

## A QUANTITATIVE ANALYSIS OF THE CROSS-NATIONAL DISTRIBUTION OF HUMAN TRAFFICKING

### İnsan Ticaretinin Uluslararası Dağılımının Nicel Analizi

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#### Özet

İnsan ticaretinin uluslararası dağılımını etkileyen yapısal faktörlerin neler olduğu daha çok mağdurların kişisel özelliklerinden hareketle veya bu mağdurların sömürüldüğü tek bir ülkede veya aynı bölge dâhilinde birkaç ülke arasında meydana gelen insan ticareti olaylarından hareketle ve elde edilen betimsel verilerin değerlendirilmesi suretiyle anlaşılmaya çalışılmaktadır. Literatürdeki bu boşluğu doldurmak amacıyla bu çalışmada, göç sistemleri ve kriminolojideki sosyal çözülme teorilerinin temel varsayımları kullanılarak örneklem içerisinde yer alan 53 ülkede meydana gelen insan ticareti olaylarının coğrafi dağılımı incelenmiştir. Tahmin edilen farklı regresyon modelleri yoksulluk, şehirleşme, toplam nüfus ve genç nüfus oranının insan ticaretinin uluslararası dağılımı üzerinde anlamlı etkilerinin olduğunu göstermiştir.

**Anahtar Kelimeler:** Uluslararası insan ticareti, Sosyal çözülme, Nicel analiz, Suç analizi.

#### Abstract

Structural forces driving cross-national human trafficking are simply inferred based on the individual characteristics of the victims and on the descriptive information about trafficking in a single country or across multiple countries in a single region where trafficking victims are recruited and/or exploited. This study attempted

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PBD, 13 (2) 2011, ss.97-122

to fill this void by exploring the spatial distribution of human trafficking across a sample of 53 countries based on the assumptions of migration systems theory and theoretical propositions drawn from the social disorganization framework within criminology. Several sets of Ordinary Least Squares and Ordinal Logit Regression Models indicated that poverty, urbanization, the size of total population, and the proportion of younger population have significant impact on the cross-national distribution of human trafficking.

**Key Words:** Cross-national human trafficking, Social disorganization, Quantitative analysis, Crime analysis.

## **Introduction**

Despite growing concern about human trafficking over the last decade, empirical research on human trafficking is still in its early stages (Adepoju, 2005:75; Ali, 2005:141; Calandruccio, 2005:267; Godhziak and Collett, 2005:99; Langberg, 2005:129; Lee, 2005:165; Piper, 2005:203). Existing research mostly estimates the scale of the problem, maps routes and countries of origin, transit, and destinations; or reviews legal frameworks and policy responses. Critics of existing human trafficking research note that “researchers have glossed over or completely ignored the broader socio-cultural and economic contexts in which migration, in general, and more strictly trafficking in human beings, takes place” (Adepoju, 2005:84).

In this regard, legal regulations and intervention policies based on such limited research and information may have limited impact or generate unintended side effects (Salt, 2000:31). Unless the underlying contextual factors that lead to convergence of traffickers and victims of trafficking in the countries of origin and destination are identified, the research focus merely on traffickers and victims can put the trafficked persons in a vicious cycle of exploitation. In fact, the victims of human trafficking are found to be re-victimized when they are returned to the context in which they were initially victimized (Oxman-Martinez et al., 2005:7). Thus, increased understanding of the extent to which human

trafficking relates to vulnerability produced by socio-cultural and economic contexts is clearly needed.

Building on existing research on human trafficking and drawing insights from theoretical frameworks used to explain international migration and the distribution of crime across place(s); this study attempts to fill this void by exploring the distribution of human trafficking markets across a sample of 53 countries. Acknowledging that human trafficking is generally nested in larger international migration processes, the cross-national distribution of human trafficking is investigated based on the assumptions of migration systems theory as regard to the initiation and direction of trafficking and the role of traffickers as intermediary institutions in migratory processes. Migration systems theory is complemented with theoretical propositions drawn from the social disorganization framework within criminology.

### **1. Integrating Framework: Migration Systems Theory, Globalization, and Social Disorganization**

Theories developed to understand the process of international migration process provide different causal mechanisms to explain the initiation and persistence of migratory processes (Massey et al., 1993:431). Migration systems theory suggests that the migratory process is driven by the existence of prior links between sending and receiving countries based on trade, investment, political influence, colonization or cultural ties (Castles and Miller, 2003:26).

Globalization also contributes to increased worldwide interconnectedness involving the cross-border flows of finance, trade, media, products, and people, that link previously isolated areas into the broader national and international markets based on economic development. Yet, while economic development instigates the modernization of agriculture, it also provokes social differentiation and displacement of labor. This precipitates rural-urban migration and as overseas employment opportunities become apparent, international migration also grows (Castles, 2000).

Although population mobility is expected to follow other types of cross-border flows in the process of globalization, immigration (and related cultural differences) is not always welcomed by economic and political powers as much as the flow of capital and commodities since the former is regarded as a potential threat to national identity and state sovereignty (Koser, 2005). But at the same time, urbanization of developing societies and related displacement of people give rise to both internal and international migration as the evolution and concentration of production, distribution and exchange in urban centers, primate (Jefferson, 1939:226) and global cities (Sassen, 1991) create a strong demand for immigrant labor (Massey et al., 1993:431). Even though such demand is generally met by formal institutions such as recruitment by governments, employers, and recruitment organizations, extra-legal networks, such as smugglers and traffickers also emerge to exploit especially those who can not qualify or afford the legal services of formal institutions (Kritz et al., 1992:7).

Thus, as nations become more connected to other countries through the spread of formal and informal economic relations in the process of globalization, structural changes such as shifts in urbanization and political economy are likely to weaken formal and informal social controls (Howard et al., 2000:148) and create more opportunities for crime (Bursik, 1988:519; Bursik and Grasmick, 1993) in the process of development. Put differently, rapid social change and displacements increase social disorganization at the local level (Howard et al., 2000:148). In this regard, “social disorganization seems to be a mechanism through which globalization and economic development affect crime rates” (Paulsen and Robinson, 2004:21).

Social disorganization theory suggests that increased poverty, instability, heterogeneity, family disruption, and urbanization in an area, including a nation, produce illegitimate opportunity structures and dysfunctional lifestyles generating violence and crime. Although Shaw and McKay’s (1972) original social disorganization model has been subjected to significant revisions in terms of consideration of the factors which mediate between the structural characteristics and crime and/or

victimization rates, the social disorganization perspective still seems to be worth exploring given substantial empirical evidence indicating the ability of contextual factors to explain the spatial distribution of crime/victimization rates at neighborhood, city, and state level (Kennedy, Silverman, and Forde, 1991:397; Parker, 1989:983; Parker, McCall and Land, 1999:107; Rose and McClain 1998:1010; Sampson and Groves, 1989:774; Sampson et al., 1997:918; Smith et al., 2000:489). Moreover, numerous studies link social disorganization to the cross-national distribution of both violent and property crimes (i.e., Avison and Loring, 1986:733; Braithwaite and Braithwaite, 1980:45; Gartner, 1990:92; Gartner et al., 1990:593; Krahn et al., 1986:269; Messner, 1989:597; Neapolitan, 1994:4; Ortega et al., 1992:257; Rosenfeld and Messner, 1991:51).

As far as human trafficking is concerned, several qualitative studies and country reports on human trafficking have reported adverse effects of *globalization of transportation, markets, labor* (Kelly, 2005a), and related impact of *poverty, economic desperation and disadvantage* (Ahmad 2005:211; Brunovskis and Tyldum, 2004; Raymond and Hughes, 2001; U.S. Department of State, 2006); *family breakdown and abusive relationships* (Acharya, 2006:21; Boontinand, 2005:175; Shelley, 2002:207; Sulaimanova, 2005; Chaikin, 2006:201); *feminization of poverty and migration* (Castles and Miller, 2003; Dong-Hoon, 2004:7; Jagori, 2005:159; Kofman, 1999:269); *ethnic conflict and dislocations* (Kelly, 2005:235; Kelly, 2005a); *lack of political willingness, corruption, and weak governance* (Kelly 2005a; Shelley, 2002:207) on the emergence of the contemporary human trafficking problem. Thus, research already indicates the impact of globalization and related breakdown in formal and informal social controls on the emergence and continuance of human trafficking markets in different parts of the world.

Thus, migration systems theory focuses on increased interconnectedness between countries in the process of globalization and conceptualizes human smugglers and traffickers as illegal institutions that exploit the people who cannot afford or qualify for the services of formal recruiting institutions in migratory processes. At the same time, globalization affects the structural characteristics of the world nations and the local community capacity for social control. Consequently, human

trafficking is hypothesized to have emerged as a result of the inability of world nations to regulate the behavior of their residents and visitors because of lack of resources and formal and informal social controls (i.e. private, parochial, and public controls: see Bursik and Grasmick, 1993).

## **2. Methodology**

### **2.1. Data and Sample**

A sample of 53 countries providing the most relevant and reliable information on specified independent variables in accordance with the proposed framework has been selected to analyze the cross-national distribution of human trafficking. Although the information about the dependent variable was available for 111 countries, information on the independent and control variables was available for only 53 nations. The information regarding the independent variables was retrieved from various databases of the United Nations. The dependent variable, on the other hand, was constructed based on the modification of Bales' (2005:183-186) measurement of human trafficking across 111 different countries.

While assembling the cross-national database, information about the nations' *poverty, urbanization, annual population growth rate, heterogeneity* and *population* was retrieved from the PRED database<sup>1</sup>. The UN also provides panel data on world population prospects between 1950 and 2050<sup>2</sup>. Information about one of the control variables, the proportion of the nations' *population at the age of 15-24*, was retrieved from this database. Information on *divorce rates* comes from the United Nations Demographic Year Book 2000 and 2003<sup>3</sup>. Finally, information on the *gini index* of inequality of the nations was obtained from the UN Human development report 2005. The measures of all these variables are based on the information provided by the countries in the year 2000; yet, for a small number of nations that had missing information for unemployment and divorce rates for the year 2000, information from the preceding years was used (all on or after 1995).

## 2.2. Measurement of the Concepts

**Human trafficking:** In order to identify significant predictors of ‘human trafficking from’ and ‘human trafficking to’ a country, Bales (2005) created two separate dependent variables for human trafficking from and to a country. Using a systematic protocol, Bales (2005:96) retrieved information on human trafficking from multiple physical and electronic records including reports by national governments, international organizations, experts, non-governmental organizations, press reports, and his ethnographic fieldwork in five countries. Then, he assigned two different points for each country on a 5 point ordinal scale - that ranges from ‘0’ to ‘4’ (0= no trafficking, 1=rare cases of trafficking, 2=occasional but persistent case of trafficking, 3=regular cases of trafficking in small numbers, 4= regular cases of trafficking in large numbers) and indicates the level of human trafficking to and from a country. To increase the validity and reliability of his estimates, Bales (2005) had several anonymous experts with personal knowledge on each country review his estimates and then he refined the country scores in accordance with the suggestions of these experts.

Although Bales (2005:128-129) adapted the United Nation’s definition of human trafficking, he operationalized human trafficking in a country through two separate measures, that is, human trafficking to and from a country. However, the United Nations defined human trafficking as:

- (a) “Trafficking in persons” shall mean the recruitment, transportation, transfer, harboring or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation...”

Considering the definition of trafficking by the United Nations as involving both recruitment and exploitation, and given the empirical evidence as regard to the existence of recruitment and exploitation in the same countries (Surtees, 2005; Smit, 2004) human trafficking in a country should include the measures of both human trafficking from and

to that country. Therefore, we operationalized human trafficking in a country as a factor based additive scale (human trafficking from + human trafficking to a country) which simply combines Bales's (2005) five point human trafficking to- and from-scale items and ranges from 1 to 8 (where 1= rare cases of trafficking and 8= regular cases of trafficking in large numbers). Exploratory factor analysis for Bales's (2005) two items showed that these items were associated with a single latent construct (Factor loadings > .85, explained variance= 72.50, eigenvalue= 1.45). Moreover, the magnitude of internal consistency (Cronbach's Alpha= .62) indicated an acceptable level of reliability among the items (Cohen and Cohen, 1983).

**Poverty:** As previous studies and reports on human trafficking have indicated, developing nations are more likely to struggle with human trafficking as both origin and destination points mainly because of poverty and lack of employment opportunities. This creates a conducive context for the traffickers to prey on those who want to leave for better opportunities but can't afford or qualify. While testing the impact of poverty on cross-national distribution of crime, researchers generally employ a Gross Domestic Product (GDP) or Gross National Product (GNP) per capita measure, as an indicator of development and average income in a country (Braithwaite and Braithwaite, 1980:45; Bennett and Bennett, 1983:32; Gartner, 1990:92; Howard, Newman, and Pridemore, 2000:156). In addition to serving as an indicator of poverty and development, GDP is also considered as "...a proxy for the quality of government institutions, including the police and justice systems" (Lederman, Loayza, and Menendez, 2002:509). GDP per capita for the year 2000, is used to measure the impact of poverty and level of development on cross-national distribution of human trafficking.

**Urbanization:** Urbanization is considered a key component in the process of social change (Simpson and Conklin, 1989:945) and shifts in urbanization are suggested to break the normative controls in the society (Howard et al., 2000:139). As far as human trafficking is concerned, development and related urbanization especially in developing countries would benefit traffickers in terms of targeting those who look for employment opportunities and exploiting them in an unguarded urban social environment. Urbanization is generally measured as the percentage

of the population living in urban areas (Krahn, Hartnagel, and Gartrell, 1986:269; Messner, 1989:597) and it was found to have significant impact on crossnational distribution of violent crime (Conklin and Simpson, 1985, cited in Messner, 1989:597). Hence, the percentage of the population living in urban areas in 2000 is used as a measure of urbanization across the countries.

**Heterogeneity:** It is suggested that people might be reluctant /less inclined to guard or care about the personal safety and private property of neighbors they barely know or contact (Howard et al., 2000:139). Previous research indicated significant positive impact of ethnic and linguistic heterogeneity on violent crimes (Conklin and Simpson, 1985:171; Gartner, 1990:92). In this regard, heterogeneity is expected to increase the incidents of human trafficking in a country mainly because of weak community ties and decreased level of social control over the establishment and activities of human trafficking markets. Prior research generally employed different ethnolinguistic homogeneity indices (Li, 1995:361; Messner, 1989:597; Neapolitan, 1998:139) as a measure of ethnic or linguistic heterogeneity. Acknowledging that heterogeneity mainly refers to ethnic and linguistic differentiation and given that human trafficking mainly involves the exploitation of the victims in a foreign country, the percentage of the foreign-borns in the population in 2000 is used as a measure of heterogeneity (Gartner 1990:97; Howard et al., 2000:158).

**Residential Mobility:** Like urbanization, residential mobility also leads to weaker community ties and relatively weak social control as people are less likely to know each other in the context of massive population turnover. At the cross-national level, total population growth rate is suggested as a cursor for residential mobility (Howard et al., 2000) and prior research demonstrated significant positive effect of total population growth rate on cross national violent crime rates (Li, 1995:361; Krahn et al., 1986:269). Human trafficking markets are also expected to benefit from prevailing instability across a country as increased mobility would decrease the ability of the communities to resist and control illegal markets' penetration into their proximal social environment. Total population growth rates of the nations between the

years of 1995 and 2000 are employed as a measure of residential mobility.

**Family Disruption:** Generally operationalized as a nation's divorce rate (Simpson and Conklin, 1989:945; Howard et al., 2000:139), family disruption is another factor that weakens social cohesion and integration (Sampson, vd., 1997:918). Thus, family disruption could contribute to diffusion of human trafficking markets by reducing the control of both offending and victimization. Prior research has already pointed to family disruption as a significant predictor of increased violent crime rates across the nations (Gartner, 1990:92). The UN Demographic Year Book 2000 and 2003 (United Nations, 2006) was used to operationalize family disruption as the rate of nations' divorce rate per 1000 in the year 2000. Information about divorce rates of two nations, Thailand and Sri Lanka, was not available in these year books but was obtained from Gulnar Nugman (2002)<sup>4</sup> of the Heritage Foundation. The same information was also used by other researchers before (Rahman, Mittelhammer, and Wandschneider, 2003).

**Population:** Although total population of a country is generally employed as a control variable in cross-national analysis of crime rates, it is also considered an important factor that could undermine social integration and encourage anonymity (Rosenfeld and Messner, 1991:51). In this respect, a large population, especially when accompanied by poverty and urbanization in developing countries, would contribute to establishment of human trafficking markets because of lack of control and increased number of suitable targets potential customers. The measure of total population in a country in the year 2000 also comes from the UN PRED database.

**Control Variables:** In addition to poverty, urbanization and indicators of social disorganization enumerated above; two variables were employed as control variables for the analysis of cross-national distribution of human trafficking. Prior research indicated significant impact of income inequality as opposed to absolute poverty on cross-national distribution of crime rates (Gartner, 1990:92; Lederman et al., 2002:509; Messner, 1989:597). Income inequality is generally operationalized as the gini index of a country. The Gini coefficient ranges

from 0 to 100, with 0 indicating perfect equality and 100 indicating perfect inequality within a population (Howard et al., 2000:139). Information about each country's gini coefficient in the year 2000 is obtained from the UN Human Development Report 2005. The proportion of population aged between 15 and 24 is another common control variable used in cross-national analysis of crime. However, the relationship between this control variable and international crime rates is not clear. Whereas some researchers found a significant positive relationship (Ortega et al., 1992:257), others found either negative (Bennett, 1991:343) or nonsignificant relationship (Neapolitan, 1994:4). Information about the proportion of the population aged between 15 and 24 in 2000 is retrieved from the UN database on world population prospects.

### **3. Analysis and Findings**

As noted above, a sample of 53 countries was utilized for the cross-national analysis of the distribution of human trafficking markets. Once again, the sample size was limited by the availability of some of the independent variables. The scarcity of information about potential explanatory variables increased the possibility of omitted variable bias for the multivariate analyses; however, the theoretical guidance provided by social disorganization framework and the review of empirical studies on human trafficking suggested the most relevant indicators and control variables that were included in the present study. Moreover, countries from almost all regions of the world including Asia, Europe, North America, South America, Central America and Caribbean, Africa, Middle East and North Africa, Australia and Oceania were included in this sample of world nations.

The descriptive statistics presented in Table 1 demonstrate general sample characteristics.

**Table 1:** Descriptive Statistics (N=53)

Variable	Mean	SD	Min	Max
<b>DEPENDENT VARIABLES</b>				
Total Trafficking (a)	4.57	1.93	1.00	8.00
<b>INDEPENDENT VARIABLES</b>				
Total Population (000)	58559.42	177825.90	1285.00	1273979.00
GDP per capita	10453.96	10571.75	656.00	34478.00
Urbanization	65.36	17.81	21.10	100.00
Heterogeneity	8.56	9.75	0.04	40.69
Residential Mobility	0.55	0.98	-1.30	2.90
Family Disruption	1.70	1.05	0.15	4.35
<b>CONTROL VARIABLES</b>				
Population Aged 15-24 (%)	15.77	2.91	11.10	20.80
Gini	35.72	8.39	24.70	59.30

**Note:** (a) Additive Scale (Trafficking from a Country + Trafficking to a Country)

As the nations in the sample represent a wide range of regions around the world, there is a considerable amount of variation in the independent and control variables. Univariate distributions revealed a high degree of skewness for total population, heterogeneity, and gini coefficient. Given the small sample size, to maximize linear fit and thus facilitate linear modeling (Li, 1995:361; Messner, 1989:597), natural log transformations (ln) were performed for these three variables and the transformed variables were utilized in the following bivariate and multivariate analyses.

**Table 2:** Bivariate Correlations

		1	2	3	4	5	6	7	8	9
1	Total Trafficking	-								
2	GDP per capita	-.45**	-							
3	Residential Mobility	-.06	.05	-						
4	Heterogeneity (ln)	-.36**	.47**	-.60	-					
5	Urbanization	-.16	.63**	.08	.49**	-				
6	Family Disruption	-.15	.37**	-.29*	.44**	.42**	-			
7	Total Population (ln)	.37**	.10	.14	-.36**	.00	.12	-		
8	Population Aged 15-24 (%)	.21	-.80**	.34**	-.41**	-.53**	-.45**	-.05	-	
9	Gini (ln)	.10	-.32*	.53**	-.19	-.08	-.40**	.12	.50**	-

**Note:** Entries are Pearson Correlation Coefficients; \* $p < .05$ , \*\* $p < .01$  (2-tailed tests).

Prior to multivariate modeling, bivariate correlations between dependent, independent, and control variables were examined as presented in Table 2. A statistically significant and negative relationship between GDP per capita and Total Trafficking (-.45,  $p < .01$ ) indicating that poverty has a positive impact on Total Trafficking in a country and the nations with lower GDP per capita are exposed to more human trafficking. The significant positive relationship between Total Population (ln) and Total Trafficking (.37,  $p < .01$ ) demonstrates that countries with larger populations are exploited more by human trafficking markets. Of the remaining independent variables, heterogeneity, residential mobility, and family disruption, all have negative impact on total trafficking, though only heterogeneity had a statistically significant impact.

Even though four independent variables and both control variables were not significantly related to total trafficking, they were retained in the multivariate models based on their theoretically and empirically expected

influence on the distribution of crime rates. Two different models were estimated to investigate the impact of macro level structural factors on the distribution of total human trafficking. Table 3 presents the results of Ordinary Least Squares analysis.

First, as the base model, an OLS regression model is estimated by regressing total trafficking on independent variables GDP per capita, urbanization, heterogeneity (ln), residential mobility, family disruption, and total population (ln) in Model 1. As expected, poverty, urbanization, and total population have a positive impact on total trafficking in a country controlling for the impact of residential mobility, heterogeneity, and family disruption. In other words, countries with more poverty, urbanization, and total population are exploited more by human trafficking markets net of the impact of remaining independent variables. However, heterogeneity (ln), that was significant in the bivariate analysis, was no longer significant in the multivariate analysis. Residential mobility and family disruption did not have significant impact on cross-national distribution of human trafficking in the base model.

In the second model, the introduction of the control variables gini (ln) and population aged 15-24 provided a better fit to the data and resulted in an eight percent increase in  $R^2$  ( $\Delta F= 3.79, p<.05$ ). The impact of poverty, urbanization, and total population on cross-national distribution of human trafficking remains significant even when inequality and the proportion of younger population in a country were controlled. Heterogeneity, residential mobility and family disruption again did not have significant impact on total trafficking in the second model.

**Table 3:** OLS Regression Models for Total Trafficking (N=53)

Variable	<i>Model 1</i>		<i>Model 2</i>	
	<u>Total Trafficking</u>		<u>Total Trafficking</u>	
	B (SE)	VIF	B (SE)	VIF
Constant	-2.32 (2.13)	-	8.56 <sup>a</sup> (4.96)	-
<i>Independent Variables</i>				
GDP per capita	- .0001*** (.00003)	1.88	-.0002*** (.00004)	4.88
Urbanization	.03** (.02)	1.92	.03* (.02)	2.06
Heterogeneity (ln)	.04 (.21)	2.11	.10 (.20)	2.15
Residential Mobility	-.34 (.24)	1.22	.19 (.30)	2.13
Family Disruption	-.30 (.26)	1.73	-.43 (.26)	1.89
Total Population (ln)	.66** (.18)	1.49	.70*** (.17)	1.57
<i>Control Variables</i>				
Population Aged 15-24	-		-.35* (.15)	4.77
Gini (ln)	-		-1.42 (1.26)	1.93
F	6.20***		6.16***	
R <sup>2</sup>	.45		.53	
AIC	3.80		3.72	

**Note:** Entries are unstandardized coefficients and numbers in parenthesis are standard errors; <sup>a</sup>p<.10; \*p<.05; \*\*p<.01; \*\*\*p<.001

Even though such macro level structural characteristics can hardly be regarded as favoring a specific theoretical framework; the results of Model 1 and Model 2 support migration systems theory (as regard to its broad discussion about traffickers) and also provide partial support for social disorganization framework (as regard to the impact of poverty and urbanization on the distribution of crime). However, the lack of impact of heterogeneity, residential mobility, and family disruption on the

distribution of crossnational human trafficking is not consistent with social disorganization theory.

An unexpected finding in the second model, however, is the significant negative impact of the percentage of younger population on total trafficking in a country. In spite of the high correlation between percent of population aged 15-24 and per capita GDP, several model selection procedures (i.e., stepwise regression, forward selection, and backward elimination) suggested that this control variable be retained in Model 2 together with per capita GDP and total population (ln). Once this variable was retained in Model 2, mean VIF inflates from 1.92 to 2.67 with the highest VIF score of 4.88 (for GDP per capita). Although not perfect, VIF scores for per capita GDP and percentage of population aged 15-24 are quite lower than the VIF score of 10, which is regarded as an indicator of high collinearity (Gujarati 2003; Lim, Bond, and Bond, 2005:515). Moreover there is no evidence for heteroscedastic error variance in the final model (2) and examination of residuals does not indicate any outlying cases that could unduly influence the regression coefficients.

To sum up, predicted OLS model provides certain level of support for the hypothesized impacts of structural factors on cross-national distribution of human trafficking in the light of migration systems theory, social disorganization theory, and of previous research on human trafficking and on cross-national distribution of crimes. Poverty, urbanization, and total population provide evidence for the cross-national distribution of human trafficking in the hypothesized direction, whereas proportion of younger population in a country has an unexpected negative impact on human trafficking.

#### **4. Discussion**

In general, the findings concur with the notion that rapid industrialization and related urbanization is problematic especially for the countries/communities that are deprived of necessary resources to address the problems of crime and social disorder (Paulsen and Robinson, 2004). In this regard, the process of globalization and related transformations in developing countries play a significant role in shaping the cross-national

distribution of human trafficking. Simply put, human traffickers target the nations with relatively more poverty, urbanization, and population since it is easier to exploit and recruit more potential victims for more potential customers in a social and economic context where potential victims are more likely to risk their lives for ‘so called’ better employment and living opportunities in metropolitan centers; and, where both the traffickers and their customers, on the other hand, can benefit from increased anonymity and lack of informal and formal social controls. Even though social disorganization theory mainly focuses on informal social controls, the systemic control interpretation of the disorganization framework includes public level control (i.e., law enforcement) as one of the most important yet under-tested components of community control (Bursik and Grasmick, 1993). Accordingly, given that per capita GDP is also considered as an indicator of the quality of government institutions such as police and justice systems (Lederman et al., 2002:509), lower level of per capita GDP may indicate less effective formal control systems and reduced ability to prevent and control illicit markets involved in human trafficking.

In contrast to the findings regarding poverty, urbanization, and the size of total population, heterogeneity, residential mobility, and family disruption do not have significant impact on cross-national distribution of human trafficking markets. On its face, this seems to be contrary to social disorganization theory. Two potential explanations appear plausible. First, it could be that social disorganization does not explain human trafficking. Rather, the effect of poverty may be indicative of strain or economic-based conflict theory (Agnew, 2006; Pratt and Lowenkamp, 2002:61). Second, it may reflect the nature of human trafficking. Specifically, the fact that a considerable number of victims are recruited by their significant others including their relatives, friends, and even parents (Brunovskis and Tyldum 2004), suggests dependency on a certain level of trust between traffickers/recruiters and their victims. Yet, heterogeneity, higher residential mobility and family disruption in the society could prevent the development of such informal relationships and networks and the interactions that could benefit the traffickers and recruiters. In fact, the unexpected significant negative impact of the size of the younger cohort (aged between 15-24) on cross-national distribution

of human trafficking can also be regarded as supporting evidence for this argument since the countries with large proportion of younger population would be the ones with less intimate ties (because of relatively lower proportion of adult population). Human trafficking researchers often talk about victims being recruited and exploited by their significant others whom the victims trusted. Specifically, relatives and neighbors may also recruit and exploit trafficking victims (see, for example, Brunovskis and Tyldum, 2004).

Thus, utilizing a sample of 53 countries and borrowing from international migration theories and the communities and crime literature, the present study extends Bales's (2005) argument about the cross-national distribution of human trafficking markets in both theoretical and methodological terms. Methodologically, the tested models indicated that human trafficking from and to a country can be considered as a part of the same construct. Theoretically, the problem of human trafficking across the world nations appears to follow patterns predicted through the integration of migration systems theory with social disorganization theory as developed within criminology, although the support for social disorganization theory was mixed.

## **Conclusion**

Overall, the analyses of human trafficking markets across 53 countries supported the notion that as the nations become more connected in both social and financial terms through the process of globalization, rapid industrialization and urbanization produce a conducive context for the traffickers where they can prey on large numbers of potential victims who are suffering from poverty and looking for better employment and living opportunities in unguarded urban locations. Additionally, intimate relationships among the adult population and specifically between the traffickers and potential victims are also speculated to be important in determining the level of human trafficking in a country. Put differently, higher levels of poverty and urbanization in populous countries increase both recruitment and exploitation of potential victims as these countries lack necessary informal and formal control mechanisms to help their

citizens confront organized criminals and their illegal exchanges within human trafficking markets.

Consequently, this study can help to identify the countries that are at relatively more risk of being targeted by human traffickers. Thus, the international community, including governments, governmental and non-governmental organizations, activists, and law enforcement agencies can allocate their resources to prevent and control human trafficking in and across the world nations. Given that the countries with more poverty, urbanization, and larger population are at more risk, prevention strategies that fail to address the problem of absolute poverty and that are unable to provide better living and employment opportunities are unlikely to be successful and may even be counterproductive by displacing human trafficking across time and/or places. Additionally, given that human trafficking organizations are composed of loosely coupled networks including legal business owners (i.e., employers, hotel owners) and corrupt officials, this might undermine the power of deterrence and prosecution oriented strategies. Therefore, formal social control needs to be complemented by informal social control. Risk-based problem solving initiatives that focus on the trafficking networks, victims and potential victims, and contexts (geographical and virtual) whereby networks and victims intersect, are called for.

At the national level, this can be facilitated by activists and non-governmental organizations through the allocation of resources for the education and mobilization of the public. Law enforcement agencies, as suggested by community policing philosophy, can also contribute to this multi agency task of community building and organizing, for community policing entails increasing police and government responsiveness and involves the formation of police and community partnerships in addition to crime control (McGarrell et al., 1997:479; Karakus et al., 2010:175). Promising interventions are likely to resemble what Wood and Shearing (2007) have recently labeled security through “intermodal governance” whereby public law enforcement, corporate security and the private sector, NGOs, and elements of local, federal, and international governments collaborate in risk-based strategies to address the problem of human trafficking.

Although the findings are generally consistent with theoretical predictions, conclusions must be drawn cautiously because of several methodological issues raised in the course of this research. First, the measures of independent variables, specifically the measures of heterogeneity and residential mobility were rather crude. Even though better operationalization of these two explanatory variables is available in previous research, using more adequate measures further decreases the sample size, for specific information about other necessary explanatory variables is not available for every country. This also relates to the second limitation in that the selection of countries for cross-national analysis of human trafficking markets is also limited by available information about explanatory variables. Although the measurement of human trafficking, the dependent variable, provided by Bales (2005) was available for 111 different countries, the necessary information about explanatory variables was only available for 53 countries included in the final sample. Thus, any other factor that might have compounded the selection process might also have influenced the results of cross-national analysis of human trafficking. Therefore, given that the representativeness of the sample is problematic, firm conclusions await replication of these results with larger sample of countries and with more adequate measures of heterogeneity and residential mobility.

Despite these methodological reservations, this study marks a significant shift in the study of human trafficking, which has almost exclusively focused on individual characteristics of trafficking victims and organizational structure of trafficking networks without a systematic consideration of structural factors that shape the context in which human trafficking takes place.

## References

- Acharya, Arun K., (2006), "International migration and trafficking of Mexican Women to the United States", Karen D. Beeks and Delila Amir (Eds.), *Trafficking and the Global Sex Industry*, UK: Lexington Books, pp.21-33.
- Adepoju, Aderanti, (2005), "Review of research and data on human trafficking in sub-Saharan Africa", *International Migration*, V.43, N.1-2, pp.75-98.

- Agnew, Robert, (2006), *Pressured into crime: An overview of general strain theory*, New York: Oxford University Press.
- Ahmad, Nastasha, (2005), "Trafficked persons or economic migrants? Bangladeshis in India", Kamala Kempadoo (Ed.), *Trafficking and prostitution reconsidered: New perspectives on migration, sex work, and human rights*, CO: Paradigm Publishers, pp.211-227.
- Ali, Masud A.K.M, (2005), "Treading along a Treacherous Trail: Research on Trafficking in Persons in South Asia", *International Migration*, V.43, N.1-2, pp.141-164.
- Avison, William R., and Loring, Pamela R. (1986), "Population diversity and cross-national homicide: The effects of inequality and heterogeneity", *Criminology*, V.24, pp. 733-749.
- Bales, Kevin, (2005), *Understanding Global Slavery*, Berkeley: University of California press.
- Bennett, Richard R., and Bennett, Sandra B., (1983), "Police personnel levels and the incidence of crime: A cross-national investigation", *Criminal Justice Review*, V.8, pp.32-39.
- Bennett, Richard R, (1991), "Development and crime: A cross-national time-series analysis of competing models", *Sociological Quarterly*, V.32, pp.343-363.
- Boontinand, Jan, (2005), "Feminist Participatory action research in the Mekong region", Kempadoo, Kamala (Ed), *Trafficking and prostitution reconsidered: New perspectives on migration, sex work, and human rights*, CO: Paradigm Publishers, pp.175-199.
- Braithwaite, John, and Braithwaite, Valerie, (1980), "The effect of income inequality and social democracy on homicide", *British Journal of Criminology*, V.20, pp.45-57.
- Brunovskis, Anette, and Tyldum, Guri, (2004), "Crossing borders: An empirical study of trans-national prostitution and trafficking in human beings" (Rep. No. 426). Norway: Fafo, (Retrieved November 17, 2005, from <http://www.fafo.no/pub/rapp/426/426.pdf>).
- Bursik, Robert J., (1988), "Social disorganization and theories of crime and delinquency: Problems and prospects", *Criminology*, V.26, pp.519-551.
- Bursik, Robert J., and Grasmick, Harold G., (1993), *Neighborhoods and Crime: The dimensions of effective community control*, New York: Lexington Books.

- Calandruccio, Giuseppe, (2005), "A review of recent research on human trafficking in the middle east", *International Migration*, V.43, N.1-2, pp.267-299.
- Castles, Stephen, (2000), "Migration as a factor in social transformation in East Asia", Paper presented to a Conference on Migration and Development, Princeton University, 4-6 May.
- Castles, S., and Miller, Mark J., (2003), *The age of migration: International population movements in the modern world*, London: Macmillan.
- Chaikin, Rita, (2006), "Fighting against trafficking in women in the north of Israel", Karen D. Beeks and Delila Amir (Eds.), *Trafficking and the Global Sex Industry*, UK: Lexington Books, pp.201-217.
- Cohen, Jacob, and Cohen, Patricia, (1983), *Applied multiple regression/correlation analysis for the behavioral sciences* (2<sup>nd</sup> ed.), Hillsdale, NJ: Lawrence-Erlbaum.
- Conklin, George H., and Simpson, Miles E., (1985), "A demographic approach to the cross-national study of homicide", *Comparative Social Research*, 8, pp.171-85.
- Dong-Hoon, Seol, (2004), "International sex trafficking in women in Korea: Its causes, consequences and countermeasures", *AJWS*, V.10, N.2, pp.7-47.
- Gartner, Rosemary, (1990), "The victims of homicide: A temporal and cross-national comparison", *American Sociological Review*, V.55, pp.92-106.
- Gartner, Rosemary, Baker, Kathryn, and Pampel, Fred C., (1990), "Gender stratification and the gender gap in homicide victimization", *Social Problems*, V.37, pp.593-612.
- Godziak, Elzbieta M., and Collett, Elizabeth A. (2005), "Research on human trafficking in North America: A review of literature", *International Migration*, V.43, N.1-2, pp.99-128.
- Gujarati, Damodar N., (2003), *Basic econometrics*, NY: McGraw Hill.
- Howard, Gregory J., Newman, Graeme., and Pridemore, William A., (2000), "Theory, method, and data in comparative criminology", *Criminal Justice*, V. 4, pp.139-211.
- Jagori, (2005), "Migration, trafficking, and sites of work: Rights and vulnerabilities", Kamala Kempadoo (Ed.), *Trafficking and*

*prostitution reconsidered: New perspectives on migration, sex work, and human rights*, CO: Paradigm Publishers, pp.159-175.

Jefferson, Mark, (1939), "The law of the primate city", *Geographical Review*, 29 (2), pp.226-232.

Karakus, Onder, McGarrell, Edmund F., and Basibuyuk, Oguzhan, (2010), "Fear of crime among citizens of Turkey", *Journal of Criminal Justice*, V. 38, N. 2, pp.174-184.

Kelly, Liz, (2005), "You can find anything you want: A critical reflection on research on trafficking in persons within and into Europe", *International Migration*, V. 43, N.1-2, pp.235-266.

----- (2005a), *Fertile Fields: Trafficking in persons in Central Asia*, IOM: Vienna, (Retrieved February 10, 2006, from <http://tcc.iom.int/iom/images/uploads/IOM-%20Fertile%20Fields,%20Trafficking%20in%20Persons%20in%20Central%20Asia,%2020051128609474.pdf>).

Kennedy, Leslie W., Silverman, Robert A., and Forde, David R., (1991), "Homicide in urban Canada: Testing the impact of economic inequality and social disorganization", *Canadian Journal of Sociology*, V.16, N.4, pp.397-410.

Kofman, Eleonore, (1999), "Female 'Birds of Passage' a decade later: Gender and immigration in the European Union", *International Migration Review*, V. 33, N.2, pp.269-299.

Koser, Khalid, (2005), *Irregular migration, state security, and human security*, Paper prepared for the policy analysis and research programme of the global commission on international migration, (Retrieved March 21, 2007 from, <http://test.gcim.org/attachements/TP5.pdf>).

Krahn, Harvey, Hartnagel, Timothy F., and Gartrell, John W., (1986), "Income inequality and homicide rates: Cross-national data and criminological theories" *Criminology*, V.24, pp.269-295.

Kritz, Mary M., Lin, Lean L., and Zlotnik, Hania (Eds.) (1992), *International Migration Systems: A Global Approach*, Oxford: Clarendon Press.

Langberg, Laura, (2005), "A Review of recent research on human trafficking in the Latin American and Caribbean Region", *International Migration*, V.43, N.1-2, pp.129-139.

- Lederman, Daniel, Loayza, Norman, and Menendez, Ana M., (2002), "Violent crime: Does social capital matter?", *Economic Development and Cultural Change*, University of Chicago Press, V.50, N.3, pp.509-539.
- Lee, June J.H., (2005), "Human trafficking in East Asia: Current trends, data collection, and knowledge gaps", *International Migration*, V.43, N.1-2, pp.165-201.
- Li, De, (1995), "Economic development, social control, and murder rates: A cross-national approach", *Cross-Cultural Research*, V.29, N.4, pp.361-382.
- Lim, Flora, Bond, Michael H., and Bond, Mieko K., (2005), "Linking societal and psychological factors to homicide rates across nations", *Journal of Cross-Cultural Psychology*, V.36, N.5, pp.515-536.
- Massey, Douglas S., Joaquin, Arango, Hugo, Graeme, Kouaocui, Ali, Pellegrino, Adela, and Taylor, Edward J., (1993), "Theories of International Migration: A review and appraisal", *Population Development Review*, V.19, N.3, pp.431-466.
- McGarrell, Edmund F., Giacomazzi, Andrew L., and Thurman, Quint C., (1997), "Neighborhood disorder, integration, and the fear of crime", *Justice Quarterly*, V.14, pp.479-500.
- Messner, Steven F., (1989), "Economic discrimination and societal homicide rates: Further evidence on the cost of inequality", *American Sociological Review*, V.54, N.4, pp.597-611.
- Neapolitan, Jerome L., (1994), "Cross-national variation in homicides: The case of Latin America", *International Criminal Justice Review*, V.4, pp.4-22.
- (1998), "Cross-national variation in homicides: Is race a factor?", *Criminology*, V.36, N.1, pp.139-156.
- Ortega, Suzanne T., Corzine, Jay, Burnett, Cathleen, and Poyer, Tracey, (1992), "Modernization, age structure, and regional context: A cross-national study of crime", *Sociological Spectrum*, V.12, pp.257-277.
- Oxman-Martinez, Jacqueline, Hanley, Jill, and Gomez, Fanny, (2005), "Canadian policy on human trafficking: A four-year analysis", *International Migration*, V.43, N.4, pp.7-29.
- Parker, Robert N., (1989), "Poverty, subculture of violence, and type of homicide", *Social Forces*, V.67, pp.983-1007.

- Parker, Karen F., McCall, Patricia L., and Land, Kenneth C., (1999), "Determining social-structural predictors of homicide", Smith, M. Dwayne and Zahn, Margaret A. (Eds), *Homicide: A Sourcebook of Social Research*, Sage Publications, Thousand Oaks, CA, pp.107-123.
- Paulsen, Derek J., and Robinson, Matt B., (2004), *Spatial Aspects of Crime: Theory and Practice*, MA: Pearson Education.
- Piper, Nicola, (2005), "A problem by a different name? A review of research on trafficking in South-East Asia and Oceania", *International Migration*, V.43, N.1-2, pp.203-234.
- Pratt, Travis C. and Lowenkamp, Christopher T., (2002), "Conflict theory, economic conditions, and homicide: A time-series analysis", *Homicide Studies*, V. 6, N.1, pp.61-83.
- Rahman, Tauhidur, Mittelhammer, Ron C., and Wandschneider, Philip, (2003), "Measuring the quality of life across countries: A sensitivity analysis of well-being indices", Paper presented at WIDER International Conference on Inequality, Poverty, and Human Well-Being, May 30-31, Helsinki, Finland.
- Raymond, Janice, and Hughes, M. Donna, (2001), *Sex trafficking of Women in the United States: International and Domestic Trends* (monograph). Washington, DC: Coalition Against Trafficking in Women.
- Rose, Harold M., and McClain, Paula D., (1998), "Race, place, and risk revisited: A perspective on the emergence of a new structural paradigm", *Homicide Studies*, V. 2, N.2, pp.101-129
- Rosenfeld, Richard, Messner, Steven F., (1991), "The social sources of homicide in different types of societies", *Sociological Forum*, V.6, pp.51-70.
- Salt, John, (2000), "Trafficking and human smuggling: A European perspective", *International Migration*, V. 38, N.3, pp.31-56.
- Sampson, Robert J., and Groves, W. Byron, (1989), "Community structure and crime: testing social disorganization theory", *American Journal of Sociology*, V.94, pp.774-802.
- Sampson, Robert J. Raudenbush, Stephen W., and Earls, Felton, (1997), "Neighborhoods and violent crime: A multilevel study of collective efficacy", *Science*, V.277, pp. 918-924.

- Sassen, Saskia, (2000), *Cities in a World Economy*, Thousand Oaks, CA: Pine Forge Press.
- Shaw, C. Robe, and McKay, H. Donald, (1972), *Juvenile delinquency and Urban Areas* (3<sup>rd</sup> Edition), Chicago:University of Chicago Press.
- Shelley, I. Louise , (2002), "The changing position of women: trafficking, crime, and corruption", David S. Lane (Ed.), *The Legacy of State Socialism and the Future of transformation*, Rowman & Littlefield Publishers, pp.207-222.
- Simpson, Miles E., and Conklin, George H., (1989), "Socioeconomic development, suicide and religion: A test of Durkheim's theory of religion and suicide", *Social Forces*, V.4, pp.945-964.
- Smit, Vanessa, (2004), "Safe migration: A role in curtailing human trafficking, a theoretical discussion and a case study of human trafficking from Nepal to India", MA thesis, University of Amsterdam.
- Smith, William R., Frazee, Sharon G., and Davison, Elizabeth L., (2000), "Furthering the integration of routine activity and social disorganization theories: Small units of analysis and the study of street robbery as a diffusion process", *Criminology*, V.38, pp.489-524.
- Sulaimanova, Saltanat, (2005), "Unintended consequences of globalization: The case of trafficking of women from Central Asia", *Journal of Central Asia Studies*, V.6, N.2.
- Surtees, Rebecca, (2005), *Second annual report on victims of trafficking in South Eastern Europe*, Geneva:IOM, (Retrieved March 15, 2007, from [http://www.iom.hu/PDFs/Second\\_Annual\\_RCP\\_Report.pdf](http://www.iom.hu/PDFs/Second_Annual_RCP_Report.pdf)).
- United Nations, (2006), *Demographic Yearbook 2003*, Department of Economic and Social Affairs, United Nations, New York.
- United States Department of State, (2006), *Victims of Trafficking and Violence Protection Act 2000: Trafficking in Persons Report 2006*, Department of State, Washington DC.
- Wood, Jennifer and Shearing, Clifford, (2007), *Imagining Security*, Oregon: Willan Publishing.