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Impacts of Globalization on Quality of Life:
Evidence from Developing Countries

Jeet Bahadur Sapkota, Ph.D.

Visiting Assistant Professor, Global Institute for Asian Regional Integration,
Waseda University
Research Associate, Asian Development Bank Institute, Tokyo
Email: jbsnepal@gmail.com

Abstract:

This paper evaluates the impacts of globalization on quality of life, particularly on human development, gender development and human poverty in developing countries. Applying the fixed effect model to the annual panel data of 124 developing countries covering nine years from 1997, it shows that globalization (in terms of its comprehensive indexes and key elements) not only promotes human and gender development, but also significantly reduces human poverty. Not surprisingly, all the three aspects of globalization (economic, social and political) contribute to the overall effect of globalization. In general, the results from the key elements of globalization are consistent with the results from the comprehensive indexes. However, it is also observed that political and social globalization, FDI, and international migration were insignificant to gender-related development. Thus, further research is suggested for appropriate policy recommendations to make these variables significant on promoting gender aspects of development.

Key Words:

Globalization, human development, gender development, human poverty, developing countries

1.   INTRODUCTION

Due to its ever-accelerating trend, globalization has been one of the most closely observed processes among scholars, policymakers, politicians and even the general public in recent years (Collier and Gunning 2008, 1-2). Consequently, scholars have devoted their efforts to analyzing the impacts of globalization on different aspects of human life and society. Their arguments are, however, highly contested in terms of impact mechanisms and the gainers and losers of globalization. Some are quite critical as they observe the negative effect of globalization on QOL and society in the form of job elimination, especially in the manufacturing sector (Scott, 2001). These "hyperglobalists" argue that globalization is creating a new era of human history in which nation-states and governments are powerless to improve the quality of life of their citizens (e.g., Guillen, 2001; Soros, 2000). In their view, globalization is a great threat to society and they strongly oppose a globalized world.

In contrast, many others observe the positive impact of globalization on QOL (e.g., Thorbecke and Eigen-Zucchi, 2002). For these "pro-globalists," trade liberalization and increased marketing integration are opportunities to increase productivity and wages, which lead to improved QOL of workers (Zoellick, 2001). They claim that the negative impact of globalization, such as the elimination of manufacturing jobs, is highly overstated and the decline of the manufacturing industry is the result of rapid changes in technology rather than globalization (Krugman, 1996).

In the debate on the possible consequences of globalization, non-economists generally tend to oppose globalization as they expect the costs associated with globalization to exceed its benefits, particularly in developing countries. On the contrary, supported by a number of empirical studies, most economists strongly believe the net effect of globalization is positive (Dreher, 2006:1091). Although Sirgy et al. (2004) and Tsai (2007) have investigated this question by assessing globalization's effects on human and social aspects of development, their efforts are still exploratory and further empirical examinations are necessary. This paper attempts to contribute to the study of globalization with an empirical analysis that tests the theories proposed by earlier research, with a focus on the human aspects of development.

The paper proceeds as follows. Section 2 defines the variables and explains its linkages with recent trends. Section 3 discusses the methodology employed, the data used and the variables analyzed. Section 4 presents the results and Section 5 concludes the paper.

2. GLOBALIZATION AND QOL: DEFINITION, TRENDS AND LINKAGES

Most empirical studies related to the so-called third wave of globalization[1] employ proxies, such as trade, capital flows and openness as measures of globalization using cross-section data (Dreher, 2006). For example, Heinemann (2000) shows that more globalized countries have lower increments in government outlays and taxes and lower government consumption. Rodrik (1998) also used cross-sectional data and found no effects of capital that account for openness in economic growth. Recently, however, some scholars have used panel data to find the effects of globalization and showed positive impacts of openness on growth and poverty but mixed impacts on income inequality (Dollar and Kraay, 2004; Greenaway et al., 1999).

These detailed studies, however, failed to consider the overall effect of globalization, as they focused on individual sub-dimensions. As all the dimensions of globalization are strongly related and are important in explaining the consequences of globalization, omitting important variables from the regression equation can generate severely biased estimates (Dreher, 2006). In addition, most of these studies, motivated by conventional wisdom, focus solely on economic growth, income poverty and income inequality (ibid). To avoid these shortcomings, this study intends to use QOL indicators as dependent variables and a comprehensive indicator of globalization, along with its major elements, as explanatory variables.

2.1 *Globalization*

Globalization is a highly contested concept that means different things to different people (Bardhan, 2006), raising both positive and negative emotions in different groups and circles (Scholte, 2005). Consequently, development practitioners and scholars mostly refrain from explicitly defining globalization, and rather vaguely interpret it as real cross-border interactions and exchanges (Goldin and Reinert, 2007:2). In the literature, globalization is mostly viewed in economic terms. However, we cannot ignore its social and political dimensions, which are usually not considered properly. In fact, cross-national connections are created in the economic, political, cultural, social, and environmental domains.

Measuring these variables into a single indicator is a major challenge in empirical work. In fact, if any concept can be expressed in numbers, it gives more meaning than explanation.

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[1] According to Martell (2007), "some recent contributions in globalization literature have identified three waves or perspectives in globalization theory—the globalists, skeptics, and transformationalists or post-skeptics (for details see Held et al. 1999; Holton 2005)."

Because of its inevitability in empirical research, a number of composite indicators have been developed recently. Constructing such composite indicators has made a significant contribution to globalization research, which is making it possible to consider a wide range of issues of globalization in scholarly works. Although using such composite indexes has its own limitations, the development of a composite indicator is essential to globalization research due to the complexity and comprehensibility of issues involved. Of course, one should be careful when using and interpreting results from such composite indexes. Particularly, conclusions cannot be generalized from such composite indexes for particular sectors or issues, as the results always come from combined effects. Keeping these points in mind, this study uses the KOF index of globalization developed by Axel Dreher (2006), which is considered one of the most comprehensive indicators of globalization.

To define globalization, Dreher followed the explanations of Clark (2000), Norris (2000), and Keohane and Nye (2000:4). He summarized that "globalization is meant to describe the process of creating networks of connections among actors at multi-continental distances, mediated through a variety of flows including people, information and ideas, capital and goods. Globalization is conceptualized as a process that erodes national boundaries, integrates national economies, cultures, technologies and governance and produces complex relations of mutual interdependence" (Dreher, 2006:1092).

More specifically, Dreher summarized the definition of the KOF index in the following three dimensions. Firstly, "economic globalization," which is measured by the long-distance flow of goods, capital and services as well as information and perceptions that accompany market exchanges. Secondly, "social globalization" is defined as the spread of ideas, information, images and people, which is measured by *personal contacts, information flows* and *cultural proximity*. Finally, "political globalization" is defined as the level of diffusion of government policies, which is proxy by the number of embassies and high commissions in a country and, the number of international organizations to which the country is a member and the number of UN peace missions a country participated in. To construct the indices of globalization, Dreher transformed each of 24 variables under the above categories to an index on a scale of one to 100, where 100 is the maximum value for a specific variable over the period 1970 to 2007, and one is the minimum value. Higher values denote greater globalization. For detail see Dreher (2006).

Following the definition and measurement of globalization in terms of KOF indexes, Figure 1 presents the comparative trends of the three types of globalization from 1970 to 2007.

As expected, economic globalization is the strongest of the three factors. In fact, most literature considers economic indicators as a proxy of globalization. This is not only because of data availability and the clarity of economic indicators, but also because of its influence in global integration. Figure 1 also shows that economic globalization has the steadiest trend, without much fluctuation. Even during the Asian Financial Crisis (1997-1998), the trend did not drop sharply. To observe the effect of the current global financial crisis, however, we do not yet have data.

Figure 1 Global Trend of Overall Globalization and Its Sub-Indexes (1970-2007)
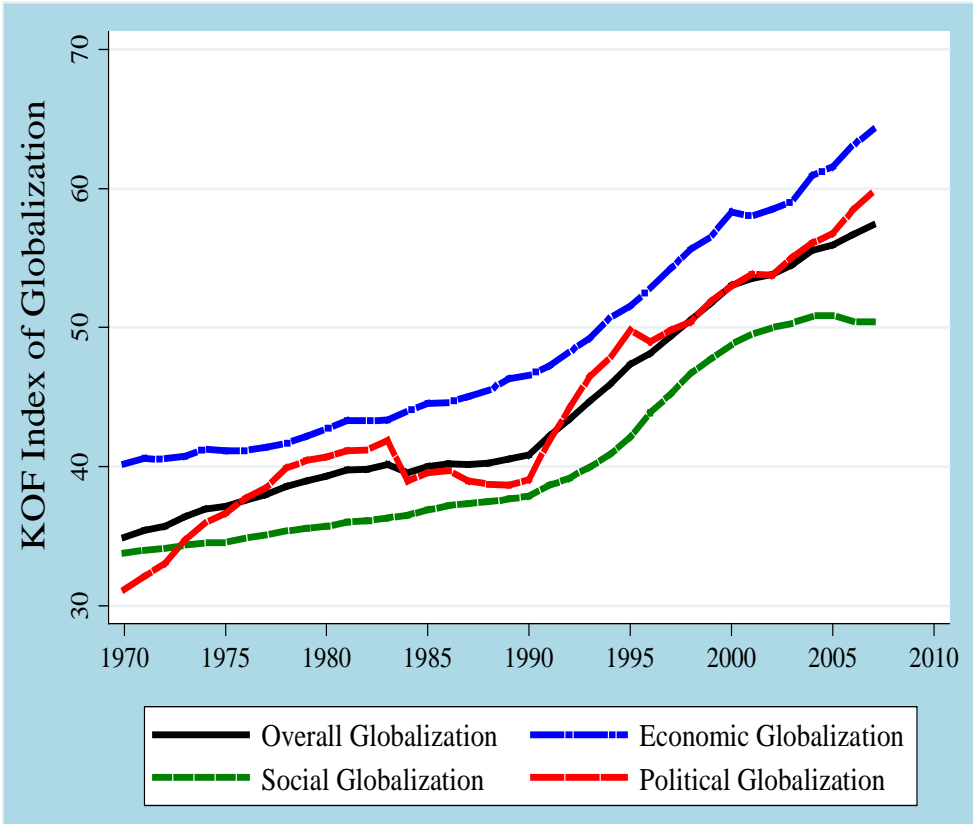
Source: Calculations done by the author based on data from Dreher (2006).
Updated data can be found at: http://globalization.kof.ethz.ch/ (accessed May 5, 2010).

Representing the high turmoil in international security as well as the increasing role of global governance, political globalization fluctuates more. Interestingly, political globalization shows much more of a contribution to the overall globalization trend than social globalization. Social globalization, on the other hand, is continuously the lowest of all trend lines. However, its progress goes along with the pace of other forms of globalization.

Interestingly, globalization has moved faster since the beginning of the 1990s. This can

be explained by the end of the Cold War in the 1990s, which lead to the opening of many countries in Eastern Europe, Russia and the states that emerged after the collapse of Soviet Union, and many other developing countries. The dramatic increase of political globalization since 1990 has contributed much to the accelerating globalization process.

To complement the analysis from the KOF index, this study considers some of the real variables of globalization in a regression analysis. This not only provides an understanding about the relationships between such key elements of globalization and QOL, but also checks the consistency of the results that ultimately enhance the reliability of the study. The selection of the key globalization variables was based on the existing literature in the sense that the most proxy variables for globalization were considered. Therefore, this study uses international trade, FDI, ICT and international migration for its disaggregated analysis. The comparative trends of these key elements of globalization between DCs and the world are shown in Figure 2 on its four parts (2a-2d).

Figure 2(a) shows the comparative trend of international trade between DCs and the world from 1970 to 2007. Interestingly, the trends not only reveal that the trade to GDP ratio is increasing sharply in DCs and the world, but also that international trade has become more and more important for developing countries in recent decades. Figure 2(b) shows the comparative trends of FDI inflows in percentage of GDP for both the world and DCs from 1970 to 2007, which reveals that FDI inflows in DCs are less volatile than that of the world. The FDI inflow to GDP ratio has continued to increase since 1990 for both DCs and the world. Again, the fluctuation in the world's trend is mostly consistent with the trend of DCs in terms of time and direction. However, in terms of magnitude, the world trend has fluctuated sharply in recent years. See the World Investment Reports (WIRs) of 2001 and 2002 of the United Nations Conference on Trade and Development (UNCTAD) for the explanation of such sharp fluctuation, which mainly comes from big mergers and acquisition in developed world (see UNCTAD 2003 and 2008 for detail).

Figure 2(c) shows the dramatic increasing trend of ICT development in recent decades in DCs. In 1990, there were less than 5 persons per 100 people in DCs who had telephone or mobile phone services. However, this number increased rapidly to more than 55 persons per 100 people in 2007. Finally, Figure 2(d) shows the importance of remittances to DCs vis-à-vis the world. The DCs' remittance trend is not only much higher than the world, but has been increasing dramatically since 1995. If the unofficial flow of remittance were also included, the

picture would be more interesting. However, information on unofficial flow is difficult to explore. These trends also suggest that the significance of globalization is much higher for DCs.

Figure 2 Comparative Trends of Key Elements of Globalization between DCs and the World (1970-2007)
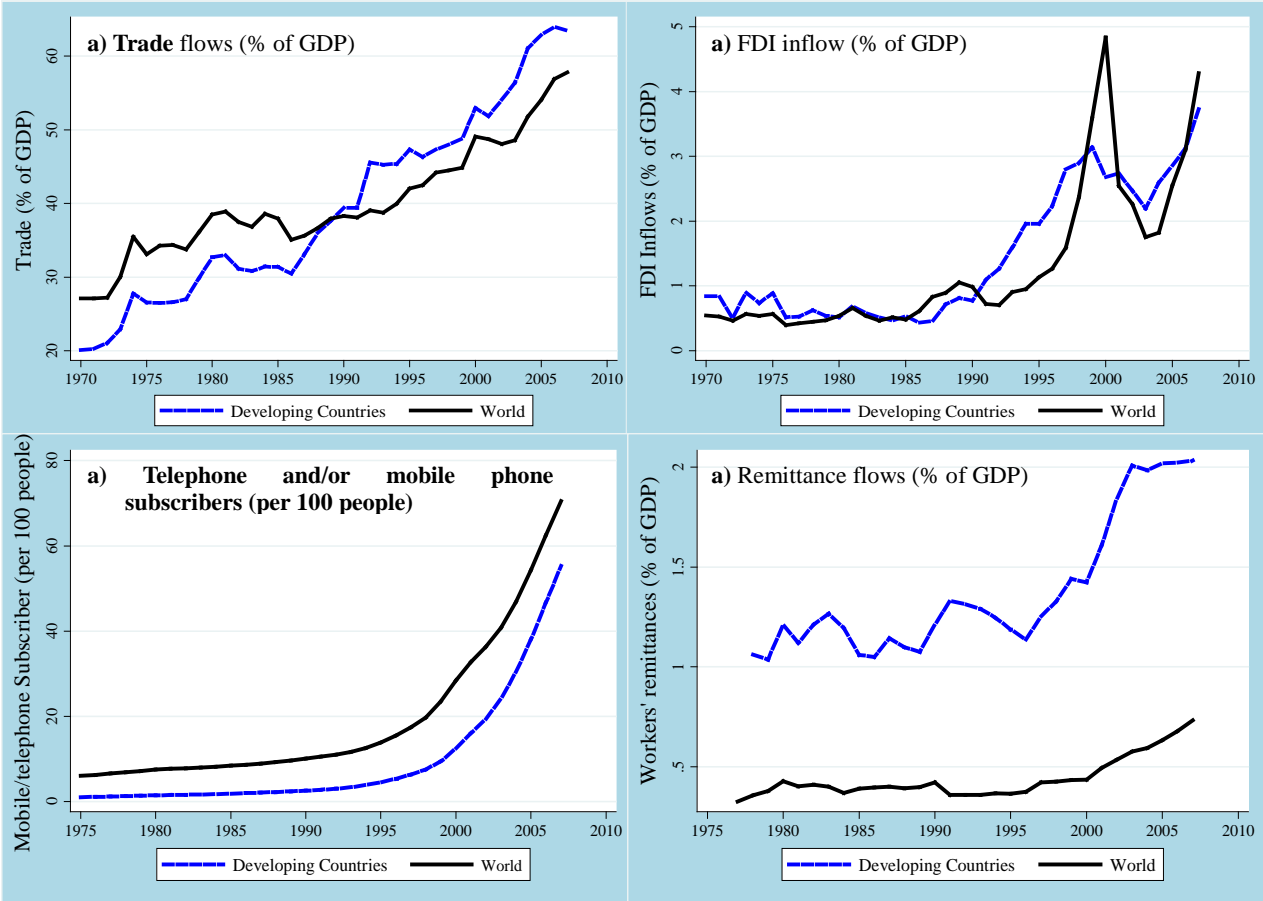
2.2 *Quality of Life (QOL)*

QOL, the dependent variable of this study, is also a vague term that has different meanings for different people. QOL is a multifaceted and elusive concept (e.g. Nussbaum and Sen 1993, Doyal and Gough 1991). Generally, QOL definitions emphasize degree of choice, meaning the greater the degree of choice, the higher the QOL. Mainly, choice is explained in economic terms. Thus, for many decades, national QOL measures have been defined by the level of the GNP per capita. Although GNP per capita is a significant part of a development strategy, it cannot capture all aspects of development. Of course, there is a systematic positive relationship

between GNP per capita and social and human welfare (McGillivray 1991), but the social and physiological aspect of QOL cannot be measured correctly by the income variable. Thus, a range of socio-economic indicators should be considered to measure QOL. For instance, it is estimated that economic development adds approximately 30 years to life expectancy and reduces infant mortality by 140 deaths per thousands live births (Sagan and Afifi, 1978). Additionally, the World Economic Forum's World Competitiveness Report (WCR, 1993) also recognizes the importance of measuring social and economic indicators of competitiveness among nations, including human resources as the fifth of the 10 most important economic components of a nation's environment. However, there has been no individual attempt to create such a composite index, as it requires massive efforts and cost.

To cover this shortcoming, the United Nations Development Program (UNDP 1990) introduced the Human Development Index (HDI), a comprehensive measure of QOL, in 1990 aiming to provide a yardstick of human development of all member countries of the United Nations. Since then, the UNDP has published the Human Development Report (HDR) annually for the world, and occasionally for regions and member states, in detail. The HDR's basic principle is that the essential components of QOL are the combination of a long and healthy life, education, and a decent standard of living. As a result, the HDI has measured human development through the use of three factors; longevity, knowledge and GDP per capita measured in purchasing power parity (PPP).

Because of its popularity and data availability for a wide range of countries since before 1990, this study uses the HDI as an overall measure of QOL. Apart from the HDI, there are four other key indexes that have been reported by the HDR: the *Gender Development Index* (GDI), the *Gender Empowerment Index* (GEM), and the two *Human Poverty Indexes* for developing (HPI-1) and developed (HPI-2) countries. This study, however, takes the GDI and HPI-1 along with HDI as dependent variables. Detailed explanations and calculations techniques of the indexes can be found in Technical Note 1 of *Human Development Report, 2007/08* (UNDP, 2008: 356-357).

Figure 3 presents the trends of HDI across regions from 1975 to 2005. In general, the HDI for highly globalized regions is much higher. However, HDI trends for less globalized regions also seem to be catching up. This is more valid for the East Asia & Pacific (EAP) region, which saw an even more rapid pace of human development from the same period and exceeded the global average in 2000. This was due to the region's high and shared economic growth (World Bank, 1993).

Figure 3 Regional Comparisons of Human Development Trends (1975-2005)
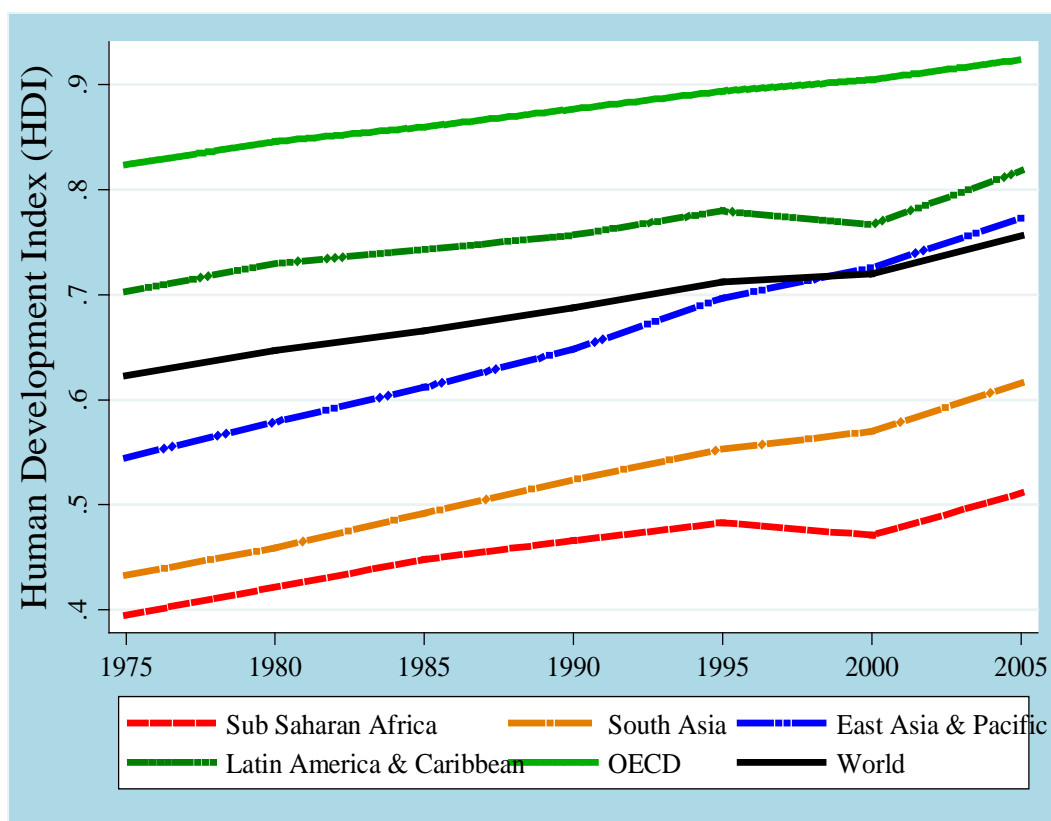
Source: Calculations done by the author based on UNDP (2009). Updated data also available at: http://hdr.undp.org/en/statistics/data/ (accessed in May 3, 2009).

C. *Linkages between Globalization and QOL*

As was observed by the general trends of globalization and human development, it is easy to predict their positive relationship. Although most literature agrees that globalization is a current reality (Guillen 2001), the human consequences of globalization remain controversial. Two contradicting theories prevail in how globalization affects human welfare. First, neo-liberalists believe that globalization enhances productive efficiency and generates extraordinary prosperity. Although wages for unskilled workers fall, especially in developed nations, globalization helps workers manage these potential threats by acquiring additional skills, which benefits the whole of society (Grennes 2003). Additionally, globalization has spread industrialization to developing countries, and has thus reduced global income inequality (Firebaugh and Goesling 2004). Economic globalization, in terms of trade liberalization, was found to be effective in increasing productivity and institution-building in societies, which

leads to faster economic growth (Urata and Yokota 1994; Rodrik et al. 2004). However, many argue that some policy measures are essential to make globalization work for all (Mayer 2007) pointed out that globalization alone is not a sufficient condition for development. For example, trade liberalization without roads and ports would not lead to more trade or help the poor (Stiglitz 2004). Even though scholars point out the defects of the current form of globalization and suggest better options, they ultimately tend to favor globalization.

On the contrary, many others see globalization as a new hegemonic project that transnational capitals operate in a way that promises little betterment for most countries. This perspective claims that the current form of globalization is the creation of a new world order that facilitates capitalist accumulation in the so-called free market environment (Petras and Veltmeyer 2001). Promoting private interests in a limitless free market ignores personal and social interests (Smart 2003). As a result, benefits from globalization primarily go mainly to the already advantaged (Scholte 2005).

Within the context of these controversies, this paper attempts to answer how and which types of globalization generate the most favorable and unfavorable human consequences. It founded on the theoretical base provided by the Sirgy et al. (2004) and improves the empirical model offered by Tsai (2007) to evaluate the human consequences of globalization.

3.   DATA AND METHODOLOGY

Most empirical analyses use cross-country data at a certain point in time (Rodrik 1988). Although this is useful to find differences between countries, such studies fail to observe changes in structural features and their correlates over time. These studies are also limited by fewer numbers of observations, which lead to weak results. Thus, this study builds a panel of 124 DCs, covering nine years of annual data of globalization and human development from 1997 to 2005. The selected countries are listed in Appendix 1. Data from 1997 onward is used because there is no HPI data available for years prior to 1997.

In another analysis, Tsai (2007) used a similar methodology on panel data of 112 developing countries. However, he had several methodological weaknesses. Firstly, the results were weak in capturing time effects as the data were in intervals of 10 years from 1980 to 2000. Secondly, Tsai uses economic, social and political globalization separately in the regression instead of regressing simultaneously, which can create the problem of biased, as Dreher (2006) argues, "The effects reported for one dimension of globalization might therefore appear only because other important aspects of globalization are omitted from the regressions" (p. 1092).

The current study corrects these shortcomings by using the components of globalization simultaneously with annual data.

3.1 *The Data and Its Sources*

The HDI, the GDI and the HPI-1 are the dependent variables of this study. Data are from the 1998-2007/08 annual HDRs. The KOF indexes (sourced from the updated database of Dreher 2006) and some key elements of globalization (sourced from the WDI online database), as defined in the previous section are explanatory variables. Contrary to the conventional approach of using proxies of globalization through specific factors such as trade and investment, this paper adopts a more multidimensional and pluralistic approach. A multidimensional approach is far more effective in preventing the over-simplification of complexities involved in understanding globalization. This over-simplification is usually due to the omitting of important variable(s) in addition to problems of measurement and interpretation (Dreher et al. 2008: 121).

In choosing the set of control variables, this paper follows standard practice as much as possible. Firstly, a country's level of development is considered a critical element in improving human development (Tsai 2007). Thus, it includes per capita GDP to differentiate development levels across countries. Secondly, as this study focuses on developing countries, population growth is also included because the literature has long documented the harmful impacts of unchecked fertility against limited resources, such as attenuated health and educational expenditures, insufficient housing, sanitary and water, etc. (Goldthorpe 1996). Data of both the control variables are taken from the WDI online database. Finally, this study also introduces a dummy variable to compare the effect of globalization across different income group of countries. The dummy for lower middle-income countries (LMCs) and upper middle-income countries (UMCs) are created for comparison. The classifications are based on the World Bank's classification of countries and regions (World Bank 2008). Then an interaction term is generated with multiplying each dummy variable and major elements of globalization and indexes that are used in each regression equation. Natural logarithms of all variables (except dummies) are taken to reduce the skewness of the data. The summary statistics of each variable are presented in Appendix 2.

3.2 *The Model*

Throughout this paper, the *fixed effect* (FE) estimation model is used to analyze the data. The FE model explores the relationship between predictor and outcome variables within an entity (country, person, company, etc.). When using the FE model, it is assumed that something within the individual may impact the predictor or outcome variables, so this needs to be controlled for. Another important assumption of the FE model is that time-invariant characteristics are unique to the individual and should not be correlated with other individual characteristics. Each entity is different, therefore the entity's error term and the constant (which captures individual characteristics) should not be correlated with the others. If the error terms are correlated, then FE is not suitable since inferences may not be correct and that relationship needs to be modeled (probably by using random-effects). The Hausman test indicates that the dataset good fit the FE model. The model is described as follows.

$$log \ Y_{it} = \alpha + \beta_1 \ logC_{it} + \beta_2 \ logG_{it} + u_i + \epsilon_{it}$$

Here, *Y* is the vector of dependent variables (i.e. HDI, GDI and HPI-1), *C* is the vector of control variables (i.e. GDP per capita and population growth) and *G* is the vector of explanatory variables (i.e. the indexes of globalization). α is the constant term. β is the coefficient of explanatory variable that explains the strength and direction of impact on QOL indicators. In addition, *i* represents the group identifier (i.e. 124 countries), and *t* represents the time identifier (i.e. 9 years from 1997 to 2005). Similarly, $u_i + \epsilon_{it}$ is the composite error term, where u_i is the unobservable country effect fixed over time. Time dummies were included in the equation and found that the time effect is jointly significant; however, results for time dummies are not reported in result tables.

A number of diagnostic tests were performed before and after running the regression in Stata. A unit root test for panel data developed by Levin, Lin and Chu (2002) was performed that confirmed all the variables are free from the unit root problem. Similarly, tests for autocorrelation and heteroskedasticiy also showed no significant such problems on the model. The correlation matrix of each variable is presented in Appendix 3.

4. RESULTS

First, the study uses the key elements of globalization as major explanatory variables. Then, it

uses the KOF indexes to capture the overall effects of globalization. Table 1 shows the impacts of the major elements of globalization on the HDI. Column 1 reports the results without the interaction terms, whereas Column 2 reports the results of regression including all the interaction terms. The effects of trade and access to ICT were found to significantly increase human development at the 1 % level in both the columns. These results are consistent with much of the existing literature, theoretical as well as empirical, which argues that trade helps overall socio-economic development by increasing employment, productivity, government revenue, educational access and standards, among other things, all which lead to the overall improvement of human development (Seker, 2009; Bernard et al., 2007). Similarly, UNDP (2001) claims that using ICT in a development strategy allows DCs to achieve a wider diffusion of benefits, which ultimately leads to a broad-based economic growth.

Table 1 Human Development and Four Major Elements of Globalization (1997-2005)

Dependent Variable: Human Development Index (HDI)

Explanatory Variables	[1]	[2]
GDP per capita	0.02** (0.01)	0.04*** (0.01)
Population Growth	-0.01 (0.01)	-0.01 (0.01)
Trade (% of GDP)	0.06*** (0.01)	0.05*** (0.02)
FDI Inflow (% of GDP)	0.00 (0.00)	0.02*** (0.01)
Log of ICT	0.02*** (0.01)	0.02*** (0.00)
Log of Remittances	0.00 (0.00)	0.003 (0.003)
LMC Dummy $\times$ Trade	--	0.03 (0.03)
UMC Dummy $\times$ Trade	--	0.06* (0.03)
LMC Dummy $\times$ FDI	--	-0.03*** (0.01)
UMC Dummy $\times$ FDI	--	-0.03*** (0.01)
LMC Dummy $\times$ ICT	--	0.004 (0.01)
UMC Dummy $\times$ ICT	--	-0.001 (0.01)
LMC Dummy $\times$ Remittances	--	0.003 (0.01)
UMC Dummy $\times$ Remittances	--	-0.01** (0.01)
Constant	-0.93*** (0.08)	-1.13*** (0.09)
R -Square (Number of Observations)	0.28 (913)	0.27 (913)

Notes: Fixed effect (FE) estimations are reported. Standard errors are in parentheses. * means the coefficient is significant at 10%, ** is significant at 5%, and *** is significant at 1%. LMC=lower-middle income countries and UMC=Upper-middle income countries. All the variables, dependent as well as explanatory, are logged to neutralize the skewness of data. The data covers 1997 to 2005 annually.

Sources: The data of GDP per capita, population growth rate, trade, FDI inflow, mobile/fixed line subscribers (as ICT) and remittances are taken from the WDI online database of the World Bank. HDI are taken from the HDRs from 1997 to 2007/08 of the UNDP.

Impact of FDI was found to be significant at 1% only in Column 2. The finding is consistent with the evidence drawn by Arnal and Hijzen (2008), which suggests that the

OECD based MNEs tend to provide better pay than their domestic counterparts, especially when they operate in developing and emerging economies. The positive impact on wages also appears to spread to the employees of domestic firms that ultimately uplift the QOL of workers in DCs.

As for the control variables, only GDP per capita has a positive impact on human development. The effect was significant at the 5 % level in Column 1 and the 1 % level in Column 2. This result is in the line with the mainstream literature and the general intuition that income improves overall QOL. However, the effect of population growth was not significant.

The results in Column 2 are firmly consistent with Column 1. The main purpose of this column is to observe whether the above observed effects are different in different income groups of countries. As the model does not include the interaction term with the dummy of low-income countries (LICs), the positive sign of the coefficient of the interaction term of the respective income group reveals a larger effect than LICs and vice versa. Thus, Column 2 reveals that the effect of FDI is significantly (at 1%) lower in lower-middle income countries (LMCs) and upper-middle income countries (UMCs) than LICs, as both have -0.3 coefficients. This is a welcoming result that the HDI promoting effect of FDI is higher in LICs, as many scholars worry that FDI works well only on those countries that have already reached a certain level of development. Regarding the trade issue, the effect on UMCs was significantly (at 10%) more than other groups of countries.

In Table 2, the dependent variable is the GDI. The table reports that trade and ICT are significant at 1% in promoting gender development in both columns except for trade effects on Column 2, which is only significant at 5%. These results support the arguments that international trade reduces the gender gap in DCs. For example, evidence shows that job creation for women in export sectors are growing rapidly (UNDP 1999), and girls, who historically have low labor market participation rates and so have not benefited from the traditional network, take greater advantage of available opportunities when their society undergoes economic changes (Munshi and Rosenzweig 2006). Similarly, the impact of ICT on gender development is consistent with the arguments that ICT brought some benefits to the developing world as women are empowered with ICT access and they negotiate gender relations in the household and community (Kelkar and Nathan 2002).

The remaining two elements of globalization and control variables are found to be insignificant in affecting the GDI. The results after using the interaction term in Column 2 are quite consistent with Column 1. However, the effects are not found to be different across the

income groups of countries except for the trade effect on LMCs, which is significantly higher (at 1%) than the other region.

Table 2 Gender-Related Development and Four Major Elements of Globalization (1997-2005)

Dependent Variable: Gender-Related Development Index (GDI)

Explanatory Variables	[1]	[2]
GDP per capita	0.00 (0.00)	0.00 (0.00)
Population Growth	0.01 (0.03)	-0.00 (0.03)
Trade (% of GDP)	0.19*** (0.07)	0.01** (0.001)
FDI Inflow (% of GDP)	0.002 (0.03)	0.01 (0.04)
Log of ICT	0.04*** (0.01)	0.05*** (0.02)
Log of Remittances	-0.01 (0.01)	0.05 (0.02)
LMC Dummy × Trade	--	0.67*** (0.14)
UMC Dummy × Trade	--	0.22 (0.16)
LMC Dummy × FDI	--	-0.02 (0.06)
UMC Dummy × FDI	--	-0.02 (0.06)
LMC Dummy × ICT	--	-0.01 (0.03)
UMC Dummy × ICT	--	-0.04 (0.05)
LMC Dummy × Remittances	--	-0.05 (0.04)
UMC Dummy × Remittances	--	-0.003 (0.04)
Constant	-1.45*** (0.28)	-1.75*** (0.27)
R -Square (Number of Observations)	0.41 (913)	0.26 (913)

Notes: Fixed effect (FE) estimations are reported. Standard errors are in parentheses. * means the coefficient is significant at 10%, ** is significant at 5%, and *** is significant at 1%. LMC=lower-middle income countries and UMC=Upper-middle income countries. All the variables, dependent as well as explanatory, are logged to neutralize the skewness of data. The data covers 1997 to 2005 annually.

Sources: The data of GDP per capita, population growth rate, trade, FDI inflow, mobile/fixed line subscribers (as ICT) and remittances are taken from the WDI online database of the World Bank. GDI are taken from the HDRs from 1997 to 2007/08 of the UNDP.

Table 3 presents the impacts of the major elements of globalization on human poverty in developing countries (HPI-1). The poverty effect of globalization elements is broader than the human and gender development effects because all the four elements of globalization (trade, FDI, access to ICT and remittances (except in Column 1)) are found to be significant in decreasing human poverty at 1 %. Trade and FDI inflows are significant at 1% in both cases with or without the interaction terms, whereas ICT was significant at 1% in Column 2 but not significant in Column 1. Migration was significant at 1 % in the case with and 10% without interaction terms.

These results are consistent with the positive arguments of Winters (2000) and Urata (2002) for trade effect, Moran (2001) for FDI effect, the World Economic Forum (2010) for ICT effect and Ozden and Schiff (2006) for remittance effect on poverty reduction and

economic growth.

Table 3 Human Poverty and Four Major Elements of Globalization (1997-2005)

Dependent variable: Human Poverty Index for Developing Countries (HPI-1)

Explanatory Variables	[1]	[2]
GDP per capita	-0.13*** (0.3)	-0.14*** (0.03)
Population Growth	0.06*** (0.02)	0.08*** (0.02)
Trade (% of GDP)	-0.11*** (0.4)	-0.17*** (0.05)
FDI Inflow (% of GDP)	-0.06*** (0.02)	-0.09*** (0.02)
Log of ICT	-0.00 (0.001)	-0.003**** (0.001)
Log of Remittances	-0.02* (0.01)	-0.03*** (0.01)
LMC Dummy × Trade	--	0.11 (0.09)
UMC Dummy × Trade	--	0.08 (0.10)
LMC Dummy × FDI	--	0.04 (0.03)
UMC Dummy × FDI	--	0.01 (0.05)
LMC Dummy × ICT	--	0.07*** (0.02)
UMC Dummy × ICT	--	0.16*** (0.04)
LMC Dummy × Remittances	--	0.02 (0.02)
UMC Dummy × Remittances	--	0.02 (0.02)
Constant	4.64*** (0.17)	4.58*** (0.28)
R -Square (Number of Observations)	0.12 (798)	0.17 (798)

Notes: Fixed effect (FE) estimations are reported. Standard errors are in parentheses. * means the coefficient is significant at 10%, ** is significant at 5%, and *** is significant at 1%. LMC=lower-middle income countries and UMC=Upper-middle income countries. All the variables, dependent as well as explanatory, are logged to neutralize the skewness of data. The data covers 1997 to 2005 annually.

Sources: The data of GDP per capita, population growth rate, trade, FDI inflow, mobile/fixed line subscribers (as ICT) and remittances are taken from the WDI online database of the World Bank. HPI-1 are taken from the HDRs from 1997 to 2007/08 of the UNDP.

As expected, population growth has a poverty increasing effect at a 1% level of significance. However, GDP per capita was insignificant in reducing poverty.

Column 2 reveals that there is no difference on the poverty reducing effects of globalization elements across income groups of countries except for ICT. It has a larger effect on higher income group countries and the effect is significant at the 1% level.

In the next step, it uses the KOF indexes of globalization as major explanatory variables. Table 4 provides the relationship between human development and globalization in terms of the KOF indexes. Column [1.a] includes overall globalization with the control variables GDP per capita and population growth without the interaction terms with the income group dummy, whereas Column [1.b] includes the interaction term. In these columns in this and the next two

result-tables, the suffix 'a' is given for the result-columns without interaction terms, and suffix 'b' is given for the result-columns with interaction terms.

The results from both the columns [1.a] and [1.b] show that the overall globalization is highly significant (at 1%) to increase human development. However, Column [1.b] reveals that these effects are not different across income groups of countries. This result supports the theoretical proposition made by Sirgy et al. (2004) that globalization enhances human quality of life in many ways.

Table 4 Human Development and Globalization (1997-2005)

Dependent Variable: Human Development Index (HDI)

Explanatory Variables	[1.a]	[1.b]	[2.a]	[2.b]
GDP per capita	0.04*** (0.01)	0.04*** (0.01)	0.04*** (0.01)	0.04*** (0.01)
Population Growth	-0.01** (0.01)	-0.01** (0.01)	-0.01** (0.01)	-0.01* (0.01)
Overall Globalization (G.)	0.18*** (0.02)	0.16*** (0.03)	..	..
Economic G.	..	..	0.07***(0.02)	0.10***(0.03)
Social G.	..	..	0.06*** (0.02)	0.03* (0.02)
Political G.	..	..	0.08*** (0.02)	0.04* (0.02)
LMC × Overall G.	..	0.06 (0.04)	..	..
UMC × Overall G.	..	0.01 (0.07)	..	..
LMC × Economic G.	..	..	..	-0.08* (0.04)
UMC × Economic G.	..	..	..	0.03 (0.06)
LMC × Social G.	..	..	..	0.1** (0.04)
UMC × Social G.	..	..	..	0.07 (0.08)
LMC × Political G.	..	..	..	0.04 (0.03)
UMC × Political G.	..	..	..	-0.03 (0.05)
Constant	-1.51*** (0.08)	-1.52*** (0.09)	-1.45*** (0.11)	-1.61*** (0.10)
R-Square (No. of obs.)	0.16 (987)	0.16 (987)	0.20 (791)	0.21 (791)

Notes: Fixed effect (FE) estimations are reported. Standard errors are in parentheses. * means the coefficient is significant at 10%, ** is significant at 5%, and *** is significant at 1%. LMC=lower-middle income countries and UMC=Upper-middle income countries. All the variables, dependent as well as explanatory, are logged to neutralize the skewness of data. The data covers 1997 to 2005 annually. Column (2) has fewer observations because some particular types of globalization data are not reported for some countries.

Sources: Globalization indexes are taken from Dreher (2006), GDP per capita (current US$) and population growth rates are from the WDI online database of the World Bank, and HDI are from the HDR from 1997 to 2007/08 of the UNDP.

As expected, GDP per capita has a significant (at 1%) positive impact on HDI since GDP per capita itself is one of the three components of HDI, which generates a direct effect on it. Additionally, as richer countries generally have better health and educational status, GDP per capita also indirectly generates a positive effect on HDI. Similarly, it is quite natural to observe the negative impact of population growth on HDI. These impacts are significant at the 5% level. This result is consistent with the previous findings that higher population growth rates have

negative correlations with economic growth, health and educational indicators, particularly in developing countries (e.g. Kelly and Schmitd, 1995).

In Columns [2.a] and [2.b], instead of overall globalization, the three sub-indexes economic, social and political globalization, are included in the equation. Such disaggregated analyses not only demonstrate the independent effect of each dimension of globalization, but also cross-checks the validity of the model based on the consistency of the results. Here, the result is highly consistent with Column [1.a] and Column [1.b]. All the three dimensions of globalization; economic, social and political, were found to be highly significant at the 1% level to increase human development in both the equations with or without the interaction term, except for the social and political globalization in Column 2.b in which the effect were found significant at 10%. Interestingly, the magnitude and direction of the effect of GDP per capita and population growth were also found to be exactly the same as in the previous columns [1.a] and [1.b]. These findings are similar with the outcomes of an empirical analysis by Tsai (2007), but the relationship that he found was rather poor; Tsai showed the significance level of the overall impact of globalization on human development at 10 % and also reported no significant impact of economic and social globalization.

Unlike the case of overall globalization, the results from the disaggregated analysis shows that the human development effect of economic globalization was significantly (at 10%) lower in LMCs than LICs. However, there is no difference in effects between LICs and UMCs. However, social globalization has a significantly (at 5%) larger effect on LMCs. This indicates that a certain level of development helps to optimize the benefits from social globalization.

Similarly, Table 5 presents the effects of globalization on GDI. Column [1.a] shows that the effect of overall globalization was positively significant (at 1%), which reveals that globalization also helps to reduce gender disparity in human development. The result with the interaction term in Column [1.b] also shows a significant (at 5%) effect. These results are consistent with recent findings by Munshi and Rosenzweig (2006), who argue that lower-caste girls in the Indian city of Bombay are taking full advantage of opportunities provided by the globalized economy switching rapidly to English schools, whereas working class boys in the lower caste, who already have a dominating role within their ethnic group tend to continue to go local language schools that lead to traditional occupations with lower incomes. Furthermore, these results also support the cross-country evidence of Oostendorp (2004) that shows the significant impact of trade and FDI net inflows on narrowing the occupational gender wage gap for low-skill occupations worldwide.

Regarding the control variables, GDP per capita has a significantly (at 1%) positive impact on GDI for both the columns. As expected, population growth was found significant (at 5%) to reduce gender development, although there was no significant effect observed in Column [1.a]. All the effects are found no different across the income group of countries.

Table 5 Gender-Related Development and Globalization (1997-2005)

Dependent Variable: Gender-Related Development Index (GDI)

Explanatory Variables	[1.a]	[1.b]	[2.a]	[2.b]
GDP per capita	0.10***(0.04)	0.10*** (0.04)	0.13***(0.05)	0.13*** (0.05)
Population Growth	-0.01 (0.03)	-0.01** (0.03)	-0.001 (0.04)	-0.001 (0.04)
Overall Globalization (G.)	0.33*** (0.11)	0.28** (0.14)	..	..
Economic G.	..	..	0.39*** (0.11)	0.11*(0.16)
Social G.	..	..	-0.05 (0.11)	0.09 (0.14)
Political G.	..	..	-0.01 (0.09)	0.05 (0.14)
LMC × Overall G.	..	0.23 (0.23)	..	..
UMC × Overall G.	..	-0.31 (0.38)	..	..
LMC × Economic G.	..	..	..	0.82*** (0.25)
UMC × Economic G.	..	..	..	-0.09 (0.34)
LMC × Social G.	..	..	..	-0.35 (0.24)
UMC × Social G.	..	..	..	-0.11 (0.48)
LMC × Political G.	..	..	..	-0.12 (0.18)
UMC × Political G.	..	..	..	-0.10 (0.28)
Constant	-2.5*** (0.43)	-2.33*** (0.49)	-2.76*** (0.50)	-2.73*** (0.60)
R-Square (No. of obs.)	0.60 (987)	0.03 (987)	0.57 (791)	0.05 (791)

Notes: Fixed effect (FE) estimations are reported. Standard errors are in parentheses. * means the coefficient is significant at 10%, ** is significant at 5%, and *** is significant at 1%. LMC=lower-middle income countries and UMC=Upper-middle income countries. All the variables, dependent as well as explanatory, are logged to neutralize the skewness of data. The data covers 1997 to 2005 annually. Column (2) has fewer observations because some particular types of globalization data are not reported for some countries.

Sources: Globalization indexes are taken from Dreher (2006), GDP per capita (current US$) and population growth rates are from the WDI online database of the World Bank, and GDIare from the HDR from 1997 to 2007/08 of the UNDP.

The gender impact of globalization mainly comes from the economic globalization. Because, in Column [2.a] and [2.b], when the three major components of globalization regressed replacing the overall globalization, only economic globalization found significant at 1% in Column [1.a] and 10% in Column [1.b]. Thus, it argues that globalization helps to increase gender-related development as well. This finding complements earlier empirical evidence on the gender development effects of globalization by Munshi and Rosenzweig (2006) and Ostendorp (2004), as explained above. The effect is significantly (at 1%) higher in LMCs indicating that the certain level of economic development is helpful to gain gender impact of globalization.

Table 6 shows the relationship between globalization and human poverty. As expected, all the indexes of globalization are found to be significant (mostly at 1%) in reducing poverty, as the coefficient of each indicator has a negative sign. Only in the case of Column [2.a] was the effect of political globalization observed at a 5% level of significance. These results are consistent with the findings by Dollar (2005) and many others that they found globalization has a positive impact on improving the lives of poor people in developing countries and areas.

Table 6 Human Poverty and Globalization (1997-2005)

Dependent Variable: Human Poverty Index for Developing Countries (HPI-1)

Explanatory Variables	[1.a]	[1.b]	[2.a]	[2.b]
GDP per capita	-0.03 (0.03)	0.04 (0.03)	-0.03 (0.03)	-0.03 (0.03)
Population Growth	0.04** (0.02)	0.05** (0.02)	0.05** (0.02)	0.04** (0.02)
Overall Globalization (G.)	-0.54*** (0.07)	-0.66*** (0.08)	..	..
Economic G.	..	..	-0.19*** (0.06)	-0.22***(0.09)
Social G.	..	..	-0.23*** (0.06)	-0.25*** (0.08)
Political G.	..	..	-0.11** (0.05)	-0.166*** (0.08)
LMC × Overall G.	..	0.45*** (0.14)	..	..
UMC × Overall G.	..	-0.28 (0.26)	..	..
LMC × Economic G.	..	..	..	0.23* (0.13)
UMC × Economic G.	..	..	..	-0.57*** (0.21)
LMC × Social G.	..	..	..	0.04 (0.13)
UMC × Social G.	..	..	..	-0.05 (0.26)
LMC × Political G.	..	..	..	0.12 (0.10)
UMC × Political G.	..	..	..	-0.08 (0.17)
Constant	5.42*** (0.27)	5.48*** (0.31)	5.35*** (0.35)	5.71*** (0.35)
R-Square (No. of obs.)	0.10 (863)	0.12 (863)	0.46 (734)	0.14 (734)

Notes: Fixed effect (FE) estimations are reported. Standard errors are in parentheses. * means the coefficient is significant at 10%, ** is significant at 5%, and *** is significant at 1%. LMC=lower-middle income countries and UMC=Upper-middle income countries. All the variables, dependent as well as explanatory, are logged to neutralize the skewness of data. The data covers 1997 to 2005 annually. Column (2) has fewer observations because some particular types of globalization data are not reported for some countries.

Sources: Globalization indexes are taken from Dreher (2006), GDP per capita (current US$) and population growth rates are from the WDI online database of the World Bank, and HDI are from the HDR from 1997 to 2007/08 of the UNDP.

Regarding the control variables, contrary to case of the GDI, GDP per capita was found to be insignificant, whereas population growth was found to increase poverty significantly at the 5% level. The results are consistent with all four columns. These findings demonstrate the fact that income growth is highly concentrated on higher-income groups among the DCs, thus doing little to help poor people. Population growth rates, being mostly higher among lower-income groups and in poorer countries, certainly add a burden to the poor and ultimately exacerbate poverty.

To compare the poverty effect of globalization across different groups of countries, overall globalization was found to have a significantly high impact on LMCs. This clearly shows that countries should reach a certain level of development to capture the optimum poverty effect of globalization. The result is thus consistent with the argument of Sabi (2007) that globalization is important for human development only after certain level of income growth. This result actually comes from economic globalization as Column [2.b] shows that economic globalization has a significantly high impact on LMCs (at 10%) but a low impact on UMCs (at 1%), and the effect of social and political globalization are not different across income groups of countries.

Overall, it is argued that globalization, in terms of the KOF index, is statistically significant not only in increasing human development and gender development, but also in reducing human poverty. Even for the segregated index of globalization (i.e. economic, social and political globalization), the results are generally robust. The results are consistent with the analysis using some of the key elements of globalization instead of globalization indexes at the beginning of this section, which further strengthen the reliability of the mode used in this study. Thus, the dataset used and model applied in this study is valid and appropriate.

5. CONCLUSION

In the context of disputing arguments among scholars, the empirical results of this study reveal that globalization enhances QOL by promoting human and gender-related development and significantly reducing human poverty. Not only the key elements of globalization, but the KOF indexes are highly significant regarding all three dependent variables of QOL (i.e. HDI, GDI and HPI-1) and have been shown to be quite robust in the FE regression model. Not surprisingly, all of the aspects of globalization (economic, social and political) contribute to the overall effect. Indeed, these three factors of globalization comprise a tripod of global integration and move along together rather than separately. Furthermore, the selected key elements of globalization were also found to significantly and positively affect the QOL indicators. This rather conventional approach gives further evidence of the validity and credibility of the data used and the methodology followed in this research. Therefore, it is argued that along with the results, the methodology applied in this study is also useful for similar research of this kind.

The major message of the findings is that there should not be any fear of globalization, in general. It argues that globalization has mostly favorable effects for all. However, globalization

effects were found higher in LMCs in general. Thus, the international community should focus their support to LICs to empower them to raise their income level up to a certain level.

The study also observed some unexpected outcomes. Political and social globalization, FDI, and international migration (proxy by remittances) were all found to be insignificant factors of gender-related development. Thus, how can these variables be made to significantly promote gender aspects of development? This is a crucial question for policymakers and the right answers will enhance their capacity for successful globalization because there is no choice but for globalization to improve QOL and other kinds of development. Indeed, better policies will matter in making every element significant in this process. The paper suggests further research for such policy recommendations.

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Appendices follow

APPENDICES

Appendix-1 List of developing countries included in the study (in alphabetical order)

1. Albania	45. Grenada	90. Poland
2. Algeria	46. Guatemala	91. Romania
3. Angola	47. Guinea	92. Russia
4. Argentina	48. Guinea-Bissau	93. Rwanda
5. Armenia	49. Guyana	94. Saint Kitts
6. Azerbaijan	50. Haiti	95. Saint Lucia
7. Bangladesh	51. Honduras	96. Saint Vincent
8. Belarus	52. India	97. Senegal
9. Belize	53. Indonesia	98. Seychelles
10. Benin	54. Iran	99. Sierra Leone
11. Bhutan	55. Jamaica	100. Solomon Islands
12. Bolivia	56. Jordan	101. South Africa
13. Botswana	57. Kazakhstan	102. Sri-Lanka
14. Brazil	58. Kenya	103. Sudan
15. Bulgaria	59. Kyrgyzstan	104. Suriname
16. Burkina Faso	60. Lao PDR	105. Swaziland
17. Burundi	61. Latvia	106. Syria
18. Cambodia	62. Lebanon	107. Tajikistan
19. Cameroon	63. Lesotho	108. Tanzania
20. Cape Verde	64. Libya	109. Thailand
21. Central African Republic	65. Lithuania	110. Togo
	66. Macedonia	111. Tonga
22. Chad	67. Madagascar	112. Tunisia
23. Chile	68. Malawi	113. Turkey
24. China	69. Malaysia	114. Uganda
25. Colombia	70. Maldives	115. Ukraine
26. Comoros	71. Mali	116. Uruguay
27. Congo	72. Mauritania	117. Uzbekistan
28. Congo Rep.	73. Mauritius	118. Vanuatu
29. Costa Rica	74. Mexico	119. Venezuela
30. Cote d'Ivoire	75. Moldova	120. Vietnam
31. Croatia	76. Mongolia	121. West Samoa
32. Djibouti	77. Morocco	122. Yemen
33. Dominica	78. Mozambique	123. Zambia
34. Dominican Republic	79. Namibia	124. Zimbabwe
35. Ecuador	80. Nepal	
36. Egypt	81. Nicaragua	
37. El Salvador	82. Niger	
38. Eritrea	83. Nigeria	
39. Ethiopia	84. Pakistan	
40. Fiji	85. Panama	
41. Gabon	86. Papua New Guinea	
42. Gambia	87. Paraguay	
43. Georgia	88. Peru	
44. Ghana	89. Philippines	

Appendix-2 Summary Statistics

Variables	Obs.	Mean	Std. Dev.	Min	Max
Human Development Index (HDI)	1116	0.630986	0.156687	0.25	0.87
Gender-related Development Index (GDI)	1116	1.166219	17.94408	0.24	600
Human Poverty Index (HPI-1)	869	28.9441	15.40484	3.3	65.5
GDP per capita	1116	1810.893	1846.233	81.58	8931.87
Population Growth	1116	1.630654	1.241132	-2.76	9.76
Trade	1116	81.6509	38.33903	15.84	224.89
FDI	1116	31.18571	32.31529	-16.59	202.3
ICT	1116	19.93576	22.86311	0.04	150.97
Migration (remittances)	1053	4.391168	6.358951	0	44.3
Economic Globalization	909	52.25267	13.77251	17.64	84.6
Social Globalization	1116	45.58204	17.30288	8.56	89.69
Political Globalization	1116	57.10932	19.85124	19.1	93.6
Overall Globalization	1116	50.39887	12.60756	20.82	80.02

Appendix-3 Correlation Matrix

Variables	HDI	GDI	HPI-1	gdppc	pgrow	trade	fdi	ict	remit
HDI	1								
GDI	-0.0193	1							
HPI-1	-0.9518	0.0169	1						
GDP per capita (gdppc)	-0.1824	-0.0148	0.1932	1					
Population Growth (pgrow)	0.1352	-0.0297	-0.1413	-0.4296	1				
Trade	0.0815	-0.03	-0.118	0.0942	-0.2033	1			
FDI	-0.0811	-0.0318	0.0402	0.1023	-0.1903	0.5246	1		
ICT	-0.1265	-0.0019	0.1383	0.7641	-0.4592	0.1978	0.1772	1	
remittances	-0.1299	-0.0089	0.0868	-0.137	-0.1185	0.267	0.1416	0.0366	1
Economic G. (ecog)	-0.1351	-0.0161	0.1217	0.562	-0.4011	0.5077	0.5713	0.5689	0.1147
Social G. (socg)	-0.1128	-0.0237	0.0913	0.6426	-0.4293	0.4227	0.2998	0.6111	0.1649
Political G. (polg)	-0.125	0.0615	0.1382	0.2971	-0.2511	-0.3154	-0.2073	0.3546	-0.1369
Overall G. (ovlg)	-0.1725	0.0006	0.1564	0.7079	-0.5034	0.3607	0.3898	0.7136	0.1099

	ecog	socg	polg	ovlg
Economic G. (ecog)	1			
Social G. (socg)	0.6711	1		
Political G. (polg)	0.0663	0.1046	1	
Overall G. (ovlg)	0.8502	0.8543	0.4247	1