Impact of Globalization and Economic Sanctions on Human Capital in Iran

Journal of Industrial Strategic Management
Year, 2022,
Volume 7 (Issue 1),
Pages: 52 - 60.

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Article history:
Received: 01/29/2022
Received in revised: 04/03/2022
Accepted: 05/12/2022

Abstract
As one of the most important economic development stimuli, human capital has received great attention from many researchers. Accordingly, it is necessary to discover effective factors and the sign of their impact on human capital, particularly in Iran. Therefore, the purpose of this study is to examine the impact of globalization and economic sanction on the human capital in Iran during 1989-2019. In this case, the effect of economic sanctions on the human capital is investigated as an innovative aspect of the present paper. The research model is designed by using independent variables, including KOF Globalization Index, dummy variable of economic sanctions, economic growth rate, and urban population rate, and the dependent variable of average years of education as human capital. Finally, Autoregressive Distributed Lag (ARDL) method is employed to estimate the research model. The results indicate a positive impact of globalization, economic sanctions, economic growth rate, and urban population rate on the average years of education served as the human capital index. JEL Classification: F6, C22, I25

Keywords: Globalization, Sanction, Human Capital, Autoregressive, Distributed Lag (ARDL).

1. Introduction

As one of the fundamental pillars of development, human capital has been at the center of the attention of economists. Gohari et al., 2014 believed that humans could serve as the capital if they were educated so that society could benefit from their productive potential. In this way, people and society both gain more income and investment rates. Other economists, such as Alfred Marshall and John Stuart Mill, have pointed to the importance of education as an aspect of national investment. Kuznets believed that human capital must also be calculated like physical capital as a component of total capital in economic analyses. Father of human capital theory, Schulz assumed that the acquired skills of humans are the most important origins for efficiency group and economic development.

According to human capital statistics and its trends in Iran, this index has experienced relatively severe fluctuations over recent years. Comparing human capital indicators of 130 countries, World Economic Forum has put Iran rank 85, while its rank was 104 in WEF report 2017. The 19-rank fall of Iran may be related to specific international conditions and sanctions imposed on Iran over recent years. The interactions between Iran and the world and the economic sanctions imposed on the country are the variables that may affect the human capital by influencing the education system. Constructive relationships with the world and compliance with globalization can bring considerable consequences for educational structure, which is the main source of human capital production. Globalization is expected to affect human capital by reducing educational costs, expanding the higher education system, entering new technologies into the educational system, and promoting internet and computer-based teachings. In other words, educational systems that transfer human knowledge to educated people cannot isolate themselves from the growing globalization trend (Abbaspour & Marzoghi, 2013).

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Economic sanctions may also affect the educational system and quality of human capital. Since countries do not have any predetermined plans to face sanctions, the economic sanctions may negatively affect the educational system and cause human capital failure. In this case, economic sanctions lead to increased illiteracy, dropout, poor modern educational facilities and infrastructures, such as Internet and online education (Habibi Mojandeh et al., 2013).
It must be considered that despite the early-stage negative effects of economic sanctions, suitable policies must be made in response to sanctions to reduce their negative effects on the educational system if sanctions remain longer. In this case, a resistance economy relying on domestic potentials and internal knowledge consolidation would be an appropriate approach to human capital improvement. According to the mentioned points, the extant study was conducted to examine the impact of globalization and economic sanctions on human capital during 1989- 2019. The subject was investigated by using ARDL method to estimate the model. The innovative aspect of this paper is studying the impact of economic sanctions on human capital in Iran. The present paper was structured as follows: the second section reviews theoretical literature, and the third section introduces previous studies. The fourth section introduces the model and analyzes the data. The fifth section proposes the conclusion and recommendations.

2. Review of Literature

2.1. Human Capital

Human beings are new sources for weal production if they are considered human capital. Investment in human capital is made using some means, including education, apprenticeship, or activities improving future productivity of persons through increasing their lifetime income. According to human capital theory, income difference between people originates from their different productivity. In this lieu, human capital theorists believe that human capital is shown as the skill, knowledge, and expertise of individuals that improve their production level, service quality, and income rate affecting many of their decisions in all life contexts (Senobari, 2009).
Human capital can be generalized as knowledge, competency, individual or group skills acquired during life (Akbarmousavi & Haghighat, 2016).
In other words, human capital includes characteristics, knowledge, creativity, innovation, and energy chosen by individuals to invest in their job (Mohammadi, 2011).
Because human is considered a development factor in sustainable development, human capital is seen as the most valuable asset and capital of every country (Naderi et al., 2015).
Lucas (1988) also calls human capital accumulation as an economic growth engine (Samadi et al., 2012).

Various indicators have been considered to measure human capital: monetary value or total investment in human capital (e.g., market and non-market value of investment concerning human capital), the total number of enrollments in elementary schools, high schools, and universities, total investment in the formal education of elementary and high schools, and university (Doucouliagos, 1997).
Moreover, adult literacy rate and educational attainment have been used as alternatives to human capital, while average years of schooling is the most prominent and important index used by researchers to measure human capital (Akbarmousavi & Haghighat, 2016).

2.2. Globalization and its Association with Human Capital

Globalization definition can be considered based on four views. With an emphasis on power in relationships, the first view considers globalization a new discipline by developing products, services, and interactions and changing the obstacles' orders, privatization, and political choices. Each actor tries to make others obey it in the global economy in this trend. The second view concentrates on technology development and considers globalization as a trend. Its first aspect includes technology development and possible global economic activities. In this case, the companies can use technology to organize the production at the global level and manufacture by using flexible communicational instruments and techniques. Emphasizing the concept of competition and policies among countries, the third view defines globalization as a realm in which policymaking faces difficulties due to the risk of political control change caused by emerging actors, such as governments. Finally, the fourth view relies on information exchange and respective technologies to define globalization as a trend in which governance is replaced with information serving as the power source for government. According to the aforementioned perspectives, globalization is a multidimensional phenomenon covering various levels. Hence, globalization can be introduced as a process through which a modern evolution occurs in commercial, technical, political, and scientific competitions between old and emerging actors of the international system due to developed production knowledge and technologies and accelerated information exchange trends associated with technologies. In this case, power relationships may experience oscillations at national and international levels (Abdollahi, 2010).
Although various methods are used to measure globalization, KOF index is usually used in many studies for this purpose. KOF index measures globalization in three economic, political, and social fields. Economic globalization refers to the movement of goods, capital, services, and information in large geographical dimensions. Economic globalization is measured through the real flow of trade and investment considering trade and capital barriers. Political globalization is measured based on the number of embassies and excellent delegations of a country, membership of the country in international, participation in peaceful missions of UN, and the number of international treaties signed since 1945. Social globalization is measured using three categories of indicators, including personal contacts, telephone traffic transfers, and tourism levels. The second category includes the number of internet users, and their category includes Cultural Proximity (Mohammadi & Khastar, 2014).

The changed educational system is one of the most important channels explaining the association between globalization and human capital.

Abbaspour & Marzoghi (2013) believes that reform in states' financial approach to educational costs reduction, stimulating governments to promote higher education system, expansion of standards in exams and change in educational methods to improve quality of the educational system in comparison with the international community, the introduction of new technologies to the educational system, and promotion of remote educations based on computer and internet, and transfer of global culture due to the changed information network are the most important consequences of globalization. The aforementioned consequences affect the educational structure that is the main human capital production source of countries. In general, globalization is a process that influences the governance and cultural identity of nations at micro and macro levels so that educational systems that transfer human knowledge to educated people cannot isolate themselves from the growing globalization trend (Abbaspour & Marzoghi, 2013).

2.3. Economic Sanctions and its Association with Human Capital

Sanction is an economic weapon on the non-military battlefield that transcends diplomacy from dialogue to action (Eyler, 2007).

The sender body may be one or more states or one international organization. The sanction policies are directly imposed on the target country. Foreign policy goals mean change in political behaviors of the target country that the sender country tends to achieve implicitly or explicitly (Hufbauer et al., 2007).

Golliard, has divided economic sanctions into four groups based on their goals. In his opinion, economic sanctions are imposed to control and limit trade, suspend technological aids and supports, confiscate properties and assets of the sanction target country, and remove the target country from the list of trade with sender countries. The sanctions can be classified into three categories: A) import embargo in which imports of one or several products from target country is constrained by sender country or countries causing lower demand for productions of the target country. The mentioned measures limit currency revenues and the ability to produce required products. B) Export embargo in which the export of some products from target countries to sender countries is prohibited. In this case, the consumers of the target country face higher prices, while producers of the sender country receive lower prices. C) Financial sanction constrains lending and investment possibilities in the target country. The financial sanction prevents escaping from the effects of sanction by imposing more constraints on international payments (Golliard, 2013).

Economic sanctions lead to increased illiteracy, dropout, poor modern educational facilities and infrastructures, such as Internet and online education (Habibi Mojandeh et al., 2013).

In other words, economic sanctions may deprive the target country of a modern educational system due to their negative impact on educational institutions, facilities, plans, and contents that include quantity and quality of the educational system (Habibi Mojandeh et al., 2013).

Moreover, economic sanctions and financial bottlenecks may cause dropout (Reisman & Stevick, 1998).

The poverty caused by sanctions indeed targets the right to education by threatening the right to food as one of the most fundamental human rights, so that people living in poverty do not have equal educational opportunities and prefer food to education. Economic sanction also causes brain drain, making educated people with high human capital immigrate abroad (Kunnemann & Epal-Ratjen, 2004).

2.4. Previous Studies

According to the main subject of the study, the previous studies have not examined the impact of globalization and economic sanctions on human capital in Iran by considering average years of education as the human capital index. However, the recent studies related have been reviewed herein.

(Mohammadi & Khastar, 2014), carried out a study entitled "the effect of triple indicators of globalization on building human resources: A panel data study from 2005 to 201" using Generalized Least Squares to examine the effect of political, social, and economic globalization on building human resources of 56 countries. The results indicated a positive effect of political and social globalization on human resources, while economic globalization had a negative effect on the building of human resources.

(Kavousy & Ahmadi, 2010), conducted a study entitled "globalization and development of human resources (adaptive comparison of 62 countries of the world" using Spearman's correlation coefficient from 2000 to 2002 and 2005. This study examined the relationship between globalization and the human development index in studied countries. The results indicated a direct correlation between globalization and human development indexes.

(Ulucak & Li, 2020), conducted a study under the title of "the nexus between economic globalization and human development in Asian countries: an empirical investigation" using the Panel Cointegration Approach to explore the linkage among economic globalization, real income, and human development index in Asian countries from 1990 to 2015. Results reveal that economic globalization has not significantly impacted human development. However, real income promotes human development in Asian countries.

(Mazlan et al., 2019), carried out a study entitled "the role of globalization in improving human development in Malaysia," using ARDL model by considering the period 1980-2017 to examine the impact of globalization, foreign direct investment (FDI), trade openness and international migration on Human Development Index (HDI) in Malaysia. The results confirmed a positive and significant long-run impact of globalization and FDI on HDI.

Table 1. Descriptive statistics of variables

Variable	Symbol	Mean	Max	Min
Human capital	Ha_t	7.36	10.30	4.10
Economic growth rate	GR_t	1.44	3.23	1.09
Globalization index	GI_t	43.71	54.00	28.00
Urban population rate	$Popu_t$	66.31	75.39	55.79

(Solarian & Eric, 2015), carried out a study under the title of "impact of economic globalization on human capital: evidence from Nigerian economy" using ARDL considering the period 1980- 2011 to determine the long-run impact of economic growth, FDI, and economic globalization on the human capital of Nigeria. Results revealed positive effect of economic growth and FDI and the negative impact of economic globalization on human capital.

(Aigheyisi, 2013), carried out a study entitled "economic growth and human development effect of globalization in Nigeria: evidence in the democratic era." They used Multiple Linear Regression Model to investigate the effect of globalization on economic growth and human development in Nigeria in the new democratic era (1999–2011). Results revealed that globalization had no significant effect on human development.

According to reviewed studies, the main objective of the study, the impact of globalization and economic sanctions of human capital in Iran, is an innovative aspect of the paper.

3. Material and methods

The model designed by (Solarian & Eric, 2015), has been used to examine the impact of globalization and economic sanction on human capital:

$$Ha_t = \alpha_1 + \alpha_2 GI_t + \alpha_3 GR_t + \alpha_4 Popu_t + \alpha_5 Sanc_t + \alpha_6 Trend + \varepsilon_t \quad (1)$$

Where represents human capital considered as the average years of education. The data of this index have been collected from United Nations website; indicates globalization index that its data have been extracted from KOF website; this index has been formed based on three economic, political, and social dimensions, and is measured between 1 and 100. Numbers 100 and 1 show the highest and lowest values, respectively; indicates economic growth rate (growth rate of RGDP); represents urban population rate (percentage of urban people); indicates dummy variable of economic sanctions that equals 1 in the years of sanctions imposed on Iran (2006 onwards), 0, otherwise. The mentioned data have been extracted from World Bank website. The term indicates time trend, is an error term, is the intercept, t indicates time, and ،are the coefficients of explanatory (independent) variables. The data of the model covered during 1989-2019.

Due to the integration of data cointegration (mixed stationary data at the level and first-order difference), ARDL model introduced by (Pesaran, 2001) was used to examine the impact of globalization and economic sanction on human capital. Because ARDL method had some advantages compared to the common models designed by (Engle & Granger, 1987), it was used in this study. The advantages are as follows:

1. In ARDL model, it is not necessary to know the convergence degree of the variables. Moreover, it is easy to determine an endogenous variable.

ARDL is applicable for small samples.

3. ARDL method estimates long-run and short-run models simultaneously and solves the problems of variables removal and autocorrelation.

According to the features mentioned above, the estimation of ARDL method are unbiased and efficient. The model was designed based on ARDL method:

$$\Delta Ha_t = \beta + \sum_{j=1}^{n_1} b_j \Delta Ha_{t-j} + \sum_{j=0}^{n_2} c_i \Delta GI_{t-j} + \sum_{j=0}^{n_3} d_j \Delta Popu_{t-j} + \sum_{j=0}^{n_4} e_j \Delta Sanc_{t-j} + \theta_0 Ha_{t-1} + \theta_1 GI_{t-1} + \theta_2 Popu_{t-1} + \theta_3 Sanc_{t-1} + \theta_4 Trend_t + E_{it-1} + \xi_t \quad (2)$$

Where, β is the intercept, b_j, c_j, d_j, e_j are short-run coefficients, θ_is are long-run estimation coefficient, $E_{it-1}$is error correction term, and ξ_t is the error term. It is unnecessary to do a cointegration test in the ARDL method to determine the long-run relationship. The Bound Test introduced by (Pesaran, 2001) is used to do so. If F-value is greater than the critical value of the table in the Bound Test, H_0 (cointegration hypothesis) is not rejected, and the unit root test is not required to find the integration degree of variables. If the value of F is in the mentioned interval(between upper and lower bound of critical values), the result will not be definite. In this step, the researcher can use the unit root test to determine the integration degree of variables. In next step, long-run and short-run parameters are estimated (Pesaran, 2001).

Statistical Description of Data

The variables were described statistically to determine how independent variables affected the dependent variable. (Table 1) has reported the results of descriptive statistics.

According to Table 1, the mean, maximum, and minimum rates of human capital (average years of education) during 1998-2019 equal to 7.36 years, 4.10 years in 1999, and 10.30 years in 2019, respectively. Accordingly, there has been an ascending trend in average years of education in Iran. The economic growth rate is not high in the studied

Table2. Results of variables' unit root test

Variable	Symbol	Mean	Max	Min
Human capital at the level	Ha_t	-0.7237	0.8257	Non-stationary at level
Human capital at the first-order difference	ΔHa_t	-6.1713	0.0000	Stationary at the first-order difference
Globalization index at the level	GI_t	-1.4069	0.5656	Non-stationary at level
Globalization index at the first-order difference	ΔGI_t	-5.4877	0.0001	Stationary at the first-order difference
Economic growth at the level	GR_t	-5.8830	0.0000	Stationary at level
Urban population rate at the level	$Popu_t$	-4.8038	0.0006	Stationary at level

Table 3. Results of Granger causality test

Null hypothesis	F value	Prob.	Result
Human capital is not a causal factor of the globalization index	0.1886	0.8293	H_0 cannot be rejected
Human capital is not a causal factor of economic growth	0.4495	0.6432	H_0 cannot be rejected
Human capital is not a causal factor of urban population rate	0.25199	0.7793	H_0 cannot be rejected
Human capital is not a causal factor of economic sanctions	2.0912	0.1455	H_0 cannot be rejected

years, and its maximum rate equal to 3.23. Globalization index that varies between 1 and 100 equals to 43.71 on average in Iran, indicating the attempts for globalization during studied years. The mean value of the urban population showed a relatively high urbanization percent in Iran.

A stationary test of variables was done to prevent regression fallacy caused by non-stationary data. Augmented Dickey-Fuller test was used in this study to test data stationarity. H0 indicates the presence of unit root, while H1 implies variables' stationarity. If the calculated value is greater than MacKinnon value, the non-stationarity hypothesis will be rejected. Results of the stationarity test of the variables have been shown in (Table 2)

According to Table 2, the probability of t-value of economic growth rate and the urban population was less than 0.05; hence, the null hypothesis (presence of unit root) of these two variables is rejected. In other words, urban population and economic growth rate were stationary at level or of I(0) degree. According to (Table 2), the probability of the t-value of human capital and globalization index was greater than 0.05; hence, H_0 (presence of unit root) of these two variables was not rejected. However, the t-value probability of the first-order difference of mentioned variable was less than 0.05 indicating their stationarity after one differentiation. In other words, human capital and globalization index were stationary at first-order difference or from I(1) degree. In this case, the stationarity degree of the variables was mixed including variables from I(0) and I(1) degrees.

Lack of attention to simultaneous bias between the variables in ARDL model causes unbiased and inconsistent estimators. Therefore, the dependent variables must not be the causal factor of independent variables (Mohammadi & Khastar, 2014).

Accordingly, Granger causality test was done to find the causality direction from the dependent variable (human capital) to independent variables. Table 3 reports the relevant results.

According to Table 3, the probability value of all variables was greater than 0.05; hence, the null hypothesis (dependent variable is not a causal factor of the independent variable) cannot be rejected. So, human capital is not a causal factor of none of the independent variable. Therefore, ARDL method can be used to estimate the model without concerning about the biasness of estimates. In next step, the long-run relationship between the variables is confirmed by using the co-integration bound test introduced by (Pesaran, 2001). On the other hand, one of Akaike information, Schwartz information, and Hannan Quinn information criteria must be used to determine the number of optimal lags in ARDL model. Due to the small data volume of the present study, the Schwartz information criterion was used to determine optimal lag. According to the results, the optimal lag equaled two based on the Schwartz information criterion. Table 4 has reported the results of the bound test of the considered model. According to the bound test, H0 indicates a lack of a long-run relationship between the variables, while H1 indicates the presence of a long-run relationship between variables.

Table4. Results of bound cointegration test

f-value	Critical value at an error level of 5%	
	Lower bound	Upper bound
8.3148	2.86	4.01

According to Table 4, the calculated statistic was greater than the critical upper bound at the significance level of 95% (error level of 5%) reported by (Pesaran, 2001). Hence, H_0 (lack of co-integration relationship between variables) was rejected; hence, there was a long-run co-integration relationship between the variables.

After the long-run relationship between variables was confirmed, the model was estimated. Diagnostic tests of ARDL method have been reported in (Table 5).

The null hypothesis of diagnostic tests reported in Table 5 indicates a lack of collinearity of error terms, heteroscedasticity of error terms, normality of error terms, and model stability. Because, all diagnostic tests had probability values greater than 0.05, the null hypothesis

Table5. Diagnostic tests of ARDL

Test	Breusch–Godfrey autocorrelation test	Ramsey stability test	Jarque–Bera normality test	White's Heteroscedasticity Test
Test statistic	2.070	1.0172	0.7304	0.5353
Prob.	0.1568	0.3225	0.6940	0.8310

Table6. Results of short-run and long run equations of model

Period	Variable	Coefficients (1, 0, 1, 0, 2) of ARDL	t-value	Prob.
Long run	Globalization index	0.0068	2.1050	0.0488
	Economic growth rate	0.6420	9.1661	0.0000
	Urban population rate	0.2530	146.8788	0.0000
	Economic sanction	1.2750	38.1506	0.0000
	Intercept	-10.6665	-5.4448	0.0000
Short-run	Human capital (first lag)	0.1682	-7.1009	0.0060
	Economic growth rate	1.4075	5.8865	0.0000
	Economic sanction	1.9398	26.2331	0.0000
	Error correction coefficient	-0.9211	-7.0941	0.0000
		R^2=0.9712	$\overline{R}^2$=0.9650	

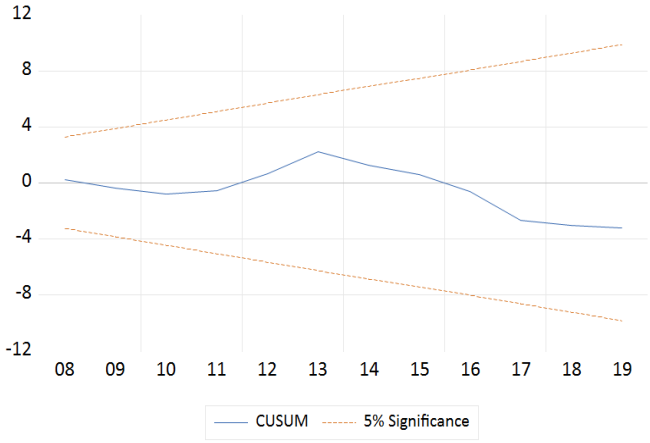

Figure 1. Structural Failure TestCUSUM Test

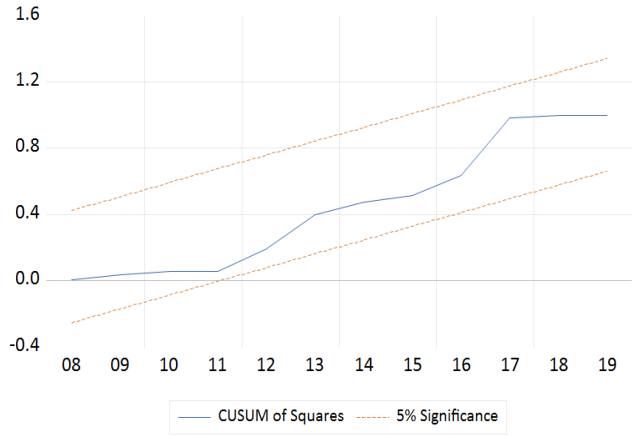

Figure 2. Structural Failure Test, CUSUMSQ Test

cannot be rejected. Accordingly, the model did not have autocorrelation, non-normality, and heteroscedasticity of error terms. On the other hand, the model was stable; hence, the long and short run of equations can be estimated.

Table 6 reports the estimated short-run and long-run equations using the ARDL method.

According to Table6, the globalization index, economic growth rate, urban population rate, and economic sanctions have a positive and significant long-run effect on human capital in Iran. The short-run results indicated a positive and significant impact of the first lag of human capital, economic growth rate, and economic sanction on human capital.The structural failure tests of CUSUM and CUSUMSQ have been illustrated in Figure1 (A and B). Because these diagrams are between two critical bounds at a level of 5%, it is not possible to reject H0, indicating regression stability and the lack of structural failure.

4. Discussion

Globalization index (GI) and human capital accumulation index (HCAI) have a mutual impact on each other; according to the results of model estimation, the impact of HCAI on GI was significant at the confidence level of 95% in selected developing and developed countries during 1995-2017. It indicates the impact of this index on globalization in both groups of countries. On the other hand, the impact of GI on HCAI was significant at the confidence level of 95% in selected countries during 1995- 2017. Therefore, this index could affect the human capital accumulation in both groups of countries. On the other hand, the results of the positive and significant impact of GI on HCAI showed that trade growth could affect the living standard of individuals by increasing income and enhancing cultural interactions. Income growth and enhanced cultural interactions, in turn, contribute to better educational opportunities and more optimal social and educational services. The findings of the extant study were matched with the results obtained by (Destek, 2020) and (An et al., 2020).

Economic growth index (EGI) and HCAI have a mutual impact on each other; according to the results of model estimation, the impact of HCAI on EGI was significant at

the confidence level of 95% in selected developing and developed countries during 1995-2017. According to the results obtained, HCAI had a positive and significant effect on economic growth. It is indeed possible to enhance the productivity of production inputs by improving human capital finally leading to higher economic growth and development. On the other hand, the results represented a positive and significant effect of economic growth on the human capital accumulation index. Therefore, a rise in economic growth providing the field for education improvement will increase the labor productivity. Such positive association firstly appears in the profitable investment in education and then in the whole economy, so that a closed-loop investment in the human capital occurs. The results of the studies conducted by (Zafar et al., 2019), (Elmi & Jamshidnezhad, 2018), and (Teixeiraa & Queirósba CEF, 2016 were in line with the findings of the extant study.

GI and economic growth affect each other; according to the results of model estimation, the impact of GI on economic growth was significant at the confidence level of 95% in selected developing and developed countries during 1995-2017. It indicates the impact of this index on economic growth. On the other hand, the impact of GI on the economic growth was significant at the confidence level of 95% in selected countries during 1995-2017. Therefore, this index could affect the globalization in both groups of countries. Moreover, the results indicated a positive and significant effect of economic growth on globalization. In general, a trade volume change in the growth process depends on the net effect of the consumption and production. According to the positive effect derived from results, production and consumption both are matched with the trade process in selected countries; hence, trade volume experiences a faster growth in proportion to the product. The results obtained by Hale and (Hale & Nam, 2020), (Yanikkaya, 2017), and (Sarvestani & Jafari, 2010) were consistent with the findings of the present paper.

The mutual impact of GI and HCAI resembles in the two compared groups of countries. According to the results of model estimation during the period studied (1995-2017), the impact of GI on human capital accumulation was positive and significant at the confidence level of 95% in the countries selected. However, because the null hypothesis of the parenting test (simultaneous zero coefficients of two dummy variables multiplied by globalization and human capital in two equations of the parenting test) is rejected, there is a significant difference between the coefficients of the two groups of the countries. The mutual impact of economic growth and HCAI resembles in the two compared groups of countries. According to the results of model estimation during the period studied (1995-2017), the mutual impact of economic growth and human capital accumulation was positive and significant at the confidence level of 95% in selected countries. Because the null hypothesis of the parenting test (simultaneous zero coefficients of two dummy variables multiplied by economic growth and human capital in two equations of the parenting test) is rejected, there is a significant difference between the coefficients of the two groups of countries.

The mutual impact of globalization and economic growth resembles in the two compared groups of countries. According to the results of model estimation during the period studied (1995-2017), the mutual impact of GI and economic growth was positive and significant at the confidence level of 95% in selected countries. Because the null hypothesis of the parenting test (simultaneous zero coefficients of two dummy variables multiplied by globalization and economic growth in two equations of the parenting test) is rejected, there is a significant difference between the coefficients of the two groups of countries. It can be explained that the mutual effect of globalization and economic growth is different in two groups of developed and developing countries. So, this impact is higher in the latter category. It can be stated indeed that increased economic growth in both selected countries raises their willingness to expand their transactions with other economies at the international level differently. This result may stem from the more vacant capacities and potentials existing in developing countries rather than developed countries that usually have full capacity, which is not appropriate for increasing growth rates.

5. Conclusions

According to theoretical literature, economic sanctions have destructive impacts on educational infrastructures, institutes, facilities and increased brain drain. Moreover, the effects caused by the poverty resulting from economic sanctions on health and people's interest in food instead of education lead to a negative impact on human capital (education rate) in Iran. However, the present study results indicated the positive impact of economic sanctions on average years of education in Iran during 1999-2019. Such positive impact may have emerged due to lower employment opportunities due to economic sanctions making people have higher education degrees to have hob. In this case, education becomes the prior choice of different walks of society.

Furthermore, implementing a resistive economy has alleviated the negative impact of economic sanctions on education and the achievement of higher education degrees. Under the current economic sanctions in Iran, the positive impact of sanctions can provide the field for higher efficiency of educated people in different economic fields, such as growth and development, to reduce other negative effects of economic sanctions on other areas. Accordingly, it is recommended that government and surveillance institutions provide education amenities and pay a scholarship to the poor to form specialized and skilled human capital. Governments can pave the way for education in Iran for the students who have lost the chance of studying abroad due to the conditions caused by sanctions. In this way, elites will return to the country leading to higher human capital and affecting other economic aspects positively.

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