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Küreselleşmenin İnsanî Gelişme Üzerindeki Etkileri: Seçilmiş Müslüman Ülkeler Üzerine Ampirik Bir Çalışma

Effects of Globalization on Human Development: An Empirical Study on Selected Muslim Countries

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Öz

Bu çalışmada, 1990-2019 yılları arasında seçilmiş yedi Müslüman ülkede (Bangladeş, Mısır, Endonezya, Malezya, Suudi Arabistan, Pakistan ve Türkiye) küreselleşmenin çeşitli boyutları (sosyal, ekonomik ve politik) ile İnsani Gelişme Endeksi (HDI) arasındaki ilişki incelenmektedir. Mevcut çalışma, ampirik analiz tekniği olarak, Panel Otoregresif Dağıtılmış Gecikmeli (ARDL) metodolojisi ve Pedroni Eşbütünleşme testini kullanarak yürütülmüştür. Çalışmanın ulaştığı ampirik analiz sonuçlarına göre, ekonomik küreselleşmede meydana gelen %1'lik bir değişimin insanî gelişmeyi %0,12 oranında azalttığını, sosyal ve siyasal küreselleşme değerlerinde meydana gelen %1'lik bir değişimin ise sırasıyla %21 ve %46 oranında artırdığını göstermektedir. Bu ampirik bulgulardan hareketle, ekonomik küreselleşmenin insanî gelişmişlik düzeyi üzerinde negatif bir etki gösterdiği tespit edilirken; politik ve sosyal küreselleşmenin pozitif bir etki gösterdiği sonucuna ulaşılmıştır. Ulaşılan bu bulgular, politik ve sosyal küreselleşmenin bireylerin yaşam standartları ile refah düzeylerinin üzerinde olumlu bir etkiye sebep olabileceğini; ayrıca ekonomik küreselleşmenin ise çeşitli olumsuz ekonomik sonuçlar doğurabileceğini göstermektedir. Ayrıca ampirik bulgulardan hareketle, seçilmiş Müslüman ülkeler arasında uzun dönemli bir ilişkiye ulaşılması, küreselleşmenin çeşitli boyutlarının dinamik bir denge üzerine kurulu olduğunu göstermektedir. Dolayısıyla bu çalışmada, ekonomik, sosyal ve politik küreselleşmenin insanî gelişme seviyesi üzerindeki ülkelerin Müslüman kimlikleri özeline dayandırılarak, farklı küreselleşme boyutları ile yaşam kalitesi ve refah düzeyi arasında var olan diyalektik ilişkiyi göz önüne sermeyi amaçlamaktadır.

Anahtar Kelimeler: İnsanî Gelişmişlik, Küreselleşme, Müslüman Ülkeler, Panel ARDL

Makale Türü: Araştırma

Abstract

This study examines the relationship between various dimensions of globalization (social, economic and political) and the Human Development Index (HDI) in seven selected Muslim countries (Bangladesh, Egypt, Indonesia, Malaysia, Saudi Arabia, Pakistan and Turkey) between 1990 and 2019. The study employs Panel Autoregressive Distributed Lagged (ARDL) methodology and Pedroni Cointegration test as the empirical analysis technique. The results of the empirical analysis show that a 1% change in economic globalization decreases human development by 0.12%, while a 1% change in social and political globalization increases human development by 21% and 46%, respectively. Based on these empirical findings, it is concluded that while economic globalization has a negative effect on the level of human development, political and social globalization has a positive effect. These findings suggest that political and social globalization may have a positive impact on individuals' welfare levels, while economic

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globalization may have various negative economic consequences. Based on the empirical findings, the finding of a long-run relationship among selected Muslim countries suggests that the various dimensions of globalization are based on a dynamic equilibrium. Hence, this study aims to explore the dialectical relationship between different dimensions of globalization of life and well-being by focusing on the impact of economic, social and political globalization on the level of human development with special reference to the Muslim identity of countries.

Keywords: Human Development, Globalization, Muslim Countries, Panel ARDL

Paper Type: Research

Introduction

Globalization, in its various dimensions, has become an undeniable force shaping the contemporary world. The economic, social, and political aspects of globalization exert profound influences on the fabric of societies. Understanding these influences is paramount as we navigate an era characterized by unprecedented connectivity and interdependence. The importance of globalization lies not only in its economic implications but also in its potential to shape social structures and political landscapes. This study recognizes the significance of comprehending these globalizing forces in the context of human development, particularly in countries that share the common thread of being part of the Muslim world.

Globalization, as mentioned, is a multifaceted concept, extending beyond its commonly emphasized economic dimensions. While it is often associated with economic outcomes, globalization also drives significant social and political transformations. Proponents of globalization argue that its overall benefits surpass any potential drawbacks. This study aims to investigate the effects of globalization on human development by examining its economic, social, and political aspects individually. In doing so, it seeks to answer the critical question: "Do all forms of globalization contribute positively to human development?"

The current study employs Panel ARDL methodology to reveal the relationship between globalization and HDI using annual time series data from seven selected Muslim countries (Bangladesh, Egypt, Indonesia, Malaysia, Saudi Arabia, Pakistan, and Türkiye) over the period 1990-2019. It also employs Pedroni Cointegration analysis to determine long-term relationship causality. We hope to shed light on the complex relationship between globalizing forces and national development by investigating the effects of economic, social, and political globalization on HDI. Spanning the timeframe from 1990 to 2019, the primary objective of this study is to explain the influence of globalization across distinct domains on human development.

The remainder of the parts of the paper are organized as follows: Section 1 covers the conceptual framework. Section 2 presents an overview of the current literature. Section 3 focuses at the econometric methodology and estimate processes. Section 4 discusses the empirical findings. Finally, the conclusion section concludes the paper.

1. Conceptual Framework

1.1. Globalization

The discourse on globalization has been a recurrent subject within academic circles, presenting a formidable challenge in terms of conceptual delimitation. The complexity of defining globalization is rooted in several factors. Primarily, it is a concept subject to pervasive political contention worldwide, resulting in a divergence of perspectives between proponents and detractors. The essence of the concept becomes obscured amidst the conflicting narratives endorsed by both factions. Additionally, globalization embodies a multidimensional character, encompassing financial, commercial, political, social, and cultural dimensions, each manifesting distinctively within its respective domain.

Within the economic domain, globalization is intricately connected to the uninhibited and expeditious mobility of commodities and services, labor, and capital on a global scale. In classical terms, the predominance of nation-states over their respective national economies has diminished substantially (Cable, 1995). The fluidity characterizing each economic factor is experiencing a pervasive augmentation. Consequently, the influence wielded by international and supranational economic entities, alongside financially robust multinational corporations, is progressively amplifying.

Technological advancements play a pivotal role in accelerating and intensifying the effects of economic globalization. The post-Fordist mode of production empowers enterprises to swiftly relocate their manufacturing operations between peripheral and semi-peripheral nations within the capitalist economy (Harvey, 2019). The global integration of capital markets has facilitated the seamless transference of billions of dollars across continents through mere computer commands.

The political aspects of globalization are intricately tied to the sovereignty of nation-states. The incremental acknowledgment of the diverse religious, linguistic, and ethnic backgrounds within entities residing under the monist logic of nation-states, coupled with the direct engagement of "global" entities such as the United Nations and the EU with "local" elements, constitutes fundamental manifestations of political globalization (Habermas, 2018). Certainly, scholarly investigations adopting a cyclical viewpoint towards the economic and political facets of globalization are noteworthy in this context. Analyses positing an interstate competition for hegemony within capitalism, a system characterized by interrelated economic relations and numerous political entities, contend that such contests give rise to cyclical historical patterns. To trace the conceptual origins of globalization further back, seminal works like Arrighi's (2016) "The Long Twentieth Century," George Modelski's (2005) "Long Cycles in World Politics," and, notably, Wallerstein's (2011) "World-Systems Analysis" merit consideration.

The cultural aspect of globalization constitutes a notably contentious realm characterized by a lack of unanimity among scholars. Broadly, cultural globalization is expounded upon by the convergence of lifestyles across diverse nations, leading to an increasing similarity among individuals globally. This is evidenced by the adoption of globally recognized brands in attire, the consumption of franchised fast-food items, and a semblance in cultural and entertainment preferences. Notably, the pervasive influence of Hollywood and American TV series, coupled with the heightened attention garnered by international basketball and football competitions over local games, stands out as prominent indicators of cultural globalization.

Regrettably, while there exists a shared understanding of the characteristics defining cultural globalization, there remains a lack of unanimity concerning the trajectory of this process. In this context, Holton's (2013) investigation succinctly encapsulates the divergent perspectives present in the scholarly literature. Within this study, three distinct manifestations of cultural globalization are expounded upon: homogenization, polarization, and hybridization. As anticipated, the homogenization thesis posits that the ongoing process of globalization will lead to increased similarity among diverse cultures worldwide. Conversely, the hybridization perspective contends that globalization will give rise to a synthesis involving the local cultures of integrated nations and the prevailing Western culture. The polarization hypothesis presents a contrasting perspective to homogenization, asserting that globalization has engendered distinct poles, fostering division across the globe characterized by sentiments of anger, animosity, and hostility rather than a universal cultural convergence. Noteworthy proponents of this thesis include Edward Said (1978), renowned for his contributions to the analyses of Orientalism, and Samuel Huntington (2021), the author of the influential work "Clash of Civilizations".

While possessing various facets, globalization is commonly expounded through phenomena such as interdependence, the conceptualization of the world as a global village, and

the increased permeability of national borders. The examination of political polarization surrounding the concept of globalization falls outside the purview of this study. This research refrains from presenting arguments either in favour or against globalization; instead, it acknowledges globalization as an incontrovertible reality. The primary focus lies in investigating the nexus between the degree of globalization and human development, employing an econometric methodology for analysis.

1.2. KOF Globalization Index

Today, nearly all nations are impacted by globalization. Globalization, so to speak, is a global phenomenon. Despite its ubiquity, variations persist in the extent of globalization across regions, whether assessed through economic, commercial, cultural, or other lenses. The recognition of diverse degrees of globalization prompts inquiries into the quantification of this phenomenon. Measuring globalization proves challenging given the absence of unanimous consensus on its definition. Determining which indicators merit acknowledgment as measures of globalization and the extent of their validity pose formidable challenges. It is imperative to concede that, akin to the challenge of defining globalization, endeavours to gauge its levels inherently entail subjective elements.

Various efforts have been made to quantify globalization, with notable indices such as the KOF Globalisation Index, the globalization index produced by A.T. Kearney, and the Global Connectedness Index (GCI) developed by DHL in collaboration with NYU Stern School of Business emerging as prominent benchmarks for assessing the extent of globalization. All three methodologies employ specific indicators and their corresponding ratios to gauge the extent of globalization in countries. For instance, the DHL Index incorporates indicators such as foreign direct investment, inbound tourism, and the duration of international telephone calls originating from the country to assess various facets of globalization (Altman & Bastian, 2023). While the explicit details of the indicators used in the A.T. Kearney's globalization index are not disclosed, it is inferred that factors such as the number of internet users and the presence of international organizations in the country are considered (Foreign Policy, 2024). In this investigation, the KOF Globalisation Index is employed, and the assessed levels of globalization for the countries under scrutiny are derived from the KOF Index.

The KOF Globalisation Index, issued by the Department of Management, Technology and Economics at ETH Zurich, stands as one of the earliest and steadfast measures of globalization, with a history of assessing global trends since the 1970s. Beyond providing an overall evaluation of globalization, the index undertakes a nuanced examination of distinct dimensions, namely social, political, and economic globalization. Within the realm of economic globalization, the assessment comprises two distinct measures: trade globalization and financial globalization. Concurrently, social globalization is comprehensively scrutinized through three separate measures: interpersonal globalization, cultural globalization, and information globalization (Çeştepe et al. 2023). This index employs diverse variables, each assigned specific weights, to quantify distinct forms of globalization previously delineated. As an illustration, the metrics influencing the measurement of information globalization, categorized under social globalization, encompass variables such as access to television and the internet, freedom of the press, internet bandwidth, international patents, and exports of high technology. In the context of political globalization, noteworthy determinants include the presence of foreign embassies, international non-governmental organizations (NGOs), and participation in international agreements. The factors influencing the scores for all computed types of globalization, along with the weights and calculation methodologies assigned to these factors, are accessible on the official website (KOF Globalization Index, 2024).

1.3. Human Development Index

An additional variable considered in the analysis, distinct from globalization, is the HDI. Formulated by economist Mahbub ul Haq in 1990, the HDI serves as a metric for gauging the

level of human development within countries (Haq & Sen, 1990). Since 1993, the United Nations Development Programme has annually presented the HDI in its Development Report. While a detailed discussion of the calculation methodology is beyond the scope here, it is noteworthy that two distinct calculation methods were employed before and after 2010. Presently, the HDI is principally influenced by factors including life expectancy, the average and anticipated duration of education within a country, and the national income per capita (Human Development Report 2010, 2010). Following the calculation, the HDI score assumes a range from 0 to 1, where 0 signifies the lowest level of development and 1 signifies the highest.

Upon scrutinizing the HDI scores of the countries analyzed within this study, a discernible upward trend is evident for all nations across the examined time interval. Bangladesh, commencing with the lowest HDI score in 1990, demonstrates the most notable percentage increase within the specified timeframe. In 1990, Bangladesh's HDI score stood at 0,397, and by 2019, it reached 0,644, reflecting a substantial 62% increase. In contrast, Pakistan, initially closely ranked with Bangladesh, experienced a more moderate rise, advancing from 0,4 to 0,546. Further analysis reveals Indonesia elevating its 1990 HDI score of 0,526 to 0,716, registering a 36% increase. Egypt, with an initial score of 0,572, saw a 28% increase, reaching 0,735. Turkey's HDI score surged from 0,6 in 1990 to 0,842 in 2019, reflecting a forty percent increase. Malaysia, with a 1990 HDI score of 0,64, demonstrated an ascent to 0,81 in 2019. Lastly, Saudi Arabia, starting with an initial score of 0,678, exhibited a 28% increase, reaching a score of 0,873.

In the comparative assessment of the analysed countries, Saudi Arabia consistently holds the foremost position both at the commencement and conclusion of the examined time span. In 1990, Malaysia secured the second position, whereas by 2019, Turkey emerged with the second highest HDI score. Notably, in terms of the bottom two rankings, Bangladesh, initially occupying the last position in 1990, ascended to the fifth position in 2019, whereas Pakistan, initially positioned fifth, descended to the sixth rank.

The primary focus of this investigation lies in examining the correlation between alterations in the HDI scores and the globalisation scores of Muslim countries. Central to the study is the inquiry into the interconnection between the political, social, and economic dimensions of globalization and the varying levels of human development observed in countries. The following section reviews studies that explore the relationship between globalization and human development in the context of the existing literature.

2. Literature Review

Important considerations for assimilating into global dynamics are the level of human development and the prevalence of various aspects related to globalization. Three different areas have been covered by the research that has already been written about globalization and HDI relations: social, economic, and political. These areas have all been examined in different ways. As an illustration, Muhammad et al. (2010) investigate the relationship between globalization and human development in Pakistan, focusing on foreign direct investment (FDI) as a key measure of globalization. The study utilizes data from 1975 to 2008 and applies the Ordinary Least Squares (OLS) method, with HDI as the dependent variable and FDI, real GDP growth, exports, and imports as independent variables. The findings reveal that FDI positively influences HDI by creating employment and improving living standards, while real GDP growth has a negative impact due to income inequality. This study highlights the role of FDI in driving human development, providing insights into how globalization affects developing economies like Pakistan. Afterwards, Cieślik (2014) also provides a investigation into the relationship between globalization and human development in post-transition countries (the countries that have undergone a shift from centrally planned economies to market-oriented systems such as Bulgaria, Slovenia, Hungary etc.). The study, using annual panel data from 1971 to 2010, explores this

relationship through the application of both fixed and random effects models. The analysis utilizes the KOF Index of Globalization and the Human Development Index (HDI) as key indicators. The results demonstrate a positive and statistically significant relationship between globalization and human development, although this significance diminishes when accounting for differences in economic development. This study highlights the importance of considering both regional integration and economic conditions when assessing globalization's impact on human development. Naz and Nasir (2021) explore the impact of economic, political, and social globalization on HDI across a panel of 129 countries from 1990 to 2019. Their research highlights that economic and social globalization have the most significant positive effects on HDI, while the impact of political globalization remains less pronounced. Their work contributes to the existing literature by seperating the effects of different dimensions of globalization on the individual components of HDI—income, health, and education—providing a view of how globalization shapes human development across the globe.

In particular, Takiyar & Rao (2020) investigate the impact of globalization on human rights in 40 Sub-Saharan African countries over the period 1976-2017. The study uses the Political Terror Scale (PTS) as a measure of human rights, focusing on violations such as torture, political imprisonment, and extrajudicial executions. The authors employ the ordered probit model with robust standard errors to analyze the relationship between globalization and human rights across three dimensions: economic, social, and political globalization. The results reveal that social globalization has a positive and statistically significant impact on human rights in both the medium and long terms, whereas economic globalization shows no significant effect. Additionally, the study finds that political globalization has a positive but delayed impact. Furthermore, Fosah et al. (2023) examine the relationship between globalization and economic development in Sub-Saharan Africa using data from 35 countries between 1995 and 2018. The authors employ advanced econometric techniques, including the Dynamic Common Correlated Effects (DCCE) and System Generalized Method of Moments (SGMM), to control for cross-sectional dependence, heterogeneity, and endogeneity in the data. Their findings highlight that globalization, particularly de facto globalization, positively impacts human development, as measured by the Human Development Index (HDI). The study concludes that while globalization can be a driver of development in the region, policymakers must focus on maximizing the benefits by reducing cross-border barriers and encouraging foreign direct investment.

After the literature review, the methodology used for the empirical analysis of the study is presented in Section 3.

3. Methodology

Equation 1 depicts the model used for econometric analysis in this study. The dependent variable in this study is HDI, while the independent variables are economic, social, and political globalization indexes. Thus, the impact of various aspects of globalization on HDI is investigated. The model is articulated as follows:

$$HDI_{it}=\beta_0 + \beta_1 kofeco_{it} + \beta_2 kofsoc_{it} + \beta_3 kofpol_{it} + \varepsilon_{it} \quad (1)$$

HDI_{it}: represents the Human Development Index for country i at time t. $kofeco_{it}$, $kofsoc_{it}$ and $kofpol_{it}$ are the economic, social and political globalization indices for country i, at time t, respectively. β_0 is the intercept term. β_1, β_2 and β_3 are the coefficients associated with the respective globalization indices. ε_{it} is the error term.

In our current research, we employed Pesaran et al. (1999) Panel ARDL methodology to examine the long-term link between the dependent (HDI) and independent variables (social, economic, and political globalization). The ARDL methodology offers numerous advantages over other approaches for investigating long-term correlations between variables. This methodology provides flexible modeling by include varying lag lengths for both dependent and independent variables in the model. Furthermore, this approach allows both short-term and long-term relationships between variables to be investigated simultaneously (Pesaran et al.1999). As a result, we used the ARDL methodology to understand both short- and long-run interactions. Furthermore, we used a panel error correction model called the Panel Autoregressive Distributed Lag (ARDL) approach, which was developed by Pesaran and Shin (1999) and Pesaran et al. (1999).

The long-run and short-run panel ARDL (p,q) models are define as Equation (2) and Equation (3), respectively:

$$HDI_{it} = \alpha_i + \sum_{j=1}^{p} b_{1ij} hdi_{it-j} + \sum_{j=0}^{p} b_{2ij} kofeco_{it-j} + \sum_{j=0}^{p} b_{3ij} kofsoc_{it-j} + \sum_{j=0}^{p} b_{4ij} kofpol_{it-j} + u_{it} \quad (2)$$

$$\Delta HDI_{it} = \alpha_i + \sum_{j=1}^{p} b_{1i}\, \Delta hdi_{it-j} \sum_{j=0}^{p} b_{2ij} \Delta kofeco_{it-j} + \sum_{j=0}^{p} b_{3ij} \Delta kofsoc_{it-j} + \sum_{j=0}^{p} b_{4i}\, \Delta kofpol_{it-j} + \omega hdi_{it-j} + \varphi kofeco_{it-j} + \theta kofsoc_{it-j} + \delta kofpol_{it-j} + u_{it} \quad (3)$$

The model specifications use the symbols Δ for the difference operator and ω for the error correction coefficient. Equation (2) incorporates the variable levels, with the associated coefficients representing the long-term effects. Conversely, Equation (3) describes the short-term coefficients. The Panel ARDL approach uses two types of estimators. One is the Mean Group (MG) Regression, while the other is the Pooled Mean Group (PMG) Regression. The MG estimator has no parameter restrictions. MG derives the long-run parameters by averaging the individual ARDL model parameters. Unlike the MG estimator, the PMG estimator allows for both long-run homogeneity and short-run heterogeneity in parameter values (Pesaran et al. 1999). Furthermore, Hausman's test can be used to determine the regression between MG and PMG (Pesaran & Shin, 1999).

The empirical analysis for our current study will proceed in the following order: first, we will test for cross-sectional dependence on both the variable and the panel as a whole. Then, using the unit root test, we determined which methodology will be employed for the model under consideration. After conducting the second generation unit root tests, we decided to utilize Panel ARDL as the approach. Finally, we used the Pedroni Cointegration Test, which accounts for heterogeneity, to determine whether there is a long-run link between the variables in the seven Muslim nations.

The following Section 4 indicates and examines the findings of the econometric model used to study the relationship between globalization and human development.

4. Empirical Analyses and Results

Our study begins with a presentation of data sources for empirical analysis, followed by descriptive statistics. A serial assessment of horizontal cross-sectional dependence was then performed to determine the most appropriate unit root tests and model selection. The results of the unit root tests are then presented. Also, the Panel Autoregressive Distributed Lag (ARDL) model is applied. Finally, we applied the Pedroni Cointegration test.

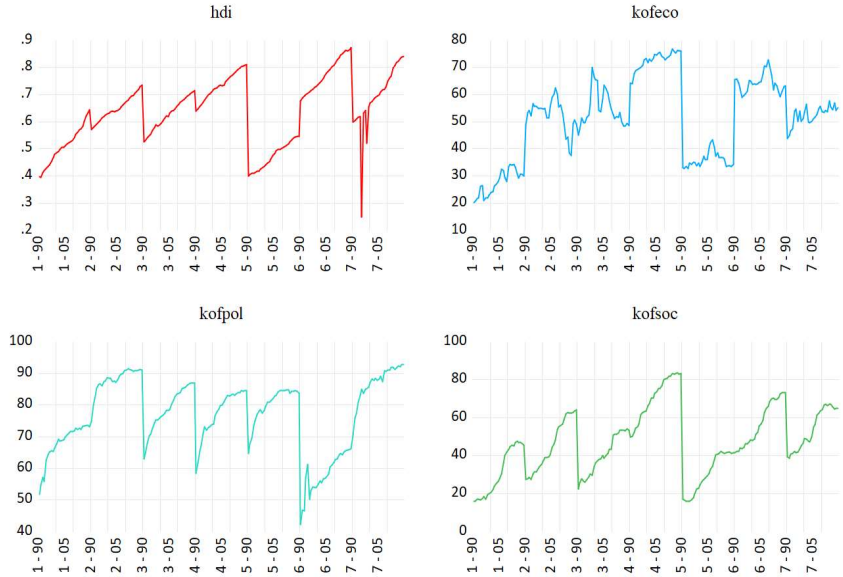
Table 1, illustrates the data sources considered in our current investigation for the period 1990-2019. The data for the HDI are sourced from the World Bank database, while the economic, social, and political indices of globalization are obtained from the Swiss Economic Institute.

Table 1. Sources of Data

Variable	**Measure**	**Source**
HDI	Human development index	World Bank
kofeco	The economic dimension of globalization	Swiss Economic Institute
kofsoc	The social dimension of globalization	Swiss Economic Institute
kofpol	The political dimension of globalization	Swiss Economic Institute

Source: Created by the authors.

Figure 1. Variables change from 1990 to 2019.



Source: It was produced using the E-views 12 package.

Figure 1 demonstrates the time-dependent changes in the variables hdi, kofeco, kofpol, and kofsoc for seven selected Muslim countries from 1990 to 2019. The *HDI* has steadily increased over time. The *HDI*, which was low in the early years (1990), rose dramatically by 2005. However, short-term reductions were seen in 1995 and 2000. The *kofeco* graph shows continual fluctuations. There was a significant fall in 1995, followed by a comeback. Sudden spikes and declines happen from time to time. The *kofpol* graph shows that political stability deteriorates and then improves. The *kofsoc* variable shows a general growing tendency, however there are occasional swings in between. Short-term declines are followed by recoveries.

Table 2 displays statistical metrics such as mean, minimum, maximum, standard deviation, skewness, kurtosis, and number of observations for each variable. As shown in Table 2, the standard deviations of the variables HDI, kofeco, kofsoc, and kofpol were determined as (0,124, 15,051, 17,795, and 11,482, respectively). The variable that deviates the most from the mean is kofsoc, which has a value of 17,795. The reference range for the skewness value is -0,5

to 0,5. All of our variables have a negative skewness value, indicating a shift toward the left tail. Our variables' kurtosis values exceed zero. As a result, they have a flatter structure than normal.

Table 2: Descriptive Statistics

	HDI	***kofeco***	***kofsoc***	***kofpol***
Mean	0,638	51,456	47,007	76,823
Minimum	0,251	20,261	15,853	42,263
Maximum	0,873	76,731	83,541	92,710
Standard deviation	0,124	15,051	17,795	11,482
Skewness	-0,284	-0,244	-0,138	-0,491
Kurtosis	2,463	2,107	2,249	2,646
Number of observations	210	210	210	210

Source: It was produced using the Stata 15 package.

In panel data analysis, cross-sectional dependence among variables is important because it influences the choice of an appropriate econometric model. Furthermore, this preliminary examination aids in the selection of appropriate unit root tests tailored to the characteristics of the data set, ensuring the methodological relevance of subsequent analyses.

Table 3: Result of Cross-section Dependence Test

Variable	***t-statistic***	***p-value***
hdi	23,384	0,00**
kofeco	7,201	0,00**
kofsoc	24,496	0,00**
kofpol	23,645	0,00**
Panel		
Breusch-Pagan LM	97.53309	0,000
Pesaran scaled LM	11.80931	0,000
Pesaran CD	6.573036	0,000

Source: It was produced using the Stata 15 package.

Both the overall panel and the horizontal cross-sectional dependence results of the variables are presented in Table 3. As the test statistic values calculated for the whole panel are above the 5% significance level, the panel is cross-sectional. Breusch Pagan (1980) cd LM1 tests whether the 'time' dimension is greater than the 'cross-section' dimension (T>N). In our dataset, the time dimension (T) covers 30 time periods (1990-2019), while the cross-sectional dimension (N) includes 7 Muslim countries. As a result, we consider the Breusch-Pagan cd LM1 test statistic in our empirical analysis.

The homogeneity test in this study is conducted using Hsiao's (1986) test. The Hsiao test operates under three different hypothesis assumptions, known as H_1, H_2, and H_3. According to these assumptions, H_1 states that the coefficients are homogeneous, while the alternative hypothesis states that they are heterogeneous. On the other hand, H_2 repeats the structure of H_1 and argues for homogeneity, whereas the alternative hypothesis argues for heterogeneity. Hypothesis H_3 is distinct from the other hypotheses in that it is based on partial heterogeneity. Table 4 shows all three hypotheses are rejected at the 5% level of significance.

Table 4. Hsiao Homogeneity Test Results

Hypotheses	*f-statistic*	*p-value*
H1	19,122	0,000
H2	5,281	0,000
H3	4,377	0,000

Source: It was produced using the Stata 15 package.

The Hsiao Homogeneity Test results in Table 4 reveal that, at this significance level, hypotheses H_1 and H_2 are rejected, indicating that the alternatives assuming heterogeneity cannot be rejected. In contrast, for hypothesis H_3, the option assuming partial heterogeneity is chosen, and the coefficients are discovered to be heterogeneously distributed.

Unit root tests must be performed when analysing panel data. This procedural step is critical because it allows for a comprehensive assessment of the variables' stationarity properties, allowing for more informed decisions about which econometric models to use (Lm et al. 2003).

Table 5. Unit Root Test Results

CADF Unit Root Tests								
Variables	***HDI***		***kofeco***		***kofsoc***		***kofpol***	
	ADF lags	t-statistic	ADF lags	t-statistic	ADF lags	t-statistic	ADF lags	t-statistic
Bangladesh	6	0,749	6	-2,259	0	-1,295	6	-3,615
Egypt	1	-0,801	6	-2,441	4	-1,244	6	-1,997
Indonesia	6	-0,074	0	-1,558	0	-3,606	6	-1,356
Malaysia	5	-1,675	6	-2,423	6	-1,126	6	-0,969
Pakistan	6	-0,532	6	-2,592	6	-0,465	6	-0,327
Saudi Arabia	1	-1,361	3	-4,704	6	-2,391	5	-2,774
Türkiye	6	-2,082	6	-0,103	6	-3,164	6	-4,553
Significance Levels								
1%	-4,13		-2,57		-2,57		-2,57	
5%	-3,37		-2,33		-2,33		-2,33	
10%	-2,97		-2,21		-2,21		-2,21	

CIPS Unit Root Tests		
Variables	***Constant***	***Constant/Trend***
HDI	-0,673	-0,909
kofeco	-2,299	-2,389
kofsoc	-0,992	-1,092
kofpol	-2,134	-1,819
Significance Levels	***Critical Values***	
1%	-2,57	-3,11
5%	-2,33	-2,86
10%	-2,21	-2,73

Source: It was produced using the Stata 15 package.

Table 5 displays the unit root test results for CADF (each country in the panel) and CIPS (the entire panel). In the CADF test, the H_0 hypothesis assumes that the series has a unit root (is not stationary), whereas the H_1 hypothesis assumes that the series does not have a unit root. The H_0 hypothesis is rejected when CIPS test statistics reach critical levels, however the H_1 hypothesis, indicating stationary series, cannot be rejected (Pesaran H., 2007). Because the test

statistics in Table 5 exceed the table critical values, H_0 hypothesis is not rejected. Thus, the series is not stationary.

Table 6. Panel ARDL Tests Results

Dep.Var.:HDI	*Coefficients*	*Std. Err.*	*z*	*P>|z|*
Long Run (Error Correction)				
kofeco	-0,0012**	0,0001**	-11,243*	0,000
kofsoc	0,0021**	0.0076	28,059*	0,000
kofpol	0,0046**	0,0004**	20,333*	0,000
Short Run				
Ec	-0,2868	0,1037	-27,566	0,0071
kofeco |D1|	0,0005	0,0004	11,912	0,2367
kofsoc |D1|	-0,0031	0,0267	-11,634	0,2478
kofpol |D1|	-0,0037	0,0033	-11,272	0,2627
Constant	0,0774	0,028***	2,751***	0,07*

*PMG: Pooled Mean Group Regression. **and*** indicate 1% and 5% significance levels respectively. AIC is used to select the optimal lag length.*

Note: Hausman Test: 4,609 [0,203] H0: Difference in coefficients not systematic/PMG

Source: It was produced using the Stata 15 package.

Table 6 shows the results of the Panel ARDL model, which uses the PMG estimator. The decision to use the PMG estimator is supported by the Hausman test results, which shows that the PMG is an efficient estimator. In long-run estimations, the parameters of the independent variables are remarkable significant. The panel ARDL model was identified as (4, 4, 4, 4) lagged using the Akaike Information Criterion (AIC), which has a lower value and a better fit. The coefficient of the "kofeco" variable was calculated to be -0,0012 based on the model findings and the lag length specified. This coefficient implies that, in the long run, a unitary increase in the kofeco variable is associated with a 0,0012 unit decrease in the HDI. Similarly, the coefficient assigned to the variable "kofsoc" is 0,0021, indicating that in the long run, a unitary increase in the kofsoc variable is associated with a 0,0021 unit increase in the HDI. Furthermore, the coefficient associated with the variable "kofpol" is determined to be 0,0046, implying that, over time, a unitary augmentation in the kofpol variable is associated with a 0,0046 unit increase in the HDI. Ec (Error Correction): This variable has a coefficient of -0,2868. A negative coefficient implies that an error correction mechanism exists to adjust departures from the preceding period's HDI balance. A unitary EC causes a short-term drop in the HDI of 0,2868 units. Furthermore, a negative and statistically significant error correction coefficient suggests that there is convergence from short to long term and that short-term balance deviations are rectified with time.

Finally, we used the Pedroni Residual Cointegration Test, which considers the heterogeneity of the variables in the panel dataset and assesses whether there is an ongoing relationship between them.

Table 7. Pedroni Cointegration Test Results

Within-Dimension		
	statistic	*p-value*
Panel v-statistic	0,351	0,363
Panel rho-statistic	-5,353	0,000
Panel PP-statistic	-8,108	0,000
Panel ADF-statistic	-2,996	0,001

Between-Dimension		
	statistic	*p-value*
Group rho-statistic	1,369	0,915
Group PP-statistic	1,135	0,872
Group ADF-statistic	0,686	0,754

Source: It was produced using the Stata 15 package.

The Pedroni Residual Cointegration Test shows that the H_0 hypothesis assumes no long-term cointegration between variables, while the H_1 hypothesis expects a relationship. The Panel v-statistic results show no long-term association between the variables. Table 7 shows the Pedroni Cointegration Test results, with a Panel v-statistic value of 0,351 and a probability value of 0,362. The probability value is greater than the 5% significance level, hence the H_0 hypothesis cannot be rejected. The Panel v-statistic results show no long-term association between the variables. Panel rho-statistic value is -5,353; panel PP-statistic value is -8,108; and panel ADF-statistic value is -2,996. Because the probability value of all these tests is less than the 5% significance level, the H_0 hypothesis is rejected, but the H_1 hypothesis cannot be rejected. As a result, the seven Muslim nations (Bangladesh, Egypt, Indonesia, Malaysia, Saudi Arabia, Pakistan and Türkiye) studied show a long-term association between HDI, kofeco, kofsoc, and kofpol variables from 1990 to 2019.

Conclusion

The relationship between economic globalization and human development, which shows an inverse pattern, should be considered in light of the structural features of the capitalist system. The capitalist system comprises center, semi-periphery, and periphery regions, determined by economic factors rather than geographical ones. Countries with lucrative sectors generating high profits are categorized as center countries. Consequently, the system involves the movement of capital from periphery to center regions. To achieve center status, a country must engage in the production of cutting-edge, high-tech products relevant to the era. For instance, in the first half of the 20th century, motor vehicle production was deemed high technology, whereas today, sectors such as chip production and artificial intelligence hold increasing importance. Thus, this current research investigates the influence of social, economic, and political globalization indices on the human development level in seven chosen Muslim countries (Bangladesh, Egypt, Indonesia, Malaysia, Saudi Arabia, Pakistan and Türkiye), utilizing annual data spanning the period from 1990 to 2019.

In this study, we first determined whether there was cross-sectional dependence between the units. We then tested the variables for homogeneity. Based on these findings, we used the CADF (Cross-Sectionally Augmented Dickey Fuller) and CIPS tests, which are second-generation unit root tests. Then, using the first difference, we made the series stationary. We used the (4, 4, 4, 4) lagged version of the panel autoregressive distributed lag (ARDL) model to investigate the long-term relationship between series that became stationary after accounting for the first differences. Also, within the ARDL model, we calculated the error correction (EC) coefficient, which indicates how quickly the system returns to long-term equilibrium following a deviation. Finally, we used the Pedroni Cointegration test to investigate the cointegration relationship among Muslim countries.

In the empirical analyses conducted for all country, the kofeco value was estimated to be -0,0012, the kofsoc value as 0,0021, and the kofpol value as 0,0046. Thus, among these values, the economic globalization index is inversely proportional to the level of human development, whereas the social and political globalization indices are directly proportional. In the long run, a one-unit change in the social and political globalisation indices raises the level of human development, whereas a one-unit change in the economic globalisation index lowers it.

This empirical finding leads us to conclude that deepening in various dimensions of globalisation may not yield the same results for each country. Human development can be expected to benefit from the positive impact of social globalisation, which is influenced by variables such as human capital, civil rights, internet access, freedom of the press, and political globalisation, which is calculated in light of variables such as international agreements to which the country is a party, the diversity of the country's trade partners, and the presence of international NGOs. These findings emphasize the importance of targeted social and political reforms in Muslim countries. To increase the positive effects of social and political globalization, policymakers in these countries should prioritize political participation, civil rights, and digital infrastructure development. Given the observed negative impact of economic globalization, policymakers must carefully evaluate their integration into the global economy to ensure that it promotes equitable development rather than perpetuating existing inequalities within the capitalist framework. This could entail developing domestic industries that can compete globally while also investing in social safety nets to protect populations from the destabilizing effects of global fluctuations. In these Muslim countries, deeper integration into global markets may occur in the absence of sufficient domestic capacity to compete in high-value industries. Instead, they may participate in lower-end production, resulting in wealth extraction rather than accumulation. This "dependent development" pattern reflects the disadvantages that peripheral or semi-peripheral countries frequently encounter in global trade dynamics.

Economic globalization can suggest a closer integration of a country into the capitalist system, but it doesn't reveal its specific position within the system hierarchy. If the observed rise in economic globalization has a negative impact on human development in the examined sample, it implies that these countries are positioned at a disadvantage within the capitalist system. The Human Development Index, which assesses factors like life expectancy, educational opportunities, and living standards, indicates that an inverse relationship with economic globalization signifies a deepening of capitalist relations in the country without a corresponding improvement in the people's quality of life. According to Pedroni cointegration results, there was a long-term relationship between the HDI, kofeco, kofsoc, and kofpol variables in the seven Muslim countries studied (Bangladesh, Egypt, Indonesia, Malaysia, Saudi Arabia, Pakistan, and Türkiye) from 1990 to 2019. This relationship, when viewed from an economic, social, and political standpoint, demonstrates a long-term balance between the countries under consideration. Understanding these dynamics requires consideration of not only economic policies, but also political relationships, integrations, and social transformations.

While this study offers key insights, it is not without limitations. The focus on seven Muslim countries may limit the generalizability of the findings. Future research could expand the scope to include comparisons with non-Muslim developing countries or countries from other regions that have experienced varying degrees of globalization. Additionally, longer time-series data could offer more robust insights into the long-term impacts of globalization.

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