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Human Trafficking in the Wake of Natural Disasters: is the United States Any Different Than Third World Countries?

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Human Trafficking in the Wake of Natural Disasters: is the United States Any Different Than Third World Countries?

by

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INTRODUCTION

This research compares the impacts of devastating natural disasters on levels of human trafficking in developed countries to the impacts experienced in third world countries. The two disasters selected for this study were Hurricane Isaac in Louisiana and the Indian Ocean earthquake and tsunami in Indonesia. Factors selected to measure the impacts of the natural disaster include income level, homelessness, and unemployment rates.

Human trafficking is a crime that touches nearly every country around the world. It is known that human trafficking levels are impacted by factors including poverty levels of regions, political unrest, and even natural disasters. There is a common misconception that human trafficking is an issue for developing countries and more developed countries, like the United States, are not as impacted by this industry. However, in the chaos following a natural disaster and the break down of government control, even developed countries can become susceptible to increases in human trafficking. Unfavorable changes in the economy, such as declining income levels, increases in homelessness, and higher unemployment rates, that occur in the aftermath of natural disasters attract human traffickers to target the vulnerable population of that region. This research will aim to compare, through statistical analysis, the changes in levels of human trafficking post-natural disaster in the United States to the levels experienced in Indonesia. This comparison will be done in an effort to find if the United States is just as susceptible to increases in human trafficking following natural disasters as third world countries.

Included in my research is a discussion of literature currently existing on the subject matter, the experimental design including the hypothesis and methodology used. This will be followed by an analysis of the results. A conclusion, discussion of the limitations of this study, as well as areas for future research will conclude this study.

LITERARY REVIEW

What is Human Trafficking?

Human trafficking is defined as "sex trafficking in which a commercial sex act is induced by force, fraud, or coercion, or in which the person induced to perform such an act has not attained 18 years of age; or the recruitment, harboring, transportation, provision, or obtaining of a person for labor or services, through the use of force, fraud, or coercion for the purpose of subjection to involuntary servitude, peonage, debt bondage, or slavery" (TVPA, pg. 114 STAT. 1470). According to the "United Nations Convention Against Transnational Organized Crime and the Protocols Thereto," human trafficking contains three elements: the act, the means, and the purpose. The act consists of what is being done, including recruitment, harboring, transportation, provision or obtaining persons. The means deals with how the act is done, including through the use of force, fraud, or coercion. Lastly, the purpose explains why the action was done, including for the purpose of exploitation ("United Nations Convention Against Transnational Organized Crime and the Protocols Thereto", pg. 50).

Any action pertaining to the above definition is classified as human trafficking. If a victim offers their consent to trafficking in persons, the definition above is not applicable. Further, "the recruitment, transportation, transfer, harboring or receipt of a child for the purpose of exploitation shall be considered 'trafficking in persons' even if it does not involve any of the means set forth" ("United Nations Convention Against Transnational Organized Crime and the Protocols Thereto," pg. 51). A child is defined as any person under the age of 18.

No country is immune to the impacts of human trafficking, as over 500 trafficking routes have been identified ("Global Report on Trafficking in Persons 2016," pg. 5). Even in the United States it is estimated that the number of trafficking victims reaches into the hundreds of thousands ("The Facts," 2017). Primarily, victims are trafficked from rural areas to wealthier countries along known migration routes, though domestic trafficking is also common. Victims from East Asia and the Pacific as well as from Central America and the Caribbean are trafficked into North America ("Global Report on Trafficking in Persons 2016," pg. 9).

It is estimated that 24.9 million people are subject to forced labor globally; of these victims, 16 million are forced to work in the private sector performing duties such as domestic labor or agricultural work, 4.8 million are subjected to forced sexual exploitation, and 4 million are in state imposed forced labor. Primarily, women and children are targeted for human trafficking, with 57.6% of victims in the private sector and 99% of victims in forced sexual exploitation being female. It is estimated that of the 24.9 million human trafficking victims annually, approximately 4.1 million are children ("Global Estimates of Modern Slavery: Forced Labor and Forced Marriage," 2017).

In general, traffickers have a specific subset of the population they target as victims. They look for people that are "made more vulnerable by high rates of unemployment, poverty, crime, discrimination, corruption, political conflict, or cultural acceptance of the practice" ("Trafficking in Persons Report 2010", pg. 8). Events such as wars, political unrest, and natural disasters not only meet criteria laid out by traffickers, but also amplify these underlying issues.

There are many organizations currently in place that are working to put an end to human trafficking. One way to combat human trafficking is by promoting awareness of the crime. The United Nation's "Global Report on Trafficking in Persons" is a publication created every two years that assesses human trafficking data reported, trafficking patterns, and the efforts being made to stop human trafficking. The US Department of State's "Trafficking in Person's Report" is an annual grading of countries and the laws they currently have in place to combat human trafficking. They are graded on a tiered basis, with Tier 1 countries fully complying the Trafficking Victim's Protection Act (TVPA) standards, Tier 2 countries not fully complying with the TVPA but are making significant efforts to do so, and Tier 3 countries not meeting the minimum standards of the TVPA and are not making significant efforts to do so ("Trafficking in Persons Report 2010," pg. 47). The Polaris Project created the National Human Trafficking Hotline and aims to disrupt global traffickers specifically in the United States by creating an anonymous reporting mechanism for those who suspect a case of human trafficking and serving as a resource for victims and survivors.

Trafficking victims often face severe physical and emotional abuse from their captors. Karla Jacinto was wooed by an older man when she was 12 years old and fell into forced sexual exploitation a few months later in Mexico. Over the 4 years that she was held captive, she estimated that she serviced more than 40,000 clients. Her captors beat her, threatened her, and took away her children that she conceived and birthed while being trafficked. All these actions were done in order to exert as much control over her as possible and force her compliance to their commands (A Pathway to Freedom, 2015).

A similar story was shared by a University of Arkansas student, who will remain anonymous. This individual was abducted at gunpoint after their significant other was murdered for a drug debt. They were trafficked primarily out of Las Vegas, but traveled around the country over the course of 10 years. After finally escaping from their traffickers, this survivor continues to face the by-products of being trafficked. During their time as a trafficking victim, this

individual was charged with several felony offenses, such as prostitution and larceny, that their captors essentially forced them to do. For example, trafficking victims may steal from their customers in order to meet their daily "quotas" laid out by their traffickers. Often, if a victim of sex trafficking does not meet this quota, they face severe physical abuse and possibly even death. If the trafficking victims are reported to law enforcement for committing these crimes, they will likely be charged for the felony. However, if they choose to disclose their circumstances for committing those crimes to the police, they often do not receive help to escape their traffickers nor do the traffickers get punished. Now that this individual has escaped, they have found it nearly impossible to find employment due to their criminal record from their time being trafficked (Anonymous, 2017).

Unfortunately, the stories of these two individuals are not uncommon. Countless trafficking victims that have came forward over the years have shared similar stores of hardship and abuse. Many states are creating legislation in order to provide assistance to trafficking victims. Louisiana provides victims of domestic minor sex trafficking access to specialized services and housing. The state is also working to decriminalize the acts of minors that were victims of sex trafficking (Murphy, pg. 25-26). Oklahoma Statute Title 21 lays out how the state should treat human trafficking victims, including providing them access to appropriate shelter, not jailing or penalizing them due to having been victims of trafficking, providing them legal assistance, among many other guidelines (21 OK Stat, 2014).

Natural Disasters

Major natural disasters have been appearing more often around the world due to the impacts of climate change. It is estimated that in 2013 alone 22 million people were made homeless by natural disasters such as floods, hurricanes, and typhoons. Individuals in developing countries were at a higher risk of displacement, with 19 of the 22 million displaced coming from various countries in Asia (Goldenberg, 2014). Many regions will be more susceptible to the impacts of natural disasters as rapid urbanization due to mass migration continues to increase year after year.

There has been a link established between natural disasters and increases in human trafficking. This relationship is due to numerous factors, such as poor birth registration in developing countries, disruption of governmental organizations, and difficulty enforcing border patrols (Childs, 2018). When families have lost their homes, their jobs, and even family members, the actions these people take become increasingly desperate. Traffickers can pose as aide workers or offer jobs in order to deceive and entrap their next victims.

Organizations, such as UNICEF, are taking notice following disasters to try to intercept human trafficking victims. In the 2010 report of "Trafficking in Persons," the US Department of State laid out some considerations in order to adequately respond to human trafficking in the context of natural disasters. Some of their recommendations included engagement of local stakeholders, providing substantial institutional support, and immediate action during the emergency phase of disaster response ("Trafficking in Persons Report 2010," pg. 35).

2010 Haiti Earthquake

Prior to the January 12, 2010 earthquake in Haiti, the country was ranked as the poorest in the Western Hemisphere. More than 70% of the population was living below the poverty line and 86% of people in Port au Prince, Haiti's capital, were living in slums. These sub-par living conditions only worsened when a 7.0 magnitude earthquake struck Haiti in early January near

Port au Prince. Following the disaster, it was estimated that 3,500,000 Haitians were affected by the quake and 220,000 people died. Over 200,000 homes were severely damaged or destroyed, leaving 1.5 million people homeless ("Haiti Earthquake Facts and Figures," 2015).

In Haitian culture, many children live as *restaveks* which can be considered a form of slavery. In exchange for food, shelter, and education, children from poor families are sent to live with host families in the city and are forced to work as a sort of indentured servant. Many of these *restaveks* end up being abused or sexually assaulted ("Frequently Asked Questions: Haiti's Orphans and Vulnerable Children," pg. 2). Prior to the earthquake in 2010, it was estimated that 300,000 children were currently working as *restaveks* (Padgett, 2017). Many government officials feared that the earthquake would cause these numbers to go up. Given the cultural acceptance of the practice of slavery, child trafficking became a serious issue following the earthquake.

The number of orphans in Haiti was believed to increase from 380,000 to nearly one million as a result of the earthquake (Tackett, pg. 1030). Several of the known child trafficking cases following the quake dealt with fraudulent adoptions. Children that were believed to be orphaned were evacuated to other countries when in reality they were only separated from their families. These children were sometimes moved by human traffickers, but several were also transported by misinformed aid workers trying to help the children. Paige Tackett states in her paper "'I Get By With a Little Help from My Friends': Why Global Cooperation is Necessary to Minimize Child Abduction and Trafficking in the Wake of Natural Disaster" that countries such as the United States should hold its citizens accountable for these instances of foul play despite that "human trafficking for the means of adoption is not a punishable crime" (Tackett, pg. 1033, 1038).

Haiti has remained on the Tier 2 Watch list in the "Trafficking in Persons Report" since 2012, except in 2016 when it dipped down to a Tier 3 country ("Trafficking in Persons Report 2017, pg. 194). According to the 2014 report, "women and children living in Internally Displaced Persons (IDP) camps set up as a result of the 2010 earthquake were at an increased risk of sex trafficking and forced labor." The report noted that Haitians were at risk of being trafficked in the Dominican Republic along with various other Caribbean countries ("Trafficking in Persons Report 2014," pg. 194).

Typhoon Haiyan: Philippines

Super Typhoon Haiyan devastated the Philippines on November 8, 2013. The Philippines is a country struck by poverty, with 40% of the population living on less than $2 a day. Typhoon Haiyan only amplified the issue. The typhoon impacted nearly 13 million people, the equivalent of 13% of the country's population. It was estimated that 1.9 million people were left homeless and between 5,000-10,000 people perished. 280,000 homes were damaged or destroyed and 2.5 million people were left in need of food ("Quick Facts: What You Need to Know About Super Typhoon Haiyan," 2013).

Following Haiyan, the Philippine government struggled to maintain law and order. Night time curfews had to be enforced to prevent looting and aid convoys were often attacked from communist rebels and starving storm survivors (Eimer, 2013). The chaos made it extremely difficult for relief operations to successfully take place. The government took a stance of denial of the crisis occurring in the country and believed that they were "doing quite well" (Eimer, 2013). Since 2008, the Philippines has been a Tier 2 country in the US Department of State's

"Trafficking in Person's Report," except in 2009 and 2010 when it dropped down to a Tier 2 Watch List country ("Trafficking in Persons Report 2015," pg. 280).

The Philippine government had learned from experience with the Indian Ocean tsunami in 2004 that children were at high risk of being trafficked in the weeks immediately following such disasters. One unique obstacle that this country had to overcome was the difficulty monitoring the 7,000 islands that make up the country. Many rural areas took weeks to reach and made it impossible to adequately check in with all children displaced by Haiyan (Eimer, 2013). The country has a high Catholic population, resulting in the average rural family having 3.8 children (Eimer, 2013). With the majority of those that were killed by Haiyan being adults, this left many children orphaned by the storm. Pernille Ironside, UNICEF's child protection specialist, was quoted saying, "Children who are alone are particularly vulnerable to a range of risks including potential exploitation, abuse and even trafficking" (Branigan, 2013).

Many organizations set up efforts to combat trafficking after Haiyan. UNICEF worked on establishing programs to reunite separated families and Save the Children set up centers designed to give children a safe place to play. One of the priorities of the relief efforts was to get children back into school, allowing them a safe place to go and establishing a routine of a somewhat normal life (Branigan, 2013).

2004 Indian Ocean Earthquake and Tsunami: Indonesia

On December 24, 2004 a 9.1 magnitude earthquake struck off the coast of Indonesia, causing 30-foot tsunami waves all across the Indian ocean, killing over 200,000 Indonesians (The Editors of Encyclopedia Britannica, 2017). The storm also left more than a million people injured and homeless (Nishiyama, 2005). 35,000 Indonesian children had lost at least one parent as a result of the tsunami, and the government took quick action in an effort to stop child trafficking ("The Tsunamis and Child Trafficking," 2005). The Indonesian government barred children leaving the country unless they were accompanied by verifiable family members. Several other countries, such as Thailand, took similar actions. These efforts undoubtedly made a large impact on reducing human trafficking following the tsunami, but traffickers still managed to capitalize on the suffering of Indonesia.

Just 2 weeks after the storm, the United Nations Children's Fund confirmed the first case of child trafficking as a result of the tsunami. A 4-year old boy was taken by a couple claiming to be his parents to a hospital, where the couple was found to be guilty of trafficking the child (Nishiyama, 2005). Another unnamed organization had claimed to confirm 7 trafficking cases early in January, but the organization remained nameless (Nishiyama, 2005). Birgithe Lund-Henriksen, chief of the UNICEF Indonesian child protection unit, was quoted saying, "We're absolutely concerned about trafficking. This is something that existed prior to the earthquake and tsunami. And with Syndicates in place, it's clear they will take advantage of the chaos that's going on now." Other organizations that had not confirmed trafficking cases in wake of the storm acknowledged that just because they had not identified any instances did not mean that it was not occurring.

In the United Nation's 2009 Global Report on Trafficking in Persons, many spikes were identified in the years following the storm in trafficking-related activities. In 2004, 103 victims were identified by the police in Indonesia. By 2006, one year after the earthquake and tsunami, 625 victims were identified ("Global Report on Trafficking in Persons 2009," pg. 170). There was also an increase in cases prosecuted for trafficking and persons investigated and arrested for trafficking from 2005-2007 ("Global Report on Trafficking in Persons 2009," pg. 170).

Indonesia has had a lot of difficulty passing substantial human trafficking laws. According to the US Department of State's ranking system, Indonesia has never risen above a Tier 2 country. Indonesia started as a Tier 3 country from 2001-2002, jumped to a Tier 2 country from 2003-2005, dropped to a tier 2 Watch List country in 2006, and has been a Tier 2 country since 2007 ("Trafficking in Persons Report 2010," pg. 178). Indonesia is in desperate need of substantive trafficking legislation, as efforts to combat human trafficking must become a constant commitment and not just a response to disaster if trafficking in Indonesia is to be eradicated.

Hurricane Katrina: Louisiana, United States

Hurricane Katrina caused massive damage to the Southern United States in 2005. In New Orleans alone, 600,000 households were displaced and nearly 1,000 people perished (Hepburn, 2017). FEMA was highly criticized for their slow response following the storm and that their attention to terrorism overshadowed their preparedness for response to natural disasters.

Following Katrina, massive reconstruction efforts took place throughout the affected regions of Louisiana, thus increasing the demand for low-cost labor. Many construction workers that came to assist were undocumented immigrants, which are highly vulnerable to exploitative labor practices (Murphy, pg. 9). These immigrants generally choose not to report issues to law enforcement in fear of facing deportation. Their vulnerability was increased by the Department of Labor temporarily suspending employee protections in the regions affected by Katrina (Hepburn, 2017). It is believed that at least 3,750 individuals were identified as potential victims of labor trafficking in the years following the hurricane (Murphy, pg. 9).

One specific labor trafficking case dealt with Million Express Manpower recruiting Thai immigrants and promising employment and compensation. These promises turned out to be untrue and the workers were forced to work under the supervision of armed guards, their identification was confiscated, and they were provided no financial compensation or meals. These workers had to catch and kill birds outside of where they worked in order to avoid starvation (Murphy, pg. 9). Another labor trafficking case that came post-Katrina was Signal International taking advantage of the US government's guest worker program and importing and exploiting nearly 500 men from India (SPLC, 2015). They were forced to pay between $10,000 and $20,000 in recruitment fees and were promised employment, green cards, and permanent residence for their families. When they arrived in Mississippi, they were not given anything they were promised and were forced to pay over $1,000 a month for their sub-standard living arrangements (SPLC, 2015). Ivy O. Suriyopas, the director of the Asian American Legal Defense and Education Fund's Anti-Trafficking Initiative, stated, "Human trafficking is a complex human rights issue, and this case demonstrates how male immigrants with visas can be victims and survivors of trafficking."

Even years after Hurricane Katrina, New Orleans has continued to be highly targeted by traffickers in the United States thanks to its status as a transportation hub, large amounts of migrant workers, and the presence of sexual entertainment services. In addition, Louisiana constantly has one of the highest state poverty rates, with about 20% of the residents living in poverty (Murphy, pg. 11). Given Louisiana's diverse economy, including agricultural fields, oil fields, offshore fishing boats, and construction, labor trafficking is highly prevalent in Louisiana (Murphy, pg. 15). In addition to being a breeding ground for labor trafficking, Louisiana also deals with the presence of sex trafficking. Most victims generally are women and young girls, but men and boys can also be victims. Since sex trafficking can occur in both highly visual

locations like street prostitution and in underground operations like massage parlors or closed brothels, one issue that Louisiana continues to face is differentiating between voluntary sex work and involuntary sex trafficking (Murphy, pg. 19-20).

EXPERIMENTAL DESIGN

Hypothesis

It is known that human trafficking has been linked to natural disasters, extreme poverty, high unemployment, and homelessness in third world countries. I will be applying this same knowledge to the United States, a developed country. I hypothesize that the United States is just as susceptible to increases in human trafficking following natural disasters as any other country. The living conditions and chaos post-disaster are factors that no country is immune to. For my research, I have selected two disasters to study: Hurricane Isaac in Louisiana and the Indian Ocean earthquake and tsunami in Indonesia. I hypothesize that after Hurricane Isaac, Louisiana experienced similar increases in trafficking that were experienced in Indonesia. In statistical terms, I have identified two hypotheses, one null and one alternate, for each multiple regression:

H_0: There is no relationship between the increases in human trafficking and the changes in unemployment, homelessness, and income.

H_A: There is a relationship between increases in human trafficking and the changes in unemployment, homelessness, and income.

After evaluating the strength of the relationship for each disaster independently, I will compare the regression outputs of Hurricane Isaac and the Indian Ocean earthquake and tsunami to see if the independent variables explained the dependent variable to similar degrees.

DATA AND METHODOLOGY

For my research, I performed a multiple-regression analysis on two natural disasters: Hurricane Isaac in Louisiana and the Indian Ocean earthquake and tsunami in Indonesia.

Indonesia

I began by gathering data on the number of victims identified by police in Indonesia from 2002-2007. I selected these years because it provided before and after statistics on the earthquake and tsunami that happened in late 2004. I obtained this data from two sources: "ASEAN and Trafficking in Persons" published by the International Organization for Migration and from "Global Report on Trafficking in Persons," the 2009 publication from the United Nations. I next gathered data on the homeless population of Indonesia. I obtained this data from the following sources: "Preliminary Damage and Loss Assessment: Yogyakarta and Central Java Natural Disaster" published from the 15th meeting of the Consultative Group of Indonesia, the Youth X Change published by the United Nations Environmental Program, and UNICEF Indonesia. I obtained the data on unemployment in Indonesia from Trading Economics, an online platform that compiles economic data for nearly 200 countries. Lastly, I obtained the information on Indonesian wages from UN Data, the data compilation platform provided by the United Nations.

After obtaining this data for the years 2002-2007, I created a table in excel displaying the differences between each consecutive year for each variable, shown below:

	Change in # Victims	Change in Unemployment	Change in homelessness	Change in wages (rupiah)
2002-2003	-54	-1.90%	0	21,733
2003-2004	2	0.50%	200,000	45,173
2004-2005	40	2.60%	500,000	14,242
2005-2006	482	0.70%	1,200,000	78,082
2006-2007	-144	-3.40%	-1,700,000	435,756

Louisiana

I performed similar data gathering and analysis for Hurricane Isaac. I obtained trafficking data for Louisiana from the Human Trafficking Hotline. This organization keeps yearly statistics on various aspects of calls they receive, and I selected to use the number of human trafficking cases reported each year. The 2017 data provided stated 59 reports as of June 30, 2017. Based on this mid-year data, I recorded 2017 as having an estimated 118 reports. I recorded data on unemployment in Louisiana from the Bureau of Labor Statistics. This organization provided monthly unemployment rates for the state of Louisiana, so I took the average of the 12 months in each year to use in my data analysis. Data on homelessness in Louisiana was obtained from the Annual Homeless Assessment Report published by the US Department of Housing and Urban Development. I used the 2012-2017 publications. Lastly, the data on Louisiana median household income was obtained from two sources: The Bureau of Economic Analysis within the US Department of Commerce and from Statista, an online statistics and market research company.

After obtaining this data for the years 2012-2017, I created a table in excel displaying the differences between each consecutive year for each variable, as shown below:

	Change in # reports	Change in unemployment	Change in homelessness	Change in income (dollars)
2012-2013	72	-0.5%	-2,379	537
2013-2014	-18	-0.2%	-620	2,784
2014-2015	-17	0%	-525	3,516
2015-2016	30	-0.2%	-87	-1,573
2016-2017	10	-0.7%	-689	-2,051

Statistical Analysis

Once all the data was collected and entered into the appropriate tables, I ran two multiple-regression analyses to identify the relationship between the independent and dependent variables. The purpose of a multiple regression analysis is "for describing the relationship between one variable (the dependent variable) and one or more other variables (the independent variables) in a specific body of data" (Hardy, pg. 166). After analyzing the relationship and using the output of the multiple regression, a formula can be created and used to predict the output (dependent variable) given different levels of input (independent variables). The regression equation is:

$$Y = a + b_1 * x_1 + b_2 * x_2 + b_3 * x_3 \ldots$$

Y = dependent variable
a = constant
b = slope of the line
x = independent variable

I identified my dependent variable (Y Range) as the change in the measure of human trafficking and my independent variables (X Range) as the change in homelessness, unemployment, and income. For Indonesia, my dependent variable was "the change in the number of victims identified by the police" and for Louisiana my dependent variable was "the change in number of reports of human trafficking." I decided to run the multiple-regressions at a 95% confidence level, meaning a regression that returns a P-value less than 0.05 would be considered statistically significant. I would then compare the P-value of the regression ran for Hurricane Isaac to the regression for Indonesia to see if the results were comparable.

RESULTS

When observing and analyzing the results of the multiple-regression analyses on the Indian Ocean earthquake and tsunami and Hurricane Isaac, I evaluated the strength of each output by examining the P value and R square values of each multiple regression and comparing the results.

Indonesia

Multiple R	0.999954354
R Square	0.99990871
Adjusted R Square	0.999634842
Standard Error	4.644780701

	Coefficients	Standard Error	t Stat	P-value
Intercept	-134.6621757	3.732704998	-36.07629744	0.017641966
Change in unemployment	-2486.445292	165.6009017	-15.0146845	0.042337285
Change in homelessness	0.000432542	4.75469E-06	90.97155737	0.006997727
Change in wages	0.001471473	2.51559E-05	58.49426276	0.010882397

A p-value of .0176 indicates that there was a relationship between the independent and dependent variables. This multiple regression shows that the relationship between all 3 independent variables and the number of victims identified was *statistically significant* at the 95% confidence level. Therefore, in the years I selected pre and post natural disaster, there was a

correlation between the changes in unemployment, homelessness and wages and the number of human trafficking victims identified. I would reject H_0 and accept H_A.

This multiple regression output shows the extent that the independent, or explanatory, variables explain the dependent variable. An R Square value of .9999 means that the three independent variables, change in wages, homelessness, and unemployment, explained about 99% of the variation in the change in number of trafficking victims reported to the police. By rejecting my null hypothesis, I am claiming that there is a relationship between increases in human trafficking and the changes in unemployment, homelessness, and income following the Indian Ocean earthquake and tsunami in Indonesia.

A second regression was ran using a dummy variable for the natural disaster. In the year of the natural disaster, a value of "1" was given and in all other years a value of "0" was given. This second regression was run to see if the natural disaster itself would be a statistically significant independent variable. For the Indonesia multiple regression, adding the dummy variable for the disaster was *not statistically significant*. The P value of the output increased to .1747 and the P value for the event was .1998. This data can be interpreted that human trafficking in Indonesia is an ongoing problem, with or without the presence of a natural disaster. The output with the addition of the dummy variable for the natural disaster is shown below:

	Coefficients	Standard Error	t Stat	P-value
Intercept	-78.42870713	22.08288742	-3.551560339	0.174727056
Change in unemployment	-7.066880517	525.359842	-0.013451505	0.991437022
Change in homelessness	0.000378896	2.1261E-05	17.82115956	0.035685268
Change in wages	0.001331073	0.000139753	9.524495316	0.066596272
Natural Disaster	-72.61827801	23.57473183	-3.080343757	0.199838407

Louisiana

Multiple R	0.999115091
R Square	0.998230964
Adjusted R Square	0.998230964
Standard Error	3.150621039

	Coefficients	Standard Error	t Stat	P-value
Intercept	20.36787785	3.380317392	6.025433558	0.104701103
Change in unemployment	11330.46593	1104.988394	10.25392302	0.061889771
Change in homelessness	-0.04941154	0.002477936	-19.94060725	0.031899073
Change in income	-0.017435904	0.001098699	-15.86959341	0.040062725

A p-value of .1047 indicates that there was a relationship between the independent and dependent variables, though the relationship found in the Indonesia regression was stronger. This multiple regression shows that the relationship between all 3 independent variables and the number of reports was *not statistically significant* at the 95% confidence level, though it was *statistically significant* at a 90% confidence level. Therefore, in the years I selected pre and post natural disaster, there was a correlation between the changes in unemployment, homelessness and income and the number of human trafficking victims identified. I would reject H_0 and accept H_A.

This multiple regression output shows the extent that the independent, or explanatory, variables explain the dependent variable. An R Square value of .9982 means that the three independent variables, change in income, homelessness, and unemployment, explained about 99% of the variation in the change in number of human trafficking reports received by the National Human Trafficking hotline. By rejecting my null hypothesis, I am claiming that there is a relationship between increases in human trafficking and the changes in unemployment, homelessness, and income following Hurricane Isaac in Louisiana.

A second regression was run using a dummy variable for the natural disaster. In the year of the natural disaster, a value of "1" was given and in all other years a value of "0" was given. This second regression was run to see if the natural disaster itself was a statistically significant independent variable. For the Louisiana multiple regression, adding the dummy variable for the disaster was *statistically significant*. The P value of the output decreased to .0076 and the P value for the hurricane itself was .0027. This data can be interpreted that human trafficking wasn't a statistically significant problem for the state of Louisiana before the hurricane, but the addition of the natural disaster made human trafficking statistically significant. The output with the addition of the dummy variable for the natural disaster is shown below:

	Coefficients	Standard Error	t Stat	P-value
Intercept	23.19312839	0.278166599	83.37855265	0.007634928
Change in unemployment	2665.104002	101.5645645	26.24049063	0.024249236
Change in homelessness	0.01824118	0.000305732	59.66395241	0.010669092
Change in income	-0.008754107	9.34063E-05	-93.72070774	0.006792476
Natural Disaster	110.2291142	0.476099108	231.5255634	0.002749657

Comparison

The relationship between the independent and dependent variables for the Indonesia regression was stronger than the relationship between the independent and dependent variables for Louisiana. The strength of the relationship can be compared by analyzing both P values. The Indonesia regression had a P value of .0176 while the Louisiana regression had a P value of .1047. The Indonesia regression was found to be statistically significant at the 95% confidence level, while the Louisiana regression was found to be statistically significant at a 90% confidence level. Both outputs showed that there was a strong positive correlation between the changes in income/wages, unemployment, and homelessness and the human trafficking measure.

Both regressions had R Square values of over 99%. This shows that the three independent variables selected, changes in unemployment, homelessness, and income levels, explained over 99% of the variance in the dependent variable, levels of human trafficking. In both cases, the null hypothesis was rejected in favor of the alternative hypothesis. There is a relationship between increases in human trafficking and the changes in unemployment, homelessness, and income. Even though the Indonesia regression had a higher statistical significance, this statistical analysis shows that both third world countries, like Indonesia, and developed countries, like the United States, are susceptible to increases in human trafficking following natural disasters.

When looking specifically at the P values of each independent variable for both regressions, it is seen that all three variables were found to be more statistically significant for the Indonesia regression than for the Louisiana regression. The lower the P value, the more significant the variable is. At a 95% confidence level, all three independent variables were found to be significant for Indonesia. For Louisiana, the change in homelessness and the change in income were significant at a 95% confidence level and the change in unemployment was just outside the significance range at a 95% confidence level with a P value of .06, but it was significant at a 90% confidence level. A table displaying the P values of each independent variable is shown below:

	Indonesia P Value	Louisiana P Value
Change in unemployment	0.042337285	0.061889771
Change in homelessness	0.006997727	0.031899073
Change in income	0.010882397	0.040062725

The addition of a dummy variable into the regression had very different impacts for both outputs. For Indonesia, the dummy variable made the output less statistically significant. This implies that human trafficking is a problem in Indonesia with or without the presence of a natural disaster. In the Louisiana regression, the statistical significance of the changes in human trafficking was increased by adding the presence of a natural disaster into the regression. This implies that while human trafficking wasn't a statistically significant issue for the state without a natural disaster, the presence of a natural disaster made the regression notably more significant. A table displaying the differences in P value of each regression with the dummy variable and without the dummy variable is shown below:

Indonesia P Value *without* dummy	Indonesia P Value *with* dummy	Louisiana P Value *without* dummy	Louisiana P Value *with* dummy
0.017641966	0.174727056	0.104701103	0.007634928

CONCLUSION

In my research, I hypothesized that the increases in human trafficking levels post-Hurricane Isaac would be comparable to the increases post-Indian Ocean earthquake and tsunami. To begin the study, I described what is considered human trafficking and discussed literature published that explored the relationship between natural disasters and human trafficking. Human trafficking is defined as "sex trafficking in which a commercial sex act is induced by force, fraud, or coercion, or in which the person induced to perform such an act has

not attained 18 years of age; or the recruitment, harboring, transportation, provision, or obtaining of a person for labor or services, through the use of force, fraud, or coercion for the purpose of subjection to involuntary servitude, peonage, debt bondage, or slavery" (TVPA, pg. 114 STAT. 1470).

To analyze my hypothesis, I ran two multiple regressions, one for Hurricane Isaac in Louisiana and one for Indonesia after the Indian Ocean earthquake and tsunami. The dependent variable was identified as the change in the measure of human trafficking. For Hurricane Isaac, the level of trafficking selected was the change in the number of human trafficking reports received by the Human Trafficking Hotline in Louisiana. For the Indian Ocean earthquake and tsunami, the human trafficking level identified was the change in the number of human trafficking victims reported to the police. The independent variables selected included the changes in income/wages, homelessness, and unemployment.

The regression for the Indian Ocean earthquake and tsunami was found to be statistically significant at a 95% confidence level with a P value of .0176, showing that there was a strong relationship between the changes in level of human trafficking and changes in wages, homelessness, and unemployment for Indonesia. For Hurricane Isaac, the P value was found to be .1047, which was statistically significant at a 90% confidence level. Though this value was found to be less statistically significant, it still showed a relationship between the changes in level of human trafficking and changes in income, homelessness, and unemployment for Louisiana.

With the addition of a dummy variable to represent the year the natural disaster occurred, the P value for Indonesia increased to .1747 and the P value for Louisiana decreased to .0076. This shows that for Indonesia, human trafficking is an ongoing issue with or without the presence of a natural disaster in the country. For Louisiana, human trafficking was not as statistically significant of a problem without the presence of a natural disaster, however the addition of a dummy variable for the year the disaster occurred made the regression much more statistically significant.

LIMITATIONS

There were several limitations in this study. One of the limitations is in the manner data was collected. In collecting data for the Indonesia regression, while solid data sources were found for the changes in trafficking and wages, homelessness and unemployment data was compiled from a variety of sources. For the Louisiana regression, data for household income levels was compiled from two different sources. While having one reliable source for the data would have been preferable, the fact that this data was not readily available forced multiple sources to be used.

Another limitation for this study relates to the underground nature of the crime of human trafficking. Though measures were found from reliable sources, the United Nations and the Human Trafficking Hotline, these statistics may not reflect the actual levels of human trafficking in the country. Unfortunately, there will likely never be a way to adequately measure levels of human trafficking globally because many human trafficking victims suffer in silence and do not or are not able to come forward and report the crime.

Lastly, differences between Indonesia and Louisiana could have impacted data gathering. The data found for Louisiana came from primarily databases of government entities. The data for Indonesia did not primarily come from governmental organizations, but from international

organizations like UNICEF and the United Nations. Sources such as literary work and news reports were also used to obtain some of the data. The fact that Louisiana data was mainly compiled within the United States government and the data for Indonesia was primarily found from sources outside the country could have resulted in different collection techniques and impacted the viability of the data.

FUTURE WORK

Human trafficking research has increased significantly since the passing of the Trafficking Victims Projection Act of 2000, but more work still needs to be done. Future research would include an analysis on relief efforts following natural disasters. This would allow aid workers and governments much needed information on how to better prevent increases in human trafficking post-natural disaster. Efforts such as housing placement or the amount of time in which students are sent back to school would be looked at and analyzed to see their effectiveness at combatting human trafficking.

Future research would also be done on other causal events and their relation to human trafficking. Such things as war or political unrest have not been substantially researched as compared to human trafficking in the wake of natural disaster. Similar data gathering of before and after statistics on the selected event would allow researchers to determine the effects on political unrest or war on changes in levels of human trafficking. These results would be compared to results from this research and would shed light on the severity of these conflicts on human trafficking.

Researching human trafficking legislation passed and the impact of that legislation on human trafficking levels would provide the government with vital information on what laws are most effective at combatting human trafficking. Regulation on both the crime of human trafficking and the punishment of being found guilty of trafficking in persons would be investigated to determine if certain laws are more deterrent to traffickers than others.

A possible follow up study would focus on the demand side of human trafficking. Most research has focused on variables that increase the supply of human trafficking victims, but it is evident that the supply would not be present if there was not a corresponding demand for the service. By researching what motivates customers of sex trafficking and labor trafficking, it could be determined how to go about curbing and even eliminating the demand for human trafficking.

Lastly, potential research could be centered around assistance given to human trafficking victims. This research would entail visiting a home for trafficking survivors and interviewing the individuals on their experiences after escaping their traffickers. Finding out what assistance is most vital to these survivors could help guide organizations towards the best way to help integrate human trafficking survivors back into society. Determining what programs and aid is most helpful to these survivors would help aid programs focus their efforts on increasing funding to these areas or by making those services more widely available to survivors.

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