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ARTICLE INFO

JOURNAL
"Innovative Marketing"

FOUNDER
LLC “Consulting Publishing Company “Business Perspectives”

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An empirical study on international human organ trafficking: effects of globalization

Abstract
This study investigates human organ trafficking, an emerging global phenomenon, as one dark side of globalization. We identify various factors associated with human organ trafficking and conduct an empirical test using secondary data from forty countries. The proposed factors include: economic globalization, cultural globalization, and political globalization. We found empirical support for the relationships between levels of economic and cultural globalizations and number of human organ traffickings in a given country. Implications and suggestions for future research are also provided.

Keywords: human organ trafficking, globalization, dark side of globalization.

Introduction
Human organ transplantation was not a common medical procedure until late 1980s (Harrison, 1999). Due to many technological innovations, the demand for human organs has increased dramatically. Organs supplied only by donations have not been sufficient for the demand; therefore, the shortage of human organs has led to human organ trafficking (Bruckert and Parent, 2003). In this research, trafficking for organs is defined as the phenomenon when a third party recruits, transports, transfers, harbors, or receives a person, using threats (or use) of force, coercion, abduction, fraud, deception, or abuse of authority or a position of vulnerability for the purpose of removing that person’s organs (GTZ, 2004). Human organ trafficking has become an industry, and it is growing rapidly under the force of globalization. Globalization makes this sector of the human trade industry much easier either via patients traveling to another country for a transplant, or transporting harvested organs rapidly by air to a recipient (Kyle and Koslowski, 2001).

Globalization is a term used to describe the changes in societies and the world economy that result from dramatically increased international trade and cultural exchange (Werner, 2003). It describes the increase of trade and investment that results from a loss of barriers and the interdependence of countries (Lorraine and Lenway, 2001). The effects that globalization has had on human organ trafficking have been studied. Yet, because of the illegal nature of this phenomenon, most of the research is descriptive (i.e., Tansuhaj and McCullough, 2003; Harrision, 1998; Scheper-Hughers 1994, 2000). There is little empirical work on how globalization affects human organ trafficking. In this study, we view globalization as a trend that results in economic changes, political changes, and cultural changes. We argue that these changes have some direct influence on international human organ trafficking.

1. Background of human organ trafficking
Transplanting human organs has become a successful medical procedure during the past fifteen years. Thousands of seriously ill patients are given new life via the transplantation of healthy hearts, kidneys, livers, and lungs. About 300,000 people receive organ transplants per year worldwide. Unfortunately, very few countries have sufficient organs to meet patients’ needs. In the United States, about 50,000 people are on the waiting list for a transplant, and 15% of patients who need a new heart will die before one becomes available (Rothman, 2002). The unmatched supply and demand generates a massive global search for possible organ donors. In order to survive, a great many people – not all of them wealthy – have shown their willingness to travel great distances to secure transplants through legal or illegal channels, even though the survival rates are quite low (Scheper-Hughes, 2000). In contrast, the sellers are all from poor socio-economic backgrounds. They sell their organs to pay debts, to pay for necessary surgery, or for other family needs. The most common problem found in the trafficking of organs, is when people agree to sell their organs and enter into a formal or informal contract to do so; however, once the organ (i.e., kidney) is removed, they are not paid at all or paid only a part of the initially agreed upon price. Recognizing the demands, many surgeons, brokers, and some government officials have commercialized human organs in order to gain profits from the shortage (Baker, 2002). For example, in India, wealthy people and their doctors buy kidneys from debt-ridden Indian villagers (Ahmed, 2002). In desperation, many individuals even resort to illegal means to obtain an organ for transplantation, such as using blackmarket trade to purchase executed prisoners’ organs. In China,
officials profitably market organs of executed Chinese prisoners (Rothman, 2002; Elvin, 2001). There are even more scary stories about organ trafficking (GTZ, 2004). Andre from a town in Southern Moldova was facing hard economic circumstances when a Turkish man came to his village and offered him a large amount of money (approximately $2,500-$3,000) to sell a kidney. Andre finally agreed, and with other Moldovan men he traveled to Turkey. They were sheltered in a basement lodge for a night and were due to go to the clinic the next day for the operation. Andre stated that during the night he lost consciousness and when he woke up the following day, he found he had been operated on in his sleep and his kidney had been stolen. Andre reported the case to Turkish police, who simply deported him, back to Moldova. He subsequently reported the case to local Moldovan police, but due to lack of clear information about he broker or the place visited in Turkey, there was little the police could do. Andre reported the case to La Strada Moldova’s Hotline because he was upset that he had been cheated out of the money and was seeking help in locating the Turkish broker.

2. Globalization factors associated with human organ trafficking

According to Harrison (1999, p. 22), “the human body part trade simply mirrors the normal system of unequal exchanges that mark other forms of trade between the developed and underdeveloped regions of the world, and between classes, ethnicities, genders, etc. within and across these same regions.” Globalization facilitates the process of this exchange. George Soros (1998a, b) points out that globalization has not only changed the whole economies in the world, but it also has eroded social values and social cohesion. Soros (1998a,b) argues that markets are by nature indiscriminate and inclined to reduce everything—including human beings, their labor, and their reproductive capacity—to the status of commodities.

The reconstruction of world economy, imposed by the International Monetary Fund (IMF) and the World Bank, has added to the impoverishment of both underdeveloped and developing countries. This results in a desperate underclass whose members are willing to sell their own organs or steal organs from others (Harrison, 1999). At the same time, the unfavorable notion associated with the organ trade has been “laundered” through liberal notions of property rights that defend economic coercion as legitimate. Now, the wealthy need not steal the body parts of the poor, they can buy them under a contract law. As a result, the human organ trafficking business has been growing continuously from individual entrepreneurs to large international cooperation.

It is illegal to trade human organs in most of the countries in the world. Because of the lack of efficient regulations on human organ trade, the prohibition of organ sales, on the other hand, has not restricted the trade in human organ business but tended to foster the trade. This type of questionable trade stems from peoples’ innate desire for longevity and a great pool of supply-and-demand organs. The inevitable result has been a boom in human organ trafficking that caters to rich recipients and destitute (sometimes-helpless) donors. Schep-Laundered through liberal notions about the dignity of the body and of sovereign states pose some barriers to the global market in body parts, but these ideas have proven fragile under global markets.

3. Hypotheses

Based on the aforementioned discussion of cultural, economic, and political changes, in this section we develop hypotheses with these changes as major influencing factors on human organ trafficking.

Figure 1 is a conceptual model of three factors associated with international human organ trafficking. In specific, trade openness, Internet usage, and membership in the international organization are used to measure economic, cultural, and political factors. In the following sections, we investigate the associations between human organ trafficking and these three factors.

3.1. Economic globalization and human organ trafficking

It is considered wrong to buy and sell human organs, such as kidneys, because it would be immoral to make a profit from the commercialization of such items. The rejection of organ trafficking occurs more in religious countries. Trafficking may flow from countries with more religious restrictions to countries that have less religious restrictions. Yet, the cultural notions about the dignity of the body and of sovereign states pose some barriers to the global market in body parts, but these ideas have proven fragile under global markets.
international human organ trafficking, including economic, technical, and religious restrictions. These barriers are being reduced by the driving forces behind globalization. Economic globalization involves the establishment of a series of worldwide exchange in labor, trade, technology, and capital between countries (Stubbs and Underhill, 1994).

Benefits from economic globalization include world economic development, falling trade barriers, higher living standards, accelerated innovation, diffusion of technology and management skills, and new economic opportunities for countries (Wallach and Sforza, 1999; Larkin, 1999; Head, 1997). However, several costs result from economic globalization, such as increasing inequality and greater vulnerability for many individuals (i.e., higher rates of crime, unsafe working environments, and unemployment) (Wallach and Sforza, 1999; Larkin, 1999).

Human organs provided only by donation have not been enough to satisfy the world’s needs. As a consequence, the illegal trade of human organs takes place. According to the international business literature, human organ trafficking has been accelerated by economic globalization. Goble (2000) argues that human organ trafficking has become the fastest growing type of organized crime under economic globalization. Scheper-Hughes (1997) argues that economic globalization has stimulated the circulation of human organs across national boundaries. Scheper-Hughes (1997) also suggests the movement and flow of living donor organs is from South to North, from poor to rich, from black and brown to white, and from female to male bodies. For example, Japanese kidney patients traveled to Taiwan and Singapore to purchase organs obtained from executed prisoners (Scheper-Hughes, 1997). Although this practice was condemned by the World Medical Association and prohibited in 1994, this illegal practice is still spreading (Scheper-Hughes, 1997). The movement of illegal human organ trafficking may be similar to the movement of legal donor organs. Economic globalization has facilitated the increased mobility of economic objects such as capital, commodities, information, and people in legal as well as illegal sectors. Economic objects in the illegal sector include human organs (SARRC People’s Forum 1998). Traffickers treat human organs as nothing more than economic commodities in a globalization economy (Goble, 2000). Regarding its role, economic globalization may exacerbate the illegal movement of human organs around the world. In sum, it is thus believed that economic globalization is closely associated with trafficking. In general, trade openness is used to measure economic globalization. The favorability to trade openness has a positive impact on economic liberalization, which drives economic globalization in a given country. Based on the arguments, the following hypothesis is made:

\[ HI: \text{There is a positive relationship between levels of economic globalization and human organ trafficking in a given country.} \]

3.2. Cultural globalization and human organ trafficking. We discussed international human organ trafficking associated with economic globalization. Like the previous paragraph, the association between cultural globalization and trafficking can be addressed, which may drive international human organ trafficking. In general, culture includes diverse ethical and religious issues, which explain the ways by which people live in each culture. There are diverse types of cultures throughout the world, and each culture has a unique view about the dignity of the human body. Cultural values influence individuals’ decisions pertaining to the human body. Some cultural notions about the dignity of the body pose barriers to organ transplantation (Scheper-Hughes, 2000). Thus, sales of organs seem to be prevented in some countries because of cultural beliefs (Joralemon, 1995). For example, in the Middle East, it is rare to obtain organs from cadavers. Islamic teachings emphasize the need to maintain the integrity of the body after death (Rothman, 2002). In much of Asia, cultural antipathy to the idea of brain death, and even more important, conceptions of the respect due to elders, have practically eliminated organ transplantation. For example, Chinese people, well known for conservativeness, value the preservation of the intact human body after death (Fang, 2002). Also, the Japanese culture has a high regard for the soul after death. Thus, many Japanese regard mutilating the body as taboo (Seewald, 2000). According to Confucian doctrine, one’s body is considered as a noble gift from one’s parents. Thus, people are culturally reluctant even to cremate the body of the deceased in South Korea in keeping with Confucian traditions.

However, these cultural notions are not always applicable today. India has become the biggest reservoir of human organs. China is considered one of the biggest suppliers of human organs. Even in South Korea and Japan, legal and illegal markets of human organs exist (TED Project, 2001). This astonishing phenomenon is argued to be one of the results of the dark side of cultural globalization. Akande (2002) argues that the most important far-
reaching effect of cultural globalization is the commercialization of culture. What once was an element of a people’s way of life becomes a product, rather than something unique they had made to suit their own specific needs and circumstances. Production and consumption of cultural goods and service have become commodities, along with the essentials of social life. Culture, whether it is found in music, food, clothes, art, masculinity or femininity and values or beliefs, becomes a product, sold in the marketplace. The familiar and the old are to be discarded (Rothkop, 1997; Akande, 2002; Gerle, 2000). Dignity of human body, viewed as one kind of value, is also treated as product in market. In sum, as similar to the results of cultural globalization, many cultural barriers to trafficking are being reduced. The Internet has been considered an influential force that alters culture. The Internet may have direct influence on diverse cultural aspects. People who frequently use the Internet are exposed to diverse cultures. They may not adhere strictly to traditional values regarding the human body. They may show little cultural denial to organ transplantation or to organ trafficking. Internet usage is a key indicator that is used to measure cultural globalization (Dahlgren, 2000). Based on the above discussion, we hypothesize the following:

H2: There is a positive relationship between levels of cultural globalization and human organ trafficking in a given country.

3.3. Political globalization and human organ trafficking. With other two dimensions of globalization, political globalization may accelerate international human organ trafficking. Globalization has impact on the political arena. Some political scientists argue that globalization is weakening nation-states and that global institutions gradually will take over the functions and power of nation-states. Other social scientists believe that although increased global interconnectivity will result in dramatic changes in world politics, particularly in international relations (i.e., the way states relate to each other), the nation-state will remain at the center of international political activity (www.ssrc.org). On one hand, the processes of globalization accelerated as goods, ideas, and people have flowed more freely across borders in the post Cold War political environment. On the other hand, political globalization has allowed international criminals to operate virtually without regard to borders. This happens because unlike criminals, governments and law enforcement agencies must respect other nations’ sovereignty and legal statutes in law enforcement operations. Paradoxically, the abandonment of many national controls in order to pursue open markets and free competition has opened up new opportunities for criminals to prosper (http://student.scw.vu.nl).

Criminal groups have taken advantage of the high volume of legitimate trade to smuggle drugs, arms, and other contraband across national boundaries. Moreover, illegal migration facilitated by organized alien smuggling networks is on the rise. The easing of national border controls worldwide, the growth of commercial travel options, the availability of technology that can be readily adapted to forge identification and travel documents, and the rising sophistication of global criminal networks are key factors contributing to this development. Human organ trafficking is always associated with serious crimes, such as stealing organs, purchasing organs from executed prisoners, killing for organs, and kidnapping people for organs. Thus, human organ trafficking is becoming a very serious social problem. Based on the above discussion, we argue that the political globalization may be associated with human organ trafficking. Political globalization can be embodied by membership in an international organization. This political engagement is assessed by taking stock of the number of international organizations and the number of members in the United Nations (U.N.). Thus:

H3: There is a positive relationship between levels of political globalization and human organ trafficking in a given country.

The aforementioned discussion is about the associations between changes in a country and human organ trafficking. There are diverse aspects to regarding changes in a country. Among them, globalization dimensions can explain concrete phenomena in economic, cultural, and political changes. Also, there used to be several barriers to international human organ trafficking. The barriers, then, are being reduced by the driving forces for globalization.

4. Method
One large obstacle for this study is to measure human organ trafficking, which is illegal in general. This study could estimate human organ trafficking from related factors such as number of human organ transplants, the size of shadow economy, and the GDP in each country. The GDP is the total value of legal goods and services produced, whereas the shadow economy represents illegal ones. Transplantation is a legal medical procedure, but trafficking is illegal in most countries. Also, trafficking is an influential factor that has been feeding shadow economies (Ivakhnyuk, 2005). Therefore, we could estimate numbers of human organ trafficking from the GDP, the shadow
economy, and the transplantation rates in each country. Associations among the factors are statistically tested by ordinary least square (OLS) regression.

4.1. Variables. 4.1.1. Human organ trafficking. The dependent variable of this study is the number of human organ trafficking. Human organ trafficking represents an illegal trade of human organs. In reality, it is very hard to get data of human organ trafficking, because it is illegal. Instead, we could use an alternative to estimate the number of trafficking. Widespread shadow economy consists of various forms of activity from trafficking to the production, distribution, and consumption of illegal goods in a country (Johan, 1996). One of main factors that have been feeding the shadow economy is trafficking. With the size of the shadow economy growing, trafficking has been increasing (Ivakhnyuk, 2005). In other words, shadow economy is closely linked to trafficking. Unlike organ trafficking, non-profitable transplantation is a legal medical procedure. GDP is the total value of legal goods and services produced while shadow economy represents illegal ones within a territory during a specified period. This study thus estimates number of human organ trafficking from number of human organ (kidney) transplantation, the size of the shadow economy, and the GDP in each represented country. Table 1 shows a summary of numbers of human organ transplantation, estimated numbers of human organ trafficking, and ratios of a shadow economy to GDP in forty countries during 1990s. Table 1 shows that China, India, and the United States have been the largest markets regarding human organ trafficking.

Table 1. Number of human organ transplantations, estimated number of human organ trafficking, and estimated size of shadow economy

<table>
<thead>
<tr>
<th>Country</th>
<th>* Human organ transplantation</th>
<th>** Shadow economy (%)</th>
<th>Human organ trafficking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>654</td>
<td>9</td>
<td>59</td>
</tr>
<tr>
<td>U.A.E</td>
<td>5</td>
<td>35</td>
<td>2</td>
</tr>
<tr>
<td>India</td>
<td>2132</td>
<td>35</td>
<td>746</td>
</tr>
<tr>
<td>Indonesia</td>
<td>62</td>
<td>35</td>
<td>22</td>
</tr>
<tr>
<td>Oman</td>
<td>18</td>
<td>35</td>
<td>6</td>
</tr>
<tr>
<td>Korea</td>
<td>828</td>
<td>38</td>
<td>315</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>245</td>
<td>35</td>
<td>86</td>
</tr>
<tr>
<td>Singapore</td>
<td>63</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Thailand</td>
<td>113</td>
<td>70</td>
<td>79</td>
</tr>
<tr>
<td>Taiwan</td>
<td>139</td>
<td>35</td>
<td>49</td>
</tr>
<tr>
<td>P.R. China</td>
<td>2202</td>
<td>35</td>
<td>802</td>
</tr>
<tr>
<td>Pakistan</td>
<td>310</td>
<td>35</td>
<td>109</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>11</td>
<td>35</td>
<td>4</td>
</tr>
<tr>
<td>The Philippines</td>
<td>166</td>
<td>44</td>
<td>73</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>81</td>
<td>13</td>
<td>11</td>
</tr>
<tr>
<td>Malaysia</td>
<td>83</td>
<td>39</td>
<td>32</td>
</tr>
<tr>
<td>Qatar</td>
<td>1</td>
<td>35</td>
<td>0</td>
</tr>
<tr>
<td>U.S.</td>
<td>10621</td>
<td>9</td>
<td>956</td>
</tr>
<tr>
<td>U.K.</td>
<td>1704</td>
<td>16</td>
<td>273</td>
</tr>
<tr>
<td>France</td>
<td>1768</td>
<td>13.5</td>
<td>239</td>
</tr>
<tr>
<td>Canada</td>
<td>946</td>
<td>14.6</td>
<td>138</td>
</tr>
<tr>
<td>Austria</td>
<td>348</td>
<td>8.3</td>
<td>29</td>
</tr>
<tr>
<td>Belgium</td>
<td>400</td>
<td>21.9</td>
<td>88</td>
</tr>
<tr>
<td>Germany</td>
<td>2106</td>
<td>14.5</td>
<td>305</td>
</tr>
<tr>
<td>Denmark</td>
<td>177</td>
<td>18.3</td>
<td>32</td>
</tr>
<tr>
<td>Norway</td>
<td>190</td>
<td>20.5</td>
<td>39</td>
</tr>
<tr>
<td>Sweden</td>
<td>322</td>
<td>18</td>
<td>58</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>390</td>
<td>11</td>
<td>43</td>
</tr>
<tr>
<td>Hungary</td>
<td>255</td>
<td>24</td>
<td>61</td>
</tr>
<tr>
<td>Italy</td>
<td>1082</td>
<td>27</td>
<td>292</td>
</tr>
<tr>
<td>Portugal</td>
<td>358</td>
<td>12.9</td>
<td>46</td>
</tr>
<tr>
<td>Spain</td>
<td>1698</td>
<td>22.9</td>
<td>389</td>
</tr>
<tr>
<td>Switzerland</td>
<td>223</td>
<td>7.5</td>
<td>17</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>70</td>
<td>28</td>
<td>20</td>
</tr>
<tr>
<td>Cyprus</td>
<td>41</td>
<td>21</td>
<td>9</td>
</tr>
</tbody>
</table>
Table 1 (cont.). Number of human organ transplantation, estimated number of human organ trafficking, and estimated size of shadow economy

<table>
<thead>
<tr>
<th>Country</th>
<th>* Human organ transplantation</th>
<th>** Shadow economy (%)</th>
<th>Human organ trafficking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Croatia</td>
<td>51</td>
<td>20.7</td>
<td>11</td>
</tr>
<tr>
<td>Estonia</td>
<td>20</td>
<td>27</td>
<td>5</td>
</tr>
<tr>
<td>Lithuania</td>
<td>44</td>
<td>21</td>
<td>9</td>
</tr>
<tr>
<td>Malta</td>
<td>10</td>
<td>20.7</td>
<td>2</td>
</tr>
<tr>
<td>Turkey</td>
<td>368</td>
<td>20.7</td>
<td>76</td>
</tr>
</tbody>
</table>

Notes: * Yearly average numbers of kidney transplantations during 1990s. ** Ratios of shadow economies to GDPs during 1990s.

Specific procedures to estimate human organ trafficking include following steps. First, this study states the numbers of human organ (kidney) transplantations in forty countries. These countries were selected from each continent (Asia, Europe, and America). Although many different human organs are being transplanted, among them, the kidney was selected. Regarding the number of transplants, the kidney is a representative human organ that is being transplanted. This study collected the yearly average number of kidney transplantations in forty countries during 1990s. Data were collected from the following: UNOS (annual report), Canadian Association of Transplantation, Council of Europe (International Figures on Organ Donation & Transplantation Activities), International Transplant Coordinators Society (World Transplant Statistics), Eurotransplant, and International Figures on Organ Donation and Transplantation. Second, this study measured the sizes of the shadow economies in forty countries found in research conducted by Enste and Schneider (1998) and Schneider (2000, 2002). Third, GDPs of the countries were measured. The Gross Domestic Product (GDP) is the market value of all goods and services produced in a year within a country’s borders (WTO, 1999). It is also the standard measure of the overall size of a country’s legal economy (WTO, 1999). In contrast, the shadow economy represents the size of a country’s illegal economy. This study could measure ratios of shadow economies to GDPs in forty countries during 1990s. Then, the ratios were used to estimate the size of illegal human organ trades minus the size of legal organ transplantations. Through the processes, numbers of human organ trafficking were estimated in forty countries during 1990s.

4.1.2. Economic globalization. This study addresses economic globalization that is closely linked to trafficking. In specific, trade openness is used to measure economic globalization. According to Rodriguez and Rodrik (2000), trade openness is the sum of exports and imports of goods and services measured as a share of the GDP. The favoring of trade openness had a positive impact on economic liberalization, which drives economic globalization in a given country (Rodriguez and Rodrik, 2000). Trade openness of forty countries was collected from CIFP (Country Indicators for Foreign Policy). Data include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services (CIFP, 2003). The data, however, excluded labor and property income (formerly called factor services) (CIFP, 2003). The data are in constant 1995 U.S. dollars (CIFP, 2003). According to CIFP, the data were collected from the World Bank National Accounts and the OECD (Organization for Economic Cooperation and Development) National Accounts.

4.1.3. Cultural globalization. Cultural globalization is used to explain the cultural changes taking place in each country. The Internet is at present a global phenomenon. It is an influential force that can and does alter culture. In his paper, “A Survey of the Influential Ability that the Internet has on Culture”, Barbu (2000) studies the symbiotic relationship between a culture and its collision with the modern medium known as the Internet. In this paper we have demonstrated that for positive or negative, the Internet is an influential force that alters culture. Dahlgren (2000) also argues that Internet has direct influence on civic culture. Thus, Internet usage is one of the most commonly used indicators of culture globalization.

4.1.4. Political globalization. We use Foreign Policy’s indicators to measure political globalization. Foreign Policy is the magazine of global politics, economics, and ideas. Political change is measured by membership in international organizations. This political engagement is assessed by taking stock of the number of international organizations and U.N. Security Council missions in which each country participates, as well as the number of foreign embassies that each country hosts. Participation in U.N. Security Council missions was then divided by the total number of active missions during each year and embassies; international organizations remained as absolute
numbers. This process produced panels of data that enable comparisons between and among countries of all sizes.

4.2. Statistical methods. In order to test the hypothesized relationships, data were collected from forty countries and ordinary least square (OLS) regression was employed to analyze it. OLS regression is utilized to test the three hypotheses. OLS regression uses linear combinations of independent variables to compute expected values of the dependent variable. The advantage of this statistical technique is that it answers the hypothesized questions in a direct manner, and it is a powerful approach for data analysis if there are no severe problems with the form of the data (namely, regression assumptions are not violated) (Neter et al., 1985).

The OLS regression model takes the following form:

\[ Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + e \]

with \( Y \): Human organ trafficking; \( X_1 \): Economic globalization (trade openness); \( X_2 \): Cultural globalization (Internet usage); \( X_3 \): Political globalization (membership in international organization).

5. Findings

Table 2 represents coefficients, standard errors, and variance inflation factors (VIFs) of six independent variables. Also, \( R^2 \) and F-statistic are shown in the table 2. Two coefficients are statistically significant, because \( p \) values of them are below than .05. However, the third coefficient is not statistically significant. \( p \) value of F-statistic is also below than .001. That is, OLS regression model is statistically significant. Also, \( R^2 \) is quite high (.62), which represents 62 percent of fluctuation of variation, can be captured by OLS regression. Variance inflation factors (VIFs) are used to diagnose potential multicollinearity problems. As shown in the second parentheses of Table 3, the maximum VIF obtained is 1.48, which is below the rule-of-thumb cutoff of 10.0 for a multiple regression model (Neter et al., 1996). Therefore, there is no serious multicollinearity problem found in the independent measures.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Independent variable</th>
<th>Dependent variable: number of human organ trafficking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Economic globalization</td>
<td>( b_1 ) = 0.50, ( t = 1.19 )</td>
</tr>
<tr>
<td>2</td>
<td>Cultural globalization</td>
<td>( b_2 ) = 0.56*, ( t = 1.48 )</td>
</tr>
<tr>
<td>3</td>
<td>Political globalization</td>
<td>( b_3 ) = 0.16, ( t = 1.92 )</td>
</tr>
<tr>
<td>R-squared</td>
<td></td>
<td>0.62</td>
</tr>
<tr>
<td>F-statistic</td>
<td></td>
<td>13.01***</td>
</tr>
</tbody>
</table>

Notes: The coefficients are standardized. Standard errors are in the first parentheses; variance inflation factors (VIFs) are in the second parentheses. * \( p < .10 \), ** \( p < .05 \), *** \( p < .001 \).

Based on the above statistical results, two hypotheses are supported, but Hypothesis 3 is not supported. Hypothesis 1 predicts that level of economic change (specifically trade openness) in a country will be positively associated with number of human organ trafficking in the country. The coefficient for trade openness (\( b_1 = 0.50, \ p < 0.05 \)) is significant, which supports Hypothesis 1. For Hypothesis 2, as reported in Table 2, the coefficient for Internet usage is positive and significant (\( b_2 = 0.56, \ p < 0.001 \)). Therefore, Hypothesis 2 is also supported. Hypothesis 3 predicts a positive association between level of political change (specifically membership in international organizations) and number of human organ trafficking in a given country. Coefficient for membership in international organizations is positive (0.16), but it is not statistically significant. Thus, Hypothesis 3 is not supported. Two possible answers may justify the regression result. First, a close relationship with international organizations may reduce organ trafficking. A country involved in various international organizations should keep many international regulations and rules, and some of them must be related to human organ trafficking. Therefore, membership in international organization may be a barrier to organ trafficking in a given country. Second, with regard to the positive coefficient, a sampling error may be involved, because it is not statistically significant.

6. Contributions and directions for future research

Globalization can represent various country changes at present. Globalization is a double-edged sword. On one hand, globalization brings various benefits in economic, political, and cultural perspectives. For instance, the increased pace of globalization accelerates goods, ideas and people as they flowed more freely across borders. On the
other hand, there are some costs driven by the development of globalization. For instance, international human organ trafficking has recently increased with the advent of globalization. The goal of this study is to pay an adequate attention to what variables are associated with human organ trafficking that make it internationally rampant. According to the findings, human organ trafficking has gone from bad to worse because of two globalization perspectives: economic and cultural globalization. Specifically, trade openness and Internet usage are positively associated with international human organ trafficking. This result is particularly significant for government policy makers who need a better understanding of this dark side of globalization, human organ trafficking. Policy makers should take these factors into consideration while making policies regarding the control of human organ trafficking.

Given the potential importance of these implications, future research is needed to refine and expand this study. In particular, primary data should be used to test the hypothesized relationships in the future study. In this paper, a single proxy is used to measure each variable; future studies should attempt to develop some reliable and valid measurement to measure the focal constructs. Finally, other factors may also have an influence on human organ trafficking, but they were not included in this study. In the future, researchers should attempt to identify these factors.

Conclusion

Scholars note that human organ trafficking is becoming an important phenomenon on a number of fronts, yet there is a scarcity of empirical research investigating the factors associated with this phenomenon. In general, previous literature has insisted that globalization might bring many benefits. The literature, however, has neglected the other side of globalization, that is, it is producing some negative results, and the increase in human organ trafficking is one of them. This study could introduce various factors associated with international human organ trafficking. We advance the emergent literature on human organ trafficking by showing that two globalization dimensions are very important factors behind this phenomenon. Nevertheless, this study is only the first step in empirically exploring international human organ trafficking. Finally, this study suggests that there are still many opportunities for scholars to examine more factors associated with organ trafficking as well as the effects that human organ trafficking can have on the global community.

References

Innovative Marketing, Volume 5, Issue 3, 2009

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