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IMPACT OF GLOBALIZATION ON ENVIRONMENTAL DEGRADATION

ABSTRACT

The study focused to find out the impact of defacto and dejure globalization (as in explained in KOF globalization index 2018) on Environmental degradation in EAGLE, BRICKS, European Unions & NEXT11 countries. The defacto globalization indicate the measures of globalization include variables that represent flows and activities, de jure measures include variables that represent policies that, in principle, enable flows and activities. Whereas the environmental globalization is measured by CO2 Emission. The results show that dejure economic and social globalization has significant impact on environmental degradation in EAGLE, BRICKS, European Union & NEXT11 countries which indicates that the favorable trade & financial globalization policies in these countries enabled more economic globalization led to more industrialization which deteriorates the environment in these countries. Yet political defacto & dejure globalization has no significant impact on countries within these regional Cooperation's.

KEYWORDS

Regional Coperations, European Union, Defacto, Dejure, Globalization, CO2 (Carbon dioxide emission), EKU

INTRODUCTION

Globalization is the strategy where nations are being retained into the widespread economy through Outside Coordinate Speculation (FDI), exchange, territorial understandings, labor movement and capital streams. Globalization prepare is one of the most reasons behind worldwide natural changes. Globalization energizes improvement without a question; however, it makes negative externalities through natural debasement and biological defilement. Amid final few decades, natural impacts and exchange liberalization comes about due to globalization process is one of the elemental issues in worldwide exchange So the globalization handle is one of the fundamental components around the globe. Globalization is imperative due to: improvement, great administration, mechanical up degree, devout and ethnic resistance. In spite of the fact that, globalization prepare makes modern openings and challenges like imbalance, devout and ethnic pressures, natural weakening among nations. The theoretic writing talks about that exchange beside destitute legal framework relating to the environment will extend natural disintegration in worldwide economy.

Estimation results of globalization donate sound observational substances to urge ridden by sensible vulnerability, wavering causal cases and contradictory points of view. Globalization Record (GI) is an indispensably resource to evaluate, layout, communicate and pass on the challenges to globalization. It considered a comparative evaluation and situating of the execution of the economies (OECD,1996)5 as for globalization, based on pointers. Two tentatively affirmed files are the Maastricht Globalization Record (Figge L, Martens P. 2014) and the KOF list of globalizations (Dreher A. 2005 &2006).

Profoundly globalized country allots greater weights to natural framework, which can be seen as negative from a supportability point of see. In this way, the foremost globalized nations are not truly the foremost feasible countries. In any case, exceedingly globalized does not truly recommend positive comes about as laid out by the Trade Globalization List that joins the Exchange Biological Impression bio capacity as a extent of environmental globalization. As of late, globalization and its results for the environment have assembled tremendous thought with respect to the warmed discourse over the assumed Contamination Sanctuary Theory (PHH), which fights that the

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businesses with tall contamination will move towards creating nations from created nations due to careless biological guidelines10-12. Past examinations of this subject within the financial aspect's literature have for the foremost portion experienced two central goals with regard to the component of globalization, approximately each one of the examinations show up as either FDI or exchange and estimations of globalization other than financial globalization have been to a incredible degree disregarded13-15.

Globalization could be a multidimensional concept consolidating not as it were financial matters but moreover other areas of think about like humanism and legislative issues. There are a few financial components of globalization like request, generation, back, exchange, venture and competition. this considers centers on the effect of globalization on natural debasement in territorial enterprises as per categorized by World Bank, it considers four distinctive territorial participation like Rising and growth-leading economies (Hawks), Another 11, BRICS (Brazil, Russia, India and China) and European Union. This consider will propose arrangement producers to make strides the environment by taking globalization into the account. The foremost important thousand years advancement objectives are to decrease environment debasement and to extend the Worldwide organization by globalization Economical sustainable development goals. So, the present study tries to contribute in the literature by investigating the effects of globalization on environmental degradation as well as existence of the U shaped or the inverted U-shaped relationship between globalization and Carbon dioxide gas emission. CO2 gas emission is used as a proxy of environmental degradation for this regional cooperation. Globalization index used in this research is composed of four sub components and those components are economic, social, political. Globalization index is constructed by these three important components of globalization.

The current study is organized in four sections like review of literature, methodology, results, discussion and conclusion.

LITERATURE REVIEW

The most concern of financial specialists in this subject is the effect of globalization on economy and society, especially of creating nations. It is contended that integration into the worldwide economy advances financial development, which in turn makes a difference to fathom issues of destitution, imbalance, need of votebased system and contamination, and empirics propose a significant diminishment in poverty amid globalization, particularly within the case of India and China (Bhagwati, 2004), Zhou et al. 2011).

(Phong, 2019) depicted that in later a long time, the challenging concern of declining worldwide natural quality has unequivocally showed, which is clearly outlined by the upward drift of CO2 (Carbon Dioxide - one of the most components of the nursery impact) within the climate. But financial analysts as well as policy-makers endeavored to investigate and scrutinize the determinants of CO2 emanations such as vitality utilization, financial development, budgetary advancement and urbanization by different national and worldwide investigates in arrange to back maintainable improvement arrangements, the comes about with respect to the relationship between the previously mentioned components and natural harm stay questionable (Omri, 2013; Strict, 2004; Dinda, 2004; Omri et al. 2015; Shahbaz et al., 2015b; Shahbaz et al., 2016b; Dar and Asif, 2017; Phong et al., 2018).

The final a few decades seen the solid advancement of financial exercises which raised concerns for their impacts on the environment at both national and worldwide levels. The interface between financial development and natural quality has drawn impressive considerations since Grossman and Krueger (1991) proposed the Natural Kuznets Bend (EKC) theory which accept that financial development emphatically impacts CO2 emanations within the starting arrange, but the effect is negative within the consequent arrange after the CO2 outflows comes to the greatest level associated with a certain sum of wage per capita.

Following Grossman and Krueger (1991), many a research focused on testing the impact of globalization on environment in different countries, and the results varied. Jayanthakumaran et al. (2012) for India and China; Nasir and Rehman (2011), Ahmed and Long (2012), Javid and Sharif (2016) for Pakistan; Saboori et al. (2012) for Malaysia; Alam et al. (2012) for Bangladesh; Baek and Kim (2013) for South Korea; Shahbaz et al. (2014) for Tunisia; Ahmed (2014) for Mongolia; Baek (2015) for Iceland; Shahbaz et al. (2015a) for Portugal; Tang and Tan (2015) for Vietnam; Zambrano-Monserrate et al. (2016) for Ecuador; Balaguer and Cantavella (2016) for Spain; Al-Mulali et al. (2016) for Kenya; Bento and Moutinho (2016) for Italy; Ahmad et al. (2017) for Croatia; Ozturk and Acaravci (2013), Yavuz (2014), Gokmenoglu and Taspinar (2016), Ozatac et al. (2017), Pata (2018) for Turkey;

Cole et al. (1997) for 7 countries; Halkos (2003) for OECD and non-OECD countries; Apergis and Payne (2009) for Central America; Cho et al.(2014) for OECD; Pao and Tsai (2011), Sinha and Sen (2016) for BRICS; Farhani et al. (2014) for 10 MENA countries; Kasman and Duman (2015) for European countries; Zaman et al. (2016) for 34 developed and developing countries; Zhang et al. (2017) for 10 Newly Industrialized countries (NICs-10).

The increasing rate of economic growth process needs more consumption of energy, therefore resulted in damaging the environment (Islam et al., 2013; Zhang and Cheng, 2009; Shahbaz et al., 2016; Shahbaz et al., 2017). For instance, Pao and Tsai (2010) examined the impacts of energy consumption, economic growth on CO2 emissions and concurrently verified the EKC hypothesis in BRIC countries in the 1971-2005 period; and the results reclaimed the existence of the EKC hypothesis and denoted that energy consumption and economic growth were main factors raising CO2 emissions. Jaunky (2011) analyzed 36 high-income countries from 1980 to 2005 and found that energy consumption boosted CO2 emissions. s. Rehman and Rashid (2017) analyzed the role of energy consumption on environmental damage under multivariate analysis in SAARC countries and confirmed that increased globalization degraded the environment.

(Ullah, 2019) said Around the world expanding going up against issues of natural corruption and contamination is going more awful due to anthropogenic exercises such as fast urbanization, mechanical improvement, and agrarian operations (Kijima et al. 2010). For maintainable improvement of an economy, it is necessary to diminish environmental degradation and contamination at zero level or at slightest at a steady least level. Over the final few decades, logical inquire about thinks about contended that worldwide warming and climate alter issues are dependable for natural debasement. Broad writing, for occasion (Abas and Khan 2014; Karl and Trenberth 2003; Ramachandra et al. 2015; Li and Yang 2016 and Fereidouni 2013), proposes that these issues are caused due to air nursery gas (GHG) emanations. The experimental considers uncovered that GHGs are comprised of carbon dioxide, ozone, methane, nitrous oxide, and water vapor (Ullah et al. 2018).

Previous researches show that, around the world, the carbon dioxide emanations within the year 2014 was almost 42% higher compared to the year 1990. This implies that, around the world, the concentration of carbon dioxide within the air has been expanded at a significant level (Aung et al. 2017). With quick financial development and improvement, the concentration of carbon dioxide emanations has been significantly expanding amid the past few decades. As a result, creating economies produce a major portion of carbon dioxide emanation within the world. For the financial improvement of a nation, globalization plays a prevailing role, as globalization has demonstrated to be essential to a nation's capacity to urge the most extreme potential.

There are diverse conclusions with respect to the impact of globalization on the environment. Grossman and Krueger (1991) and Shahbaz et al. (2013b) examined that globalization incorporates a positive effect on natural debasement. In addition, numerous analysts have inspected that the variables of financial globalization have a critical effect on natural corruption, for occasion (Dignitary 2002; Copeland and Taylor 1995; McAusland 2008 and Frankel 2009). In differentiate, Antweiler et al. (2001) and Liddle (2001) contended that these variables move forward natural quality. In a comparable setting, Shahbaz et al. (2013c) checked the globalization effect on natural debasement within the nearness of the EKC theory for the Turkish economy. The creator found that globalization encompasses a critical effect on natural corruption. The observational work on the EKC clarifies how the natural quality of a country changes when it gets a limit level of income.

In many other studies they focused on measuring the relationship among vitality utilization, globalization, financial development, monetary advancement, and carbon dioxide emanations. In any case, these considers are constrained in number. In this setting, Shahbaz et al. (2017b) explored the effect of globalization on carbon dioxide Environ Sci Pollut Res emanations by counting vitality utilization and financial development in Japan, crossing the period of 1970–2014 utilizing NARDL show and inspected that vitality utilization, globalization, and financial development increment carbon dioxide emanations. In any case, Shahbaz et al. (2017a) found that globalization list and the sub-indices of globalization diminish carbon dioxide outflows within the presence of EKC, within the case of China over the period from 1970 to 2012. Comparative comes about were moreover found by Shahbaz et al. (2013c) over the period 1970–2010 in Turkey and inspected that globalization diminishes carbon emanations within the nearness of EKC.

Besides, Shahbaz et al. (2017c) utilized the board and time arrangement information strategies and inspected the relationship between carbon emanations and globalization in 25 created nations over the period of 1970–2014. The creators of the consider concluded that globalization increments carbon dioxide emanation. Haseeb et al. (2018)

inspected the effect of vitality utilization, budgetary improvement, globalization, financial development, and urbanization on carbon dioxide emanations for Brazil, Russia, India, China, and South Africa (BRICS) economies. They found that globalization diminishes carbon dioxide outflows within the presence of the EKC theory for BRICS nations. Shahbaz et al. (2015) utilized the Bayer and Hanck cointegration and vector blunder adjustment demonstrate (VECM) approach to gauge the effect of globalization on natural quality taking the case of India, over the period of 1970–2012. They found that carbon dioxide emanation increments as a result of globalization.

MODEL SPECIFICATION & DATA SOURCES

As this study focuses on the impact of globalization on environmental degradation in regional corporations as per categorized by World Bank, it considers four different regional cooperation like Emerging and growth-leading economies (EAGLEs), NEXT 11, BRICS (Brazil, Russia, India and China) and European Union. These cooperation are selected because of convenient availability of data. For the measurement of globalization, it uses the improvised version of KOF globalization index introduced by Gyglia, Haelgb and Sturmb (2018). This index is comprised of social, economic and political globalization, each having defacto and dejure dimensions. Economic globalization is subdivided into trade and financial globalization. Social globalization is subdivided into interpersonal, information and cultural globalization. Figge and Martens (2014) propose two additional dimensions in the Maastricht Globalization Index, which are technological and ecological globalization. While technological globalization includes measures of communication technology that overlap with the social dimension of the KOF Globalization Index, the ecological dimension is a distinct feature of the Maastricht Globalization Index.

METHODOLOGY

The globalization is multicountry phenomenon and this study focusses on the nexus of this factor with inequality and environmental degradation. So in the present scenerio, the cross sectional regression is commonly used to capture the relationship among above mentioned variables at one point of time. But in order to consider the impact of time series data along with cross sections, panel data techniques are more appropriate as they utilize both cross sectional and time data for the analysis. These techniques enhances the strength and size of the data sets, leading to reorganization of the analysis (Hsiao 1986). Moreover, the panel data methods have more leaverage for more hetrogeniety, variablility, efficiency and degree of freedom so, the models which are analyszed by these methods, have lesser restrictions (Baltagi, 2001).

So, the present study has utilized the panel data for the analysis and hence, the functional panel data models which have analyzed are three basic model. First is for economic globalization, second is for political globalization and third is for social globalization as follows:

$$CO_2 = a_1 + \beta_{2i}\, DfEG_t + \beta_{3i} DjEG_{it} + \beta_{4i}\, PPP_{it} + \beta_{5i}\, HC_{it} + \mu_{it} \quad \text{..... 3.1}$$

$$CO_2 = a_1 + \beta_{2i}\, DfPG_t + \beta_{3i} DjPG_{it} + \beta_{4i}\, PPP_{it} + \beta_{5i}\, HC_{it} + \mu_{it} \quad \text{.....3.2}$$

$$CO_2 = a_1 + \beta_{2i}\, DfSG_t + \beta_{3i} DjSG_{it} + \beta_{4i}\, PPP_{it} + \beta_{5i}\, HC_{it} + \mu_{it} \quad \text{.....3.3}$$

Where

CO_2 = CO_2 emissions per metric;

DfEG and DJEG = defacto and dejure KOF economic globalization index;

DfPG and DJPG = defacto and dejure KOF political globalization index;

DfSG and DJSG = defacto and dejure KOF social globalization index;

PPP= purchasing power parity

HC= human capital index and

μ = error term

$_{it}$ = panel data ($_i$ for cross section t for time series)

For the analysis of panel data models, three basic techniques are pooled ordinary least square (OLS), fixed effects and random effects. The pooled OLS model assumes homogeneity among cross sections. But if the specification of model requires the heterogeneity, fixed and random effects methods are applied. The fixed effects model assumes the heterogeneity among cross sections and time with the help of varying intercept whereas random effects model allows for random distribution in error variances. This study applies both fixed and random effects methods on different models. The decision of application of either in a specific model is done on the rejection and acceptance of null hypothesis in Hausman test (Hausman, 1978). To apply fixed effect model, we first have to check the properties of ordinary least square tests.

Then the same tests were applied on other panels to keep the findings comparable. The results of Hausman tests for BRICS are given below.

Table 3.1

Hausman Test for Model Specification (BRICS)

Hausman	Coefficient (b) RE	Coefficient (B) FE	Difference (b-B)	S.E
KOFECGLDF	-.1023162	-.0904871	-.0118291	.0209536
KOFECGLDJ	-.0658977	-.024355	-.0415427	.0163645
KOFSOGLDF	.6783019	.2215223	.4567796	.0168129
KOFSOGLDF	-.1483989	.0036494	-.1520483	.004974
KOFPOGLDF	.0804298	.0372869	.0431429	.0189985
KOFPOGLDF	-.1200769	-.0211517	-.0989252	.0096298
PPP	-.0003592	-.0000734	-.0002858	.0000374
AGEDEPEND	.036005	.0195868	.0164182	.000000
CHI-SQ	99.79	PROBABILITY	0.0000	

In the table 3.1, the results show that the null hypothesis of no difference between fixed effects and random effects model is rejected against the alternative hypothesis stating that the fixed effects model is more preferable. So, based on these preliminary estimates fixed effects model with cross-sectional weights is finalized for our panel data analysis. Then the same tests were applied on NEXT11 panels to keep the findings comparable. The results of Hausman tests are given below.

Table 3.2

Hausman Test for Model Specification (NEXT11)

Hausman	Coefficient (b) RE	Coefficient (B) FE	Difference (b-B)	S.E
KOFECGLDF	-.091445	-.1427014	.0512564	-
KOFECGLDJ	.2111244	.2860203	-.0748959	-
KOFSOGLDF	-.1057044	.4075133	-.5132177	-
KOFSOGLDJ	.0966417	-.5584333	.655075	.0209536
KOFPOGLDF	.0310343	.6779922	-.6469579	.0163645
KOFPOGLDJ	-.076308	1.341528	-1.417836	.0168129
PPP	-.5019015	-1.656419	1.154518	.004974
AGEDEPEND	-1.278831	-1.987943	.7091115	.2170737
HCI	.9959583	2.495852	-1.499894	-
CHI-SQ	-1857.48	Probability	0.000	

So, based on Hausman model specification test, fixed effects are more reliable for model estimation of NEXT11 and Hausman test for EAGLE countries is given below.

Table 3.3

Hausman Test for Model Specification (EAGLE)

HAUSMAN FE	COEFFICIENTS (b) FE	COEFFICIENTS (B) RE	DIFFERENCE (b-B)	S.E
KOFECGLDF	-.0816768	-.0183158	-.063361	.
KOFECGLDJ	-.028744	-.0954989	.0667549	.
KOFSOGLDF	.1556081	.4712145	-.3156065	.
KOFSOGLDF	.0086815	-.1297476	.1384291	.
KOFPOGLDF	.0202137	.0011669	.0190468	.
KOFPOGLDF	-.0044234	-.1006144	.0961909	.
CHI-SQ	153.71	P-VALUE	0.00000	

Lastly, the same test applied on European union panels to keep the findings comparable. The results of Hausman tests are given below.

Table 3.4

Hausman Test for Model Specification (EUROPEAN UNION)

HAUSMAN FE	COEFFICIENTS (b) FE	COEFFICIENTS (B) RE	DIFFERENCE (b-B)	S.E
KOFECGLDF	.1967871	.207065	-.0102779	.
KOFECGLDJ	.3241203	.3054774	.0186429	.
KOFSOGLDF	.1283808	.1220918	.006289	.
KOFSOGLDJ	-.8093024	-.7828075	-.0264949	.
KOFPOGLDF	-.5440919	-.5968833	.0527914	.
KOFPOGLDJ	-.2521299	-.2362241	-.0159058	.002536
CHI-SQ	22155.96	P-VALUE	0.00	

In the table 3.4, the results reveal that the null hypothesis of no difference between fixed effects and random effects model is rejected against the alternative hypothesis stating that the fixed effects model is more preferable. In the next step, we apply modified Wald test to check heteroscedasticity. Moreover, we apply Wooldridge test to check autocorrelation of BRICS, NEXT11, EAGLE and EUROPEAN UNIONS in the model. The results are given in the below table:

Table 3.5

Heteroscedasticity and Autocorrelation Tests

Test name	T statistics/ P-value BRICS	T statistics/ P-value NEXT11	T statistics/ P-value EAGLE	T statistics/ P-value EU
Modified Wald test for Heteroscedasticity Chi-square	324.74 0.06	576.18 0.09	386.62 0.10	453.91 0.8
Wooldridge test for autocorrelation Chi-square	24.942 0.05	19.221 0.51	24.942 0.118	93.812 0.11

In table 3.5, modified Wald test is applied to check heteroscedasticity in the model and the results show that chi-square test statistics presented in table are unable to reject our null hypothesis. Wooldridge test has applied to check the autocorrelation in the model and the results showed that chi-square statistics accept the null hypothesis.

The autoregressive conditional heteroskedasticity (ARCH) (Engle 1982) and Breusch–Godfrey serial correlation LM (Breusch 1978; Godfrey 1978) tests conclude that results of model are free from problems of heteroscedasticity and serial correlation as in both cases, probability value is greater than 0.05. Here, the null hypotheses of homoscedasticity and no serial correlation are accepted.

To check multicollinearity among variables, VIF test has applied and the mean VIF shows that there is no multicollinearity among the variables. The results for BRICS panel are given below;

Table 3.6

VARIANCE INFLATION FACTOR (BRICS)

VARIABLES	VIF	1/VIF
KOFEcGIdflog	6.08	0.164500
KOFEcGIdJlog	3.36	0.297668
KOFSOGIdflog	31.24	0.032011
KOFSOGIdJlog	9.15	0.109328
KOFPOGIdflog	4.43	0.225754
KOFPOGIdJlog	7.45	0.134155
MEAN VIF	12.02	

The table reveals that mean vif value is 12.02 that shows there is no multicollinearity in the variables of the model. To check multicollinearity among variables, VIF test has applied and the mean VIF shows that there is no multicollinearity among the variables. The results for EUROPEAN UNION panel are given below;

Table 3.7

VARIANCE INFLATION FACTOR (EUROPEAN UNION)

VARIABLES	VIF	1/VIF
KOFEcGIdflog	2.93	0.341601
KOFEcGIdJlog	2.00	0.931559
KOFSOGIdflog	4.80	0.208452
KOFSOGIdJlog	6.50	0.153809
KOFPOGIdflog	2.15	0.464465
KOFPOGIdJlog	2.37	0.422053
MEAN VIF	8.24	

The table reveals that mean vif value is 8.24 that shows there is no multicollinearity in the variables of the model. To check multicollinearity among variables, VIF test has applied and the mean VIF shows that there is no multicollinearity among the variables. The results for Next11 panel are given below;

Table 3.8

VARIANCE INFLATION FACTOR (NEXT11)

VARIABLES	VIF	1/VIF
KOFEcGIdflog	2.33	0.429866
KOFEcGIdJlog	5.10	0.196055

KOFSOGIdflog	12.35	0.080970
KOFSOGIdJlog	10.85	0.092133
KOFPOGIdflog	6.48	0.154396
KOFPOGIdJlog	5.81	0.172212
MEAN VIF	21.57	

The table reveals that mean vif value is 21.57 that shows there is no multicollinearity in the variables of the model. To check multicollinearity among variables, VIF test has applied and the mean VIF shows that there is no multicollinearity among the variables. The results for Eagle panel are given below;

Table 3.9

VARIANCE INFLATION FACTOR (EAGLE)

VARIABLES	VIF	1/VIF
KOFEcGIdflog	2.07	0.482315
KOFEcGIdJlog	6.76	0.147874
KOFSOGIdflog	13.77	0.072604
KOFSOGIdJlog	10.82	0.092396
KOFPOGIdflog	1.66	0.603560
KOFPOGIdJlog	4.52	0.221483
MEAN VIF	21.27	

The table reveals that mean vif value is 21.27 that shows there is no multicollinearity in the variables of the model.

EMPIRICAL RESOURCES

This chapter provides the results of the specified models for four above mentioned regional cooperation and also analyzes these results based on previous literature. Table 4.1 depicts the effects of defacto and dejure economic, political and social globalization on CO2 emissions by taking the data of countries cooperated in EAGLE by three separate models.

Table 4.1: CO2 emissions and KOF Globalization index (EAGLE cooperation)

Variables	Log of CO2 emmisions		
	(1)	(2)	(3)
C	-5.516041 (0.0000)	-5.258690 (0.0000)	-5.0186 (0.0000)
Log of KOF defacto economic Gloablization	0.016863 (0.7277)		
Log of KOF dejure economic Gloablization	0.17659* (0.0123)		
Log of KOF defacto Political Gloablization		-0.007655 (0.9562)	
Log of KOF dejure Political Gloablization		0.0061697 (0.5960)	

Log of KOF defacto Social Gloablization			-0.084058 (0.4341)
Log of KOF dejure Social Gloablization			0.181310 * (0.0517)
Log of Purchasing power parity	0.2259 (0.0101)	0.247144 (0.0292)	0.147311 (0.2039)
Log of agedependancy ratio			
Log of human capital index	0.36625 (0.0026)	0.369652 (0.0071)	0.422775*** (0.0012)
R2	0.5248	0.98128	0.9816
Selected model	Random effects	Fixed Effects	Fixed effects
Included cross sections	8	8	8
Included observations	208	208	208

In the above table, the results show that dejure economic and social globalization has positive sign that show there is positive relationship with dependent variable. It reveals that dejure economic and social globalization increases CO2 emissions while defacto globalizations in all the three divisions have not significant impact on CO2 emissions. Moreover, the purchasing power parity and human capital have positive influence on CO2 emissions. These results suggest that economic social globalization may cause hurdle for the government of the countries. Furthermore, the impact of economic globalization on carbon dioxide is positive and significant. The results imply that economic globalization can affect environmental quality. This can be explained through a well-known example of economic globalization that adversely affects the environment is global free trade. Worldwide increasing confronting problems of environmental degradation and pollution is going worse due to anthropogenic activities such as rapid urbanization, industrial development, and agricultural operations (Kijima et al. 2010).

Globalization is a multi-dimensional concept and includes economic, political, and social dimensions. Moreover, trade liberalization, economic growth, investment, capital flows, and technological change are the key factors of economic globalization (Torres 2001). Table 4.2 depicts the effects of defacto and dejure economic, political and social globalization on CO2 emissions by taking the data of countries cooperated in NEXT11 by three separate models.

Table 4.2: CO2 emissions and KOF Globalization index (NEXT11 cooperation)

Variables	Log of CO2 emmisions		
	(1)	(2)	(3)
C	-10.65231 (0.0000)	-10.520206 (0.0000)	-5.07703 (0.0000)
Log of KOF defacto economic Gloablization	0.1085863* (0.020)		
Log of KOF dejure economic Gloablization	0.4507843* (0.0000)		
Log of KOF defacto Political Gloablization		.2361666* (0.052)	

Log of KOF dejure Political Gloablization		.5142919 * (0.0000)	
Log of KOF defacto Social Gloablization			-0.5917315* (0.0712015)
Log of KOF dejure Social Gloablization			0.1760636 * (0.0856357)
Log of Purchsing power parity	-0.1230361 (0.162)	-0.2035028* (0.090)	-0.1471201 (0.216)
Log of human capital index	1.139264 (0.000)	1.065243 (0.0000)	0.4628041*** (0.007)
R2	0.8698	0.8491	0.6334
Selected model	Fixed effects	Random Effects	Fixed effects
Included cross sections	10	11	11
Included observations	260	278	278

In table 4.2, on the basis of findings, we infer that both defacto and dejure globalization has a significant and positive impact on CO2 emmissions with the exception of defacto social gloablization which has negative influence on dependant variable. Economic globalization has significant positive impact on environment which shows that with increasing globalization, environmental degradation also increases. This means that, worldwide, the concentration of carbon dioxide emissions in the atmosphere has been increased at a considerable level (Aung et al. 2017). There are different opinions regarding the effect of globalization on the environment. Grossman and Krueger (1991) and Shahbaz et al. (2013b) investigated that globalization has a positive impact on environmental degradation. Moreover, many researchers have examined that the factors of economic globalization have a significant impact on environmental degradation, for instance (Dean 2002 and Frankel 2009). In contrast, Antweiler et al. (2001) and Liddle (2001) argued that these factors improve environmental quality.

Table 4.3 depicts the effects of defacto and dejure economic, political and social globalization on CO2 emissions by taking the data of countries cooperated in EUROPEAN UNION by three separate models.

Table 4.3: CO2 emissions and KOF Globalization index (European Union)

Variables	Log of CO2 emmisions		
	(1)	(2)	(3)
C	-1.1556 (0.002)	-1.997144 (0.0000)	-.7056022 (0.100)
Log of KOF defacto economic Gloablization	.0246202 (0.511)		
Log of KOF dejure economic Gloablization	-.0560153 * (0.078)		

Log of KOF defacto Political Gloablization		0.2258446* (0.0000)	
Log of KOF dejure Political Gloablization		0. 0110265 (0.837)	
Log of KOF defacto Social Gloablization			-.2547978* (0.002)
Log of KOF dejure Social Gloablization			.1399637 (0.183)
Log of Purchsing power parity	-.4897653 (0.000)	-0.5170552 (0.0000)	-.4851763 *** (0.000)
Log of human capital index	.7962333 (0.000)	0.7906424 (0.0000)	.7815804 *** (0.000)
R2	0.2185	0.1663	0.1978
Selected model	Random Effects	Random Effects	Random effects
Included cross sections	28	28	28
Included observations	696	700	696

The Table 4.3 shows the results for eurpeon union, where dejure economic globalization is good for environment but opposite for economic defacto globalization. Whereas, defacto political gloablization detriotes the environemnt in this cooperation by increasing CO2 emmissions. In addition, the defacto social globalization has a negative and significant effect on CO2 emmissions. In this scenario, it is the political system that underpins globalization and allows unchecked GHG emissions, especially from energy production and land-use change which are the two primary mechanisms of both modernizations. Moreover, globalization plays a proactive role and making global level policies to reduce the severe impact of environmental threats (Najam et al. 2016).

Table 4.4 depicts the effects of defacto and dejure economic, political and social globalization on CO2 emissions by taking the data of countries cooperated in BRICS by three separate models.

Table 4.4 : CO2 emissions and KOF Globalization index (BRICS).

Variables	Log of CO2 emmisions		
	(1)	(2)	(3)
C	-5.094896 (0.000)	-5.998611 (0.0000)	-5.19182 (0.000)
Log of KOF defacto economic Gloablization	-.0655181 (0.100)		
Log of KOF dejure economic Gloablization	.0409398 (0.489)		

Log of KOF defacto Political Gloablization		3.735126* (0.0000)	
Log of KOF dejure Political Gloablization		-1.554412 * (0.000)	
Log of KOF defacto Social Gloablization			-.0073153 (0.955)
Log of KOF dejure Social Gloablization			-.0430321 (0.653)
Log of Purchsing power parity	-.2107856 (0.001)	1.041403 (0.0000)	-.2372302 *** (0.001)
Log of human capital index	.9305659 (0.000)	-1.116325 (0.0000)	.9792286*** (0.000)
R2	0.5131	0.8606	0.5312
Selected model	Fixed Effects	Random Effects	Fixed effects
Included cross sections	5	5	5
Included observations	128	128	128

These results showed that defacto economic globalization has negative relationship with environmental degradation confirming the deteriorating impact of defacto economic globalization on CO2 emissions. Whereas, in case of social globalization, defacto index has negative effect on environment while dejure one also has negative influence on CO2 emissions. Moreover, in case of political globalization dejure has negative relationship but defacto has positive impact on environmental degradation. This means that globalization is the main cause of environmental degradation. In addition, globalization creates environmental issues (e.g., global warming, loss of biodiversity, thinning of the ozone layer, depletion of natural resources, and widespread deforestation) (Shahbaz et al. 2017a).

CONCLUSION

The study focused to find out the impact of defacto and dejure globalization (as in explained in KOF globalization index 2018) on Environmental degradation in EAGLE, BRICKS, EU & NEXT11 countries. The defacto globalization indicate the measures of globalization include variables that represent flows and activities, de jure measures include variables that represent policies that, in principle, enable flows and activities. Whereas the environmental globalization is measured by CO2 Emission.

The results show that dejure economic and social globalization has significant impact on environmental degradation in EAGLE countries which indicates that the favorable trade & financial globalization policies in these countries enabled more economic globalization led to more industrialization which deteriorates the environment in these countries. While Increased Social globalization also increased the CO2 emissions in EAGLE countries. On the other hand, the political globalization has no significant impact on Environmental degradation. In European Union far and less most countries have seen income inequality increasing year by year and due to increased social, political and economic globalization he more production taken place, therefore more environmental degradation. Similar pattern I have observed in BRICKS and NEXT11 countries as well. As a result of limited convergence process and increasing inequality in all these regional coperations people are more unequal today than before.

During this study I have observed that though free trade and liberalization have expanded the canvas for free markets but it could not break the panorama of developed and developing. In my view after conducting this study is

that small size economies could not be benefitted more by regional cooperations as their big size economies's counter parts did. Maybe lifting all trade barriers did not support the small size economies and more defacto economic and social globalization increased environmental degradation in these countries.

Governments should religiously follow the environmental laws in order to avoid the increasing environmental degradation. The super powers in world should obey these rules at first. Recycling, less use of plastic and opposition of deforestation should be mandatory. The ethical codes of conducts in trade are no more effective in this rapidly globalized capitalistic world therefore the accountability and implication of law should be the priority of states and world trade institutions.

More capital and investment should be done in creating awareness about climate change and environmental degradation. All states, regional coperations, and international trade institutions should spend their resources for more research in this field so the world can find alternative sources of energies which could not harm the environment.

The speed of globalization should not be so rapid that it decreases the quality of life even vanishing the life. The one case recently we have seen in the form of COVID 19. This showed us that ignoring environment could cost not only the growth & development but large number of causalities.

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