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Modern Slavery: A Regional Focus

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Abstract

Kevin Bales, through his study in *Understanding Global Slavery: A Reader*, provides an important quantitative analysis on the predictive factors of modern slavery. Upon examining his study though, several issues arise including too few observations for several of the variables and the lack of a regional variable. The author decided to rerun his study with replacements for the problematic variables used previously. Upon obtaining the results from this, the author examined development theory (development is believed to be closely liked to slavery), and began creating an alternative model, which eventually included the addition of a regional variable. This model differed from Bales', but showed that region matters in predicting modern slavery and further examination of the regions separated out shows there are differences in what predicts slavery in various regions. The potential policy implications include targeting appropriate programs in a region to fight the issues might lead to slavery there.

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CHAPTER ONE: INTRODUCTION

The study of modern slavery and human trafficking is still young. Until recently, the field focused almost exclusively on qualitative understandings and interpretations of the problem. While this illuminated some aspects of the issue, such a method could not answer questions such as "how many slaves are there in the world?" or "what factors are able to predict the scale of slavery in a country?" Both are the foci of a study done by Kevin Bales, who is a pioneer in the quantitative analysis of modern slavery. His study, detailed in *Understanding Global Slavery: A Reader,* sought to discover the factors that predict the scale of slavery in a country. While the study shows innovation, an in depth examination raises doubts. Perhaps most importantly, the study fails to consider the possibility of regional variation in the predictive factors of slavery. For example, while the percentage of the population under the age of fourteen might be significant in predicting slavery in Sub-Saharan Africa, it likely will not be in Europe. Without understanding and accounting for regional differences, the results of any study will misrepresent the nature of modern slavery. Such a mistake could ultimately lead to ineffective policies and programs.

Definitions of Slavery

Throughout history, the term slavery referred to many different types of exploitation. Among these are the sale of human organs, prison labor and prostitution (Bales 2000, 2-3). In some African countries, the term slavery only applies to the Trans-

Atlantic slave trade (van den Anker, Introduction: Combating Contemporary Slavery 2004, 1).

Additionally, various laws and conventions define slavery and related practices differently, though this often reflects changes in common thought about the nature of slavery. The 1926 Slavery Convention, the first to outlaw slavery internationally, describes slavery as "the status or condition of a person over whom any or all of the powers attaching to the right of ownership are exercised," (United Nations 1926). The 1948 Universal Declaration on Human Rights added "servitude" to slavery and the signatories agreed that "(n)o one shall be held in slavery or servitude: slavery and the slave trade shall be prohibited in all their forms," (United Nations General Assembly 1948). Slavery was recognized as inhumane and a violation of human rights (van den Anker, 1 Contemporary Slavery, Global Justice and Globalization 2004, 17). The Supplementary Convention of 1956 on the Abolition of Slavery defined "servile status," and suggested that the "practices that create the circumstance of servile status should be abolished: debt bondage; serfdom; unfree marriage; the exploitation of young people for their labor," (Bales 2005, 51). The International Covenant on Civil and Political Rights of 1966 prohibits slavery, the slave trade and forced labor. It recognizes "the right of everyone to the opportunity to gain his living by work which he freely chooses or accepts," (United Nations General Assembly 1966).

The Convention on the Rights of the Child protects children from exploitative labor including any work that is considered hazardous, would prevent the child from obtaining an education, or that could have negative impacts on their "health or physical, mental, spiritual, moral or social development" (United Nations General Assembly

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1989). There were two optional protocols to this Convention. These outlawed the use of

children for armed conflict, child prostitution, child pornography, as well as the sale of

children (van den Anker, 1 Contemporary Slavery, Global Justice and Globalization

2004, 17-18). The 1998 Rome Final Act adds trafficking to the definition of slavery and

slavery is redefined. Slavery is "the exercise of any or all of the powers attaching to the

right of ownership over a person and includes the exercise of such power in the course of

trafficking in persons, in particular women and children," (International Criminal Court

1998).

Human trafficking is often confused with slavery. While human trafficking is a

form of modern slavery, not all slavery is human trafficking. The Protocol to Prevent,

Suppress and Punish Trafficking in Persons, Especially Women and Children states that

> "'trafficking in persons'
> shall mean the action of recruitment, transportation, transfer, harbouring, 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. Exploitation shall include, at a minimum, the
> exploitation of the prostitution of others or other forms of sexual exploitation,
> forced labour or services, slavery or practices similar to slavery, servitude or the
> removal of organs," (United Nations 2000, art. 3.a).

All of these definitions are subject to interpretation and a lack of clarity. Though

slavery is almost universally condemned, what one person considers a form of forced

labor, such as all forms of prostitution, another may not.

> "Divergent definitions will remain a stumbling block, despite the fairly
> broad definition within the Optional Protocol to the UN Convention on
> Transnational Organized Crime, adopted by the UN General Assembly,
> and subsequently widely signed in Palermo in late 2000. Even signatories
> to the protocol are likely to have different definitions in their national

laws, and it is these that are used in the construction of official data."
(Kelly 2002)

Some authors choose to explicitly state the definition they are using in their studies though these suffer similarly from lack of clarity.

The Nature of Modern Slavery

The scale and existence of modern slavery is widely misunderstood. Many believe slavery ended in the 1800's. While others are aware slavery still exists, they are unaware it affects their lives. Few are aware that slavery persists and it affects their communities and the products they buy. Though no one knows exactly how many slaves there are in the world, one estimate suggests there are 27 million (Bales 2000, 3-4). This is larger than the population of Texas and New Mexico combined.

Slavery has existed in human societies throughout history. According to some scholars, nearly every society and culture had slaves at some point (Bales 2000, xiii). Today slavery is widespread. According to van den Anker, slavery currently exists in all regions throughout the world (van den Anker, 1 Contemporary Slavery, Global Justice and Globalization 2004, 15). This includes the United States where authorities regularly discover slaves in several industries including the textile industry, and brothels in cities such Los Angeles, New York and Seattle. One example of this is from 1995, when 67 immigrants from Thailand were liberated from the garment factory in el Monte, CA where they worked 16-hour days to pay off their passage debt. Wire fences surrounded the factory, preventing victims from escaping (Bales 2000, 14, 24).

In every society where slavery exists, it reflects the culture, economy, ideas and power relations of the area. It is a social relationship and most often an economic relationship. Slaves are predominantly used in non-technical, simple and traditional work such as agriculture, mining and quarrying, brick making, leather working, textiles, prostitution, forest clearing, and domestic service. While most of these products are sold locally, some products made by slave labor are sold on the global market. Examples include sugar, rice, grains, steel (made with slave charcoal), metal goods, jewelry, fireworks and carpets (Bales 2000, xiii, 4).

While slavery exists throughout the world, a higher proportion of slaves live in the developing world, in places such as Northern and Western Africa, Southeast Asia and in parts of South America. While there are many types of slavery, researchers tend to conceptualize particular types of slavery affecting particular regions of the world. Examples include Brazil's short-term 'contract' slavery, Eastern Europe's human trafficking, North Africa's classical slavery and South Asia's debt bondage. Slavery is not always easy to recognize but the forms achieve the same exploitative outcomes across cultures and time (Bales 2005, 4, 6, 8).

Why Slavery Exists

Though there are many reasons why slavery exists, there appear to be three overarching reasons throughout the world. First, since the end of World War II a population boom took the world population from 2 billion people to over 6 billion. Most of the population growth occurred in the developing world where people were already vulnerable. In fact, the countries with the greatest increases in population since 1945 also appear to have the most people enslaved (Bales 2000, 5).

The increase in the population, and thus increase in the supply of potential slaves, led to a decrease in the cost of obtaining a slave. Slaves are no longer considered a capital purchase. While a slave previously cost between $50,000 and $100,000 in today's money, today they average around $100. Modern slaves are considered a disposable resource. Should one perish, they are easily replaced. Since most slaves today are held for only a few years on average, the profitability of overworking one for the short term far out weigh any cost of obtaining new slaves when necessary (Bales 2005, 5, 8-10, 115).

The second overarching reason that slavery persists is due to rapid changes occurring both in societies and in economies throughout the world. In parts of the developing world, this took the form of post-colonial civil wars, which led to mass upheaval among the people and movements into the cities. Astronomical debts taken out to fight the wars meant the government forced farmers to grow cash crops instead of the sustenance crops they grew previously. Many of the farmers went bankrupt, in part due to crop failures, and were forced to flee to the cities as well (Bales 2000, 5). The mass influx of people into the cities created a sudden strain on resources and jobs. Many people struggling for survival found themselves in shanty villages surrounded by people fighting for scant resources. This created a concentration of desperate people who became easy prey for exploitation and slavery.

For countries seeking development, rapid changes in the economy made people more vulnerable. Too often, the focus of development was, and still is, simply on rapid economic growth for the country and not sustainable livelihoods for citizens. One

example of this might be the quick change from the state controlled economy to capitalist

economies after the fall of the Soviet Union (Bales 2000, 6).

Another example of this rapid change is the deregulatory push in the 1980's.

Countries no longer had much control over money flows between their country and

others. Money could go anywhere rapidly. Businesses could too.

> "Hiring or firing workers, buying, selling, or renting factories, investing or divesting funds could all happen with the touch of a button. Businesses could move quickly whenever and wherever they found cheaper labor, and if there was a less expensive factory to rent somewhere else, then a business could just walk away from its current location. As businesses began to spread around the planet, governments had less and less control over their operations; whether the businesses were legal or criminal or a mix of the two," (Bales, Trodd and Williamson 2009, 48).

Those who wish to enslave others find easy prey in all of these situations (Bales 2000, 6).

The third overarching reason for the persistence of slavery is government

corruption. If corruption exists, a bribe alone can make almost anything legal, at least in

practice. Without government corruption, many believe slavery cannot persist at such a

large scale. One manifestation of this is through police corruption. For slaveholders,

payments to the police for police protection are simply a part of a regular business

expense. In some countries, police will actually act as slave gathers, when slaves try to

escape. When corruption exists, those who wish, are able to use violence to secure slaves

(Bales 2000, 6-7).

Why Does it Matter?

The existence of slave labor impacts everyone whether we are conscious of it or

not. There are two main reasons for this. First, it affects the health of the international

economic system by preventing countries from becoming healthy participants. This is

because slavery affects the ability of a country to develop. Today in India, free labor must compete with slave labor. When a free laborer, who receives lower wages than normal due to such competition, runs into hard times, they are less able to provide for their family than usual. The free laborer is forced to borrow money and often in the process, becomes a bonded laborer. The slave must then work for the bondholder until he decides the debt has been repaid. This is devastating for the family, but also for the community, mainly because this person is no longer able to act as a consumer and local businesses suffer (Bales 2005, 18, Bales 2000, 8-9). Granted one indebted person is not likely to ruin an entire local economy but several can have an impact. When local businesses begin to see a decrease in demand for their items they suffer too and either they or their workers will find themselves without their own money to care for their families. Should tragedy strike this family they too could become bonded laborers. The spiral affect can lead to consequences for the nation as a whole, especially in countries were the problem is widespread like in India. In other words, slavery hinders the multiplier effect. The lack of development in one country affects not only that country but also the countries surrounding it, who take in economic migrants or who are left without an effective trading partner, putting strains on their economies. In an increasingly global world, the impacts of slave labor on one country are potential harmful for the health of the world economy.

Second, as mentioned before, some of the products we buy are tainted with slave labor. When slave labor is used in local economies, it helps to keep costs low for the producers and thus the products they make can be sold for less (Bales 2000, 4). The problem is that some of these products, such as sugar, make their way into the global

economy and into our homes. In some way our desire for cheaper and cheaper items could be fueling slavery not only in other countries but possibly also our own, including enslaved farm workers in the tomato and citrus industries of Florida (Coalition of Immokalee Workers).

It is our responsibility as consumers and members of the globalized economy to understand that slavery is pertinent to our every day lives. Our awareness and demand for action can lead to improvements not only in the lives of individuals but also improvements in the global economy. To do this though, one must develop a better understanding of the nature of modern slavery. One means for fighting slavery then is to discover its predictive factors. Slavery is not always easy to recognize or even find though. Thus, in order to determine the predictive factors of modern slavery, a different indirect approach is necessary.

CHAPTER TWO: BACKGROUND

Kevin Bales is perhaps the most respected scholar in the field of modern slavery and human trafficking for his efforts to understand the scale and nature of the crime. Thomas Cushman, the Editor-In-Chief for *The Journal of Human Rights,* dubbed Bales "the world's leading analyst of modern-day slavery," (Bales 2005, Back Cover). One of these studies, detailed in *Understanding Global Slavery: A Reader,* provides a unique examination in to the predictive factors of slavery throughout the world. It is the first attempt to understand the nature of slavery at such a large scale and it provides interesting insight into an elusive phenomenon. One accomplishment of the study was to show a statistically significant relationship between slavery and factors such as infant mortality (Bales 2005, 106).

Since this study though, very little progress has been made to further our understanding of slavery's predictive factors apart from qualitative studies at the national and regional level examples include Fitzgibbon 2003, Cole 2005, and Craig, et al. 2007. While Bales' results are intriguing, they were never meant to be an end, but rather a beginning to more comprehensive research. To take on this challenge, one must first understand how Bales' study was carried out, and then understand its shortcomings. From there, one can improve upon the previous methodologies, and hopefully shed new light on the crime.

Bales began his study by creating country level measures of slavery using the following definition: "(a) social and economic relationship, in which a person is controlled through violence or its threat, paid nothing and economically exploited," (Bales 2005, 199.29). This process spanned three years and involved collecting data from reports by U.S. government agencies, the International Labor Organization, experts, NGOs, national governments, academic experts, and the press. Bales processed this information, in addition to information from case studies and on the ground observations, to produce estimates for 111 countries. The estimates were "very rough, if informed, guesses," (Bales 2005, 96-102).

Recognizing the potential problems and subjectivity of the original sources, and thus his estimates, Bales requested experts to provide their opinion on the estimates he created. Bales drew inspiration for this from L.L. Thurstone's study *Attitudes Can Be Measured*, in which the author was able to create the first known scale for attitudes based on input from experts. The experts in Bales' study had personal knowledge of a country, region or industry. Based on the definition above, they provided opinions about the estimates and contributed other potentially helpful information. Bales adjusted some of the estimates with the information they offered and finally settled on estimates for each of the countries. He further estimated that there are 27 million slaves worldwide (Bales 2005, 102-103).

Bales indicates that his "own methods of data collection have been simplistic and driven less by epistemological concerns than by practicalities," and went so far to say that

the estimates were a bit "mushy" (Bales 2005, 96, 104). As such, Bales chose to group

the data into categories based on the prevalence of slavery in those countries.

> "0= no slavery
> 1=very little, occasional slavery
> 2=small but persistent amounts of slavery
> 3=slavery regularly found in a few economic sectors
> 4= slavery regularly found in several economic sectors" (Bales 2005, 104)

Bales named this variable "incidence of slavery." These are known as ordinal

variables, meaning the numbers represent categories that are ordered but not necessarily

equidistant from each other. Such a grouping allows one to perform statistical analysis

while controlling, to some degree, for the possibility of bias in the estimates. Though

Bales cannot be sure if 30,000 slaves live in a country, he can be more certain that

slavery is found regularly in a few economic sectors. Categorizing these variables

provides at least the illusion of more certainty. This also means that the correct

interpretation of the results will likely lead to a more certain outcome than one based off

of the more uncertain estimates. On the contrary, the outcome is less meaningful and

precise.

The experts Bales consulted also examined these categorizations. Bales quickly

noted that definitions of "occasional," and "regularly" were not adequate. Despite this,

the experts were able to provide feedback, which Bales used to make appropriate

adjustments (Bales 2005, 104). Bales admitted the danger in using bad estimates to

create a "worse ordinal or ranking estimates," (Bales 2005, 104). This could be

problematic because as Devereux and Hoddinott discuss

> "…a number 'calcifies' at each stage –from questionnaire to coding sheet to
> analysis–until it is one of several hundred numbers contributing to the production

of a percentage, in which uncertainty over the accuracy of each individual number is buried forever,"(Devereux and Hoddinott 1993).

Since there is no way to determine if these estimates or groupings are poor or not, Bales used qualitative data to triangulate his findings (Bales 2005, 104-105). Triangulation refers to the process of using multiple research methods to test one's results. Any research method has its pros and cons. The problem is that with any methodology, the results are in part a product of the methods used (Babbie 2004, 112-113). Triangulation is a means to double-checking one's results to ensure it is not simply a product of the method used.

The Test

After creating the variable incidence of slavery, Bales began testing what he identified as the "theory" of slavery though he claims such a theory was never formally stated. He does note that factors such as "population pressure, poverty, environmental destruction, social vulnerability, and government corruption" appear to lead to and promote the continuation of slavery within countries (Bales 2005, 105).

Based on this "theory", Bales determined a wealth of variables to test. Sources for these indicators included the United Nations *World Statistics Pocketbook 1995*, the Corruption Perceptions Index 1999, an article entitled "Human Rights Abuses by Country" which appeared in the *London Observer* on the 25th of October in 1999, and the *Amnesty International Report 1999*. Bales included any factor he felt might predict incidence of slavery though he doubted some, including number of televisions receivers per 1,000 people, would be significant (Bales 2005, 199.36).

Bales performed a multivariate regression analysis and found the following to be

significant:

- Infant mortality rate (.61)
- Percent of the population below 14 (.49)
- Percent of workforce in agriculture (.34)
- Governmental Corruption (.30)
- Extent of endangered species in a country (.15) (Bales 2005, 105-106).[1]

The numbers in parentheses indicate standardized coefficients. Bales calls them

beta coefficients but this is often confused for the finance term. As Bales suggests, the

beta coefficients, or standardized coefficients, measure "the relative strength of each of

the predictive factors," (Bales 2006, 13).[2] In other words, the standardized coefficients

transform the independent variables into comparable units (instead of having one item in

millions of dollars and another in square miles) and show which of the independent

variables has a greater affect on the dependent variable.

According to Bales, the R^2 value is .61 for this model suggesting that the

independent variables as stated explain 61% of the variation in incidence of slavery.

Bales believes the model confirms a relationship between slavery and factors such as

corruption, population pressure, poverty and vulnerability. For the first time a

statistically significant relationship between slavery and environmental destruction is

shown. This is only true though, as Bales notes, if one accepts incidence of slavery as a

valid measure (Bales 2005, 106).

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[1] All of these are significant at the .01 level except for the extent of endangered species, which is significant at the .05 level. The smaller these values are the more certain we can be that the null hypothesis can be rejected. The null hypothesis in this case is that there is no relationship between the variables. The p-values of all of the variables are low enough that we can reject the null hypothesis that there is no relationship between the variables.
[2] There is some concern with Bales' numbers. If this were truly beta-/standardized coefficients the numbers in parentheses should add up to unity. It's unclear what he is attempting to do exactly

Problems with the Study

Despite his findings, Bales clearly states there are validity questions with this study, meaning he might not be measuring what he believes he is measuring. For example, while he may wish to measure incidence of slavery he may be measuring the perception of incidence of slavery. Bales, in fact, believes the most problematic aspect of the study *is* his creation of the variable incidence of slavery, since the information used to create the estimates stems from a wide variety of unrelated sources and pieces of information, which likely are measuring slightly different concepts. Since this is in question, his groupings of incidence of slavery are also in question (Bales 2005, 104, 108).

Despite these acknowledgements, a few problems remain absent from the discussion. These issues can be divided into two groups. The first are further issues with the dependent variable, level of slavery/incidence of slavery, which Bales did not address and the second are issues with the independent variables.

Issues with the Dependent Variable

In the first group, issues with the dependent variable, there are several major concerns, which Bales does not sufficiently address in his book. First, in Appendix 2 of his book *Understanding Global Slavery: A Reader*, Bales lists a wide range of countries with their estimates and categorical groupings. Some surprising countries are missing from the list though. Examples include Angola, Rwanda, Ethiopia, Zimbabwe, Finland, Ireland, Slovenia, Bolivia, Cuba, and Venezuela (Bales 2005, 183-186). These countries are not slave free though as noted in various reports and newspaper articles (Whelan

2010, United States Department of Labor's Bureau of International Labor Affairs 2009, Patt, et al. 2009). The reader is left wondering if these countries were examined at all. If these countries were not included, then Bales' estimate is biased and does not accurately reflect the true nature and scale of modern slavery throughout the world.

The second issue is that by now the measure of slavery is outdated. Though Bales does not indicate what year his measure represents, the independent variables he tests slavery against come from the years 1995 to 1999, and it is likely the estimates of slavery come from around this time. The estimates then, could be at least 15 years old. Bales lists Yugoslavia (here referring to Serbia and Montenegro), which split in 2006. In fact, most of the data collected came before Zaire became the Democratic Republic of the Congo in 1997, nearly 13 years ago, though Bales does refer to its latter manifestation. If the estimates come from this period, they likely do not reflect the current situation. Additionally, the information extrapolated from the study cannot be generalized to today. Updating the data is essential to obtain any understanding of slavery as is. It took Bales and his team three years to accomplish this initially. While updating the data is crucial in furthering our understanding of slavery, it is unfortunately not within the scope of this particular study.

The third issue is that the measure of slavery is not replicable. Replicability is an essential element of any scientific study; otherwise, the legitimacy of the previous results is in question. The measure is not replicable primarily because Bales does not provide enough information concerning the experts he employed. They were assured anonymity, which is potentially not a problem, but Bales does not tell his readers *anything* about the

experts. He does not tell the reader how many experts there were, what countries they verified, how much their input influenced the final product, whether or not they had an agenda, who they worked for, and how their experiences or positions might influence their input. If one wished to replicate the study, these uncertainties would make it impossible to do so. When a study is non-replicable, it puts the results into question. That is true here too. These concerns are also echoed in the creation of incidence of slavery, the categorical variable representing the scale of slavery in a country, since the same process was used in its creation.

The fourth problem with the measure of slavery is related to the previous issue. Bales does not clearly indicate what determined the categorization of incidence of slavery. It is apparent that economic sectors play a role in the categorization but this is not quite enough information. A country is given a 3 if slavery is regularly found in a few sectors of the economy, and 4 if it is found in many. Larger countries, though, tend to have more economic sectors than smaller countries. A larger country may have more sectors where there is slavery but a smaller country, while having fewer sectors, may have proportionally more slavery. Additionally, a country may only have slavery within a few economic sectors, but since most of the workers in these few sectors are slaves, the problem is underrepresented. This type of misrepresentation could skew the results of the study. Unfortunately, Bales does not address this issue, leaving the reader unconvinced that the issue was taken into account.

The final issue with the dependent variable is its use in a multiple regression analysis. When using a dependent categorical variable, special considerations and

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techniques are necessary. A multiple regression model is not sufficient because it assumes the dependent variable is linear. While Bales' incidence of slavery will tell us the ranking of the variable, it is a grouped variable and thus non-linear. In order to use a grouped (categorical) dependent variable, a different model with many more calculations would be necessary. Examples of appropriate models include ordered logit or ordered probit models (Long and Freese 2006, 3-4, Powers and Xie 2000, 4).

Issues with the Independent Variables

The second overarching problem is with the independent variables. The first is a general issue entailing years the independent variables represent. This is problematic primarily because when one is using variables from various years, 1995 to 1999 in this case, it is difficult to interpret. Unless theory or observation suggests there is a time-lagged affect, such as the infant mortality rate two years previous would help predict slavery levels today, then one should standardize the year data is collected from, unless of course it is not available for that year. If there is a possibility of a lagged effect, the researcher should account for both a lagged and a non-lagged effect in the test. Otherwise, it is most prudent to use data for all variables that represents the same year. While Bales uses data from various years, he does not provide justification for such a method. One exception to this might be if data remains the same over the years but under these conditions, the researcher should simply use the data from the same year as the other variables.

The second independent variable of concern in Bales' study was threatened species. This relationship is likely spurious. As one moves closer to the equator, there is

more biodiversity. It stands to reason then, that if there is more biodiversity there will likely be more endangered species. In fact, despite a few outliers including the United States, most of the countries with significant numbers of endangered species are near the equator (United Nations Statistics Division 1998). If this is true, endangered species might simply be indicative of regional variations in slavery, not the impact of environmental destruction on slavery. This provides particular incentive to test such a regional variable.

Another variable of concern in Bales' study was corruption. The Corruption Perceptions Index is widely considered a problematic variable since it is a subjective measure. The Index compiles people's feelings about whether or not they believe there is corruption in a country and creates a measure based on these perceptions. It does not actually measure whether or not corruption exists and several studies show it would be a poor indicator of such (Olken 2009, 950-964). Bales seems to recognize this, but does not address the fact that the index only provides results for 70 out of the 111 countries of interest, or 63%. There are far too few cases to adequately understand the relationship between perceived corruption and incidence of slavery globally. Countries not included tend to be less developed or in certain regions of the world including Cambodia, Sudan and some of the Middle Eastern countries. To attempt generalizing the results of such a study to countries that were not involved would thus be dangerous since there is a fundamental bias in the types of countries examined by the Index.

A predominant problem with several of the variables in Bales' study is that there are too few observations. The study as a whole is questionable because when performed

as Bales detailed, only 48 countries, or 43% of the countries of interested, remain due to missing observations. Since there is a bias towards developed countries, the results from such a study can in no way accurately represent the situation of all the 111 countries the study is supposed to examine. Thus, the results obtained from any regression analysis are, for the most part, only indicative of the situation in developed countries.

One last issue with Bales' study is that it appears he is missing a major variable. Bales did not consider any regional variation within his model. As discussed before, there appear to be differences in the type of trafficking occurring in various parts of the world. As such, the predictive factors of slavery should change based on what region is being examined. The factors that predict slavery in Africa are likely to differ from those in Europe. Additionally, the factors that predict bonded labor in parts of Asia should be different than those that predict sexual slavery in European or North American countries. The addition of a regional variable will indicate whether or not there may be something different within the regions that helps to predict slavery. Using the same regional variable to separate out countries and examine predictive factors at a regional scale will help the author see whether or not there might be differences in the predictive factors of slavery within that region.

Our Study

The shortcomings raised here, demand an improved study, one that takes into account, the limitations and possibilities of the data. To do such a study though, one must find and understand the variables of interest in this field. Such variables are best

determined, not only by looking for available data, but also through an examination of the

theoretical underpinnings of the fight against modern slavery.

CHAPTER THREE: THEORY

Bales briefly introduces theories of modern slavery in his works. It is apparent though, in his work and in the work of others, that slavery is often perceived as a development issue. Several key figures and organizations including Amatrya Sen, the International Labour Organization, Kevin Bales himself, Ban Ki-moon and the United States' Department of State, all recognize the connection.

As Sen states:

"One of the biggest changes in the process of development in many economies involves the replacement of bonded labor and forced work, which characterize parts of many traditional agricultures, with a system of free labor contract and unrestrained physical movement. A freedom-based perspective on development picks up this issue immediately in a way that an evaluative system that focuses only on culmination outcomes may not." -(Sen 1999, 28).

The International Labour Organization says:

"Forced labour and trafficking are important aspects of other poverty and developmental challenges, such as migration policy and labour market governance where it can be difficult to achieve consensus," (Plant 2007, 16).

As Bales notes:

"The dramatic potential for increased profits from cheaper slaves exists, but the proportion of the workforce in any country held in slavery is likely to be very small. That said the countries with larger proportions of their populations in slavery, should reflect that fact in their development," (Bales 2006, 5).

Even UN Secretary-General Ban Ki-moon said that human trafficking, one form of modern slavery, was the "anti-thesis of development," (United States Department of State 2009, 39).

The State Department recognizes:

"Human trafficking is a multidimensional issue, it is a crime that deprives people of their human rights and freedoms, increases global health risks, fuels growing networks of organized crime, and can sustain levels of poverty and impede development in certain areas." (United States Department of State 2009, 5)

Such statements are not surprising since the term "development" encompasses so many ideas. Certainly, development is multi-dimensional, and covers the reorganization and reorientation of economic and social systems though many disagree about the particulars. Some believe it requires dramatic changes in social, administrative and institutional structures along with customs, popular attitudes and beliefs. It is witnessed through improvement in political, economic, cultural, social and natural conditions (Peet and Hartwick 1999, 1). Sen suggests that a major element of development is the removal of that which leads to "un-freedom" including tyranny, poverty, social deprivation, lack of economic opportunities along with intolerance or over-involvement of "repressive states", and neglect of public facilities (Sen 1999, 3-4).

Whether lack of development leads to slavery or whether slavery leads to a lack of development is the proverbial chicken-and-egg debate within the field. Though this argument is not examined here, either way it runs, modern slavery is bound to issues of development.

Development Theory

Though some trace the ideas of development back to the earliest formation of human societies, what is recognized as development theory proper began soon after the end of World War II. The success of the US Marshall Plan in regenerating economic stability in Europe, provided inspiration for countries to seek development through similar means. Development was conceptualized a process for 'backward' countries to 'catch up' with industrialized countries. It was from the beginning a Western concept and the result of post-colonialism. Today, industrialized countries still drive the theories and practices that shape development (Black 2002, 10, 14-5).

Since its modern founding, several schools of thought on development have emerged. Here the author offers only a brief overview of some of these theories. The Modernist, Marxist, Feminist and Neo-Liberal theories of development are some of the more influential strains of thought within development and they will help provide a basis of understanding for the study detailed later.

Modernist

Modernization theory draws inspiration from the European transition from feudalist to capitalist societies. Such theories became popular in the 1950s and 1960s especially in the West (Dickson 1997, 34, 36).

Modernization theories postulated that development in the Third World would occur in the same manor as the transition from feudalism to capitalism in Europe. Therefore, countries in the developing world could only transition from 'backwardness' to modernity if they followed the same path Europeans did. Such development was aided

by adopting the institutions, values and beliefs of capitalism (Dickson 1997, 34). Several Modernists also believed the government should organize and mobilize resources invested in the country. Growth in the economy was key and would lead to increased opportunities for employment and income, which eventually would 'trickle down' to the poor (Mackinnon and Cumbers 2007, 258-260). Countries in the process of developing were aided by technologies already developed in the industrialized world including medicines, which could lower infant mortality rate (Dickson 1997, 36).

The solution to lack of development then was to determine the patterns or organizations, including institutional factors and social variables, which were crucial for the development of the Industrialized world. Once these were identified, they should be applied to developing countries (Dickson 1997, 34). Development would be evident through "a large manufacturing sector, commercialized agriculture, the importance of class groups rather than family or tribal structures and governments based on democratic election rather than tribal or religions loyalties," (Willis 2005, 189).

One particularly popular theory of Modernization was Rostow's Stages of Growth Theory. Rostow believed there were five successive stages through which all societies much pass to reach development. These are the traditional society, preconditions for take-off, take-off, road to maturity and age of mass consumption (Dickson 1997, 35). Traditional societies are characterized by low productivity and are mainly agricultural.

The preconditions for take-off are set in motion through "intrusions from more advanced societies," (Dickson 1997, 35). Technology transfers, are the traditional means for this. The transfers lead to the expansion of trade, and economic growth follows.

Economic growth will eventually lead to the formation of a state that is able to manage its own economy (Dickson 1997, 35). This stage requires an entrepreneurial class able to take risks and accumulate resources, later investing this into production techniques (Lynn 2003, 47)

When the take-off begins, permanent economic growth occurs within the economy. This is achieved through an increase in the capital investment rate (Dickson 1997, 35). This is a key stage in the process and is often associated with an increase in modern banks and the manufacturing industry. The road to maturity occurs as the rate of capital investment increases. New modern techniques are incorporated in industries making them more productive and thus competitive. One example is agriculture. Growth is automatic.

In the final stage, high mass consumption is attained when the production of consumer durables and services is the orientation of the whole economy. It is characterized by the focusing on social security, welfare provision and the increases in military spending (Dickson 1997, 35).

Rostow's Stages of Growth Theory suggested that

"the right quantity and mixture of saving, investment, and foreign aid were all that was necessary to enable developing nations to proceed along an economic growth path that had historically been followed by the more developed countries. Development then became synonymous with rapid, aggregate economic growth," (Todaro and Smith 2006, 103).

Criticisms

There were several major oppositions to Modernization theory. First, it characterizes the Third World as a singular homogenous group and does not consider the

diversity and potential consequences of taking a singular approach including success in one country but worsening of conditions in others. Development here is conceptualized as simply an equation. If the correct inputs are inserted then the correct outputs will automatically occur. Second, many thought that the assumptions were "Eurocentric," suggesting it was arrogant and condescending to believe European values were always superior. Some even suggested that Modernization theory was popular because it justified widespread prejudices about 'backward' countries, and allowed for paternalism (Dickson 1997, 34-36). Third, Modernization theory did not consider the fact that those who were attempting to industrialize would be competing with already industrialized countries, something the now industrialized countries never had to face (Mackinnon and Cumbers 2007, 260).

Marxist

One response to Modernization theory was the formation of Marxian theories of development. These theories were particularly popular in the 60's and 70's and emerged mostly from the global South particularly from Latin America (Mackinnon and Cumbers 2007, 261).

Marxist development theorists conceived the structure of the economy as a hindrance to development and focused on historical and geographical unevenness in development (Power 2005, 193). Exploitation stemmed from how countries are incorporated into the world economy. Thus, external forces initiated poverty and underdevelopment mainly through relationships with other, more developed countries (Mackinnon and Cumbers 2007, 261).

To some, colonialism was the root of this issue. Many former colonies remained dependent on the products they exported and imported during the colonial period. Export prices decreased relative to import prices and thus, countries were suddenly unable to purchase the same quantity of goods from abroad. Additionally, while Multi-National Corporations (MNCs) were supposed to benefit developing countries, the company's profits usually were sent to the corporation's home country. Few people in the developing countries saw the benefits the corporations were supposed to bring, but instead saw only minimum remuneration (Mackinnon and Cumbers 2007, 261).

In other words, the industrialized world used its relationships with the developing world to exploit them. In Marxists analysis, exploitation is measured through the following equation:

$$\text{exploitation rate} = \frac{\text{the surplus value}}{\text{variable capital (labour power)}}$$

$$\text{exploitation rate} = \frac{\text{work time - time it takes to produce worker}}{\text{time it takes to produce worker}}$$

Surplus value, also known as non-wage income, is the difference between the value of labor power and the value of what a worker produces. The value of labor power is equal to what it costs to keep the worker alive and able to continue to produce. It can thus be said that surplus value is the difference between the time necessary to produce the incomes that will keep the worker alive and able to produce (time it takes to produce worker) and the time he actually spends producing products for income of the company (work time). Surplus value is effectively the income a firm does not use to pay wages (non-wage income). Variable capital is the value of labor power. The exploitation rate then, is simply the value of non-wages over the value of labor (Cohen 1979, 341). As is

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true in this formulation, Foley notes, "a situation in which one person gives another something for which the giver receives no equivalent is commonly called exploitation," (Foley 1986, 39).

Marxists theorists mostly advocated the solution to under-development was for countries to seek development on their own. One means for this was through Import Substitution Industrialization (ISI), which focuses on developing internal industries to produce goods that are currently imported, in addition to imposing tariffs on imports to protect the developing industries from competition from well-established companies abroad. Other theorists advocate for total removal of developing countries from the international economic system. Linking an economy with other more developed economies simply leads to increased disparity between the two (Mackinnon and Cumbers 2007, 261).

One particular strand of Marxist theories of development is Dependency Theory. T. Dos Santos describes dependency as:

> "(a) conditioning situation in which the economies of one group of countries are conditioned by the development and expansion of others. A relationship of interdependence between two or more economies or between such economies and the world trading system becomes a dependent relationship when some countries can expand through self impulsion while others, being in a dependent position, can only expand as a reflection of the expansion of the dominant countries, which may have positive or negative effects on their immediate development" (Dos Santos 1970, 231).

The most influential dependency theorist was Andre Gunder Frank. He believed countries in the 'core' exploited 'satellites', and took profits (surplus) to invest in other places. Colonialism created these unequal economic relationships, which were further perpetrated by an informal form of imperialism commonly accepted in the post-War

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period. Frank believed that instead of liberating the developing world, capitalism was the

reason why underdevelopment continued there (Mackinnon and Cumbers 2007, 261).

To Frank, the center and periphery were connected by economic, social and

political structures. The center exploits the periphery in a systematic way and confiscates

the surplus of the periphery's economies. This increases development in the core

countries and underdevelopment in periphery countries (Dickson 1997, 40). The

periphery then remains in a state of underdevelopment because it cannot use the surplus.

Those who ascribed to Dependency Theory believed the bourgeoisie who lived within the

periphery were so ingrained in the system of imperialism that they become 'comprador

bourgeoisie' without an interest in fighting capital from abroad or for the country's

independence. Such exploitation has over time changed forms and now is mostly

dominated by transnational corporations (TNCs) (Skarstein 1997, 45-6).

According to Skarstein, the main point of Dependency Theory is that

development in the center is the precondition for underdevelopment in the periphery

(Skarstein 1997, 45). As Frank says

> "Economic development and underdevelopment are the opposite faces of the
> same coin. Both are the necessary result and contemporary manifestation of
> internal contradictions in the world capitalist system. Economic development and
> underdevelopment are not just relative and quantitative, in that one represents
> more economic development than the other; economic development and
> underdevelopment are relational and qualitative, in that each is structurally
> different from, yet caused by its relation with the other. Yet development and
> underdevelopment are the same in that they are the product of a single but
> dialectically contradictory economic structure and process of capitalism…One
> and the same historical process of the expansion and development of capitalism
> throughout the world has simultaneously generated—both economic development
> and structural underdevelopment," (Frank 1969, 9).

He believed in order for the periphery to develop, weaker ties between the core and periphery were essential. Underdevelopment is not conceptualized as a stage rather as a process created by dependency existing along with development (Dickson 1997, 40). "An anti-bourgeoisie socialist revolution which would cut all ties with imperialism was, therefore, considered as the periphery's only way out of underdevelopment," (Skarstein 1997, 45).

Criticisms

There are several criticisms of Marxist theories of development. Dependency Theory specifically is criticized for being too broad to have tangible meaning. Dependency explains everything to the point that it is often seen as a tautological argument. "Poor countries are poor because they are dependent, and any characteristics they display are attributed to their dependence" (Larrain 1989, 177). Second, it cannot explain any outcomes which are counter to its expectations but there are examples showing that "dependence" does not necessarily cause underdevelopment and there are situations in which underdevelopment occurs in what most consider industrialized countries (Dickson 1997, 44).

The third problem is that while the Franken form of Dependency Theory argues that the reasons for underdevelopment are external, and thus one should seek to be independent of the international system, few countries have been successful upon removal from the international system. Cuba did not do well under such a policy. On the other hand, many countries, including the Newly Industrialized Economies (NIEs) have had success in developing through the international system.

Fourth, Dependency Theory really does not propose a distinct theory as to how

development does occur (Dickson 1997, 44-45). Frank admitted this

> "the usefulness of…dependence theories of underdevelopment as guides to policy
> seems to have been undermined by the world crisis of the 1970s. The Achilles
> heel of these conceptions of dependence has always been the implicit, and
> sometimes explicit, notion of some sort of independent alternatives for the Third
> World. This theoretical alternative never existed, in fact, certainly not on the non
> capitalist path and now apparently not even through socialist revolutions. The
> new crisis of real world development now renders such partial development and
> parochial dependence theories and policies invalid and inapplicable," (Frank
> 1969, 27).

Fifth, Dependency Theory also treats developing countries as a homogenous

group rather than noting their historical differences. It ignores the internal differences,

which will lead to different responses in the same situation. Therefore, what external

forces are exerted on a country are unanimously assumed to produce the same distortions

within the country (Dickson 1997, 41).

<div align="center">Feminist</div>

Feminist theories, while not widely popular in mainstream development theory,

do exist and are important in the discussion on modern slavery. The interest in Feminist

theories of development increased during the UN Decade for Women, 1976-1985, when

women's conditions throughout the world actually deteriorated. This provided fuel for

Feminist theorists. Over time, Feminism changed from being a purely Western woman's

concern to a worldwide movement embraced especially in Third World countries. In

fact, in the beginning of the 1980's, women in the Third World called for theories of

development that encompassed Feminism, and at conferences the idea of empowering

women to become agents of change rather than portraying them as the reason change was not occurring dominated (Bunch and Carillo 1990, Peet and Hartwick 1999, 165).

There are many different subsets of Feminist thought, including the strains of WID (Women in Development) and GAD (Gender and Development). For some scholars focusing on WID, the problems women faced were from a lack of participation in the process of economic growth, an overall "benevolent process," (Peet and Hartwick 1999, 164). For others especially those adhering to GAD, development was a paternalistic concept, "a masculinist enterprise" (Peet and Hartwick 1999, 176). Catherine Scott (1995), believed Dependency theorists and Modernization came from a perspective based on preconceived notions of gender, which dominated the practices and policies of international organizations and governments alike, even revolutionary governments (Peet and Hartwick 1999, 176).

Modernization, as conceptualized, required man to become industrial and rational, "receptive to new ideas, punctual, optimistic, and universalistic, with a counterpart in the modern efficient state with its new mechanisms of domination and power," (Peet and Hartwick 1999, 176). Scott believed this universal idea of modernization was an idealized notion of "masculine modernity," (Peet and Hartwick 1999, 176). Men had to leave the household, abandon traditions, and become part of the group of rational men while women and their role in the household were believed to represent the idea that nature could not be changed and people were not able to control this, as well as the ideals of the past. Women then were treated paternalistically, as invisible objects or simply a

means of determining how backward a country was. Thus, "(m)odernization involved the subordination of traditions, nature , and the feminine," (Peet and Hartwick 1999, 176).

For still other Feminists, the indicators of development did not adequately account for women and their work. One main concern for social Feminism was to reconceptualize women's labor. Social Feminism saw the work of raising children as important as material needs such as shelter and food. Nurturing and sexual satisfaction were also necessary. Each of these needs requires labor and normally women's labor. Traditional Marxist theory failed to understand this and that struggles concerning reproductive activity were fundamental. Women then were a "superexploited" class, which performs unpaid labor (Peet and Hartwick 1999, 166-168). Surplus production was funded by the labor of women, the unpaid labor of women. Development was then both a gender and class process.

For a long time, there has been a tinge of if not outright socialist undertones in Feminism. At the same time, left-wing Feminism criticizes Marxism because it failed to recognize the interactions and activities vital to the existence of women. While, appreciating "Marxism's liberating intent" and historic materialist approach, they felt Marx fell short since he did not directly address women's issues in his analysis (Mitchell 1966). For example Hartmann, an early theorist, believed that the analysis of inequalities between classes (ruling class over working class) missed the inequalities between genders, in other words, male domination. To move forward it was necessary to complete a full analysis of gender inequality. Hartmann believed that at the time Feminist analysis was not historical or materialist enough. It was essential then to

examine both Feminist and Marxists analysis of gender inequality to understand how capitalist societies developed and how this affected the situation of women (Hartmann 1984, 3). Some complained though that Feminist theories were simply taking Marxism adding in women and stirring (Peet and Hartwick, Theories of Development 1999, 169).

There were several potential solutions to gender inequalities in the developing world. First, women should be allowed increased participation in the economic system. This would allow them to gain resources, employment and income, which would lead to improvements in their living standards. Second, Feminist development theorists believed that by placing gender relations as the primary focus of theory, a reorientation in the discourse in development would occur, hopefully leading to the improvement of women's situations throughout the world. Third, the use of new indicators for development would more accurately capture the contribution of women to society "for example, the informal and rural sectors of the economy, the reproductive sphere as a vital component of development, or the relations between production and reproduction," (Peet and Hartwick 1999, 164, 177).

One example of Feminist theory in practice was the creation of DAWN (Development Alternatives with Women for a New Era). They argued that "short-term ameliorative approaches" aimed at improving employment opportunities for women were not effective, unless they were coupled with more long-term strategies to establish everyone's (especially women's) control over life shaping economic decisions they faced. This has lead to an empowerment approach to development for Third World women (Peet and Hartwick 1999, 165).

Criticisms

Feminism tended to conceptualize all women as being homogenous by suggesting that all women suffer the same oppression, which Lorde claimed was not the true. Many were critical of Feminist theory for essentializing femininity and not recognizing women had many different attitudes and even different levels of power. Not all women were the same. Second, some criticized Feminism because while it acknowledged that "differences should not be defined by the dominant sex," it did not also address the idea that it should similarly not be "defined by the dominant (Western) culture" (Peet and Hartwick 1999, 172, Minh-ha 1989). Finally, some criticized Feminism for not widely addressing the root causes of inequality in development.

Neo-Liberal

In the 1980's theorist began focusing on liberal economic policies as a new way towards development. The 80's are seen as a "counter-revolution" in the practice and theory of development. Coincidentally they also are known as "the lost development decade" in the Third World.

Neo-Liberalism criticized both the welfare state in the North and development theory in the South arguing that the government should not interfere with the economy in any country. Simply participating in the international economic system would lead to the greatest benefit for the greatest number of people. This could only occur if the market was not interfered with though, since the market regulates itself. By interfering with the market, countries will obtain less optimal outcomes. This applied to every state all of the

time. Never was there deviation or exceptions (Dickson 1997, 46, Lal 1980, Lal 1983).

In other words, completely free markets were essential for true perpetual development.

In Neo-Liberal thought, private enterprise and competition were the vehicles, which would drive development (Peet and Hartwick, Theories of Development 1999, 49-50). Liberalization of the financial sector, privatization of state enterprises, Foreign Direct Investment openness, low inflation and reducing trade barriers were all essential in this process (Mackinnon and Cumbers 2007, 263). Their belief was supported by evidence from the Newly Industrialized Economies (NIEs), which through improvements in the manufacturing industry were able to reach development. To some this suggested that the Neo-Classical ideas of comparative advantage where under developed countries should focus on providing primary commodities and developed countries should focus on manufactured goods, were dead. Even under-developed countries, by allowing free markets, could reach the same development success as that of developed countries (Peet and Hartwick 1999, 51). The nature of the international system then, was important for development but not as important as was conceptualized in dependency theories. It was domestic policies, which worked against the market.

These principles underlined the tenets of the Washington Consensus, which for many is synonymous with Neo-Liberalism and has formed development policy since the 1990s," (Mackinnon and Cumbers 2007, 263). The Washington Consensus specifically suggested the main priorities were fiscal discipline; public expenditure prioritization toward health, infrastructure and schools; tax reform by enlarging the tax base; financial liberalization with respect to interest rates; competitive exchange rates; trade

liberalization; Foreign Direct Investment liberalization; privatization; deregulation of entry and exit barriers; and property rights security (Williamson 1993, 1332-3).

These ideas were particularly important for policies pursued by the International Monetary Fund (IMF) and the World Bank. Both organizations require countries to make reforms in their economies in order to receive assistance. The reforms were once known as structural adjustment programmes (SAPs). Countries had to reduce public expenditures but also open trade and investment to others. The countries were pushed to compete in the global economy through developing their exports. These adjustment policies were later renamed economic recovery plans (ERP) and allowed for slower changes in the economy. In 1999, these policies were renamed again, and became the Poverty Reduction Strategies (PRS). The latter requires national governments to produce a detailed plan for poverty reduction. Additionally, countries had to consult with the IMF and World Bank, along with the local communities and NGOs to promote local empowerment and democracy within the country (Mackinnon and Cumbers 2007, 263-265, Willis 2005, 194).

These sentiments and polices were evident in a World Bank statement about Africa in 1981

> "(t)he constraints to development in Africa lay in its lack of human resources, overpopulation, political fragility, misguided policies and excessive state intervention. Development planning, ISI and state marketing boards had all failed to deliver the promised benefits. The report recommended the liberalization of trade, the promotion of exports and the reduction of state economic activity as a mechanism for increased economic growth and hence development," (Dickson 1997, 46)."

Criticisms

Many people heavily criticized Neo-Liberalism, and thus the Washington Consensus. First, some claimed it ignored the issue that markets are altered by various economic actors including people and states and thus some will benefit by adopting these polices while others will not. There is no guarantee that these benefits will be sufficient or equal for all (Dickson 1997, 47).

Second, critics noted that globalization is uneven.

"A closer look at the figures raises questions about the 'globalness' of this process. In fact, world trade has, if anything, become highly 'regionalized' in recent years in the sense that for the majority of countries the most important trading partners are neighbouring states," (Mackinnon and Cumbers 2007, 99).

For example, Dicken notes that of Western Europe's trade, two thirds of it is between European states (Dicken 2003, 41, Mackinnon and Cumbers 2007, 99). Thus, a country's success partially depends on the success of neighboring countries.

Third, many including Ha-Joon Chang, note that countries such as the United States and Britain did not develop through open trade policies and often the countries that succeed in developing were selective and strategic in how they became integrated with the world economy sometimes choosing forms of protectionism. He even suggests that when Neo-Liberal policies were adopted in the developed world, it in fact lead to a decrease in the growth rate. Additionally the Newly Industrialized Economies (NIEs), except Hong Kong, all used what Chang calls "strategic" integration rather than unconditional integration. For example, Singapore, while committing to free trade and relying on Foreign Direct Investment, also used subsidies to attract corporations it considered strategic. Singapore also had several state owned sectors in the economy

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including their Housing Development Board, which controls nearly 85% of housing in Singapore. Taiwan, South Korea, Japan, China and India also have many non Neo-Liberal policies, including tariffs, subsidies, lax controls on international property rights and state-owned enterprises including the banking system, but all found degrees of success while pursuing such policies (Chang 2008, 15,26,29-30,38).

Region

Though not explicitly stated, each of these theories, Modernization, Marxist, Feminist and Neo-Liberal theories, implicitly recognize the existence of inequality in development levels across regions. Practical, historical, and numerical reasons also compel the author to take a regional approach to development, and thus slavery.

Examining development and almost any international social science issue from a regional perspective is practical. Humans attempt to make sense of a complex world by grouping items of similar nature. One example of this is regions, which people categorize together in spatial clusters based on shared attributes (Rowntree, et al. 2003, 13).

Cantori and Spiegel specifically remark that region is a practical and vital unit in international relations. To them, scholars who focused on the state level were too narrow in their considerations, while those who examined the international system as a whole were too broad (Cantori and Spiegel 1970, 1,40). Using the state as a unit of analysis fails to recognize the influence of neighboring countries in an increasingly global world, while using the world as the unit of examination fails to recognize the commonly accepted distinctions of various parts of the world. This method is also applicable in

practice as many people attempt to find regional solutions to various problems and

challenges which are seen as a consequence of globalization but are too large to handle at

the state level (Bøås, Marchand and Shaw, The Political Economy of Regions and

Regionalisms: An Introduction to our Critical, Revisionist Inquiries 2005, 3)

Historically, region has been crucial to understanding international social

sciences. Russett acknowledges the "long and honorable tradition in the profession

which regards regionalism as the proper basis for world order, an alternative both to

fragmentation and to universalistic solutions," (Russett 1968, 321). This is in part due to

recognition by political scientists of "subglobal patterns of cohesion," (Nierop 1994, 10).

Thus, regions were central in analysis by 2005 and many believe their continued

prominence will persist no matter how delineated or ranked (Bøås, Marchand and Shaw,

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2005, 167).

Numerically, one can also see the merits of examining a phenomenon such as

development and thus slavery from a regional perspective. Concerning development,

MacDonald believes that most people recognize there are "distributional inequalities",

i.e. regional inequalities, at least sub-consciously (McDonald 1972, 4). Such inequalities

become apparent through examining variables such as income. Since the 1960s the

divergence between regions of the developing world, including East Asia and Sub-

Saharan Africa, in relation to that of the developed world have become apparent. The

incomes of East Asian and Sub-Saharan African countries averaged around $1/9^{th}$ or $1/10^{th}$

that of OECD members. Countries in the Caribbean and in Latin America were at about

1/3rd. In the 1970s, East Asia experienced very strong growth, but by 1998 Sub-Saharan

Africa fell to 1/18th the income of OECD countries (Ismi 2004, 11).

Another example of regional based inequalities is demonstrated through levels of

poverty. In fact, the gap between countries that are poor and countries that are rich has

increased. The World Bank determined there are 1.3 billion people living on less than $1

a day. Of these, 60% live in South Asia and Sub-Saharan Africa (Rowntree, et al. 2003,

38).

Additionally as Peet and Hartwick note:

"Other data frequently used to measure standard of living—poverty, life
expectancy, calorie intake, infant morality, population per physician, secondary
education and use of commercial energy and electricity—supports conclusions
apparent from the income tables: people in different kinds of places live at
entirely dissimilar materials levels" (Peet and Hartwick 1999, 7).

They continue, noting that while in some places babies almost always survive the first

minutes of birth, in others death often follows (Peet and Hartwick 1999, 3-4). The data

clearly indicates there are regional differences in development.

What Region?

The make-up of regions though is quite a bit more complicated. Regions are

usually stereotypes of some characteristic(s) that are common and differentiate one area

from another (Rowntree, et al. 2003, 13). Many people conceptualize region based on

criteria such as geography, history, society, and political/economic relationships. Nierop

suggests that while it is preferable for a region to have some element of common culture,

it might not be a sufficient condition (Nierop 1994, 14, 191). Russett suggests that while

there may be cultural characteristics that are similar in an area there may be just as many

that are different (Russett 1968, 319).

Minshull believes, region, as a familiar idea that we take for granted, "...floats

away when one tries to grasp it, and disappears when one looks directly at it and tries to

focus." He proceeds to suggest that region appears obvious but is challenging to

delineate (Minshull 1967, 13). MacDonald believes the region is one of the most

controversial subjects in geography noting "it requires a certain bravado, if not downright

foolhardiness, to attempt an impartial review and assessment" (McDonald 1972, vii).

Depending on the topic at hand the make-up and importance of region changes

(Isard 1975, 1). According to Russett, "(d)ifferent definitions and different criteria will

produce different regions, and no two analysts may fully agree as to what the appropriate

criteria are," (Russett 1968, 317). Israd also notes that when there are difficult societal

issues it is a luxury to spend time collecting data, testing and speculating which grouping

of region is the most appropriate. The most "orthodox" thing to do is to examine

standard works or even encyclopedias to see how they group regions (Isard 1975, 1-2, 11-

13).

<center>Limitations of Region</center>

Hartshorne sees the division of earth into regions as a mosaic, close to the truth,

but not to be mistaken for the truth. Region to the geographer is like a model to the

natural scientist. Reality might not be observable in either, but an approximation, such as

through a model or through region, is an acceptable stand-in. While earth is possibly

more like a continuum, as humans, we attempt to define beginning and ending points

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along such continuums. Electro-magnetic waves are an excellent example of this. When gradual change exists, but there are still distinct differences within the continuum, it is acceptable to use a model to grasp at an understanding of the phenomenon, so long as we remember that it is indeed only a model. Minshull notes a danger in heeding the criticisms and trying to make something, such as region, so precise. It cannot be precise. He states "it will be more useful in the long run to admit the shortcomings but also to state quite clearly what the regional method can and should do," (Minshull 1967, 16-7, 68).

Purpose of Theory and Region

While this is only a brief discussion of the theories surrounding development, and of the rational for pursuing a regional perspective, it does provide a basis for the study dictated in the next chapter. Development theories will help provide the author with a framework for choosing variables to test. The discussion on region simply helps when considering how to delineate a regional variable, which the author will test. This is all to say that from this section the author derives the motivation for the model used in this paper.

CHAPTER FOUR: STUDY

In determining how to approach this study, the author determined the best method was to take a four-step approach. The first step was to rerun Bales' study with some modifications to account for the issues addressed in Chapter 2. The second step was to add additional variables based on the development theories explored in the previous chapter. This mainly serves as a means of ensuring all potentially significant variables were included in the study. The third step was to determine if the addition of a regional variable significantly affects the model, indicating that some difference in region is not previously taken into account in the model. The final step was to separate out the countries based on regions to examine the differences in the variables of interest for the model as a whole. This helps one determine whether or not there are in fact differences in the predictive factors of slavery in different regions.

In order to provide symmetry between this study and the study performed by Bales, the author chose to perform multiple regression analysis for all of the following studies. Additionally a multiple regression analysis is simple and thus easier to interpret than other potential models. It is also commonly used in this type of research. To correctly use such a model in this study though, the issues raised in the previous chapter must first be addressed.

Step One

In order to rerun Bales' model it is important to first address the issues raised in Chapter 2 about his study. His model was

$$Y = \beta_1 + \beta_2 INFMOR + \beta_3 POP014 + \beta_4 WORKAGR + \beta_5 COR + \beta_6 ENDSPEC$$

Where

$Y =$ incidence of slavery

$INFMOR =$ infant mortality rate

$POP014 =$ population $0 \text{-} 14$

$WORKAGR =$ workforce in agriculture

$COR =$ corruption

$ENDSPEC =$ threatened or endangered species

The first major issue to address is that of incidence of slavery, a categorical dependent variable. As discussed previously, using a categorical dependent variable is problematic. Understandably, Bales would want to use a categorical variable for increased accuracy rather than using his "mushy" estimates, but to use a multiple regression analysis it is essential that the dependent variable is continuous. By choosing a modified version of the estimates for all 111 countries as a base for the dependent variable, the author is able to continue using simple multiple regression analysis. Bales' estimates are problematic. These are guesses. But as far as detail into the country level estimates this is the most comprehensive information available to the public.

To use the estimates Bales provides as they are though would be problematic. Though there are more slaves in one country, this does not accurately indicate whether or not that country has a proportionally larger issue with slavery than another country. The larger the population, the more slaves one should expect in a particular country. If one does not control for population, there is potential for misleading results including the

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potential of false correlations due to scale. Thus, a factor may appear to be more significant simply because both the independent and dependent variable did not control for population size not because there is actually a significant relationship.

Bales provides only a range of victims so the average of this range was used for this study. The author divided this average by the estimated population of the country, in order to provide a scale of the problem. This tells us for every citizen in this country how many slaves there are. Since this result is a decimal it is multiplied by 100,000 to create an easily understandable variable, slaves per 100,000 people.

$$\frac{\text{average victims}}{\text{population in 1997}} * 100000 = \text{number of victims per 100,000 people}$$

While it is true that slaves are not included in the population estimate, using this equation provides an accessible way to understand the scale of slavery within the country while controlling for the inevitable affect of population size.

The next step to running Bales' study is to reexamine his indicators for population pressure, poverty, environmental destruction, social vulnerability, government corruption, and growth, all of which he indicated are important in predicting slavery. Bales seems to measure population pressure by population 0-14. This indicator, is from the *World Statistics Handbook 1997,* and is an excellent indicator for population pressure since the presence of young children will indicate in some sense a portion of the population that needs to be cared for but cannot contribute to society at a large scale. The author believed that as the percentage of the population 0-14 increased, slaves per 100,000 would also increase.

Though not explicitly stated, percentage of the population in agriculture could be an indicator of poverty. While this is theoretically a good indicator of poverty, there were only 67 observations for the variable, or around 60% of the countries of interest. Several potential alternative variables for this included unemployment, and GDP per capita Purchasing Power Parity, both which are found in the CIA *World Factbook 1997*. For the first, the author was able to obtain 86 observations or 77% of the countries of interest. For the second, all observations were available. For this indicator, the author chose to only use GDP per capita PPP, simply because it had the most observations, but the author also included unemployment rates at another stage in the study. The author believed that as this indicator increased, slaves per 100,000 would decrease.

Threatened species, which Bales sees as an indicator for environmental destruction, came from the United Nations *World Statistics Handbook 1997*. Endangered species, as previously noted, is another problematic variable and is misleading. Environmental destruction can be measured in several ways. One potential alternative indicator, and one that is widely available, is carbon emissions per capita, which has been popularly linked to global warming. This was found simply by

$$\frac{\text{carbon emissions}}{\text{population}} = \text{carbon emissions per capita}$$

Both indicators came from the United Nations *World Statistics Handbook 1997*. Other potential variables such as water pollution, or the percentage change in arable land or forested areas, might be preferable, especially since slaves are often used in work that causes these impacts, but this information is not widely available for this time period and for the number of countries of interest (Bales, Trodd and Williamson 2009, 119-123).

The author believed that as carbon emissions per capita increased, slaves per 100,000 would decrease. This is in large part due to the perception that as carbon emissions per capita increases, so does development.

Infant mortality rate appears to be an indicator for social vulnerability. The information for this variable also came from the *World Statistics Handbook 1997*. This is also a very good indicator in part since there are many observations, 109 of 111. Additionally, infant mortality rate is widely thought to indicate a level of vulnerability due to lack of social resources such as food and access to health care. For these reasons the author left this variable in for this portion of the study. The author believed that as infant mortality rate increases, slaves per 100,000 would also increase.

The Corruption Perceptions Index indicates the perception of Government corruption. This indicator was problematic because it had too few observations, 43 out of 111 or 39%. An alternative indicator for corruption is essential. One source indicated that inflation had significant predictive power in corruption. Inflation rates came from the World Bank's Data Catalog. Another potential indicator was openness in the economy. Openness is traditionally measured in Economics by imports and exports to GDP (Al-Marhubi 2000).

$$\frac{Imports + Exports}{GDP}$$

Imports and Exports came from the World Bank while GDP came from the *World Statistics Pocketbook 1997*. The author was able to find observations for all of the countries of interest. Freedom of the press, which came from Freedom House, was also

cited as a good predictor of corruption. This suggested that the freer the press is, the less

likely there is to be corruption among politicians since they are more likely to be held

accountable (Lambsdorff 2006, 40). Finally, GDP per capita was also suggested as a

variable (Al-Marhubi 2000). This was supposed to suggest some form of development,

with the belief that as development increases, corruption will decrease. Since GDP per

capita Purchasing Power Parity was already used though, the addition of GDP per capita

would be a problematic. Additionally a test to determine if it was significantly related to

the Corruption Perceptions Index showed it was not so this variable was removed from

consideration. Each of these indicators was tested against the Corruption Perceptions

Index with the following results:

Table 4.1: Alternatives for Corruption

Variable	P-value	Adjusted R^2	Observations
Inflation Rate	.055	.0644	43
Openness	.134	.0317	42
Freedom of Press	<.000	.4926	43

The author chose to use freedom of the press as the indicator for corruption. It was the

most significant at a level below .001 and had the highest adjusted R^2 value of all the

variables when regressed against corruption at .49. This means that 49% of the variation

in the perception of corruption in countries for which the author had data was explained

by the variation in freedom of the press. The number of observations is so low because

of the small number of observations for corruption, not freedom of the press, which has

109 observations. This is not a perfect indicator and obviously does not explain the

whole model but is the best alternative indicator. The author believed that as freedom of

the press increases, so would slaves per 100,000.

Bales mentions growth as an important factor, though this is not included in his

study. Here the author added GDP annual growth rate to account for this. The author

took this adjusted model, using percentage of the population between 0 and 14, GDP per

capita PPP (Purchasing Power Parity), carbon emissions per capita, infant mortality rate,

freedom of the press and GDP annual growth rate as the independent variables and

regressed these against the slaves per 100,000, the dependent variable.

$$Y = \beta_1 + \beta_2 POP014 + \beta_3 GDPPPP + \beta_4 CARCAP + \beta_5 INFMOR + \beta_6 FREPRS + \beta_7 GDPGRW$$

Where

$Y =$ slaves per 100,000

$POP014 =$ population 0 - 14

$GDPPPP =$ GDP per capita purchasing power parity

$CARCAP =$ carbon emissions per capita

$INFMOR =$ infant mortality rate

$FREPRS =$ freedom of the press

$GDPGRW =$ GDP annual growth rate

Once the whole model was run, the author took a step-by-step process to

eliminate variables. The author removed the least significant variable first and then

consulted indicators such as the coefficient and p-value of the F-test to determine if

removing the variable was a statistically sound idea. This continued, one at a time, until

the variables remaining were either all significant or there was good statistical reason for

them to remain.

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Step Two

Once the significant variables from the previous step were determined, the next step was to examine the development theories from the preceding chapter to devise other variables to test. The author included this step because while Bales suggests that the variables he tested are significant, there are concerns with his results as well as some interesting variables, which are missing such as a variable accounting for gender differences. From Modernization theory, the author drew inspiration to test indicators such as percentage of the population working in industry, and various standard of living indicators (including infant mortality rate). The author believed that as the percentage of the population working in industry increased, there would be a decline in the number of slaves per 100,000, but as infant mortality increased, slaves per 100,000 would also increase. Additionally, both Modernization theory and Marxist theories seem to indicate that growth in the economy should indicate a change in slave levels though the former thinks it will decrease and the latter believes it will increase. The author leans towards the former.

Feminism calls for a re-conceptualization of the indicators for development to ones that are more focused on traditional forms of women's work, many of these indicators are not available for this time though, except for ones such as infant mortality rate, which the author uses in the previous section. Other variables that shed light on the status of women, and thus potentially slaves per 100,000, would be the ratio of men to women, percentage of women in the workforce and secondary education for women. The

author believed as the former increased, slaves per 100,000 would also increase but as the latter two increased, slaves per 100,000 would decrease.

Openness of the economy is an excellent variable to add to this study as an indicator of Neo-Liberal development. Here the author believed that as openness increased slavery would decrease. Other variables were also added including arable land, unemployment rate and refugees, which are all general indicators of development but not attached to a particular theory previously discussed. All of these variables came either from the *World Statistics Pocketbook 1997,* the World Bank or the CIA *World Factbook 1997*. For the variables listed, the author believed that as they increased, so would slaves per 100,000

One note is necessary on refugees. While other such indicators were controlled for population size refugees was not. This is a multidimensional choice. Refugees can both stay in country or move to another country. If the former were the only case it would be logical to control for population because it could represent what portion of the population were refugees. In cases of major disasters or upheavals people simply move to where they feel safer, whether a different place in country or in a neighboring country and occasionally a non-neighboring country. They do not consider the size of the country they may head to, its social resources etc, rather simply survival. In other words, the size of the country will not determine how many refugees end there rather the number of refugees that end there will depend on factors such as safety. Additionally leaving this variable as is, rather than controlling for population, does not pose a problem for the

study since there will not be a false relationship between it and slaves due to scale since the latter is controls for population size.

Indicators such as the Gender Empowerment Measure (GEM) and the Human Development Index (HDI) were not included in this study. Both are composite indicators. They contain multiple variables and parsing out what part of the indictor was significant in predicting slavery would be difficult yet this is precisely what this study aims to do.

For this step, the author determined a mildly different approach was more suitable for the data. Since there were many variables to test, and since throwing them all into the model at once would likely lead to committing a Type II error, accepting the null hypothesis when it should not be, another approach was necessary. Each variable was tested in the model determined in the previous step. The variables that showed indications of significantly improving the model were kept and all of these were thrown into a model, which then was also examined in a similar fashion as in the first step. The most insignificant variable was removed and the author consulted indicators such as the coefficient and p-value of the F-test to determine if removing the variable was a statistically sound idea. This continued one at a time, until the variables remaining were either all significant or there was good statistical reason for them to remain.

Step Three

After obtaining these results, the next step was to add a regional variable to test the hypothesis that regional variation plays a role in levels of slavery. This step is vital in understanding this study and allows one to see if there is something about region that is

not captured by the other variables in predicting levels of slavery, for example differences in these factors across regions. If region is significant, then one can know there is some regional variation, which is helping predict the levels of slavery.

The discussion from the previous chapter about region provided inspiration for determining a suitable regional grouping. These groupings are not perfect but serve as an imperfect model of what the author is trying to obtain. In order to choose an appropriate regional alignment the author examined some of the major international organizations to see how they group countries together. These organizations included the United Nations, the International Labor Organization, the International Organization for Migration, the World Bank, United States' State Department, the Central Intelligence Agency, and another regional category the author created called "Western." This grouping separated out countries one might consider part of the western world (United States, Western European Countries and Australia) and placed them in one group while maintaining the groupings of other countries as the State Department did in addition to creating a grouping for Latin America.

When looking for a regional categorization for this paper there were two things the author kept in mind. First, too few categories would mean that problematic groups would occur. Grouping Saudi Arabia with South Africa seems strange though IOM's general grouping system did just that. Second, too many regions would also be problematic because it would lead to too few observations within the specific regions. This occurred in the case of the World Bank where one region only had three observations and another region only six. If there are too many groups, there might not

be enough observations in each group to test all of the significant variables due to the requirements for OLS (Ordinary Least Squares). For example, if there are four explanatory variables, including the constant, there must be at least five observations for that region. In fact, if there are not five, the only result will be an error message.

After examining all of the potential regional groups, the author chose to use the State Department's. The regions as defined encompassed some of the major concerns about groupings the author had including whether they were too broad or too narrow. This system is not without fault, though, including the grouping of South American countries with the United States and Canada, which is certainly questionable. Overall though, this grouping provides a means for testing the hypothesis, but future improvements in groupings will likely be necessary. The State Department divides the world into six general regions, Africa (Sub-Sahara), East Asia and the Pacific, Europe and Eurasia, the Near East (North Africa and the Middle East), South and Central Asia, an the Western Hemisphere. For a complete list of the countries and their regional groupings, please see Appendix A. The author ran the model delineated in the previous step again with the addition of the regional variable to determine if region was a significant predictive factor of slaves per 100,000.

Step Four

The next step was to separate the countries and their related data into their respective regional groupings to examine the difference in the significant factors as determined by the previous steps. Again, this is different from the previous step because before the author was testing whether or not something about region was significant in

predicting slavery per 100,000 that was not captured by the other variables. Here, the author is examining the information separated out by region to determine whether or not there are in fact differences in the predictive factors of slavery per 100,000 in the individual regions.

All the variables used in each stage of this study came from 1996 (they are in the 1997 publications but represent the year before) except in rare cases where either the variable was not available for that year, though none of the significant variables fit this description, or where individual countries collected data from a previous year. This occurred in the case of Kazakhstan's annual GDP growth rate, which came from 1995. In all cases, the data was relatively new and not likely to have changed much.

Determining a Good Model

In determining what characterizes a good model, the author considered several factors. First, seeking a high R^2 value can lead to problems in the study. The R^2 value is often used to determine the "goodness of fit" of the regression line in a model. Adding additional independent variables will automatically lead to a higher R^2 value, and sometimes it is tempting just to add in as many as possible to obtain a higher value. To counter this the author examines the adjusted R^2. It takes into account the new variables and allows for a penalty if a useless variable is included in the model. If the adjusted R^2 is significantly smaller than the R^2, it suggests that there are useless variables (Doane and Seward 2007, 565). Thus, it is possible to have a high R^2 value and a very low adjusted R^2 value.

Second, simply because the indicator is not in and of itself statistically significant, this does not mean it should be discarded from the analysis. It is possible that while the indicator is not statistically significant, it is able to explain quite a bit of the dependent variable, but that another variable is also explaining some of that variation. Remember that a regression analysis tests the individual indicators while holding everything else constant to see if that particular variable is significant. Even though those two variables are explaining some of the same thing, it is possible that they are still explaining other things that are equally as valuable and should therefore be included.

Some argue that this likely means there is some type of multicollinearity. Multicollinearity refers to a situation in which the independent variables are not independent of each other and are therefore inter-correlated. In perfect multicollinearity, there is a perfect correlation between two independent variables but in imperfect multicollinearity, the relationship is not perfect. The latter is unavoidable in some sense. This can be tested through the Variance Inflation Factor (VIF), which effectively tells us "the speed with which variances and covariances increase," (Gujarati and Porter 2009, 328). In other words, the VIF indicates how severe the multicollinearity is. Normally there is only concern if the VIF goes above 10 but some have even argued that this should not be considered a problem at all (Doane and Seward 2007, 581-582).

Additionally, if one takes out a variable that should not be, there will be a negative impact on the F-Statistic and the adjusted R^2 value. The F statistic is very important in multiple regression models such as the ones performed here. This tests the hypothesis that all the variables included simultaneously have a slope coefficient of 0 and

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the p-value of this statistic denotes the overall significance of the multiple regression model.

A good model should be as precise as possible but this is only one aspect of the issue. The model also needs to be logical. There cannot be spurious relationships. Something might appear significant but if it does not make sense and other variables can explain the variation then it should be disregarded. At the same time, if the adjusted R^2 and the p-value of the F statistic decrease one probably should not remove that variable and instead leave it in the analysis. With this in mind, the author commenced with the data analysis.

CHAPTER FIVE: RESULTS

As described in Chapter 4, the author took a four-step approach to this study. The first step was to retest Bales' model with the new variables. This model, through a step-by-step process, was reduced to include only those factors that were significant or showed signs of major interplay within the model. Second, the author individually added indicators derived from an examination of development theory to the model determined in the first step. After the significant ones were determined they were all added into the model and a similar step-by-step process that characterized the first portion of the test was applied to this model until only the most significant variables, or that showed signs of major interplay remained. Once this base model was determined, the third step was to see if region as a variable played a role in determining levels of slavery. This basically shows whether or not there is some characteristic about region that is not taken into account by the model as previously stated. The fourth step was to take the base model and apply it to the regions individually to see if there were in fact major differences in the predictive power of the variables within the regions. If there are differences, this simply suggests that one cannot expect a model for the world to really tell much about how to predict slavery at the regional level.

Prelude

Before proceeding with the results, a particular issue must be addressed. Each of the following tests was performed prior to the results provided here. After examining the results closely, it became clear that two outlier countries were skewing the data. When these two countries were removed from the model, what previously appeared to be a viable model, fell to pieces. For this reason, India and Mauritania were removed from the analysis meaning only 109 countries were examined in this study. India is widely known to have severe issues with debt-bondage, though such a relationship is illegal. In Mauritania, a form of classical slavery, while technically outlawed, is widely accepted as a common cultural practice. A more detailed discussion of the justification for their removal can be found in Appendix B.

Step One

The first step to testing the hypothesis that there are regional differences in the predictive factors of slavery was to rerun Bales' study with some modifications to account for the issues addressed in Chapter 2. This included regressing the dependent variable, slaves per 100,000, against the percentage of the population between 0 and 14, GDP per capita Purchasing Power Parity, carbon emissions per capita, infant mortality rate per 1,000 births, freedom of the press and GDP annual growth rate.

$$Y = \beta_1 + \beta_2 POP014 + \beta_3 GDPPPP + \beta_4 CARCAP + \beta_5 INFMOR + \beta_6 FREPRS + \beta_7 GDPGRW$$

When the author obtained the results from this study, it was apparent that some of the variables were not significant. Before eliminating variables though, it was important to ensure there were no issues with multicollinearity so that no variable was discarded when it should not be simply because its interaction with another variable made it appear insignificant. The author checked for multicollinearity through Variance Inflation Factors (VIF), and by examining coefficient changes in the remaining factors when a variable was removed. The VIF test at this stage showed that while there is some multicollinearity between the variables that it is imperfect, and well below the accepted cut off of 10, and therefore not a concern for this study.

Instead of immediately scrapping all insignificant variables, the author, as previously stated, decided to take a step approach. Each step eliminated the least significant variable in the equation. This allowed the author to see how the removal of each variable affected the other variables. The author eliminated variables until those that remained either were significant or could reasonably be believed to influence the prediction of slaves per 100,000. Since this is not the last step in the process of determining a model, it was vital to not eliminate anything that might in the end be significant, but it was also important to not keep variables that clearly were not. The results from this process are as follows:

Table 5.1: Results from Redone Bales' Model [3]

Test	Test 1	Test2	Test 3	Test 4	Test 5	Test 6
F-Statistic	1.54	1.85	2.31	2.98	4.24	8.32
p-value	0.1740	0.1106	0.0626	0.0348**	0.0170**	0.0048***
Adj. R^2	0.0301	0.0391	0.0481	0.0541	0.0586	0.0646
Independent Variables						
Population 0-14	2.448029	2.464913	2.470674	--	--	--
	0.59	0.60	0.60			
	0.555	0.551	0.548			
GDP per capita PPP	-.0013553	--	--	--	--	--
	-0.27					
	0.786					
Carbon Emissions per capita	7173.547	3571.679	--	--	--	--
	0.37	0.25				
	0.713	0.802				
Infant Mortality	1.625306	1.608748	1.604446	2.012471	1.994118	1.752297
	1.63	1.62	1.63	2.82	2.80	2.88
	0.106	0.107	0.107	0.006***	0.006***	0.005***
Freedom of the press	-1.187395	-1.140984	-1.120363	-.9375092	-.9057867	--
	-0.88	-0.86	-0.85	-0.73	-0.71	
	0.382	0.394	0.400	0.468	0.481	
GDP annual growth rate	-2.861526	-2.986619	-3.08398	-3.008994	--	--
	-0.67	-0.70	-0.73	-0.72		
	0.507	0.484	0.466	0.475		

After testing the full model, it became clear that there were some insignificant variables. The next step then was to remove one variable at a time. The first to be removed was GDP per capita Purchasing Power Parity. It was the least significant of all the factors in the previous test. After removing the variable, the author ran the test again. Not much changed, except the coefficient and p-value of carbon emissions. This suggests there is some interrelationship, or multicollinearity between the two. This change is not a real concern though, since again the VIF values are not high enough. Additionally, the p-value of the F-statistic decreases (.1106) and the adjusted R^2 value

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[3] * Significant at the .10 level
** Significant at the .05 level
*** Significant at the .01 level

increases (.0391). Both are good signs but the model is still not very good overall since it only explains 3.91% of the variation in the model.

Next, the author eliminated carbon emissions. Again almost everything remains about the same including all the coefficients. The only real difference visible here is a decrease in the F-Statistic's p-value (.0626) and an increase in the adjusted R^2 value (.0481). Again, this is an improvement but there are still insignificant factors remaining.

In the fourth test, the author eliminated another variable, population 0-14, since the p-value, .548, suggests it is not significant in this relationship. There were some changes in the coefficients including the coefficient for infant mortality. Though there appears to be overlapping relationship between population 0-14 and infant mortality rate, further tests and examination of the R^2 and adjusted R^2 along with further examination of the p-value provide reassurance that the removal of population 0-14 is justified. Further reassurance is provided by a VIF test showing the multicollinearity is well below the normal cutoff of 10, letting the author know that this variable is not simply insignificant because of an interrelationship with infant mortality rate. Again, a decrease in the p-value of the F-statistic and an increase in the adjusted R^2 are signs that this model is moving in the correct direction.

In the fifth test, the author removed GDP annual growth rate because its p-value in the previous test (.475), showed that it was not significant in the prediction of slaves per 100,000. After removing this variable, the coefficients do not change much and the p-value of the F-static along with the adjusted R^2 again indicate that the model is moving in the correct direction.

In the sixth test, the author removed freedom of the press because its p-value suggested that it was not significant in predicting slavery per 100,000. Once it was removed, the coefficient for infant mortality, the only remaining variable, did not change much. Also again, the p-value for the F-statistic improved (.0048) and the adjusted R^2 improved, moving to .0646. The p-value for infant mortality is clearly significant at .005 and therefore the author decided to keep this variable. This variable alone though only explains 6% of the variation in the model (as witnessed by the adjusted R^2 value). This means that overall it is not explaining much.

Step Two

The next step was to see if any of the development factors the author identified in the previous chapter were significant in predicting slavery. The author took the base model from above and tested the other factors individually. Those that were significant were all placed in one model. From there, the author removed insignificant variables until there was reason to believe the remaining variables should be kept. Some of these categories overlap the categories in Bales' model but test different aspects of the factors. These are a selection of those results:

Table 5.2: Test of Other Development Factors

Test	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6
F-Statistic	5.02	7.19	7.39	12.15	3.70	8.11
p-value	0.0083***	0.0012***	0.0011***	0.0000***	0.0053***	0.0000***
Adj. R^2	0.0705	0.1111	0.1335	0.1968	0.1615	0.2465
	N=107	N=100	N=84	N=92	N= 71	N= 88
Independent Variable						
Infant Mortality	1.97842	-1.328555	1.694329	1.403932	-.9898795	-.2833838
	3.14	-1.00	2.47	2.52	-1.61	-0.24
	0.002***	0.319	0.016**	0.014**	0.113	0.811
Women in Workforce	-2.458894	--	--	--	.1773819	-3.178172
	-1.29				0.23	-1.80
	0.200				0.821	0.075*
Secondary Education Women	--	-5.861594	--	--	-3.227484	-3.690847
		-2.68			-3.55	-1.90
		0.009***			0.001***	0.061*
Unemployment Rate	--	--	3.679283	--	-2.292742	--
			2.23		-1.98	
			0.029**		0.052*	
Refugees	--	--	--	.00048	-5.47e-06	.0004557
				4.15	-0.09	3.99
				0.000***	0.925	0.000***

When controlling for infant mortality rate, which the author found significant in the previous step, there were a few new factors that were significant when added. These are not the only variables that the author tested but simply the ones worth noting. Out of these, secondary education of women, unemployment rate and refugees are all significant at the .05 level. Women in workforce is not technically significant at .2000 but because the t-score is above 1 and the p-value does not suggest it is entirely impossible it might have value it was included. The author then added in all of the variables to see how they interact in the model. Both women in the workforce and refugees were not significant. There is a problem here though. If all these variables were included, only 71 of the original 109 observations, or 65%, end up being used in the model. This is due to the fact that only 71 countries have observations for all of the factors. This is really too low for

comfort and means that the results are not very representative of the population as a whole. In other words, the results are skewed and one cannot trust the results obtained, especially since it is likely that the countries represented are from the developed world. This puts the reliability of the study in question.

The previous tests shows that the unemployment rate in test 3 has the lowest number of observations. It is likely that this is related to the large decrease in observations in the model as a whole. Additionally, unemployment is often believed to be a problematic variable based mostly on guesses, approximations and entailing only those actively seeking work. While this variable might be interesting, there simply are not enough observations in the end to justify keeping it. Once this variable is removed, the observation count moves up to 88, or 80% of the original observations. While more observations would be preferable, this is better than continuously throwing out variables that do not have a complete response rate, instead of seeking significant relationships. By taking out unemployment, the significance levels of the other variables change. All of the remaining variables, minus one, are now significant; women in workforce at .075, secondary education of women at .061 and refugees at a level below .001.

These results are certainly interesting and the presence of two gender indicators suggests that there is certainly some relationship between inequalities in gender and levels of slavery. Additionally, the fact that number of refugees is also significant indicates that a degree of instability in the country can also lead to increased levels of slavery. Finally, the lack of a significant growth variable within this model puts into

question the assertions of both Modernist and Marxist theories that growth will be connected with changes in the level of slavery within countries.

An important thing to note here though is that infant mortality rate is no longer significant at a p-value of .811. The question then becomes "should this variable be thrown out?" From test 2, it is apparent there is some relationship between infant mortality and secondary education of women. The addition of the latter leads infant mortality rate to appear insignificant. When regressed against each other, the p-value is below .001 and the adjusted R^2 value is .7541. This means that over 75% of the variation in infant mortality can be explained by secondary education of women. At the same time there is quite a bit, that is not explained. The author decided to keep infant mortality within the model to see if maybe at the regional level it has some value. It is believed that the amount of overlap between the two variables makes infant mortality appear as though it is insignificant while it may have some important predictive power.

With these variables in the model, it becomes obvious that the p-value of the F-Statistic is below .001 and that the adjusted R^2 has reached .2465. In other words, the model as stated explains 24.65% of the variation in slavery per 100,000. This is much better than the results obtained in the previous step.

Step Three

The next step was to take the model developed in the previous section, known as the "base model", and add region to see if there is something different about this variable, which is not captured in the model as previously stated. To do this the author added the State Department Region variable to the model.

Table 5.3: The Addition of Region

Test	Without Region	With Region
F-Statistic	8.11	7.30
p-value	0.0000	0.0000
Adj. R^2	0.2465	0.2660
	N=88	N=88
Independent Variable		
Infant Mortality	-.2833838	-.3248799
	-0.24	-0.28
	0.811	0.781
Women in Workforce	-3.178172	-1.980829
	-1.80	-1.06
	0.075*	0.291
Secondary Education Women	-3.690847	-4.393587
	-1.90	-2.25
	0.061*	0.027**
Refugees	.0004557	.0004515
	3.99	4.01
	0.000***	0.000***
State Department Region		32.44788
		1.79
		0.077*

The test shows that region is significant, .077. Some of the coefficients change

when adding region suggesting there is some relationship between the variables including

changes in the coefficients of both gender variables. This clearly suggests there is some

interrelationship between gender and region, which could simply be indicating that there

are regional differences in the statuses of women. A VIF test shows the interrelationship

is not large enough for concern; even if the VIF was large, it would not actually be a

problem since in the next step the author examines whether or not there are regional

differences in these variables predictive powers of slavery.

One thing to mention is that women in the workforce is no longer significant at a

p-value of .291. While this may be the case, this is considered the base model and both

women in the workforce and infant mortality are kept in the model. Region is kept in the

model as well because the adjusted R^2 value improves with its addition. The model as stated explains 26.6% of the variation in slavery per 100,000.

Step Four

To understand how this relationship helps though, it is best to separate out the data to show the differences in the data by region. This allows one to see if there are in fact differences in what can predict slavery in regions. For example, while secondary education of women might be significant in one region, it might not be in another region. The author applied the base model to regions individually, which will show whether or not all the predictive factors determined at the world level are significant at the regional level. If all are significant, then no regional variations in the predictive factors of slavery exist. If there are differences in the significant factors, then the author could reasonably suggest there are differences in what predicts slavery in different regions.

Table 5.4: Regional Variation

Test	Africa	East Asia & Pacific	Europe and Eurasia	Near East	South Central Asia	Western
F-Statistic	0.62	0.85	2.29	2.80	5.29	0.82
p-value	0.6535	0.5433	0.0873*	0.2123	0.0679*	0.5649
Adj. R^2	-0.0914	-0.0648	0.1463	0.5065	0.6818	-0.0879
	N=19	N=11	N=31	N=8	N=9	N=10
Independent Variable						
Infant Mortality	-.6782378	-.3258112	-3.236497	-1.184956	8.850463	1.198465
	-0.51	-1.00	-1.39	-2.63	0.85	1.42
	0.618	0.356	0.175	0.078*	0.441	0.215
Women in Workforce	-1.185415	.7949065	-2.474521	1.015253	2.43529	1.344924
	-0.52	0.70	-1.10	0.83	0.12	1.30
	0.609	0.513	0.281	0.466	0.907	0.250
Secondary Education Women	-2.737554	-.7614357	-5.053602	-.2713363	12.22473	-.1879409
	-1.24	-0.82	-2.45	-0.52	0.66	-0.11
	0.234	0.442	0.021**	0.638	0.543	0.914
Refugees	-.0001672	-4.06e-06	-.000061	.00000411	.0020249	.0000633
	-0.89	-0.04	-0.81	0.03	2.70	0.88
	0.387	0.971	0.426	0.978	0.054*	0.420

When these factors are examined on the regional level, some very interesting results appear. First, the factors that are significant at the international level are not necessarily significant in all of the regional groupings. For example, in Africa none of the factors show up as significant. In Europe and Eurasia though, secondary education of women is significant in predicting the level of slavery but in the other regions, it is not. The variable refugees, is important in South Central Asia but is not anywhere else. It is also significant that the coefficient on refugees in South Central Asia is almost 4 ½ times larger than that of the World model. This indicates a much stronger relationship between refugees and slavery in this region than the world as a whole, which is evidence by the lack of a significant relationship in the other regions. Women in the workforce does not show up as significant within any of the regions. This is probably why in the previous test when region was added women in the workforce no longer showed up as significant.

It is also important to note though, that infant mortality rate, which the author considered throwing out, is significant in the Near East. Some of these results do not show up as significant perhaps because of the low n values, again which represent the number of observations for that region. Another possibility is that some of these variables might not show up as significant because there is not much regional variation in the variable of interest. The author believes these results show something else though.

The results here suggest that what predicts levels of slavery throughout the world will vary based on the region being examined. One cannot simply look to the international level to understand what is occurring and to do so will mean some of the nuances necessary for understanding the problem will be missed. What appears to matter at the international level only really matters in some regions.

CHAPTER SIX: CONCLUSION, IMPLICATIONS AND FURTHER RESEARCH

Conclusion

Though quantitative aspects of modern slavery were largely overlooked previously, Kevin Bales provided an important step towards understanding the nature of modern slavery. His study showed that infant mortality rate, percent of the population between 0 and 14, percent of the workforce in agriculture, corruption and endangered species were all significant in predicting slavery throughout the world. Despite his results, there are some concerns with the study as performed for example, with the dependent variable, countries were missing from the analysis, the estimates were outdated, both the estimates and incidence of slavery were not replicable, and Bales used a categorical dependent variable. The independent variables also suffered issues including the fact that variables came from different years, endangered species likely represented a spurious relationship, there were too few observations for corruption, too few observations for the model as a whole, and there was a failure to account for probable regional differences in the model.

With this in mind, the author began a revised study. This study was divided into four sections. Two countries were removed once various tests showed they significantly skewed the results of the study (see Appendix B). In the first section, the author created a revised model to account for the problems faced by Bales' study as previously suggested.

After eliminating the insignificant variables, the only variable that remained was infant mortality rate. From there, the author proceeded to the second step, which was to add variables to the model that drew inspiration from the discussion on the theories of development. These variables included secondary education of women and unemployment rate among others. In the end, the author determined that a model including infant mortality rate, women in workforce, secondary education of women and refugees was the most significant.

The third step was to add region. Since the addition of region showed significance and since there was theoretical reason to believe it would be a good variable for the model, the author choose to continue to the next step. In this fourth step, the data was separated out into regions and the whole-world model was regressed for each region. This provided interesting results showing that the factors, which were significant in step two were not all significant in each of the individual regions. There are several potential explanations for this including not enough observations in the regions individually, not enough variation in the variables of interest within that region, or perhaps there really is a difference in the predictive factors of slavery at the regional level.

These results are certainly interesting the context of the development theory previously discussed. For example, at the end of step two the model does not contain a variable for growth as predicted by the Modernist and Marxists theories, or for openness in trade as suggested by the Neo-Liberals. Instead, gender variables remain, which drew inspiration from Feminist theory. Additionally, refugees appears significant. This variable is one of the non-theoretically aligned variables chosen for this study. While it

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does not represent a particular theory examined in this study, it is often used as an indicator for instability and development.

When examining the regression in the separate regions, it becomes clear that in certain regions there are different factors significant in predicting slavery. For example, in Europe and Eurasia, secondary education of women appears to matter in predicting the levels of slavery suggesting that perhaps in Europe slavery is related to gender inequality. Additionally, in the Near East, infant mortality is significant and while this could provide credence to both the arguments of Modernization and Feminist theory, more research would be necessary to parse out this argument. Finally, the significance of refugees in South Central Asia is suggesting perhaps that instability in countries can lead to increased levels of slavery, but again this is not connected to one particular development theory. Though more testing is essential before making a serious conclusion on this front, it seems that gender inequality and Feminism have a lot to say about modern slavery even at the regional level.

This study was inspired by a particular belief that the study done by Kevin Bales was missing an essential regional variable. Ultimately, this study shows there are regional differences in the predictive factors of modern slavery. Though there are significant predictive factors of modern slavery on the international level, this does little to accurately explain what is occurring on the regional level. As noted in Chapter 3, the world is increasing based on regional groupings. The results here also suggest there is credence to examining modern slavery on a regional level. As such, those who wish to

end modern slavery should begin seriously considering a regional approach in attempting to understand this issue.

Implications

If the results of this study are accurate, it appears there are regional variations in the predictive factors of slavery throughout the world. If true, there are wide- ranging implications for how practitioners should approach fighting modern slavery. While, intuition suggests there should be different predictive factors in different regions, if only because different forms of slavery seem to dominate in different regions, current policies do no reflect such an understanding. Today, in the fight against modern slavery and human trafficking there are two foci, and ultimately two types of programs where funding is channeled. The first is towards education programs and the second is towards rehabilitation programs. These are both essential and deserving programs but funding is not normally directed toward fundamental preventative programs, such as poverty eradication, job creation and health clinics. If through further study, one determines what the predictive factors of slavery in a particular region are, funding can target large-scale, coordinated programs in the region to fight the factors that might lead to enslavement. This study shows there may be some prospect for focusing on a regional approach to modern slavery. These results could be a break-through on how practitioners in the field approach the issue and potentially even how successful they are in fighting modern slavery.

Further Research

The author recognizes that despite these results, more must be done before drawing solid conclusions. First, it is essential that someone re-estimate the scale of modern slavery throughout the world at the country level. The results here are indicative of the situation in the mid 90s not today. Second, a better understanding of how to approach the regional variable is necessary. The groupings used for this paper might not be optimal. To determine this, someone must examine potential regional groupings more closely, perhaps in the context of where various types of slavery dominate. Third, once the previous two steps are complete, the study detailed in this paper should be reexamined to see if the results are still applicable in the current world and under different assumptions about the make-up region. Finally, someone should take information at the regional level, and attempt to determine what model most accurately captures the predictive factors of slavery within that region, connecting the results to the context and nature of slavery in that region of the world. Each of these would significantly improve our understanding of modern slavery.

The study detailed in this paper is only a preliminary step towards understand the nature of modern slavery through a quantitative means. It is not perfect, and hopefully others will take this study or elements thereof and improve upon them both methodologically and rationally in order to progress our collective understanding of the nature of modern slavery.

REFERENCES

Al-Marhubi, Fahim A. "Corruption and Inflation." *Economics Letters*, 2000: 199-202.

Bøås, Morten, Marianne H. Marchand, and Timothy M. Shaw. "Conclusion: Possible Projections for the Political Economy of Regions and Regionalisms." In *The Political Economy of Regions and Regionalisms*, by Morten Bøås, Marianne H. Marchand and Timothy M. Shaw, 167-174. New York: Palgrave MacMillan, 2005.

Bøås, Morten, Marianne H. Marchand, and Timothy M. Shaw. "The Political Economy of Regions and Regionalisms: An Introduction to our Critical, Revisionist Inquiries." In *The Political Economy of Regions and Regionalisms*, by Morten Bøås, Marianne H. Marchand and Timothy M. Shaw, 1-12. New York: Palgrave MacMillan, 2005.

Babbie, Earl. *The Practice of Social Science Research 10th ed.* Belmont, CA: Wadsworth/Thomson Learning, Inc., 2004.

Bales, Kevin. *Disposable People: New Slavery in the Global Economy.* Berkeley, CA: University of California Press, 2004.

Bales, Kevin. *New Slavery: A Reference Handbook.* Santa Barbara, CA: ABC-CIIO, INC., 2000.

Bales, Kevin. "Testing a Theory of Modern Slavery." *Free the Slaves.* February 2006. http://www.freetheslaves.net/Document.Doc?id=14 (accessed 13 March 2010).

Bales, Kevin. *Understanding Global Slavery: A Reader.* Berekely and Los Angeles California: University of California Press, 2005.

Bales, Kevin, Zoe Trodd, and Alex Kent Williamson. *Modern Slavery: The Secret World of 27 Million People.* Oxford: Oneworld Publications, 2009.

Barry, Kathleen. *Female Sexual Slavery.* New York: New York University Press, 1984.

Belser, Patrick, Michaelle de Cock, and Farhad Mehran. *ILO Minimum Estimate of Forced Labour in the World.* Geneva: International Labour Organization, 2005.

Black, Maggie. *The No-Nonsense Guide to International Development.* Oxford: New Internationalist Publications Ltd., 2002.

Brass, Tom. "Free and Unfree Labour: The Debate Continues." In *Free and Unfree Labour: The Debate Continues*, by Tom Brass and Marcel van der Linden, 11-42. Bern: Peter Lang AG, 1997.

Brass, Tom. "Some Observations on Unfree Labour, Capitalist Restructuring, and Deproletarianization." In *Free and Unfree Labour: The Debate Continues*, by Tom Brass and Marcel van der Linden, 57-76. Bern: Peter Lang AG, 1997.

Brass, Tom. *Towards a Comparative Political Economy of Unfree Labour: Case Studies and Debates.* Portland: Frank Cass Publishers, 1999.

Bunch, C., and R. Carillo. "Feminist Perspectives on Women in Development." In *Persistent Inequalities*, by I. Tinker, 70-82. Oxford: Oxford University Press, 1990.

Cantori, L.J., and S.L. Spiegel. *The International Politics of Regions: A Comparative Approach.* Englewood Cliffs: Prentice-Hall, 1970.

Cardoso, F.H., and E. Faletto. *Dependency and Development in Latin America.* Berkeley: University of California Press, 1979.

Central Intelligence Agency. *CIA World Factbook 1997.* 1997. http://www.umsl.edu/services/govdocs/wofact97/country-frame.html (accessed March 30, 2010).

Chang, Ha-Joon. *Bad Samaritans: The Myth of Free Trade and the Secret History of Capitalism.* New York: Bloomsbury Press, 2008.

Coalition of Immokalee Workers. *CIW Anti-Slavery Campaign.* http://www.ciw-online.org/slavery.html (accessed 19 April 2010).

Cohen, Gerald A. "The Labor Theory of Value and the Concept of Exploitation." *Philosophy and Public Affairs*, 1979: 338-360.

Cole, Thomas B. "Modern Slavery a Hidden Crime in the US." *Medical News & Perspectives*, August 3, 2005: 541-542.

Craig, Gary, Aline Gaus, Mick Wilkinson, Klara Skrivankova, and Aidan McQuade. *Contemporary Slavery in the UK: Overview and Key Issues.* York: Joseph Rowntree, 2007.

Devereux, Stephen, and John Hoddinott. *Fieldwork in Developing Countries.* Boulder, CO: Lynne Reinner, 1993.

Dicken, P. *Global Shift: Reshapping the Global Economic Map in the Twenty-First Century, 4th edition.* London: Sage, 2003.

Dickson, Anna K. *Development and International Relations: A Critical Introduction.* Malden, MA: Blackwell Publishers Inc., 1997.

Doane, David P., and Lori E. Seward. *Applied Statistics in Business and Economics.* New York: McGraw-Hill Irwin, 2007.

Dos Santos, T. "The Structure of Dependency." *American Economic Review*, 1970: 231-236.

Fitzgibbon, Kathleen. "Modern-Day Slavery? The Scope of Trafficking in Persons in Africa." *African Security Review*, 2003: 81-89.

Foley, Duncan K. *Understanding Capital: Marx's Economic Theory.* Cambridge: Harvard University Press, 1986.

Frank, Andre Gunder. *Capitalism and Underdevelopment in Latin America.* New York: Monthly Review Press, 1969.

Gujarati, Damodar N., and Dawn C. Porter. *Basic Econometrics.* New York: McGraw-Hill Irwin, 2009.

Haggard, S. *Pathways from the Periphery: The Politics of Growth in the Newly Industrializing Countries.* New York: Cornell University Press, 1990.

Hartmann, H. "The Unhappy Marriage of Marxism and Feminism: Towards a More Progressive Union." In *Women and Revolution*, by L. Sargend. Boston: South End Press, 1984.

International Criminal Court. "Rome Statute of the International Criminal Court." *International Criminal Court.* 17 July 1998. http://www.icc-cpi.int/NR/rdonlyres/EA9AEFF7-5752-4F84-BE94-0A655EB30E16/0/Rome_Statute_English.pdf (accessed 13 March 2010).

Isard, Walter. *Introduction to Regional Science.* Englewood Cliffs, NJ: Prentice-Hall, Inc., 1975.

Ismi, Asad. "Impoverishing a Continent: The World Bank and the IMF in Africa." *Halifax Initiative.* July 2004. http://www.halifaxinitiative.org/updir/ImpoverishingAContinent.pdf (accessed 20 March 2010).

Kelly, Elizabeth. *Journeys of Jeopardy: A Review of Research on Trafficking in Women and Children in Europe.* London: International Organization for Migration, 2002.

Lal, Deepak. "A Liberal International Economic Order." *Essays in International Finance, No. 139*, 1980.

Lal, Deepak. *The Poverty of Development Economics.* London: Institute of Economic Affairs, 1983.

Lambsdorff, Johann Graf. "Causes and Consequences of Corruption: What do we Know from a Cross-Section of Countries." In *International Handbook on the Economics of Corruption*, by Susan Rose-Ackerman, 3-51. Northampton, MA: Edward Elgar, 2006.

Larrain, J. *Theories of Development.* Cambridge: Polity Press, 1989.

Long, J. Scott, and Jeremy Freese. *Regression Models for Categorical Dependent Variables Using Stata 2nd ed.* College Station, TX: Stata Press, 2006.

Lynn, Stuart R. *Economic Development: Theory and Practice for a Divied World.* Upper Saddle River, NJ: Pearson Education, Inc., 2003.

Mackinnon, Danny, and Andrew Cumbers. *An Introduction to Economic Geography Globalization, Uneven Development and Place.* Essex: Pearson Education Limited, 2007.

Marx, Karl. *Capital* . Vol. 1. Moscow, 1961.

Marx, Karl *Capital.* Vol. 1. Translated by Ben Fowkes. Harmondsworth, 1976.

McDonald, James R. *A Geography of Regions.* Dubuque, IA: WM. C. Brown Company Publishers, 1972.

Minh-ha, Trinh. *Women, Native, Other: Writing Postcoloniality and Feminism.* Bloomington, IN: Indiana University Press, 1989.

Minshull, Roger. *Regional Geography: Theory and Practice.* Chicago: Aldine Publishing Company, 1967.

Mitchell, J. *Women, the Longest Revolution.* New Left Review, 1966.

Nierop, Tom. *Systems and Regions in Global Politics: An Empirical Study of Diplomacy International Organization and Trade 1950-1991.* Chichester: John Wiley & Sons Ltd., 1994.

Olken, Benjamin A. "Corruption Perceptions Vs. Corruption Reality." *Journal of Public Economics*, 2009: 950-964.

Patt, Martin, Dmitriy Ioselevich, Alex Burka, and Arkadiy Abramov. *Human Trafficking & Modern-day Slavery.* 2009. http://www.gvnet.com/humantrafficking/index.html (accessed 20 April 2010).

Peet, Richard, and Elaine Hartwick. *Theories of Development.* New York: The Guilford Press, 1999.

Plant, Roger. "Forced Labour, Slavery and Poverty Reduction: Challenges for Development Agencies." *International Labour Organization.* 30 October 2007. http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---declaration/documents/statement/wcms_096992.pdf (accessed 15 March 2010).

Power, M. "Worlds Apart: Global Difference and Inequality." In *An Introduction to Human Geography: Issues for the 21st Century*, by Peter Daniels, Michael Bradshaw, Denis Shaw and James Sidaway, 180-204. Essex: Prentice Hall, 2005.

Powers, Daniel A., and Yu Xie. *Statistical Methods for Categorical Data Analysis.* San Diego: Academic Press, 2000.

Rowntree, Les, Martin Lewis, Marie Price, and William Wyckoff. *Diversity Amid Globalization: World Regions, Environment, Development.* Upper Saddle River, NJ: Prentice Hall, 2003.

Roxborough, Ian. *Theories of Underdevelopment.* London: MacMillian, 1979.

Russett, Bruce M. "Delineating international Regions." In *Quantitative International Politics: Insights and Evidence*, by J. David Singer. New York: The Free Press, 1968.

Sen, Amartya Kumar. *Development as Freedom.* New York: Alfred A. Knopf Incorporated, 1999.

Skarstein, Rune. *Development Theory: A Guide to Some Unfashionable Perspectives.* Delhi: Oxford University Press, 1997.

Todaro, Michael P., and Stephen C. Smith. *Economic Development Ninth Edition.* Boston: Pearson Addison Wesley, 2006.

United Nations. "Protocol to Prevent, Supress and Punish Trafficking in Persons, Especially Women and Children, Supplementing the United Nations Convention Against Transnational Organized Crime." *United Nations.* 2000.

http://www.uncjin.org/Documents/Conventions/dcatoc/final_documents_2/convention_%
20traff_eng.pdf (accessed 13 March 2010).

United Nations. "Slavery Convention Signed at Geneva on 25 September 1926." *Office of the United Nations High Comissioner for Human Rights.* 25 September 1926. http://www2.ohchr.org/english/law/slavery.htm (accessed 13 March 2010).

United Nations General Assembly. *Convention on the Rights of the Child.* Geneva: United Nations, 1989.

United Nations General Assembly. "International Covenant on Civil and Political Rights." *Office of the United Nations High Comissioner for Human Rights.* 16 December 1966. http://www2.ohchr.org/english/law/ccpr.htm (accessed 13 March 2010).

United Nations General Assembly. "The Universal Declaration of Human Rights." *United Nations.* 10 December 1948. http://www.un.org/en/documents/udhr/ (accessed 13 March 2010).

United Nations Statistics Division. *World Statistics Pocketbook 1997.* Geneva: United Nations, 1998.

United States Department of Labor's Bureau of International Labor Affairs. "U.S. Department of Labor's 2008 Findings on the Worst Forms of Child Labor." *United States Department of Labor's Bureau of International Labor Affairs.* 2009. http://www.dol.gov/ilab/programs/ocft/PDF/2008OCFTreport.pdf (accessed 20 April 2010).

United States Department of State. "Trafficking in Persons Report 2009." *Department of State.* June 2009. http://www.state.gov/documents/organization/123357.pdf (accessed 13 March 2010).

van den Anker, Christien. "1 Contemporary Slavery, Global Justice and Globalization." In *The Political Economy of New Slavery*, by Christien van den Anker, 15-36. New York: Palgrave MacMillan, 2004.

van den Anker, Christien. "Introduction: Combating Contemporary Slavery." In *The Political Economy of New Slavery*, by Christien van den Anker, 1-12. New York: Palgrave MacMillan, 2004.

Whelan, John. "The 'Happy Hooker' Myth a Far Cry From Reality of Sex Trade." *Independent.ie.* 3 January 2010. http://www.independent.ie/opinion/analysis/the-happy-hooker-myth-a-far-cry-from-reality-of-sex-trade-1996978.html (accessed 20 April 2010).

Williamson, John. "Democracy and the Washington Consensus." *World Development*, 1993: 1329-1336.

Willis, Katie. "Theories of Development." In *Introducing Human Geographies 2nd edition*, by Paul Cloke, Philip Crang and Mark Goodwin, 187-199. London: Hodder Arnold, 2005.

World Bank. *Data.* 2010. http://data.worldbank.org/ (accessed March 30, 2010).

APPENDIX A: REGIONAL GROUPINGS

Table A.1: Regions

Africa	East Asia and the Pacific	Europe and Eurasia	Near East	South Central Asia	Western
Benin	Australia	Albania	Algeria	Afghanistan	Argentina
Burkina Faso	Burma	Armenia	Bahrain	Bangladesh	Barbados
Cameroon	Cambodia	Austria	Egypt	India	Brazil
Congo (DRC)	China	Azerbaijan	Israel	Kazakhstan	Canada
Equatorial Guinea	Hong Kong	Belarus	Kuwait	Kyrgyzstan	Colombia
Gabon	Indonesia	Belgium	Lebanon	Nepal	Costa Rica
Gambia	Japan	Bosnia and Herz.	Morocco	Pakistan	Dominica
Ghana	South Korea	Bulgaria	Oman	Sri Lanka	Dominican Republic
Guinea-Bissau	Laos	Croatia	Qatar	Tajikistan	Haiti
Ivory Coast	Malaysia	Czech Republic	Saudi Arabia	Turkmenistan	Jamaica
Kenya	Philippines	Denmark	United Arab Emirates	Uzbekistan	Mexico
Liberia	Singapore	Estonia	Yemen		Panama
Mali	Thailand	France			Peru
Mauritania	Vietnam	Georgia			Puerto Rico
Niger		Germany			Trinidad an Tobago
Nigeria		Greece			United States
Sao Tome and Principe		Hungary			
Senegal		Italy			
Sierra Leone		Luxembourg			
South Africa		Macedonia			
Sudan		Moldova			
Tanzania		Netherlands			
Togo		Poland			
Uganda		Portugal			
		Romania			
		Russia			
		Slovakia			
		Spain			
		Sweden			
		Switzerland			
		Turkey			
		Ukraine			
		United Kingdom			
		Yugoslavia (Serbia & Mont.)			

APPENDIX B: ELIMINATION OF INDIA AND MAURITANIA

Graph B.1: Slaves Per 100,000 and Arable Land With India and Mauritania
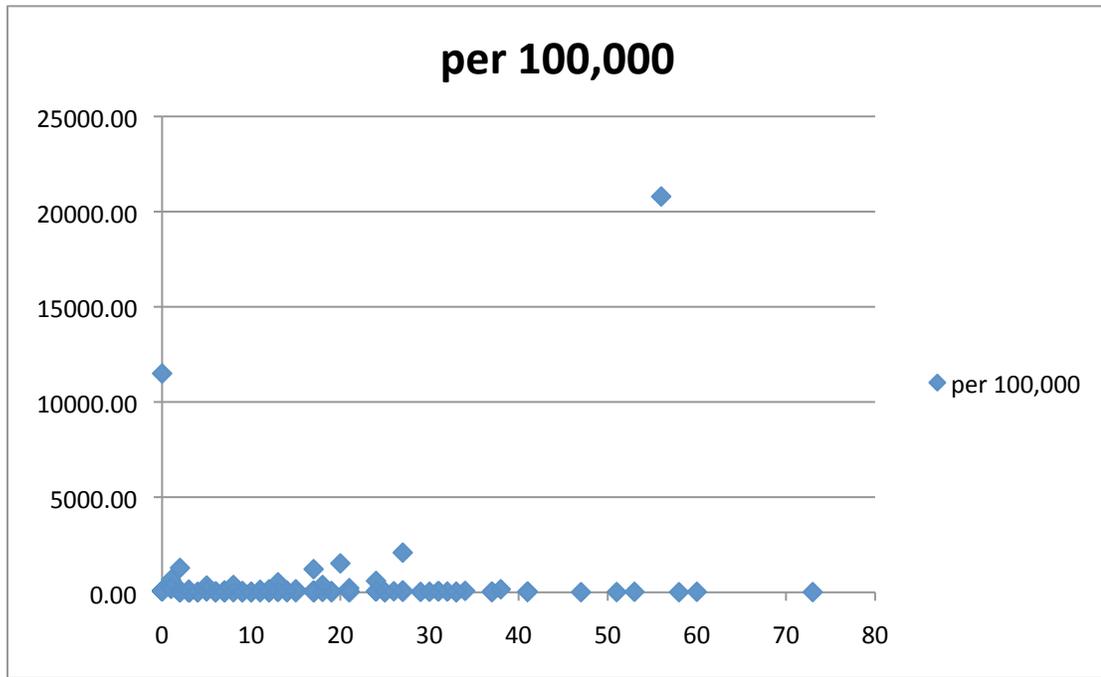
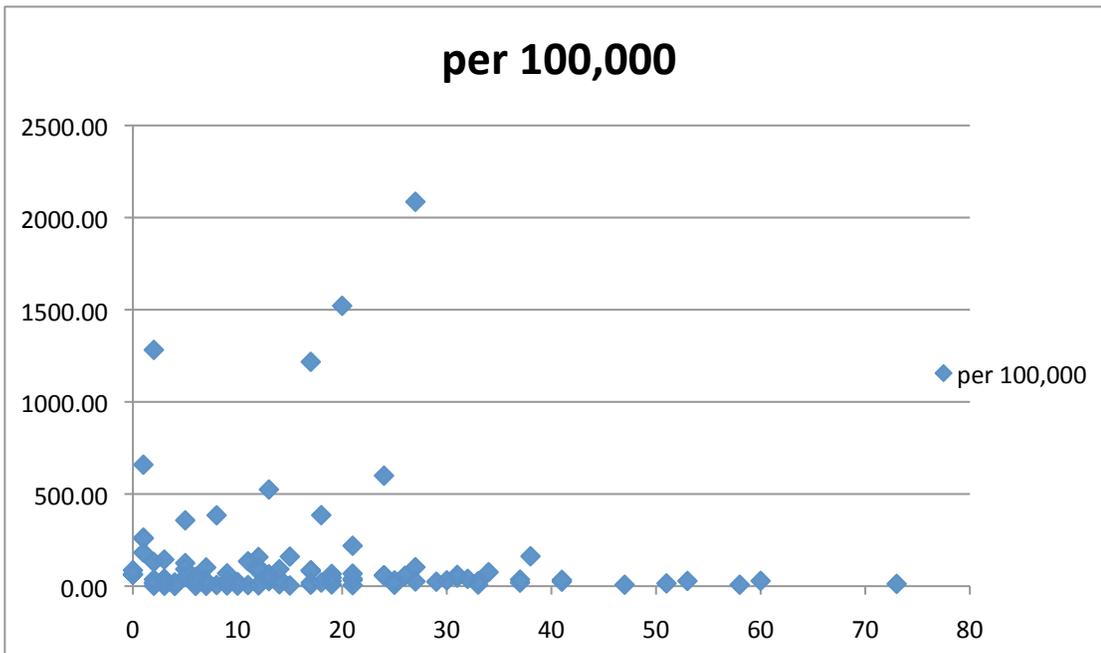**Graph B.2: Slaves Per 100,000 and Arable Land Without India and Mauritania**

Table B.1: Previous Test With and Without India and Mauritania

Test	With all countries	Minus two outliers
F-Statistic	2.74	2.15
p-value	.0324**	.0805*
Adj. R^2	.0609	.0419
GDP per capita PPP	.070876	-.001015
	1.94	-.21
	.055*	.833
Carbon Emissions per capita	-201228.7	6772.764
	-1.37	.36
	.173	.721
Infant Mortality	10.0259	1.850377
	2.03	2.90
	.045**	.0005***
Arable Land	33.11571	1.248851
	2.27	.64
	.026**	.525

India and Mauritania present a problem in this regression analysis. As stated in the paper they both have high rates of slavery due to cultural practices. In the first graph, we see arable land in relation to slaves per 100,000. It appears that everything, except those two, tightly clustered until the two countries are removed. After removal, it becomes obvious that there is quite a bit of variation in the data. When looking at the results from a model that was previously determined (using the same method as the study detailed in Chapter 4 and 5), it also becomes obvious how much the two countries are skewing the results. The middle column represents the regression analysis when all countries are included and the column to the right represents the regression when Mauritania and India have been removed. From these results, it is apparent that the significance level of the model as a whole and of the individual variables changes

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significantly, when the countries are removed. For this reason, both countries were

removed from the analysis.