority in a rustic is exercised. This includes first the technique by which governments is decided on, monitored and replaced, represented with the aid of signs, Voice and Accountability, and Political Stability. Furthermore, governance consists of second the capability of the government to correctly formulate and enforce sound policies, that's represented via the signs Government Effectiveness and Regulatory Quality. Finally, governance implies third the morality of citizens and the kingdom for the institutions that govern monetary and social interactions amongst them, that's represented by means of the indicators Rule of Law and Control of Corruption. Hence, the signs describe public institutional great and deal with distinct dimensions of the overall authorities' performance

Although the best governance measures are also belief-based indicators, we use them in the following empirical analysis for 3 motives. First of all, the figures are available and comparable for a completely massive number of countries. No other source of records for institutional satisfactory covers nearly all nations (each developed and growing) in this kind of complete way. Second, the best governance signs are in fact a combined set of underlying variables. Since they are based totally on a large wide variety of various sources, any blunders or bias in the information is probably to be reduced in assessment to different sets of indicators for institutional high-quality. Finally, the six signs are honestly applicable measures of institutional high-quality concerning the linkage between alternate and growth stages.

All indicators are standardized, ranging in between the -2.5 to +2.5, with higher values corresponding to better governance outcomes and lowers values correspond the poor governance. This study uses all the indicators of institutional quality of 15 developing countries and 17 developed countries. These indicators of institutional quality are used by Easterly and Levine (2003), IMF (2003), Kuncic (2013).

3.3.2.3 Indicator of institutional quality

Following are the indicators of institutional quality which are used in the past literature. This study also uses these indicators to check the impact of institutional quality on industrial growth.

3.3.2.3.1 Voice and accountability

Taking the quantity to which a rustic's citizens can pick out and mission its authorities, as a consequence proscribing government's energy;

3.3.2.3.2 Political stability

The lower the possibility of political instability and/or politically-stimulated violence, the extra a country's citizens are incentivized to invest in their own rich destiny (e.G. Alesina et al., 1996);

3.3.2.3.3 Government effectiveness

Shooting the exceptional of public offerings and the degree of its independence from political pressures, for that reason fostering a benign context for personal investment.

3.3.2.3.4 Regulatory quality

The potential of the government to formulate and put in force sound guidelines and regulations that permit and promote non-public sector improvement, consequently laying down uniform regulations of financial engagement;

3.3.2.3.5 Rule of law:

Captures particularly the great of settlement enforcement, assets rights, the police, and the courts, i.e. the enforcement of the policies of society;

3.3.2.3.6 Control of corruption

The more potent is control of corruption, the extra economic achievement is a characteristic of attempt and competence, as opposed to connections and bribery;

3.3.2.4 Principal component analysis (PCA)

A statistical method, known as the principal component analysis (PCA), can transform correlated variables into orthogonal or uncorrelated variables. The orthogonal variables thus obtained are called the principal components. The basic idea behind PCA is simple. It groups the correlated variables into sub-groups so that variables belonging to any sub-group have a "common" factor that moves them together. This common factor maybe skill, ability, intelligence, ethnicity, or any such factor. That common factor, which is not always easy to identify, is what we call a principal component. There is one PC for each common factor. Hopefully, these common factors or PCs are fewer in number than the original number of repressors (Guajarati,2012).

3.4 Control variables

Control variables are those variables that holds the constant by the researcher during the analysis. Following are the control variables that are used in this study.

3.4.1 Labor Force

Workforce, also known as labor force, is currently a healthy and useful population for employment or hunt for work. In other words, it represents the resources of a country or economic sector. The work data used in this study comes from the World Development Indicators (WDI). Work is used as an independent variable in this study.

3.4.2 Capital

This study uses the physical capital as a control variable. The data of physical capital is not available (not usually published in any formal source). This study used the physical capital which is calculated by the perpetual inventory method.

3.4.2.1 Perpetual inventory method

Perpetual inventory method is used to calculate the physical capital series It takes the stock of capital as the accumulation of the STREAM of past investments. Consider the following simple equation of motion of capital stock as:

$$K_t = I_t + (1 - \emptyset)K_{t-1} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

If K (0) is initial capital stock, then Nehru and Dhareshwar (1993) computed capital stock series as:

$$K_t = (1 - \emptyset)K_0 + \sum_{i=0}^{t-1}(1 - \emptyset)^i I_{t-i} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Where: Φ is Geometric delay rate = = Depreciation Rate of Capital δ

For Investment Data Gross Fixed Capital Formation and For Output Data Real GDP at market Prices with base

3.5 Correlation analysis

Correlation analysis defined that it is the measure of direction, nature and strength to check the nexus among the two predictors or factors. The value may be the positive or negative between the variables. The correlation may be between the dependent and independent variable or, dependent and control variable, or in dependent to control variable. The correlation value must be the in between +1 and -1. The positive and negative signs of data show the relationship direction and the value show that how much a viable is related with other. There are three basics assumptions of the correlation analysis.1) Normal distribution of data 2) Linear nexus between the variables 3) Factors and predictors have the casual relationship. Standard criteria of correlation are under

Table 3.1

Correlation Description

	r values	Description
1	r = + 1	high perfect positive correlation between the factors
2	r = - 1	high perfect negative correlation between the factors
3	r = 0	non-correlation between the factors
4	$+0.75 \leq r<+1$	high positive correlation between the factors
5	$-0.75 \geq r>-1$	high negative correlation between the factors
6	$+0.50 \leq r<+0.75$	positive moderate correlation between the variables
7	$-0.50 \geq r>-0.75$	negative moderate correlation between the factors
8	$+0.25<r<+0.50$	positive but low correlation between the factors
9	$-0.25>r>-0.50$	negative but low correlation between the factors

Source: (Jain & Jhunjhunwala 2006)

3.6 Regression analysis

There are two types of regressions one is multiple liner regression and second is simple liner regression. When there is one independent variable and one dependent variable it relates to the simple liner regression and multiple liner regression associated with one dependent variable and two or more independent variables. This study used the multiple liner regression because one

dependent variable is industrial growth and openness to trade, institutional quality, labor, and capital are the independent variables that are used in this study.

3.7 Types of Panel data

Panel facts constituted into micro panel or macro panel. In micro panel quantity of entities (N) is greater than term time period (T) i.e. N>T. So in micro panel the disturbance of stationarity is eliminated. In micro panel go sectional devices are decided on randomly so they're no longer likely to be correlated. On the alternative hand in macro panel, variety of entities (N) in addition to time period (T) is huge so stationarity, co-integration and causality exist inside the macro panel. Further panel records may additionally represent balanced or unbalanced panel. In balanced panel, records are available for all observations whilst in unbalanced panel a few records are missing. In the present examine, macro panel information is used.

3.7 Panel data methodology

Panel data is favorable for two main advantages. (i) Panel data has large number of observations so that it shows the great consistency, reliability, and more efficiency and minor co-linearity among variables. (ii) Due to panel data, researchers become able to comprise time specific effects and country specific effects to observe the effects of unobservable variables due to the panel data which are associated with independent variables in the panel (Reppas and Christopoulos, 2005).

In this study data collected from the different sources such a world-development indicator (WDI) world governance-indicator (WGI) and International financial Statistics (IFS).

3.8 Estimation Techniques

The first step in finding the relationship between variables is to find the stationarity of the variables by applying various unit root tests.

3.8.1 Panel Unit Root Tests

In the panel data methodology First of all we check the integration order of all the relevant variables of our research. Different unit root tests are applied to check whether variables are stationary or not. Data is Stationary when there is constant mean, constant variance and covariance for every lag. If the data is not stationary at level then we the first difference is taken to make the data is stationary and if data is not stationary at first difference then we take the second difference to make the data stationary. It is desirable to use the normal integration order

of variable rather than taking 1st or 2nd difference to make the series stationary as it may lead to the probability of non-existence of long run relationship (Vuranok, 2009).

In this study while Augmented Dicky-Fuller (ADF) fisher chi-square unit root test and PP fisher chi_ square unit root test is applied on the date to check the stationarity of the data.

3.8.2 Panel Co-integration test

After checking the results of panel unit root test and verification of the integrated order of the variables, a question arises, is there is co-integration in the variables? co integration tests depend on the results of the panel unit root test if the integrated order at level then the estimation techniques are different if mixed integrated order such as some variable are at level and some are a 1st difference the techniques are different and if the integrated order are 1st difference then we use different estimation techniques

The following panel data co-integration estimation techniques are available when all the variables are integrated of order 1.

Pedroni Co-integration test (1999)

Johansen Co-integration test (1998)

Fully Modify ordinary least square (FMOLS)

Pedroni used various tests for co-integration in panel data analysis which permit considerable heterogeneity. Pedroni assumes trend for the cross-section units and constitutes the null hypothesis of no co-integration. If null hypothesis is rejected in the panel, the variables are said to be co-integrated. Padroni's test permits for numerous repressors for the co-integration vector to change across various sections of the panel. Moreover, it provides the appropriate critical values in complex regressions (Pedroni, 1999). Pedroni proposed the following panel regression model

$$Y_{it} = \alpha_i + \sum_{m=1}^{N} \beta mi\, X_{mit} + \delta_t + \mu_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3)$$

Pedroni has proposed seven different co-integration statistics to get the within and between effects in panel. The first category includes four tests which are based on pooling along within dimension. The second category includes three tests which are based on pooling along between dimensions and are known as group mean panel co-integration statistics. Pedroni concludes that in the seven statistics the distortions in size are negligible and power is high especially for long

time span. A major shortcoming of Padroni's test is that it deals with single co-integrating vector.

On the basis of multivariate framework presented by Johansen (1988), Maddala and Wu (1999) presented the Fisher co-integration test. Johansen presented two different methods for this purpose. One is probability ratio trace statistics while the other is maximum Eigen values statistics to check the existence of co-integrating vectors in case of non-stationary time series. This test follows system methods and aims to find more than one co-integrated vectors. When cross-section units are small and time span is long, the system method gives better results (Hlouskova and Wagner, 2009).

3.8.3 Panel co-integration regression

After the verification of co-integration between all the variables, the next task is to calculate the related co-integration parameters. In case of existence of co-integration, OLS provided inconsistent and biased ideas. As a result, different estimation techniques have been proposed. For instance, Liu and Kao and (2000) proposed Dynamic OLS (DOLS) which have done well in case of co-integrated panels and particularly in small samples. In case of cross section heterogeneity, the panel DOLS is unable to provide the consistent and reliable estimates. Pedroni (2000; 2001) solved this problem by proposing the group mean fully modified OLS (FMOLS) estimator for co-integrated panel. This technique is not affected by large size distortions when indigeneity and heterogeneity are present and provides consistent and reliable estimates in case of small samples.

3.9 Model. Effect of institutional quality and trade openness in industrial growth industrial

There are several indicators which have been used as measures of industrial growth in the empirical literature. It is evident from the previous empirical studies that industrial production index such as (Dogan and Adamu 2017) has been used most frequently as a proxy of industrial growth.

LNIPI = f (LNLF, LNCAP, IQI, TO)

The model has the following general equation

$$LNIPI_{it} = \beta_0 + \beta_1 LNLF_{it} + \beta_2 LNCAP_{it} + \beta_3 IQI_{it} + \beta_5 TO_{it} + u_{it} \dots\dots\dots\dots\dots\dots (4)$$

Where,

IPI = Industrial Production Index

LF = Labor Force (Total)

CAP = Physical Capital Stock Series (Perpetual Inventory system)

IQI =Institutional Quality index which is measured by the six indicators such as (Voice and accountability, Rule of law, Regulatory quality, Control of corruption, Government effectiveness, and Political stability)

TO = Trade Openness (Import + Exports / GDP)

T = 1, 2 …time periods I = 1, 2 ….countries

μit = Error term which is supposed to be independently and normally distributed having constant variance and zero mean.

CHAPTER NO. 4

DATA ANALYSIS AND RESULTS DISCUSSION

4.1. Data Analysis of Developing Countries.

In this study there are two parts of analysis. The first analysis is the developing countries in which we use the panel data of 15 developing countries and in the next step analyses of developed countries.

4.1.1 Descriptive Analysis

The results of descriptive statistics of the variables show in table 4.1 of the developing countries data set. The tables show the values of arithmetic mean, median, maximum, minimum, standard deviation. It is clear that the observations are 315 of 15 growing countries are used.

Table 4.1

Descriptive Statistics

Variables	Mean	Median	Maximun	Minimum	Std Dev
Trade Openness (TO)	1.1447	0.6718	11.5626	0.2169	1.8584
Industrial Production Index (LnIPI)	4.4860	4.5767	5.1763	3.6176	0.2646
Capital (LnCAP)	28.6292	29.4915	33.4438	23.1922	2.7474
Labor Force (LnLF)	16.5342	16.3044	20.0500	13.9855	1.4558
Institutional Quality Index (IQI)	9.52E-12	0.1687	3.6942	-5.2806	1.7705

The table 4.1 regarding the results of normal distribution of data the value of the trade openness (TO) have the mean value 1.1447 and the median value is 0.6718 and trade openness having the maximum value is 11.5626 and minimum value is 0.2169 and the standard deviation value of

trade openness is 1. 8584.. Next dependent variable is industrial production index (LNIPI) have the mean value 4.4860 and the median value is 4.5767 and industrial production index having the maximum value is 5.1763 and minimum value is 3.6176 and the standard deviation value of industrial production index is 0.2646. The independent variable capital (LNCAP) has the mean value 28.6292 and the median value is 29.4915 and capital having the maximum value is 33.4438 and minimum value is 23.1922 and the standard deviation value of capital is 2.7474.and the third independent variable is labor force (LNLF) that having the mean value is 16.5342 and the median value is 16.3044 and labor force having the maximum value is 20.0500 and minimum value is 13.9855 and the standard deviation value of labor force is 1.4558. The table also shows the independent variable institutional quality index that having the mean value is 9.52E-12 and the median value is 0.1687 and institutional quality index having the maximum value is 3.6942 and minimum value is -5.2806 and the standard deviation value of institutional quality index is 1.7705

4.1.2 Correlation Analysis

Correlation refers to the method used to measure the connection between two variables. When variables are related to each other, their way is that they change together. A positive correlation, where the high score on one hand is related to the score on the other, and the low score on one side is related to the low score on the other. Again, negative correlation, the over-rating of the first question is associated with the low score of the second question. A negative correlation shows a low-scoring variable and the variable is associated with a second variable of the high score.

Table 4.2

Correlation matrix

Variables	TO	LNCAP	LNLF	IQI	LNIPI
Trade Openness (TO)	1.0000				
Capital (LnCAP)	0.0147	1.0000			
Labor Force (LnLF)	0.1332	0.7550	1.0000		
Institutional Quality Index (IQI)	0.0704	0.0176	0.0018	1.0000	
Industrial Production Index (LnIPI)	-0.2745	0.0369	-0.1827	0.0820	1.0000

The table 4.2 shows that the trade openness (TO) and Capital (LnCAP) has a positive correlation and its coefficient value is 0.0147. There is positive relationship between the TO and LnLF and the value of coefficient is 0.1332 which means that the TO is 13.32 percent correlated with LnLF it shows the positive correlation between the TO and IQI the coefficient vale of correlation is 0.0704 that indicated that there is 7.46 correlation between the TO and IQI. TO and LnIPI shows the negative correlation and its coefficient value is -0.2745. The LNCAP and LnLF show the positive correlation and the coefficient vale of correlation is 0.7550. The LnCAP and the IQI show the positive correlation and the coefficient vale is 0.0176 and the correlation between the LnCAP and LnIPI has a positive sign. The table shows the correlation between the LnLF and IQI is positive the value of correlation is 0.0018. It also show the negative correlation between the LnLF and LnIPI and the coefficient value of correlation -0.1827. And IQI and LnIPI show a positive correlation the value is 0.0820.

4.1.3 Panel Data Analysis

In the panel data results, we discuss about all the results which are gathered by using the panel econometrics techniques on the data.

4.1.3.1 Unit Root Results

Before using the econometric modeling, first of all we check the integration order of all selected variables. For this purpose, panel unit root tests: ADF fisher chi-square and PP fisher chi-square are used to check the stationarity of the variables. The first table 4.3 show the results which obtained by applying ADF fisher chi-square and PP fisher chi-square panel unit root tests at level with statistics as well as with probability while the table 4.4 show the results at first difference are shown with statistic as well as with probability It is clear from the results that all the variables are non-stationary at level and become stationary at first difference in case of developing countries. On the basis of these results we concluded that all the variables used in the model (TO, IPI, CAP, LF and IQI) have the integrated order one I (1).

Table 4.3

ADF and PP Fisher Chi-Square at Level

Variable	Statistic	Prob.	Conclusion
ADF fisher chi square at level			
Trade Openness	9.8379	0.9998	Non-stationary
Industrial Production index	23.2034	0.8068	Non-stationary
Capital	9.0271	0.9999	Non-stationary
Labor force	7.0890	1.0000	Non-stationary
Institutional Quality index	19.1989	0.9357	Non-stationary
PP fisher chi-square at level			
Trade Openness	14.5031	0.9923	Non-stationary
Industrial Production index	38.5781	0.1355	Non-stationary
Capital	7.4503	1.0000	Non-stationary
Labor force	6.2269	1.0000	Non-stationary
Institutional Quality index	28.8948	0.5231	Non-stationary

ADF and PP Fisher Chi- Square is Significant at 0.05 Levels

Table 4.4

ADF and PP Fisher Chi-Square at 1st Difference

Variable	Statistic	Prob.	Conclusion
ADF fisher chi-Square at 1st Difference			
Trade Openness	99.4084	0.0000	Stationary
Industrial Production index	112.7900	0.0000	Stationary
Capital	108.3440	0.0000	Stationary
Labor force	49.9857	0.0124	Stationary
Institutional Quality index	85.8159	0.0000	Stationary
PP fisher chi-Square at 1st Difference			
Trade Openness	153.5940	0.0000	Stationary
Industrial Production index	146.6820	0.0000	Stationary
Capital	111.5060	0.0000	Stationary
Labor force	89.3991	0.0000	Stationary
Institutional Quality index	144.7040	0.0000	Stationary

ADF and PP Fisher Chi- Square is Significant at 0.05 Levels

4.1.3.2 Co-integration Results

On the basis of the results of unit root test which is shown in the table 4.4 this research applied Pedroni co-integration test and got the results that are shown in Table 4.5. The results of seven

statistics reveal in which most of the cases null hypothesis cannot be rejected which assumes no co-integration. In the estimated models, results of Pedroni panel co-integration which we used the selected variables show weak long run correlation between variables. To check the further co-integration results between the variables Johansen Fisher technique for panel co-integration is applied which was developed by Maddala and Wu (1999).

Table 4.5

Pedroni Panel Co-integration Results

(**Variables: LNIPI LNLF LNCAP IQI TO)**

Models	**Statistics**	**P-value**
Panel *v*-statistics	0.8891	0.1870
Panel rho(δ)-statistics	1.1442	0.8737
Panel pp-statistics	-2.4537	0.0071
Panel ADF-statistics	-1.0680	0.1427
Group rho(δ)-statistics	2.6267	0.9957
Group pp-statistics	-4.3942	0.0000
Group ADF-statistics	-2.4910	0.0064

Pedroni Panel co-integration significant at 0.05 levels

pedroni co-integration test does not provide any information for the co-integrating vectors while Johansen Fisher panel co-integration test delivers information about more than one co-integrating vectors. This test presents much better results as compare to the pedroni especially when number of cross-sectional units is small as compared to time period (Hlouskova and Wagner, 2009). This research also used Johansen Fisher co-integration technique and which was developed by Maddala and Wu (1999).

Table 4.6 presents the results obtained by the Johansen fisher co-integration for panel co-integration. The results of Trace test and Maximum Eigen test describe the existence of all co-integrating vectors at 1% level of significance. The long run relationship among the variables is confirmed by the existence of two or more than two co-integrating vectors.

Table 4.6

Johansen Fisher Panel Co-integration Results

(Variables: LNIPI LNLF LNCAP IQI TO)

No. of CE(s)	Statistics	P-value	Statistics	P-value
	Trace Stat		Max Eigen Stat	
None	490.70	0.0000	298.40	0.0000
At most 1	260.20	0.0000	162.20	0.0000
At most 2	128.40	0.0000	87.54	0.0000
At most 3	71.39	0.0000	63.61	0.0003
At most 4	46.04	0.0308	46.04	0.0308

Johansen Fisher Panel Co-integration is significant at 0.01 levels

4.1.3.3 Co-integration Regression Estimates

After the confirmation of co-integration among the variables, the next step is to estimate the long run coefficients. FMOLS technique is applied to estimate the long run coefficients and the results are reported in table 4.7 where industrial growth which is measured by (Industrial production index) is taken as dependent variable to check the impact of trade openness and institutional quality on industrial growth. Capital (CAP) and labor force (LF) are used as control variables.

The coefficient value of CAP indicates positive sign which means that increase in capital causes an increase in industrial growth. The results show that 1 percent increase in capital causes an increase of 0.792413 percent in industrial production in long run. The probability value of CAP implies that CAP has significant effect on industrial growth in long run.

The coefficient value of LF coefficient has positive effect which indicates that with the increase in Labor Force, industrial growth also increases. The results show that increase in Labor force (measured by labor force total) increases the industrial growth in long run. The probability value of LF coefficient shows that LF coefficient has significant effect on industrial growth in long run.

The coefficient value of the variable TO have negative sign which indicates negative effect of trade openness, on industrial growth and the result indicates that 1% increase in TO causes a decrease of -0.0566 percent in industrial growth in long run. The probability value of TO shows that it has significant effect on industrial growth in the long run. This result supports the study (Hye, 2012: Hye, 2015 and Umer, 2014)

The coefficient value of the variable IQI has positive sign which indicates positive effect of increase of institutional quality, on industrial growth and the result indicates that 1% increase in IQI causes an increase of 0.0102 units in industrial growth in long run. The probability value of IQI shows that it has significant effect on industrial growth in the long run.

Table 4.7

Fully Modified OLS Results

Analysis of Developing Countries

Dependent Variable: IPI (Industrial Production Index)

Variables	Coefficients	P-Value
LNCAP	0.7924	0.0000
LNLF	0.1613	0.0464
TO	-0.0566	0.0000
IQI	0.0102	0.0917
R-squared	0.8158	
Adj. R-squared	0.8040	
S.D dependent Var	0.2490	

The R-square value is 0.8158 which indicate that 0.8040 variation in industrial growth due to the capital, labor, trade openness and institutional quality in developing countries

4.2 Data Analysis of Developed Countries

In the second part of analysis study analyze the 17 developed countries to check the impact of institutional quality and trade openness on industrial growth.

4.2.1 Descriptive Analysis

Table 4.8 shows the descriptive statistics of the variables of this research in the developed countries. The table shows the values of arithmetic mean, median, maximum, minimum, standard deviation, It is clear that the observation are 357 of 17 developed countries are used.

Table 4.8

Descriptive statistics

Variables	Mean	Median	Maxi	Mini	Std Dev
Trade Openness (TO)	0.8585	0.6793	3.8942	0.1985	0.6232
Industrial Production Index (LnIPI)	4.5743	4.6051	4.8389	3.6021	0.1722
Capital (LnCAP)	29.3509	28.8182	38.7039	24.7919	2.9019
Labor Force (LnLF)	16.1996	16.6825	18.9063	12.0511	1.5142
Institutional Quality Index (IQI)	-8.40E-12	-0.2775	4.2122	-3.6936	1.7112

The table 4.8 showed that the trade openness (TO) have the mean value 0.8585 and the median value is 0.6793 and trade openness having the maximum value is 3.8942 and minimum value is 0.1985 and the standard deviation value of trade openness is 0.6232. Next dependent variable is industrial production index (LnIPI) have the mean value 4.5743 and the median value is 4.6051 and industrial production index having the maximum value is 4.8389 and minimum value is 3.6021 and the standard deviation value of industrial production index is 0.1722.the independent variable capital (LnCAP) have the mean value 29.3509 and the median value is 28.8182 and capital having the maximum value is 38.7039 and minimum value is 24.7919 and the standard deviation value of capital is 2.9019 .and the third independent variable is labor force (LnLF) that having the mean value is 16.1996 and the median value is 16.6825 and labor force having the maximum value is 18.9063 and minimum value is 12.0511 and the standard deviation value of labor force is 1.5142. The table also show the independent variable institutional quality index that having the mean valve is -8.40E-12 and the median value is -0.2775 and institutional quality having the maximum value is 4.2122 and minimum value is -3.6936 and the standard deviation value of institutional quality index is 1.7112.

4.2.2 Correlation Analysis

Correlation refers to the method used to measure the connection between two variables. When variables are related to each other, their way is that they change together. A positive correlation, where the high score on one hand is related to the score on the other, and the low score on one side is related to the low score on the other. Again, negative correlation, the over-rating of the first question is associated with the low score of the second question. A negative correlation

shows a low-scoring variable and the variable is associated with a second variable of the high score.

Table 4.9

Correlation Matric

Variables	TO	LNCAP	LNLF	IQI	LNIPI
Trade Openness (TO)	1.0000				
Capital (LnCAP)	-0.4474	1.0000			
Labor Force (LnLF)	-0.7796	0.5824	1.0000		
Institutional Quality Index (IQI)	-0.0468	0.0139	-0.0074	1.0000	
Industrial Production Index (LnIPI)	0.0114	-0.1659	0.0693	0.0398	1.0000

The table 4.9 shows that the trade openness (TO) and capital (LnCAP) has a negative correlation and its coefficient value is -0.4474. There is negative relationship between the TO and LnCAP and the value of coefficient is -0.7796. It shows the negative correlation between the TO and (IQI) the coefficient vale of correlation is -0.0468. Correlation between the TO and (LnIPI) also positive and the coefficient value is 0.0114. LnCAP and LnLF show the positive correlation and the value of the coefficient is 0.5824. The LnCAP and IQI show the positive correlation and the coefficient value of correlation is 0.0139. The LnCAP and the Industrial Production Index (LnIPI) show the negative correlation and the coefficient value of correlation is -0.1659. The LnLF and Institutional Quality Index (IQI) show the negative correlation and the coefficient value of correlation is -0.0074.the correlation between the LnLF and LnIPI has a positive sign. The table shows the positive correlation between the IQI and LnIPI the value of correlation is 0.0398.

4.2.3 Panel Data Analysis

In the panel data results, we discuss about all the results which are gathered by using the panel econometrics techniques on the data.

4.2.3.1 Unit Root Results

Before using the econometric modeling, first of all we check the integration order of all selected variables of developed countries. For this purpose, panel unit root tests: ADF fisher chi square and PP fisher chi square are used to check the stationarity of the variables. The table 4.10 show the results which obtained by applying ADF fisher chi-square and PP fisher chi-square panel unit root tests at level with statistics as well as with probability while the table 4.11 show the results

at first difference are shown with statistic as well as with probability It is clear from the results that all the variables are non-stationary at level and become stationary at first difference in case of developed countries. On the basis of these results we concluded that all the variables used in the model (TO, LnIPI, LnCAP, LnLF IQI) have the integrated order one I (1).

Table 4.10

ADF and PP Fisher Chi-Square at Level

Variable	Statistic	Prob.	Conclusion
ADF fisher Chi-square at level			
Trade Openness	13.2302	0.9995	Non-stationary
Industrial Production index	15.0774	0.9979	Non-stationary
Capital	19.4683	0.9783	Non-stationary
Labor force	6.8101	1.0000	Non-stationary
Institutional Quality index	18.7917	0.9839	Non-stationary
PP fisher chi-square at level			
Trade Openness	26.9687	0.7988	Non-stationary
Industrial Production index	11.8566	0.9998	Non-stationary
Capital	29.9455	0.6667	Non-stationary
Labor force	4.6186	1.0000	Non-stationary
Institutional Quality index	16.2551	0.9957	Non-stationary

ADF and PP Fisher Chi- Square is Significant at 0.05 Levels

Table 4.11

ADF and PP Fisher Chi-Square at 1st Difference

Variable	Statistic	Prob.	Conclusion
ADF fisher Chi-square at level			
Trade Openness	150.3510	0.0000	Stationary
Industrial Production index	123.4550	0.0000	Stationary
Capital	59.0858	0.0049	Stationary
Labor force	58.3810	0.0058	Stationary
Institutional Quality index	120.5830	0.0000	Stationary
PP fisher chi-square at level			
Trade Openness	289.6140	0.0000	Stationary
Industrial Production index	259.3310	0.0000	Stationary
Capital	99.9202	0.0000	Stationary
Labor force	115.5750	0.0000	Stationary
Institutional Quality index	254.3210	0.0000	Stationary

PP Fisher Chi- Square is Significant at 0.05 Levels

4.2.3.2 Co-integration Results

On the basis of unit root test results which is shown in the table 4.11 researcher applied Pedroni co-integration test and got the results that are shown in Table 4.12. The results of seven statistics reveal in which supreme of the cases null hypothesis cannot be rejected which assumes no cointegration. In the estimated models, results of Pedroni panel cointegration which we used the selected variables show weak long run correlation between variables. To check the further co-integration results between the variables Johansen Fisher technique for panel co-integration is applied which was developed by Maddala and Wu (1999).

Table 4.12

Pedroni Panel Co-integration Results

(Variables: LNIPI LNLF LNCAP IQI TO)

Models	Statistics	P-value
Panel *v*-statistics	0.1285	0.4489
Panel rho(δ)-statistics	1.3227	0.9070
Panel pp-statistics	-1.4801	0.0694
Panel ADF-statistics	0.0468	0.5187
Group rho(δ)-statistics	2.9857	0.9986
Group pp-statistics	-3.5831	0.0002
Group ADF-statistics	-1.2526	0.1052

Pedroni Panel co-integration significant at 0.05 levels

pedroni co-integration test does not provide any information for the co-integrating vectors while Johansen Fisher panel co-integration test delivers information about more than one co-integrating vectors. This test presents much better results as compare to the pedroni especially when number of cross-sectional units is small as compared to time period (Hlouskova and Wagner, 2009). Johannes Fisher co-integration technique also has used which was developed by Maddala and Wu (1999).

Table 4.13 presents the results obtained by the Johansen fisher co-integration for panel co-integration. The results of Trace test and Maximum Eigen test describe the existence of all co-integration vectors at 1% level of significance. The long run relationship between the variables is confirmed by the existence of two or more than two co-integration vectors.

Table 4.13

Johansen Fisher Panel Co-integration Results

No. of CE(s)	Statistics	P-value	Statistics	P-value
	Trace Stat		Max Eigen Stat	
None	490.70	0.0000	298.40	0.0000
At most 1	260.20	0.0000	162.20	0.0000
At most 2	128.40	0.0000	87.54	0.0000
At most 3	71.39	0.0000	63.61	0.0003
At most 4	46.04	0.0308	46.04	0.0308

Johansen Fisher Panel Co-integration is significant 0.01 levels

4.2.3.3 Co-integration Regression Estimates

After the verification of co-integration among the variables, long run coefficient estimates in the next step. To estimate the long coefficients between the study variables Fully Modified Least Squares (FMOLS) technique is applied and the results are stated in table 4.14 where Industrial production index is taken as dependent variable to check the influence of trade openness (TO) and institutional quality on industrial growth in the developed countries. Capital (CAP) and labor force (LF) are used as control variables.

The coefficient value of CAP indicates positive symbol which shows that increase in capital causes an increase in industrial growth. The outcomes indicate that 1 percent increase in capital causes an increase of 0.2719 percent in industrial production in long run. CAPs value of probability indicates that CAP has significant effect on industrial growth in long run.

The coefficient value of LF coefficient has negative symbol which shows that with the increase in Labor Force, industrial growth also decreases. The results show that increase in Labor force (measured by labor force total) decreases the industrial growth by in long run. The probability value of LF coefficient shows that LF coefficient has significant impact on industrial growth in long run.

The coefficient value of the variable TO have positive sign which indicates positive impact of increase of trade openness, on industrial growth and the result indicates that 1% increase in TO causes an increase of 0.3249 units in industrial growth in long run. The probability value of TO shows that it has significant effect on industrial growth in the long run. This study mates the result such as (Dam et al 2013: Zhou 2016).

In the same way the positive coefficient value of institutional quality index reflects positive effect on industrial growth. The outcome of this estimation shows that 1 percent increase in institutional quality increases industrial growth by 0.2027 percent in long run. The probability value of institutional quality index indicates that this positive effect of industrial growth is significant (Kraay and Dollar, 2002).

Table: 4.14

Fully Modified OLS Results

Analysis of Developed Countries

Dependent Variable: IPI (Industrial Production Index)

Variables	Coefficients	P-Value
LNCAP	0.2719	0.0000
LNLF	-0.6861	0.0007
TO	0.3249	0.0001
IQI	0.2027	0.0806
R-squared	0.6639	
Adj. R-squared	0.6429	
S.D dependent Var	0.1604	

Fully Modified OLS is significant at 0.10 levels

The R-square value is 0.6639 which indicate that 0.66.39 percent variation in industrial growth due to the capital, labor, trade openness and institutional quality in developed countries.

4.3 Comparative Analysis of Developing and Developed countries.

This study divided into two major categories such as developing and developed countries. The comparison is based on the coefficient of trade openness and institutional quality how these variables effect the industrial growth in developing and developed countries.

Table 4.15

Comparative Analysis

Developing and Developed Economies

Dependent Variable: Industrial Growth

	Developing countries			**Developed countries**		
Variable	Coefficient	**t-Statistic**	P-value	Coefficient	**t-Statistic**	P-value
Trade Openness (TO)	-0.0566	-6.9490	0.0000	0.3249	5.4381	0.0001
Institutional Quality Index (IQI)	0.0102	2.5066	0.0917	0.2027	2.3234	0.0806

Comparative Analysis is significant at 0.10 levels

By using the variables of trade openness (import + export/GDP), institutional Quality Index (regulatory quality, Rule of law, political stability, government effectiveness, control of corruption and voice and accountability,) and industrial growth (Industrial production index).The tables 4.15 the comparison of developing and developed revealed that trade openness is negative in the developing countries but in the developed countries trade openness create a positive effect in industrial growth.

The institutional quality index shows the positive and significant impact in the developing countries and also shows the positive and significant impact on industrial growth in developed countries. But in the developed countries it effects more as compare to the developing countries.

CHAPTER NO. 5

CONCLUSION DISCUSSION AND RECOMMENDATIONS

5.1 Conclusion

The objectives of this study were to check the impact of trade openness on industrial growth and to check the impact of institutional quality on industrial growth in developing and developed nations. For this purpose, the independent variables were trade openness, institutional quality trade openness is measured by dividing the volume of trade over GDP (import + export/GDP) and institutional quality which is measured by the six indicators of governance such as (control of corruption, rule of law, regulatory quality, political stability, government effectiveness and voice and accountability). Institutional quality index was calculated by using the PCA (Principal Component Analysis. Dependent variable of this study was industrial growth which is measured by the industrial production index. Panel data from 1996 to 2016 period was used. Different types of Panel data analysis techniques were applied for the estimation of results. First of all pedroni data analysis technique was used to check the association among the variables but pedroni did not show the relationship between the variables. After that Johnsen fisher co-integration was applied to check the connection among the variables that indicates the strong long run nexus among the variables. After that FMOLS (Fully Modified Least Squares Model) were applied that showed the effect of independent variables on dependent variable. The output of this research showed that the trade openness has a negative impact and institutional quality has a positive and significant effect on industrial growth in developing countries.

It also concluded that the trade openness and institutional quality has a positive and significant impact on industrial growth in developed countries.

5.2 Discussion

Theory and hypothesis based on the problem of the research that has been presented above on the basis of previous research studies. The researcher found that the trade openness has a negative effect on the industrial growth in developing economies. Institutional quality has a positive and significant impact in developing countries. The result of this study related trade openness is match with Hey (2012) and Hey (2015). The first hypothesis of this study is that the trade openness has a positive impact on industrial growth and the second hypothesis that the trade openness has a positive impact on industrial growth. In the developing countries, institution quality impact on industrial growth is low as compared with the developing countries. It means that the institutional quality in the developed countries is higher as compared to the developing countries because in developing countries problems like corruption which detoriates the production, which leads to decrease trade openness (Trade to GDP share). Actually, the developing economies need to enhance the institutional quality for the better industrial growth and development. The trade openness has negative and significant effect in developing countries and positive and significant impact in developed countries. These results indicated and helped the policy makers to understand the difference between the policy implications. Developing countries considered role model and follow the rules and policies of developed countries.

The findings suggested that trade openness policies play key role to enhance economic growth in Pakistan. This is consistent with the prediction of most international trade theories that trade openness is an important engine for economic growth. The effect of trade volume on growth became significant from 1980 onwards when Pakistan gradually moves towards new tariff reform policy for industrial sector growth. Pakistani industries started importing raw materials and intermediate goods after tariffs reduction which increased labor productivity and consequently led to faster economic growth. Moreover, study also finds that an increase in physical capital and human capital leads to an increase in GDP growth rate of Pakistan. Government should take action to enhance physical and human capital in order to promote economic growth of the country (Umer 2014).

5.3 Recommendations

On the basis of the conclusions following policy recommendations are given for this study:

1. When the GOVT is following the trade openness policies to import the new innovative capital goods from developed countries in order to efficiently utilize the local natural resource. So, this is also vital for the developing countries to increase expenditures in education sector that will make efficient the abundant factor of human capital.
2. Institutional quality plays a very important role in achieving the industrial growth. If the indictors of institutional quality (voice and accountability, regulatory quality, rule of law, control of corruption, government effectiveness and political stability) are well governed by the state then they can get the potential in the industrial growth in the developing and developed countries. Now in the developing and developed countries the government should take the key steps to promote the high institutional quality and with the enhancement of institutional quality can enhance the industrial growth.
3. Regarding the trade openness this study indicated that the trade openness has a negative effect on the industrial growth in the developing countries. Young (1991) and Rivera-Batiz (1995) stated that trade openness causes economic growth through a channel of efficient allocation of resources and the spillover effect of technology. If the trade openness brings the technology in the country, so for efficient utilization of technology we need appropriate human capital. The developing countries should enhance the human capital and there is need to develop the human capital for efficient use of technology and with the enhancement of human capital the trade openness creates the positive impact on the industrial growth.
4. This study suggested to the developed countries reduce the trade barriers to increase the export and the trade openness because the trade openness has significant effect in the developed countries in industrial growth. Government should enhance the favorable trade policies for export to increase the exports and due to the increases in export the industrial growth also increases.
5. Export are directly related with the economy of scale when the production will be high the industrial sector will grow.

REFERENCE

Abbas, Q., & Foreman-Peck, J. S. (2008). Human capital and economic growth: Pakistan 1960-2003. Lahore Journal of Economics, 13(1), 1-27.

Acemoglu, D., Akcigit, U., Alp, H., Bloom, N., & Kerr, W. R. (2013). Innovation, reallocation and growth (No. w18993). National Bureau of Economic Research.

Acemoglu, D., Gallego, F. A., & Robinson, J. A. (2014). Institutions, human capital, and development. Annu. Rev. Econ., 6(1), 875-912.

Acemoglu, D., Johnson, S., & Robinson, J. A. (2005). Institutions as a fundamental cause of long-run growth. Handbook of economic growth, 1, 385-472.

Acemoglu, D., Johnson, S., Robinson, J., & Thaicharoen, Y. (2003). Institutional causes, macroeconomic symptoms: volatility, crises and growth. Journal of monetary economics, 50(1), 49-123.

Adamu, F. M., & Doğan, E. (2017). Trade openness and industrial growth: Evidence from Nigeria. Panoeconomicus, 64(3), 297-314.

Addison, T., & Baliamoune-Lutz, M. (2006). Economic reform when institutional quality is weak: The case of the Maghreb. Journal of Policy Modeling, 28(9), 1029-1043.

Adhikary, B. (2011). FDI. Trade Openness, Capital Formation, and Economic Growth in.

Afzal, M., Malik, M. E., Butt, A. R., & Fatima, K. (2013). Openness, inflation and growth relationships in Pakistan: An application of ARDL bounds testing approach. Pakistan Economic and Social Review, 13-53.

Aixalá, J., & Fabro, G. (2008). Does the impact of institutional quality on economic growth depend on initial income level?. Economic Affairs, 28(3), 45-49.

Alexiou, C., Tsaliki, P., & Osman, H. R. (2014). Institutional quality and economic growth: Empirical evidence from the Sudanese economy. Economic Annals, 59(203), 119-137.

Algan, Y., & Cahuc, P. (2010). Inherited trust and growth. American Economic Review, 100(5), 2060-92.

Álvarez, I. C., Barbero, J., Rodríguez-Pose, A., & Zofío, J. L. (2018). Does institutional quality matter for trade? Institutional conditions in a sectoral trade framework. World Development, 103, 72-87.

Anderson, J. E., & Marcouiller, D. (2005). Anarchy and autarky: Endogenous predation as a barrier to trade. International Economic Review, 46(1), 189-213.

Anorou, E., & Ahmad, Y. (2000). Openness and economic growth: Evidence from selected ASEAN countries. Indian Economic Journal, 47(3), 110.

Aron, J. (2000). Growth and institutions: a review of the evidence. The World Bank Research Observer, 15(1), 99-135.

Asghar, N., Qureshi, S., & Nadeem, M. (2015). Institutional Quality and Economic Growth: Panel ARDL Analysis for Selected Developing Economies of Asia. South Asian Studies, 30(2), 381.

Balach, R., & Law, S. H. (2015). Effects of financial development, institutional quality, and human capital on economic performance in SAARC countries. The empirical economics letters, 14(2), 131-141.

Bayar, Y. (2017). Impact of openness and economic freedom on economic growth in the transition economies of the European Union. South-Eastern Europe Journal of Economics, 14(1).

Bejan, M. (2006). Trade openness and output volatility.

Bhagwati, J. N., & Srinivasan, T. N. (1978). Trade policy and development (No. 90). World Bank.

Birinci, S. (2013). Trade openness, growth, and informality: panel VAR evidence from OECD economies. Economics Bulletin, 33(1), 694-705.

Bonnal, M., & Yaya, M. E. (2015). Political institutions, trade openness, and economic growth: new evidence. Emerging Markets Finance and Trade, 51(6), 1276-1291.

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.

Brooks, J. C., Belew, J. B., Griffin, D. B., Gwartney, B. L., Hale, D. S., Henning, W. R., ... & Savell, J. W. (2000). National beef tenderness survey-1998. Journal of Animal Science, 78(7), 1852-1860.

Brousseau, E., & Glachant, J. M. (2008). New institutional economics. Cambridge University Press.

Busse, M., & Hefeker, C. (2007). Political risk, institutions and foreign direct investment. European journal of political economy, 23(2), 397-415.

Butkiewicz, J. L., & Yanikkaya, H. (2006). Institutional quality and economic growth: Maintenance of the rule of law or democratic institutions, or both?. Economic Modelling, 23(4), 648-661.

Cepparulo, A., Cuestas, J. C., & Intartaglia, M. (2017). Financial development, institutions, and poverty alleviation: an empirical analysis. Applied Economics, 49(36), 3611-3622.

Chandrashekar, R., Sampath, T., & Chittedi, K. R. (2018). Financial development, trade openness and growth in India. Theoretical and Applied Economics, 25(1), 113-124.

Chong, A., & Gradstein, M. (2007). Inequality and institutions. The Review of Economics and Statistics, 89(3), 454-465..

Cowell, F. A., & Flachaire, E. (2014). Inequality with ordinal data. Public Economics Programme Discussion Paper 16, London School of Economics.

Dollar, D., & Kraay, A. (2001). Trade, growth, and poverty. World Bank, Development Research Group, Macroeconomics and Growth.

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

Dowrick, S., & Golley, J. (2004). Trade openness and growth: Who benefits?. Oxford review of economic policy, 20(1), 38-56.

Edwards, S. (1993). Openness, trade liberalization, and growth in developing countries. Journal of economic Literature, 31(3), 1358-1393.

Edwards, S. (1998). Openness, productivity and growth: what do we really know?. The economic journal, 108(447), 383-398.

Esfahani, H. S., & Ramírez, M. T. (2003). Institutions, infrastructure, and economic growth. Journal of development Economics, 70(2), 443-477.

Esfahani, H. S., & Ramírez, M. T. (2003). Institutions, infrastructure, and economic growth. Journal of development Economics, 70(2), 443-477.

Fakher15, A. (2014). Quality of institutions and integration in the world economy: applied study on Egypt. Journal of Economics and Business, 17(2).

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

Frankel, J., & Rose, A. (2002). An estimate of the effect of common currencies on trade and income. The Quarterly Journal of Economics, 117(2), 437-466.

Furubotn, E., & Richter, R. (2005). Institutions and Economic Theory: The Contribution of the New Institutional Economics (Economics, Cognition, and Society).

Gazdar, K., & Cherif, M. (2014). The quality of institutions and financial development in mena countries: An empirical investigation. Risk governance & control: financial markets & institutions, 4 (4-1), 65-80.

Gemmell, N., Kneller, R., & Sanz, I. (2008). Foreign investment, international trade and the size and structure of public expenditures. European Journal of Political Economy, 24(1), 151-171.

Glaeser, E. L., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2004). Do institutions cause growth?. Journal of economic Growth, 9(3), 271-303.

Gorgi, E., & Alipourian, M. (2008). Trade Openness and Economic Growth In Iran, and some OPEC Nations. Iranian Economic Review, 13(22), 31-40.

Greenaway, D., Morgan, W., & Wright, P. (2002). Trade liberalisation and growth in developing countries. Journal of development economics, 67(1), 229-244.

Grossman, G. M., & Helpman, E. (1990). Trade, innovation, and growth. The American economic review, 80(2), 86-91.

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

Hasan, I., Wachtel, P., & Zhou, M. (2009). Institutional development, financial deepening and economic growth: Evidence from China. Journal of Banking & Finance, 33(1), 157-170.

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.

Hassen, S., Anis, O., Taha, Z., & Yosra, S. (2018). Trade openness and economic growth: The case of Tunisia. IJAME.

Hofman, B., Rodrick-Jones, E., & Thee, K. W. (2004, May). Indonesia: Rapid growth, weak institutions. In World Bank Shanghai Conference, http://www. world bank. org/wbi/reducing poverty/case-Indone sia-PovertyReduction. html.

Hsu, P. H., Wang, C., & Wu, C. (2013). Banking systems, innovations, intellectual property protections, and financial markets: Evidence from China. Journal of Business Research, 66(12), 2390-2396.

Huang, Y. (2010). Political institutions and financial development: an empirical study. World Development, 38(12), 1667-1677.

Huchet- Bourdon, M., Le Mouël, C., & Vijil, M. (2018). The relationship between trade openness and economic growth: Some new insights on the openness measurement issue. The World Economy, 41(1), 59-76.

Hye, Q. M. A. (2012). Long term effect of trade openness on economic growth in case of Pakistan. Quality & Quantity, 46(4), 1137-1149.

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.

İşcan, T. (1998). Trade liberalisation and productivity: a panel study of the Mexican manufacturing industry. The Journal of Development Studies, 34(5), 123-148.

Jalilian, H., Kirkpatrick, C., & Parker, D. (2007). The impact of regulation on economic growth in developing countries: A cross-country analysis. World development, 35(1), 87-103.

Kacho, A. A., & Dahmardeh, N. (2018). The Role of Institutional Quality on the Effectiveness of Economic Growth from Financial Development.

Kaidi, N., Mensi, S., & Amor, M. B. (2018). Financial Development, Institutional Quality and Poverty Reduction: Worldwide Evidence. Social Indicators Research, 1-26.

Kao, C., & Liu, S. T. (2000). Data envelopment analysis with missing data: an application to university libraries in Taiwan. Journal of the Operational Research Society, 51(8), 897-905.

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2011). The worldwide governance indicators: methodology and analytical issues. Hague Journal on the Rule of Law, 3(2), 220-246.

Kebede, J. G., & Takyi, P. O. (2017). Causality Between Institutional Quality and Economic Growth: Evidence From Sub-Saharan Africa. European Journal of Economic and Financial Research.

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

Klomp, J., & de Haan, J. (2009). Political institutions and economic volatility. European Journal of Political Economy, 25(3), 311-326.

Knack, S., & Keefer, P. (1995). Institutions and economic performance: cross- country tests using alternative institutional measures. Economics & Politics, 7(3), 207-227.

Knutsen, C. H. (2012). Democracy and economic growth: A survey of arguments and results. International Area Studies Review, 15(4), 393-415.

Krueger, A. O. (1997). Trade policy and economic development: how we learn (No. w5896). National Bureau of Economic Research.

Lal, D., & Myint, H. (1996). The Political Economy of Poverty. Equity and Growth: A.

Law, S. H., & Azman-Saini, W. N. W. (2012). Institutional quality, governance, and financial development. Economics of Governance, 13(3), 217-236.

Law, S. H., & Singh, N. (2014). Does too much finance harm economic growth?. Journal of Banking & Finance, 41, 36-44.

Law, S. H., Azman-Saini, W. N. W., & Ibrahim, M. H. (2013). Institutional quality thresholds and the finance–growth nexus. Journal of Banking & Finance, 37(12), 5373-5381.

Le, T. (2009). Trade, remittances, institutions, and economic growth. International Economic Journal, 23(3), 391-408.

Leamer, E. E. (1988). Measures of openness. In Trade policy issues and empirical analysis (pp. 145-204). University of Chicago Press.

Lee, C. C., & Chang, C. P. (2009). FDI, financial development, and economic growth: international evidence. Journal of applied economics, 12(2), 249-271.

Lee, K., & Kim, B. Y. (2009). Both institutions and policies matter but differently for different income groups of countries: determinants of long-run economic growth revisited. World Development, 37(3), 533-549.

Lehne, J., Mo, J., & Plekhanov, A. (2014). What determines the quality of economic institutions? Cross-country evidence.

Levine, R. (2001). International financial liberalization and economic growth. Review of international Economics, 9(4), 688-702.

Li, K., Morck, R., Yang, F., & Yeung, B. (2004). Firm-specific variation and openness in emerging markets. Review of Economics and Statistics, 86(3), 658-669.

LiPuma, J. A., Newbert, S. L., & Doh, J. P. (2013). The effect of institutional quality on firm export performance in emerging economies: a contingency model of firm age and size. Small Business Economics, 40(4), 817-841.

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

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.

Mamoon, D., & Murshed, S. M. (2006). Trade Policy, Openness, Institutions. The Pakistan Development Review, 99-119.

Marelli, E., & Signorelli, M. (2011). China and India: Openness, trade and effects on economic growth. The European Journal of Comparative Economics, 8(1), 129.

Mercan, M., Gocer, I., Bulut, S., & Dam, M. (2013). The effect of openness on economic growth for BRIC-T countries: Panel data analysis. Eurasian Journal of business and economics, 6(11), 1-14.

Mobarak, A. M. (2005). Democracy, volatility, and economic development. Review of Economics and Statistics, 87(2), 348-361.

Mohtadi, H., & Ruediger, S. (2014). Intellectual Property Rights and Growth: Is there a Threshold Effect?. International Economic Journal, 28(1), 121-135.

Moskalyk, R. Y. (2007). Impact of trade openness and technology transfers on growth: Panel data investigation for developing countries.

Mukhtar, T. (2012). Does Trade Openness Reduce Inflation? Empirical Evidence from Pakistan. Journal of Economic Cooperation and Development, 33(2), 33-52.

Mukhtar, T., & Zakaria, M. (2010). Budget Deficit, Money Supply and Inflation: The Case of Pakistan. Economic Trends & Economic Policy, 20(122).

Munir, S., & Kiani, A. K. (2011). Relationship between Trade Openness and Inflation: Empirical Evidences from Pakistan (1976—2010). The Pakistan Development Review, 853-876.

Musila, J. W., & Yiheyis, Z. (2015). The impact of trade openness on growth: The case of Kenya. Journal of Policy Modeling, 37(2), 342-354.

Nawaz, S. (2015). Growth effects of institutions: A disaggregated analysis. Economic Modelling, 45, 118-126.

Nehru, V., & Dhareshwar, A. (1993). A new database on physical capital stock: sources, methodology and results. Revista de análisis económico, 8(1), 37-59.

Neuhaus, M. (2006). The impact of FDI on economic growth: an analysis for the transition countries of Central and Eastern Europe. Springer Science & Business Media.

Ngendakuriyo, F. (2013). Institutional quality and growth. Journal of Public Economic Theory, 15(1), 157-183.

Nigar, N. (2015). The composite impact of institutional quality and inequality on economic growth. The Pakistan Development Review, 54(4 PartI &), 779-791.

Njikam, O. (2009). Trade Liberalization, Infrastructure and Industrial Performance in Cameroon. Faculty of Economics and Management, University of Yaounde.

Noland, M., & Pack, H. (2003). The Asian industrial policy experience: implications for Latin America. Latin America, Caribbean and Asia Pacific Economics and Business Association.

North, D. C. (1993). Institutions and credible commitment. Journal of Institutional and Theoretical Economics (JITE)/Zeitschrift für die gesamte Staatswissenschaft, 11-23.

Olufemi, S. M. (2004). Trade openness and economic growth in Nigeria: Further evidence on the causality issue. South African Journal of Economic and Management Sciences, 7(2), 299-315.

Omisakin, O., Adeniyi, O., & Omojolaibi, A. (2009). Foreign direct investment, trade openness and growth in Nigeria. Journal of Economic Theory, 3(2), 13-18.

Osili, U. O., & Paulson, A. L. (2008). Institutions and financial development: Evidence from international migrants in the United States. The Review of Economics and Statistics, 90(3), 498-517.

Pappas, D., & Chalvatzis, K. J. (2017). Energy and industrial growth in India: the next emissions superpower?. Energy Procedia, 105, 3656-3662.

Parikh, A., & Stirbu, C. (2004). Relationship between trade liberalisation, economic growth and trade balance: an econometric investigation.

Pedroni, P. (2001). Fully modified OLS for heterogeneous cointegrated panels. In Nonstationary panels, panel cointegration, and dynamic panels (pp. 93-130). Emerald Group Publishing Limited.

Phillips, P. C., & Perron, P. (1988). Testing for a unit root in time series regression. Biometrika, 75(2), 335-346.

Rachdi, H., & Mensi, S. (2012, September). Does institutions quality matter for financial development and economic growth nexus? Another look at the evidence from MENA countries. In Economic Research Forum/September, WP (No. 705).

Rani, R., & Kumar, N. (2018). Panel Data Analysis of Financial Development, Trade Openness, and Economic Growth: Evidence from BRICS Countries. Emerging Economy Studies, 2394901518767023.

Razmi, M. J., & Refaei, R. (2013). The effect of trade openness and economic freedom on economic growth: the case of Middle East and East Asian countries. International Journal of Economics and Financial Issues, 3(2), 376-385.

Reppas, P. A., & Christopoulos, D. K. (2005). The export-output growth nexus: Evidence from African and Asian countries. Journal of Policy Modeling, 27(8), 929-940.

Rodriguez, F., & Rodrik, D. (2000). Trade policy and economic growth: a skeptic's guide to the cross-national evidence. NBER macroeconomics annual, 15, 261-325.

Rodriguez, F., & Rodrik, D. (2001). Trade policy and economic growth: A sceptic's guide to the cross-national evidence in BS Bernake and K. Rogoff (eds.) NBER Macroeconomics Annual 2000.

Rodrik, D. (2002). Trade Policy Reform and Institutional Reform. In Development, trade and the WTO: a handbook.

Romer, P. M. (1990). Capital, labor, and productivity. Brookings papers on economic activity. Microeconomics, 1990, 337-367.

Sachsida, A., Carneiro, F. G., & Loureiro, P. R. (2003). Does greater trade openness reduce inflation? Further evidence using panel data techniques. Economics Letters, 81(3), 315-319.

Sahu, P., & Sharma, N. K. (2018). Impact of Trade Openness on Inflation in India: An Autoregressive Distributed Lag (ARDL) Approach.

Sarkar, P. (2008). Trade openness and growth: is there any link?. Journal of economic issues, 42(3), 763-785.

Sarkar, P., & Bhattacharyya, B. (2005). Trade liberalisation and growth: Case studies of India and Korea. Economic and Political weekly, 5635-5641.

Sathyamoorthy, V., & Tang, T. C. (2018). Institutional quality and export-led growth: an empirical study. Journal of Economic Studies, 45(1), 193-208.

Sawyer, W. C. (2010). Institutional quality and economic growth in Latin America. Global Economy Journal, 10(4).

Semančíková, J. (2016). Trade, trade openness and macroeconomic performance. Procedia-Social and Behavioral Sciences, 220, 407-416.

Šeputienė, J. (2008). The Relationship between Economic Development and Institutional Environment. Socialiniai tyrimai, 2008(3).

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.

Siddiqui, A. H., & Iqbal, J. (2005). Impact of trade openness on output growth for Pakistan: An empirical investigation.

Siddiqui, D. A., & Ahmed, Q. M. (2013). The effect of institutions on economic growth: A global analysis based on GMM dynamic panel estimation. Structural Change and Economic Dynamics, 24, 18-33.

Smith, A. (1975). The Theory of International Trade. Essays on Adam Smith. Clarendon Press: Oxford, 472.

Subramanian, A. (2007). The evolution of institutions in India and its relationship with economic growth. Oxford Review of Economic Policy, 23(2), 196-220.

Tahir, M., & Azid, T. (2015). The relationship between international trade openness and economic growth in the developing economies: Some new dimensions. Journal of Chinese Economic and Foreign Trade Studies, 8(2), 123-139.

Tahir, M., & Azid, T. (2015). The relationship between international trade openness and economic growth in the developing economies: Some new dimensions. Journal of Chinese Economic and Foreign Trade Studies, 8(2), 123-139.

Thomas, C. (2012). Trade Openness And Inflation: Panel Data Evidence For The Caribbean. The International Business & Economics Research Journal (Online), 11(5), 507.

Ulubasoglu, M. A., & Doucouliagos, C. (2004, February). Institutions and economic growth: a systems approach. In Econometric Society 2004, Australasian Meetings Paper No(Vol. 63).

Umer, F. (2014). Impact of trade openness on economic growth of Pakistan: An ARDL approach. Journal of Business and Economic Policy, 1(1), 39-59.

Umer, F., & Alam, S. (2013). Effect of openness to trade and FDI on industrial sector growth: A case study for Pakistan. The Romanian Economic Journal, 16(48), 179-198.

Valeriani, E., & Peluso, S. (2011). The impact of institutional quality on economic growth and development: An empirical study. Journal of Knowledge Management, Economics and Information Technology, 1(6), 1-25.

Vijayaraghavan, M., & Ward, W. A. (2001). Institutions and economic growth: empirical evidence from a cross-national analysis. Clemson University.

Vuranok, S. (2009). Financial Develaopment and Economic Growth: A Cointegration Approach. Middle East Technical University.

Wagner, M., & Hlouskova, J. (2009). The performance of panel cointegration methods: results from a large-scale simulation study. Econometric Reviews, 29(2), 182-223.

Welch, K. H., & Wacziarg, R. (2003). Trade liberalization and growth: New evidence. National Bureau of Economic Research.

Yanikkaya, H. (2003). Trade openness and economic growth: a cross-country empirical investigation. Journal of Development economics, 72(1), 57-89.

Yao, S. (2006). On economic growth, FDI and exports in China. Applied Economics, 38(3), 339-351.

Young, A. (1991). Learning by doing and the dynamic effects of international trade. The Quarterly Journal of Economics, 106(2), 369-405.

Young, A. T., & Sheehan, K. M. (2014). Foreign aid, institutional quality, and growth. European Journal of Political Economy, 36, 195-208.

Zhou, Y. (2018). Human capital, institutional quality and industrial upgrading: global insights from industrial data. Economic Change and Restructuring, 51(1), 1-27.