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Article

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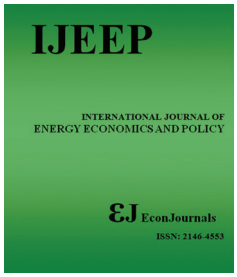

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Nexus between Foreign Direct Investment, Energy Consumption, Natural Resource, and Economic Growth in Latin American Countries

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ABSTRACT

Most of the Latin American Countries have witnessed high economic growth in the last few decades. FDI is a key factor in achieving the exponential economic prosperity in these countries. Besides, the positive effect on economic growth, it also contributes to energy consumption and helps in the extraction of natural resources to the host country. This study examines the nexus between FDI, energy consumption, natural resource, and economic growth in Latin American countries for the period of 1990 to 2018. We apply Structural Equation modeling approach to examine the relationship among these variables. The empirical results suggest that FDI, Energy consumption and Natural resources have significant and positive association with Economic growth in Latin American countries. Likewise, FDI and Energy consumption also show positive and significant effect on Natural resource, while FDI show a positive and statistically significant effect on Energy consumption. The results imply that to fuel the fast-paced economic growth, the respective governments in these countries need to reform their energy sectors by tapping renewable energy resources and deploy green technologies with a view to avoid environmental degradation. In addition, respective government in this region should formulate robust business strategies and environment to encourage FDI inflow.

Keywords: FDI, Energy Consumption Natural, Resource, Economic development Latin American Countries
JEL Classifications: Q1, Q2, Q3, O13

1. INTRODUCTION

FDI play an important role in the economic growth of a country. FDI helps to promote the technical skills of the host country labor force and their working efficiency. Moreover, it also brings technology, assets, and capital which resultantly effect the economic growth of the country (Havránek et al., 2013; Javorcik et al., 2004; Reganati and Sica, 2007). Likewise, FDI enhances the financial development and foster intuitional quality that helps to promote economic prosperity and wellbeing of the residents (Havránek et al., 2013). FDI inflow is more aggressive in those countries which have abundance of natural resources. The inflow is aimed with a view to capitalize the idle natural resources to get energy for its operations in future that can expands their revenue beyond their expectations (Reganati and Sica, 2007). Many studies highlighted that FDI is very much important in enhancing

the economic growth and further document the positive nexus in these two variables (Havránek et al., 2013; Javorcik et al., 2004; Reganati and Sica, 2007). FDI also tends to increase the human capital as well as market growth and economic stability (Borensztein et al., 1998). Many other scholars also justify the contribution of FDI in financial markets growth (Azman-Saini et al., 2010; Alfaro et al., 2010; L. M. R. Alfaro, 2004; Hermes and Lensink, 2003) and some of the researchers confirm FDI nexus with trade liberalization (Borensztein et al., 1998).

While some of the studies confirm that FDI enhances the Institutional quality (Havranek and Irsova, 2011; Jude and Levieuge, 2015). However, the FDI is more driven towards those countries which have abundance of natural resources and the resources are expected to be used for their business expectation and cheaper energy usages (Ades and di Tella, 1999). Kolstad and Wiig (2012), also found positive and statistically significant nexus FDI has with natural resources in the host country. Similarly, Onyeiwu and Shrestha (2004) argued that there is positive relationship between natural resources and FDI. Actually, most of the countries having ample amount of natural resources, sometime cannot extract the capitalization of these resources due to political differences and lacking of funds, which turns as a curse for a nation (Sadorsky, 2011; Sbia et al., 2014; Stijns, 2005). However, if these resources are extracted and the energy is used to fuel the production units and manufacturing concerns, then it yields in more revenue and encourage employment ratio in the country (Boschini and Sjögren, 2007). NR are the blessing for those countries that better manage the extraction of these resources and use the same for multiple developmental aspects (Zhang et al., 2018). Abundance of natural resources not only encourage more FDI in the country, but also upsurge the wellbeing of the residents and enhance the per capita income of the individuals and overall economic growth of the country Gylfason et al. (2003), and (Williamson, 2011). Mehlum et al. (2006) argued that countries with low institutional quality cannot foster their long-term growth as compared to enough quality institutional countries. The prosperity of the economy and its growth of a country is attached with many factors i.e. geographical location, natural resources, knowledgeable working force, visitor's destination, and production frontiers (Collier et al., 2002) (Dalgaard and Olsson, 2008). While abundance of natural resources promote more energy consumption in the country which directly affect the economic growth which is one of the high rank positive aspect, but at the same time more energy consumptions contribute to environmental degradation (Sachs and Warner, 1995). The empirical literature determines the nexus between the economic determinants and energy consumption, with natural resources, as many studies witnessed the positive nexus of economic growth and energy consumption with natural resources (Al-Mulali et al., 2015; Bekun et al., 2019). However, some of the researchers claim the adverse side of natural resources for environmental quality and public health (Bovenberg and Smulders, 1995; Costantini and Monni, 2008). While many in evidence abundance of natural resources promote energy which resultantly uplift the production quantile as well as employment rate (Balsalobre-Lorente et al., 2018).

Stan's at risk of resources scarcity and its optimum use helps to promote a competitive market interim of financial determinant as well as natural resources. However, numerous countries, like Africa, Latin America, and Middle East, which have abundance of natural resources in this area cover behind other less natural resource regions for economic development (Badeeb and Lean, 2017). However, reduced level in financial development have been noticed in some resource dependent economies (Frankel and Rose, 2002; Mehlum et al., 2006; Sachs and Warner, 2001). Zhang et al. (2018) argued that country with enough financial strength can make the curve of resources into accessible growth. Furthermore, financial system is needed which is more steady and efficient enough to encourage the development and uplifting of the economy as well as natural resources (Pradhan et al., 2016).

This study is a novel attempt as no such a study exist which have explored the nexus of FDI, natural resources, energy consumption and economic growth in the context of Latin American Countries. Moreover, this study contributes methodologically as no such a study exists in the existing literature, predicting the nexus of these variables using Structural Equation modeling approach. This study is expected to provide insight to the policy makers, dealing with economic determinants, environment, production, and business. This study aims to investigate the nexus between FDI, energy consumption, natural resource, and economic development in Latin American countries.

This paper is synthesized in the following order. Section one contains introduction which is comprised of the nexus between variables, their importance, novelty aspects and contribution, section two contains literature, predicting the relationship among the variables, while section three contains the theoretical framework which has been drawn from the literature review. Section four contains the hypothesis of this paper. Section five is comprised of the stylized facts. Section six contains the overall methodology of the paper which contains the data collection procedures & sources, variable definitions & measurements, and the estimation techniques. Next section contains the results and discussion, while the last section contains the overall conclusion which encompasses finding of the study, managerial implications, and future directions.

2. LITERATURE REVIEW, THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

2.1. Natural Resource and Economic Development

There are many empirical evidence which show the nexus between Natural resources and Economic growth. Boschini and Sjögren (2007) asserted the nexus between natural resource and economic growth and found that the resources accessible for a country can play a vital role in the growth of societies and communities and overall economy. Similarly, Willebald et al. (2015) argued that a country with enough financial strength can make the curve of resources into accessible growth. Similarly, Gylfason et al. (2003), and Williamson (2011) determined that vast amount of resources uplift the economic development as well as the political dominant of the leader who extract the resources and allocate in profitable project to fuel the economic growth. But some of the researchers like (Collier et al., 2002; Dalgaard and Olsson, 2008), and Karl

(1997) argued that political differences in a country trape the natural assets. Hillbom (2015), also documented that political difference among leaders is a hurdle in the extraction of natural resources. Likewise, many researchers found that their long term effect of Natural resource on Economic development (Arezki and van der Ploeg, 2007; Boschini and Sjögren, 2007; Brückner, 2010; Brunnschweiler, 2008; Ding and Field, 2005; Gylfason, 1999). Similarly, Ades and di Tella (1999) applied cross sectional and panel data and determined that abundance of natural resources defiantly help to improve the economic growth. Likewise, many researchers also predicted that natural resources positively contribute to economic growth and further improve the quality of institutions (Brunnschweiler, 2008; Horváth and Zeynalov, 2014; Jensen and Wantchekon, 2004; Murshed and Serino, 2011; Williamson, 2011; Zhang et al., 2008).

2.2. Foreign Direct investment and Economic Growth

There is a wide range of literature available on the FDI inflow role in the economic development of regions. However, many studies witnessed a positive effect of FDI investments on the economic growth of the host country. While empirical studies show mixed results regarding the economic growth and FDI. In this regard many studies conclude a positive effect of the FDI on the various determinants of economic growth (Blomstrom et al., 1992; Javorcik et al., 2004; Reganati and Sica, 2007).

However, some empirical studies did not find any FDI positive impact on economic growth (Borensztein et al., 1998). For the financial market development Azman-Saini et al. (2010), presented a threshold model for determining the FDI impact on the growth of a country receiving the inflow of the FDI. Natural resources presence in the country greatly affect the type and the volume of FDI the country obtains and attract, which also affect the country economic growth. Abundance of natural resources entice investment in faster growth opportunity of a country. Similarly, Corden (2012) highlighted the effect of FDI and claimed that it further improves the slow growing factors. Similarly, Aleksynska and Havrylchyk (2013) asserted that countries weaker institutional quality can also attract huge amount of FDI at the cost of the abundance of natural resources. Asiedu and Lien (2011) noted that where export is mainly due to natural resources in the case of democracy their FDI will be discouraged. Chadee and Schlichting (1997), for the FDI in Asia-Pacific documented that FDI has made a positive contribution to the all-region economies. Ram and Zhang (2002) explained that foreign direct investment act as a channel for the host country by providing ready access to the rest of the world markets. Moreover, the positive effect of FDI on the economic growth are witnessed by several studies (Havranek and Irsova, 2011; Javorcik et al., 2004; Reganati and Sica, 2007). While Chadee and Schlichting (1997) recorded positive aspects of FDI investment in the Asia-Pacific Region, and praised FDI for a positive contribution to all region economies.

2.3. Energy Consumption and Economic Growth

Literature shows energy is among one of the most important components of economic development. Kraft and Kraft (1978) observed unidirectional causality from income to energy usage in the United States. Some of studies like those of Lee (2005), and Soytas et al. (2007), also noted the causal nexus of economic growth and energy consumption, in both developing and developed countries. Moreover, Lee (2006), study on energy intensity and economic development in countries of G-11 countries, noted a bidirectional causality among the two variables, which indicate that economic growth is supported by energy consumption, while economic growth also result in increased energy consumption. Further, the same conclusion presented by recent study of Pao and Tsai (2011), on BRIC (Brazil, Russia, India, and China) countries. Keppler and Mansanet-Bataller (2010), also conducted a study on European countries by using VECM methodology and found that energy consumption has positive and significant contribution in the amount of GDP in the country. Similarly, Apergis and Payne (2009) analyzed central American countries by using Panel co-integration and VECM model and predicated that energy consumption uplift the economic growth. Likewise, Pao and Tsai (2010) evaluated BRIC countries by using time series methodologies and confirmed the importance of energy consumption and economic growth. Likewise, Narayan et al. (2010) explored 43 developing countries and predicated their positive nexus among economic growth and energy consumption for the developing countries context. In view of classical production function, the study highlighted a kind of bidirectional causality among growth factor, renewable and non-renewable energy use in the context of these sample countries. Similarly, Ocal and Aslan (2013) also documented a causal relationship between output and renewable energy usage, while using the data of Turkey, and predicted a unidirectional occurrence in the form of causality which go from the output to the energy use. While Al-Mulali and Sheau-Ting (2014), also analyzed various Latin American economies and verified the long run causality having bidirectional magnitude in renewable, non-renewable, labor, trade, and capital. In one of the studies conducted by Apergis and Payne (2014), who examined various determined like growth, real coal prices per capita, CO_2, oil prices and energy consumption. The study found long run cointegration among these variables. Salim and Shafiei (2014) explored the OECD regions and findings revealed long run association for energy use, economic growth, and industrial production

2.4. Natural Resource and Foreign Direct Investment

Willebald et al. (2015), explored that abundance of natural resource helps to motivate the inflow of FDI and confirmed positive nexus between natural resources and FDI inflow. Similarly, Boschini and Sjögren (2007), and Mehlum et al. (2006) argued that if natural resource lie in idle form then it is the curse for the nation but if it is extracted then it is the blessing for that nation. Likewise, Kolstad and Wiig (2012), also confirmed the positive nexus between natural resources and the amount of FDI, using the VECM methodology declared the positive nexus between natural resource and FDI. While extending the same literature Poelhekke (2009), also confirmed the positive nexus between natural resource abundance and foreign direct investment inflow. In such countries will enhance the per capita income of the people. Natural resources need is instrumented for this outcome evaporates but resource richness relates to a compact possibility of the consent of war and conflict rises dependence on natural resources (Brunnschweiler and Bulte, 2009). Full evidence for Columbia proposes that rises in the price of capital-concentrated supplies like oil inferior wages

and fuel conflict whereas rises in the price of labor-concentrated commodities such as coffee or banana boost wages and reduce conflict (Dube and Vargas, 2007).

Kolstad and Wiig (2012) found a positive significant relationship between Chinese outward FDI and natural resources in the host country. Similarly, Onyeiwu and Shrestha (2004), also argue that the positive relationship exist between natural resources and FDI and their study is linked to the fact that large recipients of FDI in their sample are endowed with natural resources have recorded unprecedented growth in natural resources deposits. Resource-oriented FDI always tends to move its activities into resource abundant countries to ensure easier access to physical resources, such as, oil, gas, minerals, and raw materials (Akhtar, 2013). Likewise, Dunning (2000), and Anyanwu (2012), also found that there is a positive nexus between natural resource and FDI.

2.5. Theoretical Framework and Hypothesis

The below theoretical framework has been drawn from the review of the literature.

Based on the above theoretical frame the following hypothesis has been developed

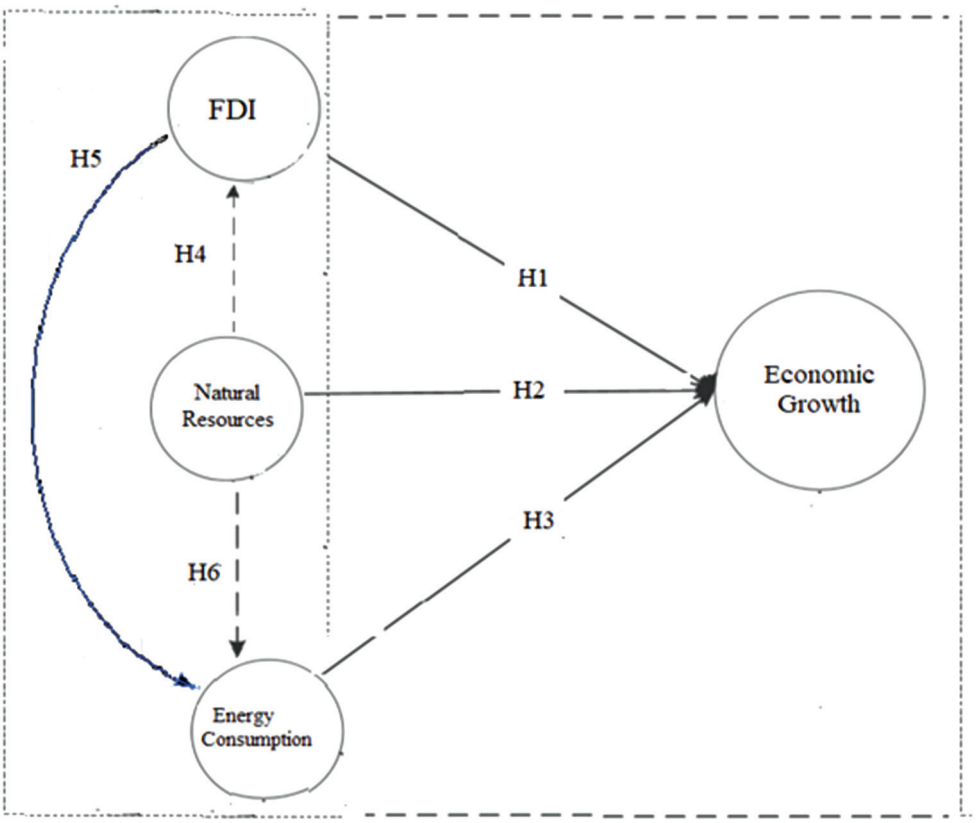
H_1. FDI has a positive effect on economic growth
H_2. Energy consumption has positive effect on economic growth
H_3. Natural resource has a positive effect on economic growth
H_4. FDI has positive effect on energy consumption
H_5. FDI has positive effect on natural resources
H_6. Natural Resource has positive effect on energy consumption.

3. STYLIZED FACT

Stylized facts should not be taken as delivering a complete study of the basic reasons for reforms or of their significances. As an alternative, we deliver original graphic sign and that our visions are founded on emerging economies skills and may consequently not affect to progressive countries or nations with huge, consistent fiscal structures.

3.1. Total Natural Resource Stylized Fact

The Graph 1 shows that Bolivia Natural Resource viewed as having a sudden downward trend for a short time while Chile, Peru, Venezuela smoothly downward trend 2 years but Haiti seems to be flat actions from 1991 to 2018. Peru seems a flat trend from 1991 to 2003 and then start an upward trend. The relation among Latin American Countries contains a lot of various countries, as compared to other regions like Europe, North America, etc. Furthermore, these countries are culturally, economically, and traditionally different from each other like North American countries to Europe. Furthermore, this study shows that natural resources greater attention wonders for the countries that give attention to natural resources. Bolivia and Chile show similar performs for natural resources in the study period which means no special initiatives have been taken regarding natural resources, Peru also shows similar applies, as of Bolivia in terms of natural resources with no especial improvements. natural resources are frequently obtained by foreign multinationals that take in capital and information. Natural resources recommend that NR usually cause various conflict among tribes and political parties (Collier and Hoeffler, 1998; Fearon, 2005; Reynal-Querol, 2002; Ross and Poirier, 2004). Similarly, maximum likelihood of both conflict



in war associated with the huge volume of NR (Brunnschweiler and Bulte, 2009).

3.2. Foreign Direct Investment Stylized Fact

The Graph 2 shows foreign direct investment is a significant factor of skill transmission, economic development, and growth but many resource-rich countries do not attract as much foreign direct investment as resource-deprived regions do. In this light, it is shocking that there is no study accessible on the effects of natural resources on both the composition and volume of foreign direct investment. In line with the reserve curse works that document adverse belongings of natural resources on development performance. In the graph shows foreign direct investment a mix upward and downward trend of Latin American Countries. A new and wide panel of external no resource & reserve foreign direct investment is used to examine the effect of natural resources on the diverse workings of foreign direct investment. Meanwhile industry-exact foreign direct investment varies in the technology they move to the swarm state, the examination of the development belongings to foreign direct investment must be showed at the level of the gripping segment. Furthermore, due to a greater difference in capital strength of manufacture, service trades vary more in their "hard/soft" expertise mixes than manufacturing industries which, in turn, requires additional disaggregation of service foreign direct investment into monetary and nonfinancial foreign direct investment.

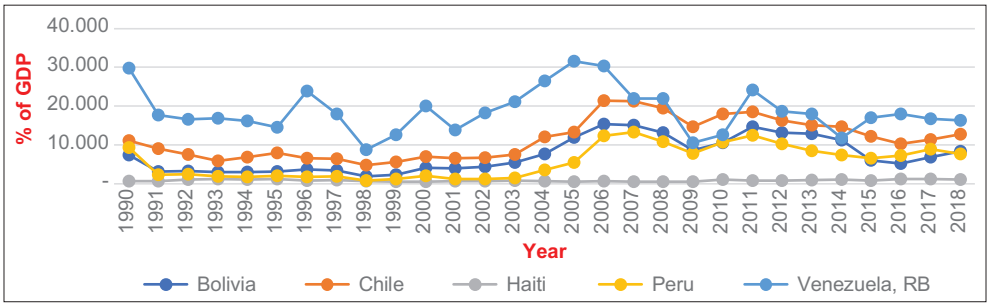
A huge study inspects the nexus between total foreign direct investment and collective growth. Earlier educations on spillover belongings of total foreign direct investment frequently find a positive relationship with development, uncertainty exact situations such as expert worker, great prosperity and industrialized economic market are seen (Alfaro et al., 2008; Blomström and Wolff, 1994; Borensztein et al., 1998). But, at the micro-economic level, where overall literature has been showing inside the industrial subdivision, outcomes are fewer clear cut. Few case studies specify inadequate positive spill overs of foreign direct investment (Blalock and Gertler, 2003; Haskel et al., 2007), and others found no or negative surplus (Aitken and Harrison, 1999; Gorg and Strobl, 2001; Lipsey, 2003).

3.3. Energy Consumption Stylized Fact

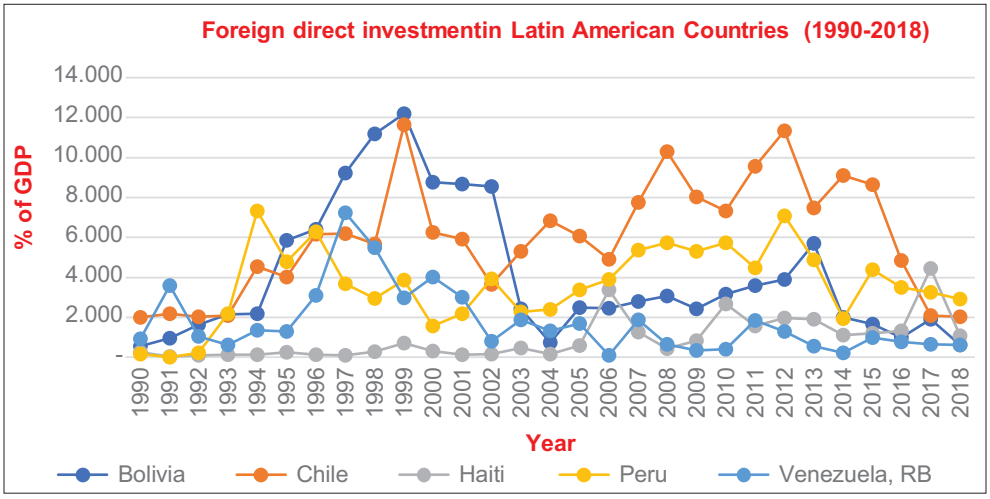
Home of one-in-ten world population estimates the valuation of worldwide viewpoint energy, sharply increasing countries regions are too many structures of energy outlook and economic aspect. The world energy outlook in its fourth edition. The Latin American countries energy outlook, showing the growing perspective of energy consumption in Latin American Countries, IEA (international energy agency) conducts these studies every 2 years since 2013. Highlight the risks and opportunities facing, Connotation of Bolivia, Chile, Haiti, Peru, and Venezuela looks in achieving to meet their affordable and sustainable energy demand, this sustainability in demand is represented in the Graph 3 evidenced its slow, and steady energy demand and consumption.

This shows the intensifying effort by the regional countries to ensure, secure, sustainable, and affordable energy sectors pathway

Graph 1: Total natural resource of Latin American countries



Graph 2: Foreign direct investment in Latin American countries



plans. This includes, investments in, power supply, infrastructure, and fuel, mainly focus on efficiency. This resulted in a well-managed region's energy system as regards to the quality of life, and improved welfare for citizens. However, there are also some warning signs, an increase in fuel demand, and outpaced production within the Southeast Asia region. Bolivia, Chile, Peru and show overall downward trends from 1991 to 2018, with a slight upward and downward practice. While Venezuela to seem a flat behavior practice. It is due to serious efforts are made by these countries to stimulate trade using more energy in their production units. More production has moved the energy consumption curve upward in these countries than other countries in the same region (Lee and Chang, 2008; Suri and Chapman, 1998).

3.4. Economic Growth Stylized Fact Sheet

Graph 4 stylized facts show, characterize the economic growth across the region for the study period. Energy economists examined these designs, but existing research has either looked at how energy use across states at one fact in time the cross-sectional measurement, or how they change in individual countries or several regions, the time length. Scholars did not link these dimensions together despite their need for each other. We investigate the links between the time and cross-sectional dimensions using two datasets and simple regression techniques. One of our datasets covers 5 Latin American regions from 1990 to 2018. From 1990 to 2003 up to some extent the Bolivia, Chile, Haiti, Peru, and Venezuela seem slightly upward trend. After 2003 the Chile and Venezuela start a sudden upward trend while the Bolivia and Peru goes upward trend slightly up to 2018, but Haiti seem a flat practice from 1990 to 2018. The other includes old data, spreading rear to as early as 1800, for the United States, Canada, and several European and Latin American countries. These data were rebuilt in recent years by economic historians, including one of the writers of their paper Mar-Rubio our results also stance a challenge to determine strategies that goal to decrease energy strength at charges that are far faster than past rules. Because energy strength has enhanced far slower than the rate of economic development, and energy use tends to increase with growth, determined energy competence rules will have to disrupt the situation in affected style (Csereklyei et al., 2016).

4. METHODOLOGY

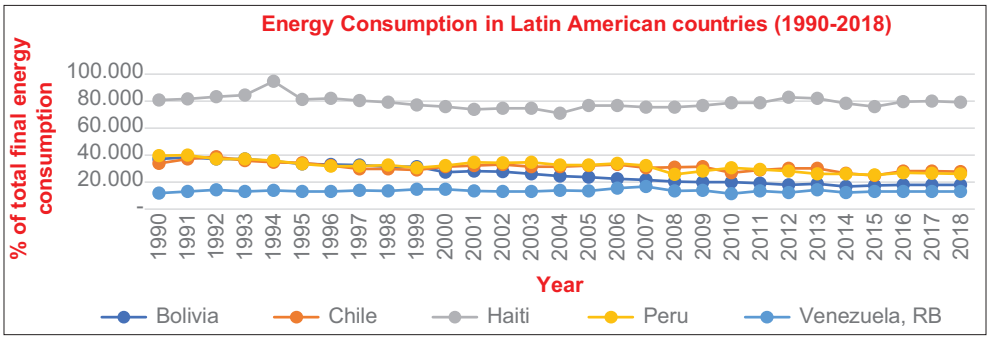
4.1. Data and Variables

The main objective of this study is to analyze the nexus of natural resources, FDI, and energy consumption on GDP in Latin American countries. The data has been collected from WDI data stream for the analysis of this study. We collected data for various Latin American countries namely Bolivia, Chile, Haiti, Peru, and Venezuela for the time span 1990-2018. We collected the data of Natural Resource, FDI, Energy consumption, and Economic growth to conduct empirical analysis for hypothesis testing. We denote NR, for natural resources which is measured in % of GDP. The same measurement technique has been used by previous researchers (Guan et al., 2020; Zaidi et al., 2019). FDI for foreign direct investment is measured as % of GDP (Sachs and Warner, 2001). We use EC, for energy consumption measured in % of total final energy consumption, in this nature of previous studies also conducted (Aye and Edoja, 2017; Ullah et al., 2019). Whereas EG, for economic growth is measured in current US dollars (Aye and Edoja, 2017; Ben Jebli and Hadhri, 2018).

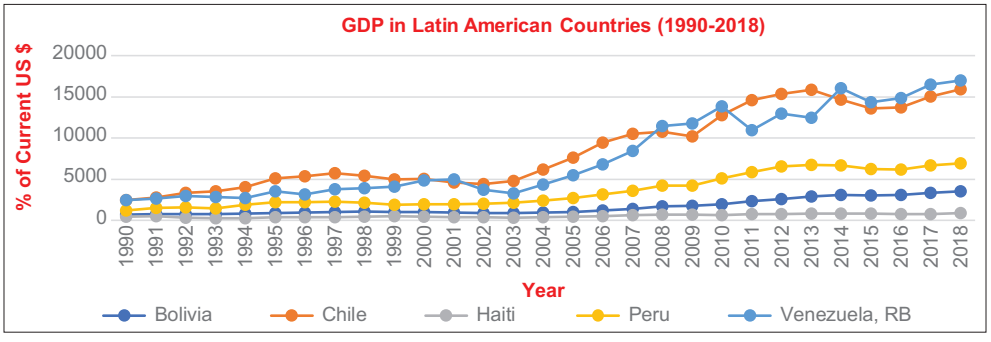
4.2. Estimation Techniques

This study analyzed panel data of five Latin American countries having ample reserves of the natural resources panel data is

Graph 3: Energy consumption in Latin American countries



Graph 4: Economic growth in Latin American countries



analyzed through various estimation techniques, i.e. OLS, fixed effect, random effect, GMM, Pool OLS, Structural equation modelling and other panel level technique which can be used for the time series as well as panel, i.e. panel ARDL, panel VECM and panel Granger causality etc. Structural equation modelling in the modern-day technique which is typically an appropriate technique for those variables having interrelationship with each other. In this regard Fan et al. (2016) view that Structure equation model is a more robust technique used in various scientific investigation. To determine the causal standard relationship. It is a unique estimator as simultaneously it's covers direct, indirect, and total effect.

Similarly, Byrne (1998) assert structural equation modeling is the most appropriate technique in finding the structural relationship among variables. Likewise, Hair et al. (2006) argued that structural equation modeling is the most useful estimation technique where structural relationship among variables is required. Based on these arguments and there is need of standard relationship in our study. We apply structure to comprehend the structural and interrelationship among FDI, energy consumption, Natural resource, and economic growth in these Latin American counties.

5. EMPIRICAL ANALYSIS

5.1. Diagnostic Tests

We applied several data diagnostic tests to confirm the reliability and validity of the data and to understand whether the data is suitable for further statistical estimation techniques. We use Wooldridge test to know the serial correlation in the data. In this respect, we applied the test and obtained the test reported value as, Prob> F = 0.234. This value indicates that there is no autocorrelation in the data. We also conducted Breush-pagan/ Cook- Weisberg test for heteroscedasticity and the test reported value as Prob> Chi^2 = 0.0897. The results confirm that there is no existence of hetero problem in the data.

Table 1 shows the correlation analysis of the variables. The results show that FDI and Economic growth has positive and moderate strong correlation (Cohen, 1988). As the coefficient of correlation, r = 0.384, P ≤ 0.001, this confirms the significant correlation between FDI and economic growth. Likewise, Energy consumption and natural resource show positive but week moderate correlation with Economic growth. Similarly, Energy consumption also predicts positive correlation with FDI, while natural resources also show positive correlation with FDI. The results also demonstrate positive correlation between natural resources and energy consumption. This means that more FDI in a country will cause more energy consumption in the country.

Table 1: Correlation penal of Latin American countries

Variables	E. G	FDI	E.C	NR
E. G	1.000			
FDI	0.384	1.000		
E.C	0.234	0.324	1.000	
NR	0.425	0.128	0.213	1.000

Table 2: Latin American: Goodness of fit measure

RMSEA	RMR	GFI	TLI	CFI	NEI
0.061	0.047	0.92	0.94	0.91	0.96

Table 3: Regression weights/path coefficients for testing hypothesis

Regression path	Estimate	S.E.	T. V	P.V
FDI→E. G	0.361	0.0792	4.56	0.000
E.C→E. G	0.223	0.0851	2.62	0.021
NR→E. G	0.434	0.0810	5.36	0.000
FDI→E.C	0.342	0.1049	3.26	0.001
FDI→NR	0.192	0.0928	2.07	0.047
NR→E.C	0.21	0.0950	2.21	0.041

Table 2 shows goodness of fit measures. The results report RMSEA = 0.061, which suggests that the model is fit as the value is less than 0.08, recommended by Hair et al. (2006). The RMR value is also in the range depicts fitness of the model as Hair et al. (2006), suggests that RMR value to be 0.05 or less than this critical value that's show the fitness of the model. All the incremental indices are showing values above than the critical stand point. Hair et al. (2006), suggest that GFI, TLI, CFI and NFI values equal or more than 0.90, show best fitted values. Hence the above absolute and incremental indices show significant structural interrelationship among the variables used in this study.

Table 3 portrays the path analysis of SEM, explaining the effect of one variable on another in the context of Latin American countries. The result show that FDI is has positive significant effect on economic growth (β = 0.361, P ≤ 0.05). Similar results were obtained by many previous studies (Blomstrom et al., 1992; Havranek and Irsova, 2011; Javorcik et al., 2004; Reganati and Sica, 2007). The results also denomestrates that energy consumption shows positive, but statistically significant effect on economic growth. The results are in line with, (Sadorsky, 2011; Stijns, 2005), and Sbia et al. (2014), who found that energy consumption show positive and statistically significant effect on economic growth. The outcomes prove that FDI has positive, but statistically significant effect on energy consumption. The results are in line with many previous studies, which show the positive nexus between natural resources and economic growth (Al-Mulali and Sheau-Ting, 2014; Baek and Kim, 2013; Seker et al., 2015). The same kind of nexus of these variables have been featured by previous studies (Ozcan et al., 2020; Shakeel et al., 2014). Likewise, FDI shows positve effect on both energy consumption and natural resources, which is very much in line with the findings of previous studies who registereds similar relationship (Eugenio-Martin et al., 2004). The results also predicted stistically significant effect of natural resources on energy consumption in Latin American countries (β = 0.21, P ≤ 0.05).

6. CONCLUSION

Latin American countries have adopted FDI policy from the last few decades and attained a substantial economic growth. Although FDI positively contributes toward the economy, yet it is a key determinant of natural resource and energy consumption. This research investigates the nexus between FDI, energy consumption, natural resource, and economic growth in Latin American countries. We use structural equation modeling (SEM) approach for the empirical analysis for the period of 1990 to 2018. Structural equation modeling is considered as an appropriate model to examine the complex interrelationship among various

variables. The empirical results depict a positive effect of FDI on economic growth, energy consumption and natural resource in Latin American countries (Javorcik et al., 2004; Kolstad and Wiig, 2012; Mehlum et al., 2006; Reganati and Sica, 2007). Besides Latin American counties did not adopt energy efficient advance technologies which resulted a positive relationship between FDI and energy consumption. The results validate positive significant effect of FDI on energy consumption, signifying the contribution of FDI in more energy use in this region. Same kinds of results have been achieved by many previous researches, who support the positive nexus between FDI and energy consumption (Boschini and Sjögren, 2007; Mehlum et al., 2006; Sbia et al., 2014), Likewise, the results demonstrate positive and statistically significant impact of energy consumption on economic growth in Latin American countries, confirming that manufacturing concerns mainly use non-renewable technologies in these countries which significantly contribute to the amount of economic growth.

Many previous studies confirm similar nexus of these variables (Apergis and Payne, 2009; Sadorsky, 2011). While supporting the findings of previous studies, the study predicts positive and statistically significant nexus between FDI and natural resources (Eugenio-Martin et al., 2004). Likewise, energy consumption and natural resource have positively and statistically significant effect on economic growth. It is in line with many previous studies (Sbia et al., 2014; Stijns, 2005). As the emperical literature and finding of this study document that FDI positively effect economic growth, and it is associated with enrgy consumption and natural resources. This further indicate that FDI helps to promote production, output and extraction of natural resources in the country. Which resultantly strengthen the financial development as well as instructional quality.

Based on these footprints government should make an appropriate strategy to bring more FDI as it is directly linked with the economic growth in these regions. The government should encourage the extraction of natural resources. So as to make more energy available for the domestic use which will help more industrial production and would cause an uplift in the employment curve. While the empirical literature and the findings suggest that abundances of natural resources if extracted are the blessings, so in this regard more appropriate strategies to be formulated to encourage extraction of natural resources with a view to convert the curse into blessing. Moreover, government should also encourage development of the institutional quality to provide more favorable grounds for the FDI influx in various countries of this region. Future study can use the same variables in two or more regions to conduct the empirical study. Moreover, future studies can use indirect and total effect to demonstrate the mediating and moderating effect of energy consumption, CO_2 emission, and natural resources in the relationship of FDI and economic growth.

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