COUNTERING TRAFFICKING IN PERSONS IN THE PHILIPPINES

AN ECOSYSTEM APPROACH USING WEAK-SIGNAL ANALYSIS

DECEMBER 2021

Novametrics LLC

Authors:
Gregory E. van der Vink, Ph.D.
Sabrina Szeto
Katherine Carlson
Erica Phillips
Jeffrey Park, Ph.D.
Michael Jackson, Ph.D

PREAMBLE

This report summarizes an empirical ecosystem analysis of trafficking in persons in the Philippines using weak-signal analysis. Parts of this analysis have been previously presented to the United States Agency for International Development (USAID) and the USAID Mission in the Philippines during briefings scheduled by USAID on August 6, 2020, December 15, 2020, January 21, 2021, and August 31, 2021.

The United States (US) Department of State has requested that more research on Trafficking in Persons be published in the peer-reviewed professional literature. Consistent with this request, parts of the analysis presented in this report have already been published in the peer-reviewed professional literature, and the other parts are either currently under review or have been submitted.

While cross-cutting recommendations are included in Section 3 of this report, detailed geographically-targeted interventions specific for the most vulnerable regions are presented in Annex 1. Annex 2 is a description of our methodology and the limitations associated with the analysis. Annex 3 provides a detailed analysis of the TIP tier rankings in the US Department of State's annual Trafficking in Persons report and was published in the Journal of Human Trafficking. Annex 4 provides a detailed analysis of the role of child marriage in TIP and is a manuscript currently under review in the peer-reviewed professional literature.

This research is supported by USAID under subcontract with NORC's prime contract, DRG-Learning, Evaluation and Research (LER II) GS-10F-0033M/76200AA18M00016. Aspects of the analytical approach and methodology were developed by Novametrics with support from the US Office of the Secretary of Defense contract #W911QX-13-C-0182.

We greatly appreciate the review and administrative management provided by our colleagues at NORC and Social Impact. Novametrics would also like to acknowledge the contributions made by Annie Liang, Nicole Meister, Rei Zhang, Arielle Mindel, Annette Lee, and James Phillips to the research in this report. The opinions presented in this report are those of the authors, and do not necessarily represent those of the supporting organizations or any of the institutions with which the authors are affiliated.

TABLE OF CONTENTS

TABLE OF TABLES

TABLE OF FIGURES

ACRONYMS

BARMM	Bangsamoro Autonomous Region in Muslim Mindanao
CTIP	Countering Trafficking in Persons
DHS	Demographic and Health Surveys
DoS	Department of State
ESP	Electronic Service Providers
GDP	Gross Domestic Product
GSI	Global Slavery Index
HDI	Human Development Index
IACAT	Inter-Agency Council Against Trafficking
ICMS	Integrated Case Management System
ILO	International Labour Organization
ISP	Internet Service Providers
MICS	Multiple Indicator Cluster Surveys
NCMEC	National Center for Missing and Exploited Children
NCR	National Capital Region
NGO	Non-governmental Organization
OFWs	Overseas Filipino Workers
OOSC	Out-of-school Children
OSEC	Online Sexual Exploitation of Children
PSA	Philippines Statistics Authority
RA	Republic Act
SCP	Situational Crime Prevention
SDG	Sustainable Development Goal
TIP	Trafficking in Persons
TVPA	Trafficking Victims Protection Act
UN	United Nations
UNDHR	United Nations Universal Declaration on Human Rights
UNICEF	United Nations Children's Fund
US	United States
USAID	United States Agency for International Development
USD	United States Dollars
USG	United States Government
U18	Under 18 years of age
U15	Under 15 years of age
VE	Violent Extremism

EXECUTIVE SUMMARY

Over the last two decades, the Philippines's ranking in the United States (US) Department of State's annual Trafficking in Persons (TIP) Report has improved, including by reaching Tier 1 status in 2016. The annual TIP Report is the US government's principal diplomatic tool for engaging foreign governments on human trafficking. Placement into one of the tier levels is based not on the magnitude of the country's trafficking problem, but on the extent of governments' efforts towards the elimination of human trafficking. Law enforcement metrics on prosecutions, convictions, and identified victims are presented in the TIP Report, and have been used by the US government as evidence of progress towards countering TIP (CTIP).

Coincident with the Philippines rise to Tier 1 has been a rise in the nation's TIP prevalence, as estimated by the Global Slavery Index (GSI). The GSI prevalence rate for the Philippines almost doubled from 2016 to 2018, increasing from 4.0 to 7.7 per 1,000 persons. The Philippines has the highest TIP prevalence estimate among Tier 1 nations. While the Philippines' law enforcement metrics are consistent with other Tier 1 nations, its governance measures, economic measures, and child marriage rates are more typical of Tier 2 nations. In addition, its rate of online sexual exploitation of children (OSEC) is among the highest in the world.

While prosecuting traffickers and rescuing those who have experienced trafficking have an important role in the overall CTIP strategy, we have found no evidence at the global scale that prosecutions result in meaningful reductions in TIP. Accordingly, our analysis supports a complementary approach that is aimed not towards prosecuting traffickers, but towards preventing future trafficking to create meaningful reductions in TIP. Our approach is grounded in the criminology theory of situational crime prevention (SCP) and is focused towards the "Prevention" part of the "3P" paradigm for addressing TIP (Smith, 2000). SCP focuses on the criminal setting and begins with an examination of the circumstances (the "ecosystems") that allow for particular types of crime. By gaining an understanding of these ecosystems, mechanisms are then introduced to change the ecosystems, which reduces the opportunities for crime.

Consistent with SCP, our analysis applies an ecosystem model that uses "weak-signal analysis" to identify the characteristics of ecosystems in which TIP occurs. Every population has a complex mosaic of characteristics derived from their demographics, environmental resources, geographical location, ethnic history, wealth, social norms, income-producing activities, religious sects, access to markets, educational levels, etc. Individual indicators are not assumed to have direct causal relationships to TIP, rather it is the combinations of indicators that hold predictive value. Just as there is no single cause for TIP, there is no single solution. Our analysis is consistent with the observation that many anti-trafficking policies have had limited success at reducing human trafficking because they tend to be applied uniformly and do not account for varying sociocultural and economic conditions. Scalability requires an "adaptive approach," with interventions customized to each geographic location.

An additional advantage of an ecosystem approach is that the analysis is agnostic. We do not pre-select and combine indicators that we think are related to TIP, nor do we limit our analysis to any single survey or type of data. We input as much relevant data as available and allow the analysis to reveal the combinations of indicators and their relative weightings that are most characteristic of ecosystems where the problem occurs. Previously-hypothesized relationships are often confirmed, but the discovery of unexpected relationships is just as common. These discoveries of unexpected relationships lead to a

more sophisticated understanding of TIP, and in turn, offers new opportunities for more nuanced and effective interventions.

Globally, we find that the traditional economic hypotheses that TIP arises from elevated poverty and unemployment appears to be an oversimplification. Economic measures, such as unemployment and poverty rates, have only weak relationships with both prevalence estimates and tier rankings. Our data analysis in the Philippines is consistent with this larger-scale finding and reveals more nuanced circumstances.

Our analysis indicates that, in the Philippines, vulnerability to TIP is highest among lower-middle to middle class societies with moderate levels of income and education that have access to an urban center. Populations that have high vulnerability to labor TIP have a patriarchal culture that supports traditional gender roles and have fewer societal services and safeguards. Populations vulnerable to sex TIP, in comparison, are less affected by gender inequality and are less agricultural. Populations vulnerable to either type of TIP characteristically have access to a city or larger town, which comes with moderate levels of education, wealth, and access to technology, which allows exposure to TIP.

Our analysis also indicates that TIP among Overseas Filipino Workers (OFWs) is higher in middle to higher-income populations living in more urban areas. Members of this population have completed higher levels of education, have access to information and media, and are seeking upward mobility.

Notwithstanding existing legal and regulatory structures, the Philippines has among the highest rates of OSEC in the world. We find that OSEC in the Philippines is largely an *in-situ* crime, with approximately 84 percent of OSEC victims trafficked within their own province, mostly likely by biological parents or relatives in the majority of cases. While OSEC in the Philippines has increased during COVID-19, it was not uniquely caused by the pandemic. We expect that OSEC will continue to increase unless stronger incentives and mandates are developed to enforce the existing legal and regulatory regimes.

Populations with high levels of TIP have high levels of child marriage and gender inequality. The treatment of a child as a commodity is consistent with the definition of human trafficking, regardless of whether that child is being transactionally exchanged for money, goods, social status, protection, or family honor. Future efforts to reduce TIP would benefit from promoting female empowerment and complementing female empowerment with efforts targeted at reducing gender inequality. Specifically, engaging males before the age of ten, when gender roles and expectations begin to be imprinted (Blum et al., 2017), is needed to complement improving education and opportunities for females. In addition to promoting further reductions to TIP, a reduction of gender inequality will likely also benefit economic development, democratic governance, resistance to extremism, and the protection of human rights.

Weak-signal analysis provides a means for predicting vulnerability to TIP. The analysis can also reveal the underlying causal relationships associated with the vulnerability. As such, it can be used to identify vulnerable populations and increase their resilience to TIP with geographically-targeted, customized interventions. While attempts at universal solutions have had limited success, geographically-targeted, customized interventions hold strong promise for providing significant reductions in victimization.

This report presents TIP vulnerability maps for the Philippines, a vulnerability measure for each region based on weak-signal analysis, cross-cutting recommendations, and recommendations for geographically-targeted interventions. The vulnerability measure is translated into projected TIP prevalence and

projected numbers of potential victims for each region. In allocating CTIP resources, decision-makers are often looking to reduce the number of victims in the most cost-efficient manner. They may want to prioritize areas with the highest density of potential victims, as measured by a combination of prevalence rate and population. Prevalence estimates can be misleading when used by themselves. For example, a location with a low prevalence rate but high population can contain more TIP victims than a location with a high prevalence rate and low population. We thus include projected numbers of potential victims with prevalence to account for population differences.

Our focus is on prevention, with the goal of undertaking proactive measures to reduce vulnerability. Although our projections accurately identify areas of known TIP, the analytical objective is to identify ecosystems where populations are most likely to fall victim in the future. Where vulnerability is high, TIP may also be occurring under-reported. In addition to focusing resources in locations where TIP has already been reported, we recommend prioritizing preventative policies in the set of locations where TIP vulnerability is high.

The annexes of this report include a description of the analytical methodology; limitations associated with the analysis; and, for the most vulnerable ten regions, a region-by-region analysis of TIP vulnerabilities and related-metrics with recommendations for potential geographically-targeted interventions.

I. INTRODUCTION

In this report, we begin with an evaluation of human trafficking in the Philippines in relation to the tier rankings in the United States (US) Department of State (DoS) Trafficking in Persons (TIP) Report, further referred to as the TIP Report. We follow this with an evaluation of the relationship between child marriage and TIP. The report then analyzes the growing phenomenon of online sexual exploitation of children (OSEC) in the Philippines and TIP vulnerability among Overseas Filipino Workers (OFWs). Next, we provide an analysis of vulnerability to TIP based on an ecosystem approach and weak-signal analysis. The final section of the report includes cross-cutting recommendations and conclusions. Geographically-targeted interventions specific to the most vulnerable regions are presented in Annex 1.

II. ANALYSIS

The analysis section consists of five parts:

a) an evaluation of TIP in the Philippines in relation to the tier rankings in the annual TIP Report;
b) an evaluation of the relationship between child marriage and TIP in the Philippines;
c) an evaluation of OSEC in the Philippines;
d) an analysis of TIP in relation to OFWs; and
e) an analysis of vulnerability to labor and sex TIP based on an ecosystem approach and weak-signal analysis.

A. THE PHILIPPINES IN THE US DOS'S ANNUAL TIP REPORT

The US government's (USG) principal diplomatic tool to engage foreign governments on human trafficking is the TIP Report (US DoS, 2020a). The report is produced annually in accordance with the Trafficking Victims Protection Act (TVPA) of 2000 (Smith, 2000). Division A of TVPA established US anti-trafficking policy to (1) prevent trafficking, (2) protect trafficking victims, and (3) prosecute and punish traffickers (known as the "3 Ps").[1] The Trafficking Victims Protection Reauthorization Act of 2003 added a requirement to the original law that foreign governments provide the DoS with data on trafficking investigations, prosecutions, and convictions (Smith, 2003). Since 2004, law-enforcement metrics on prosecutions, convictions, and identified victims have been annually reported in the TIP Report (Smith, 2003).

In 2021, the TIP Report kept the Philippines in Tier 1 for the sixth consecutive year, which confirms that the country meets the minimum standards for the elimination of TIP (US DoS, 2021). The TIP Report uses a ranking system in which the best-ranked countries are identified as Tier 1 and the worst ranked as Tier 3 (Grassley, 2018). Under the TVPA, Tier 3 countries are subject to potential restrictions on certain types of US foreign aid and other US and multilateral funds. Placement of each country into one of the tiers is based not on the magnitude of the country's trafficking problem, but on the extent of governments' efforts to meet the TVPA's minimum standards for the elimination of human trafficking (22 USC 7106). The minimum standards used to determine a country's ranking are their efforts towards: 1) prohibiting severe forms of TIP and punishing acts of such trafficking; 2) prescribing punishment commensurate with that for grave crimes; 3) prescribing punishment that is sufficiently stringent to deter and reflects the heinous nature of the offense; and 4) making serious and sustained efforts to eliminate severe forms of TIP.[2]

Figure 1 shows the Philippines's rankings in the TIP Report since 2009. The blue bar shows the tier where the Philippines was placed that year. For comparison, we have included the global average tier ranking, computed both by averaging the tier ranking for each country (dark grey), and by the percentage of global population at each tier level (light grey). The latter average reflects how many people are living in each tier. The purpose of normalizing the data to the number of people is to account for the differences in population size among nations. For example, while only nine percent of countries are in Tier 3, those countries contain 25 percent of the global population. The dotted line represents

[1] In addition, the DoS employs a fourth "P," partnerships, "as a complementary means to achieve progress across the 3Ps and enlist all segments of society in the fight against modern slavery." US DoS, Policy Issues, "Human Trafficking," at https://www.state.gov/policy-issues/human-trafficking/.

[2] In determining if serious and sustained efforts are being made (standard #4), 12 criteria are considered as indicators.

the overall trendline for the Philippines during this period, following its rise from the Tier 2 Watch List to Tier 1.

Figure 1: Philippines TIP Report Tier Ranking

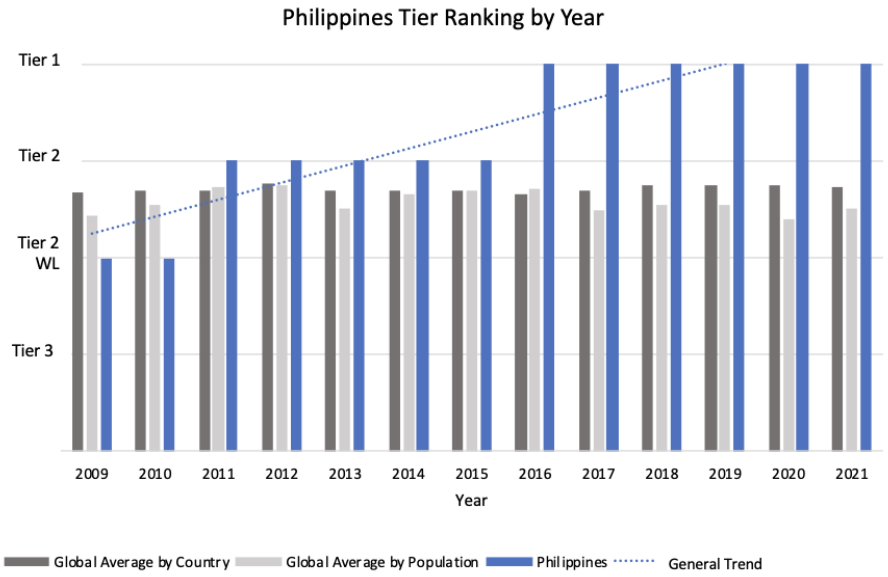


Figure 1 caption: After moving to Tier 2 in 2011 and Tier 1 in 2016, the Philippines has remained in Tier 1 through the 2021 TIP Report.

The 2021 TIP Report's justifications for the Philippines's Tier 1 status included increased prosecutions, including significantly more defendants charged with using child soldiers, and sentencing the majority of convicted traffickers to significant imprisonment terms. The government also increased the number of prosecutors assigned to anti-trafficking task forces and the number of staff to its anti-trafficking coordination body. The report noted, however, that the government did not convict any officials for complicity in trafficking crimes and did not vigorously investigate labor trafficking crimes that occurred within country or provide training to labor inspectors on the indicators of trafficking. The government also identified fewer victims than the previous reporting period and resources for law enforcement and specialized services for victims remained inadequate.

The Philippine's policies to counter human trafficking are established by Republic Act (RA) 9208, the "Anti-Trafficking Act of 2003," as amended by RA 10364, the "Expanded Anti-Trafficking in Persons Act of 2012." Section 20 of RA 9028 establishes the Inter-Agency Council Against Trafficking (IACAT). The IACAT is mandated to coordinate and monitor the implementation of the government's CTIP efforts. The IACAT also maintains a database that tracks reported TIP cases within the Philippines. The database contains information on victims of human trafficking, including the form of trafficking, origin of victim, location of where the victim was trafficked, and other demographic information. Novametrics was able to obtain access to these data through a cooperative agreement between Novametrics, STRENGTH Counter Trafficking in Persons (CTIP) Program, and IACAT.[3]

[3] Through discussions with IACAT and STRENGTH CTIP on January 29 and March 24, 2021, a data-sharing letter of understanding was developed and Novametrics gained access to data from IACAT on April 8, 2021. The STRENGTH CTIP program acted as a liaison between Novametrics and IACAT for sharing data as well as findings and provided feedback on our

Based on the TIP reports, the Philippines has shown steady prosecution and victim identification rates with levels typical of other Tier 1 nations. From 2018 to 2020, the Philippines had an average yearly prosecutions per capita rate of 2.6 per million citizens, compared to a median rate of 3.0 prosecutions per million citizens for Tier 1 nations. The average yearly victims identified rate for the Philippines was 17.1 per million population, above the median rate of 13.7 per million for Tier 1 countries. The country's convictions rates, however, are low compared to its peers. When convictions and prosecutions are averaged over three years to reduce the amount of uncertainty caused by the time-delay between prosecution and conviction, the Philippines averaged 0.3 convictions per prosecution. The rate of conviction per prosecution is lower than that of 75 percent of Tier 1 countries, for which the median rate is 0.6. It is also lower than the median rate of 0.4 for Tier 2 nations.

Figure 2 displays the law enforcement metrics for the Philippines and other Tier 1 nations in a box-and-whisker plot. The box-and-whisker format shows both the data distribution and critical statistics. Each dot represents a nation that was ranked as a Tier 1 nation in the 2021 TIP Report. The lower and upper hinges define the shaded box area, which includes the values for the middle 50 percent of the Tier 1 nations. The line separating the darker and lighter sides of the shaded box is the median value for all Tier 1 nations. The "whiskers" stretching from either end of the box show the minimum and maximum values, which are either the furthest values or else 1.5 standard deviations from the hinges. Values that lie outside of the whiskers are statistical outliers. The Philippines lies within the middle "box" of the Tier 1 nations for both prosecutions and identified victims. However, it lies well below nearly all Tier 1 nations in convictions.

preliminary results. The on-the-ground knowledge from STRENGTH-CTIP and IACAT provided additional insight into our results. At the same time, the analysis into TIP prevalence and origins of TIP victims from the IACAT database also provided valuable insight for IACAT, as Novametrics was one of the first to analyze their TIP victim profile database, which is compiled from prosecution case data.

Figure 2: Philippines Prosecutions, Convictions, and Identified Victims

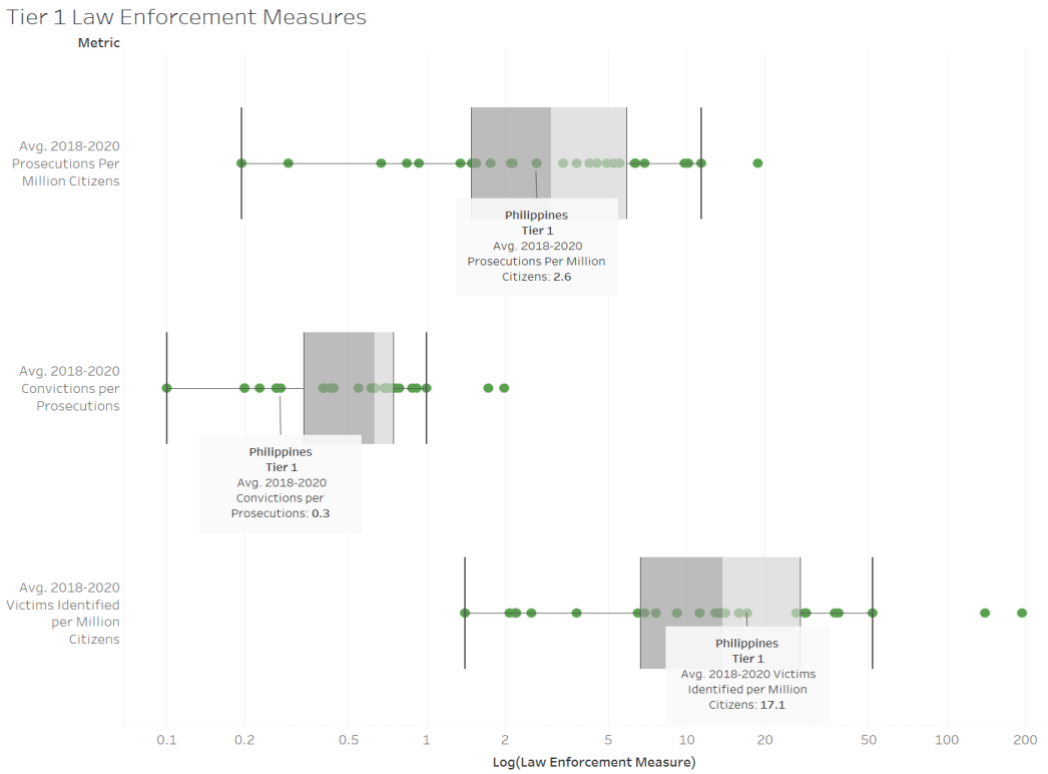


Figure 2 caption: In 2020, the government of the Philippines reported 377 prosecutions, an increase compared to 266 in 2019 and 227 in 2018. The government reported 73 convictions in 2020, compared to 89 in 2019 and 77 in 2018. We have normalized the number of convictions to the number of prosecutions. Both the number of convictions and the number of prosecutions have been averaged over three years to reduce the effects of the time-delay between prosecution and conviction. The statistical relationships are similar if we normalize the prosecutions to the estimated size of the TIP population.

While the TIP Report is intended to measure a nation's efforts towards reducing TIP, the Global Slavery Index (GSI) attempts to measure the magnitude of TIP within a nation (Walk Free Foundation, 2016 and 2018). A logical assumption would be that nations with stronger CTIP efforts, as indicated by their tier level, would achieve lower rates of TIP prevalence over time. Consistent with such an assumption, the correlations between GSI prevalence estimates and TIP tier rankings are statistically significant (van der Vink et al., 2021a). The GSI reports provide an estimate of the prevalence of human trafficking, quantified as the number of victims per 1,000 population in a country. The GSI estimate of TIP prevalence in the Philippines nearly doubled from 3.98 victims in 2016 to 7.7 in 2018, which was the highest prevalence rate of all Tier 1 countries.

The assignment of nations to various tier levels by the TIP Report, when viewed globally, only weakly correlates with the law-enforcement statistics within the reports. In addition, increases in prosecution do not typically correlate with decreases in GSI TIP prevalence estimates (van der Vink et al., 2021a). Nevertheless, some have presented law-enforcement metrics as evidence that government efforts stemming from the Palermo Protocol are working (US DoS, 2019). Others argue that viewing TIP as a law-and-order problem requiring an aggressive criminal justice response has resulted in "hundreds of millions of dollars being invested with no appreciable reduction in the absolute number of people trafficked worldwide" (e.g., Chuang, 2006).

Prosecuting traffickers and rescuing those who have experienced trafficking is an important component of an overall CTIP strategy. There is, however, no evidence that prosecutions result in meaningful reductions in TIP. Our analysis supports a complementary approach that is aimed at preventing future trafficking instead of prosecuting traffickers to create meaningful reductions in TIP. Our approach is grounded in the criminology theory of situational crime prevention (SCP) and is focused towards the "prevention" part of the "3P" paradigm for addressing TIP (Smith, 2000).[4]

SCP focuses not on apprehending criminals, but on reducing criminal opportunities. It employs a preventive approach by reducing opportunities for crime, and it has helped law-enforcement organizations realize significant reductions in the occurrence of crime and in the number of people who have experienced crime (e.g., Eck and Clarke, 2019). SCP focuses on the criminal setting and begins with an examination of the circumstances (the "ecosystems") that allow for particular types of crime. By gaining an understanding of these ecosystems, mechanisms are then introduced to change the relevant ecosystems, reducing opportunities for the harmful activities. SCP is considered an essential part of the United Nations (UN) Economic and Social Council's Guidelines for the Prevention of Crime (Resolution 2002/13) (UN Office on Drugs and Crime, 2010).

There are varied definitions of TIP, and this, combined with its sensitive nature, makes victim identification and quantification difficult. The varied definitions also lead to a large range of prevalence estimates across different institutions. Both the DoS and the Philippines use the definition of human trafficking presented in Article 3 of the Palermo Protocol. The DoS estimates that there are 25 million victims of labor and sex trafficking worldwide (US DoS, 2020b). The International Labour Organization (ILO) published its first estimate in 2005 of 12.3 million persons trafficked as a minimum at any given time between 1995 and 2004. In 2012, the ILO estimated that 20.9 million people were suffering forced labor at any given point in time over the ten-year period 2002-2011, reporting a standard error of 1.4 million at a 68 percent level of confidence (ILO, 2012). In 2016, the ILO and the Walk Free Foundation estimated 40.3 million people were "in modern slavery, including 24.9 million in forced labor" (ILO, 2017), a decrease from the earlier GSI estimate of 45.8 million victims in 2016 (Walk Free Foundation, 2018; Walk Free Foundation, 2016). The GSI published prevalence estimates by nation in 2012, 2014, 2016, and 2018. As with the DoS national estimates, the GSI national estimates have also been subject to criticism (e.g., Gallagher, 2014) and their 2012 and 2014 estimates have been withdrawn due to changes in their methodology.

The GSI estimate includes forced marriage, child marriage, and child soldiers. The DoS and earlier ILO estimates treat these human rights abuses separately. The difference between estimates can be attributed not only to differences in scope of definition, but also to the inherent uncertainty of such estimates; specifically:

1) Ambiguity and differences exist in the terms human trafficking, TIP, modern slavery, slavery, slavery-like practices, etc.;
2) Victims of human trafficking generally self-identify and therefore include subjective assessments that are affected by different sociocultural norms;
3) The population of victims is largely a hidden population, and it is therefore difficult to obtain a representative sample for statistical analysis; and

[4] The "3P" paradigm consists of Prevention, Protection, and Prosecution, as shown in the 2018 TIP Report.

4) In any given survey, the number of self-identified alleged victims is generally small and extrapolations from small numbers have significant uncertainty.

In addition, international definitions may not be fully consistent with national definitions and the local customs and laws of a particular country. For example, forced marriage is prohibited through the prohibitions on slavery and slavery-like practices, including servile marriage. By extension, child marriage can be considered to be forced marriage, as one or both parties by definition are not able to express free and informed consent (ILO, 2017). In many countries, however, parties under the age of 18 (U18) are legally allowed to marry. In the US, there is no federal law regarding child marriage, and each state has its own regulations.

The discrepancies in definitions and inherent ambiguity in victim identification can make estimating TIP prevalence complex and subjective. While methods that attempt to measure prevalence are imperfect, they still have merit and show statistically significant relationships with other related measures (van der Vink et al., 2021a).

At the global scale, the traditional economic theory that TIP arises from elevated poverty and unemployment appears to now be an oversimplification. Today, TIP and TIP tier rankings are more reflective of governance and social freedoms than economic factors (e.g., Perry and McEwing, 2013, Cho, 2015, van der Vink et al., 2021a).

The Philippines has a Democracy Index that is on the lower end of the range typical of a Tier 1 nation, and also falls below the typical range of a Tier 2 nation (Figure 3). The country's ranking on other indicators, such as Ease of Doing Business, Press Freedom, Corruption, Freedom, Fragile States, and Economic Freedom are all well below the typical range for Tier 1 nations (Figure 3). The clear differences between the median governance measures for each tier level suggest that, at the national scale, governance, corruption, and bureaucracy contribute to TIP. The strong statistical relationships revealed through our analysis between these metrics and TIP tier rankings and prevalence estimates suggest that problems with governance, transparency, and corruption should be addressed as part of the overall CTIP strategy.

Figure 3: TIP Tier Rankings and Governance Measures for the Philippines

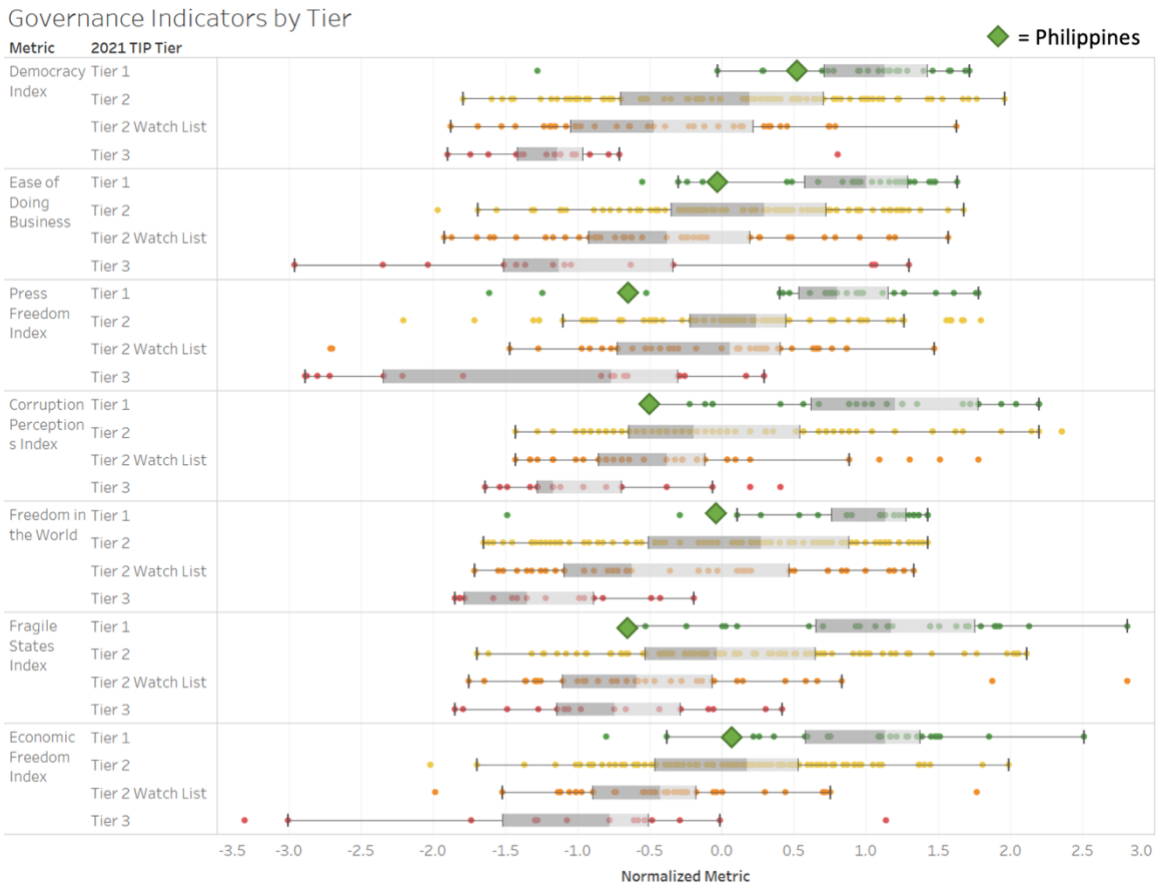


Figure 3 caption: Compared to other Tier 1 nations, the Philippines places on the lower end of all governance indicators. These indicators are: a) Democracy Index: a measure of democracy based on electoral process and pluralism, civil liberties, the functioning of government, political participation, and political culture (Economist Intelligence Unit, 2020); b) Ease of Doing Business: measures business-related metrics including handling permits and utilities, getting credit, and dealing with trade and contracts for 2020 (World Bank, 2020); c) Press Freedom Index: a measure of press freedom composed of survey responses from experts and data on abuse and violence against journalists for 2021 (Reporters without Borders, 2021); d) Corruption Perceptions Index: a composite index based on how corrupt a country's public sector is perceived to be by experts and business executives for 2020 (Transparency International, 2020); e) Freedom in the World: N index assessing political rights and civil liberties of individuals for 2021 (Freedom House, 2021); f) Fragile States Index: uses the Fund for Peace's Conflict Assessment System Tool to measure conflict drivers and dynamics for 2021 (Fund for Peace, 2021); and g) Economic Freedom Index: measures economic freedom under the categories of rule of law, government size, regulatory efficiency, and open markets for 2021 (Heritage Foundation, 2021).

B. CHILD MARRIAGE AND HUMAN TRAFFICKING IN THE PHILIPPINES

Attempts to address child marriage and child, early, and forced marriage are interwoven with TIP through a fabric of international agreements, domestic laws, and cultural traditions that contain different definitions on the age of a child, the minimum age of marriage, the age of free and informed consent, and the factors that constitute special circumstances. There is general agreement that trafficking and child marriage intersect when marriage is used both in conjunction with force, fraud, coercion, or abuse of power, and as a means to subject spouses to conditions of slavery, often in the form of domestic or sexual servitude (e.g., UN Office on Drugs and Crime, 2020). When applied to different social norms,

however, the definitions of these terms and the description of circumstances contain sufficient ambiguity to create inconsistencies regarding enforcement and interpretation.

At the international level, child marriage can be considered a violation of human rights under a series of linked international agreements to which the Philippines is party:

- The United Nations Universal Declaration on Human Rights (UDHR) states in Article 16 (2): "Marriage shall be entered into only with the free and full consent of the intending spouses" (UN, 1948).
- The Convention on Consent to Marriage, Minimum Age for Marriage, and Registration of Marriages refers in its preamble to UDHR Article 16 (2), reaffirms the consensual nature of marriages (Article 1),[5] requires the parties to establish a minimum marriage age by law (Article 2),[6] and requires parties to ensure the registration of marriages (Article 3) (UN, 1964).
- The non-binding recommendation accompanying the Convention, "Recommendation on Consent to Marriage, Minimum Age for Marriage and Registration of Marriages," recalls Article 2 of the Supplementary Convention on the Abolition of Slavery, the Slave Trade, and Institutions and Practices Similar to Slavery and specifies (Principle II) that any minimum age "shall not be less than fifteen years of age" except "for serious reasons, in the interest of the intending spouses" (UN, 1965). The exception for undefined "serious reasons" makes enforcement difficult.

Additionally, it can be argued that child marriage is a "practice similar to slavery" under the UN Supplementary Convention on the Abolition of Slavery, the Slave Trade, and Institutions and Practices Similar to Slavery (UN, 1956). Although child marriage is not specifically addressed in the convention, and no "suitable" minimum age is specified, child marriage is implicitly prohibited through Article 1(C), Article 1(D), and Article 2.

- Article 1(C) prohibits a woman to be promised or given in marriage without the right to refuse.
- Article 1(D) prohibits "any institution or practice whereby a child or young person under the age of 18 years, is delivered by either or both of his natural parents or by his guardian to another person, whether for reward or not, with a view to the exploitation of the child or young person or of his labour."
- Article 2 states "with a view to bringing to an end the institutions and practices mentioned in article 1 (c) of this Convention, the States Parties undertake to prescribe, where appropriate, suitable minimum ages of marriage, to encourage the use of facilities whereby the consent of both parties to a marriage may be freely expressed in the presence of a competent civil or religious authority, and to encourage the registration of marriages."

Finally, the UN Sustainable Development Goal (SDG) 5 is to achieve gender equality and empower all women and girls. Target 5.3 for that goal is to "eliminate all harmful practices, such as child, early and forced marriage and female genital mutilations." To measure progress towards Target 5.3, the UN uses

[5] The Convention on Consent to Marriage, Minimum Age for Marriage, and Registration of Marriages is a treaty agreed upon in the United Nations on the standards of marriage. The treaty was opened for signature and ratification by General Assembly resolution 1763 A (XVII) on 7 November 1962 and entered into force 9 December 1964.

[6] The Convention on Consent to Marriage, Minimum Age for Marriage, and Registration of Marriages also contains the statement that "No marriage shall be legally entered into by any person under this age, except where a competent authority has granted a dispensation as to age, for serious reasons, in the interest of the intending spouses."

indicator SDG 5.3.1, "the proportion of women aged 20–24 years who were married or in a union before age 15 and before age 18" (UN, 2015). Among Filipino women aged 15-19, two percent were married under the age of 15 and 17 percent were married under the age of 18. (UN Department of Economic and Social Affairs, Population Division, 2017).

As previously noted, both the Philippines and the US generally follow the definition of TIP contained in the Palermo Protocol. The protocol defines the meaning of "child" as any U18 person (Article 3(d)) and specifies that means are not relevant if the act involves a child (Article 3(c)). The TIP Report references child marriage as a contributing factor to girl's vulnerability to exploitation, but does not consider it a form of human trafficking and does not include child marriage in its calculation of TIP victims.

In 2017, the ILO began counting forced marriage in their slavery statistics (ILO, 2017) under the general recommendation that "child marriage is considered to be a form of forced marriage, given that one and/or both parties have not expressed full, free and informed consent" (Article VI.B.20, CEDAW, 2014). The recommendation, however, contains the caveat that "marriage of a mature, capable child below 18 years of age may be allowed in exceptional circumstances, provided that the child is at least 16 years of age and that such decisions are made by a judge based on legitimate exceptional grounds defined by law and on the evidence of maturity, without deference to culture and tradition" (CEDAW, 2014).

In Figure 4, each dot represents a nation. The vertical axis is the percentage of females aged 15-49 ever U18 married, divorced, or in an informal union (UN Department of Economic and Social Affairs, 2017; UN World Marriage Data, 2017).[7] The horizontal axis is the 2018 GSI estimate of the prevalence of "modern slavery" within each country (Walk Free Foundation, 2018). Each dot is colored by that nation's tier assignment in the 2018 TIP Report (US DoS, 2018). The dashed horizontal lines are the median child marriage rates for the countries in each TIP tier level. Even though child marriage rates are not incorporated in the calculation of TIP tier levels, there is an association. Tier 1 countries have on average two to three times lower child marriage rates than Tier 2 and 3 countries.[8]

[7] Many western nations were missing U18 child marriage rates in the UNICEF MICS surveys. The missing values were imputed using the linear relationship between the U15 (U15 = 0.423 * Child Marriage Practice - 1.232, R-squared = 0.716) and U18 values (U18 = 1.141*Child Marriage Practice + 4.7, R-squared = 0.809) from the UN Child Marriage Practices survey (UN World Marriage Data, 2017). The latter survey measures the percentage of women aged 15-19 ever married, divorced, widowed, or in an informal union. Thus, there are discrepancies between the age groupings of the two datasets, but given the high r-squared values in the relationship between the rates, the interpolation was suitable.

[8] It is notable that seven of the ten countries with the highest U18 child marriage rates are on the Tier 2 watchlist.

Figure 4: Child Marriage, TIP Prevalence, and TIP Tier Rankings

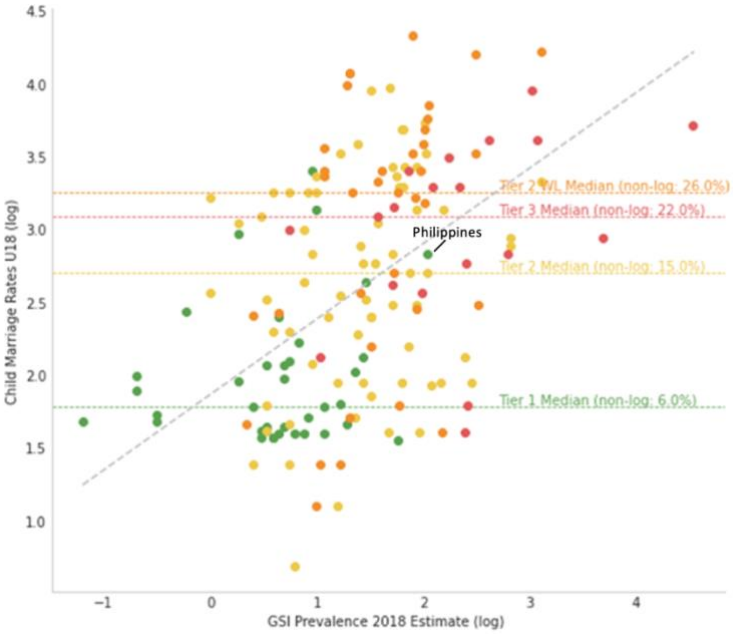


Figure 4 caption: Child marriage and TIP are interrelated within a common ecosystem (van der Vink et al., 2021b). The GSI prevalence 2018 estimate is the GSI estimate of the prevalence of "modern slavery" within each country. The Child Marriage Rates U18 values are estimates of the of the percentage of U18 females ever married, divorced, or in an informal union, based on the 2017 UN Department of Economic and Social Affairs and United Nations Children's Fund (UNICEF) Multiple Indicator Cluster Surveys (MICS) data. Each dot represents a nation, colored by that nation's tier ranking in the 2018 TIP Report. The dashed horizontal lines are the median child-marriage rates for the countries in each TIP tier level.

While the reporting of child marriage rates, the estimating of human trafficking prevalence, and the designation of TIP tier levels are distinct activities pursued by different organizations operating under different mandates, our analysis in Figure 4 demonstrates that these metrics and the associated phenomenon they attempt to measure are inter-related within a common ecosystem. Countries with higher child marriage rates typically have higher rates of human trafficking and are assigned worse TIP tier levels. Statistically, the chances of the "null hypothesis" being true, that child marriage and human trafficking are not related, is less than one in ten million.[9]

While many claim that not all child marriages are TIP, the ecosystem of opportunities it creates for TIP and other negative impacts is large. There is increasing pressure to set a minimum age for marriage and to classify marriage under that age as TIP. The hope is that by recognizing child marriage as a form of TIP, it will raise awareness and provide increased leverage for enforcement (e.g., Redfern, 2019). The argument for including child marriage as a form of slavery similar to TIP can be logically presented. Children, by definition, cannot provide free and informed consent. The treatment of a child as a commodity is consistent with the definition of human trafficking, regardless of whether that child is being exchanged in a transaction for money, goods, social status, protection, or family honor.

[9] The data distributions were skewed, so a logarithmic transformation was applied to both variables (Child Marriage Rates and GSI Prevalence Estimates) for a more accurate statistical analysis. The relationship in Figure 4 has an equation of log(U18) = 0.518 x log(GSI) + 1.868 and an R-squared value of 0.188.

C. OSEC IN THE PHILIPPINES

OSEC generally includes the production, for the purpose of online publication or transmission, of visual depictions (e.g., photos, videos, live streaming) of the sexual abuse or exploitation of a minor for a third party who is not in the physical presence of the victim, in exchange for compensation (International Justice Mission, in partnership with US DoS and IACAT, 2020). The Philippines has several legal and regulatory structures in place to address OSEC. Legal structures include: the 2009 Anti-Child Pornography Act (RA 9775), which recognizes digital pornography and online grooming, and the 2000-2025 National Strategic Framework Plan for the Development of Children. Regulatory structures include: requirements for Internet Service Providers (ISPs) to report instances of OSEC through the Anti-Child Pornography Act of 2009, and government guidelines for ISPs to install filtering software to block access to and transmission of child pornography materials. On May 27, 2021, the Senate passed the Special Protections against Online Sexual Abuse and Exploitation of Children Act (Senate Bill 2209). It defines a comprehensive list of acts that are classified as OSEC, gives additional tools to law enforcement to go after sexual abusers of children, and requires internet intermediaries to create detection systems (Cepeda, 2021).

Notwithstanding these laws and regulations, the Philippines has been described as an epicenter for OSEC (Children and the Sex Trade in the Digital Age, n.d.), with some researchers citing widespread internet access and relatively high English proficiency levels as factors that influence the prevalence of this type of child exploitation (Gill, 2021). Using the rates of reports to the CyberTipline of the National Center for Missing and Exploited Children (NCMEC) as a relative indicator of OSEC prevalence, the Philippines ranks in the top five nations, both in total number of reports and in number of reports as a percentage of population.[10]

In evaluating the characteristics of OSEC within the Philippines, we used data from IACAT and NCMEC. Data on OSEC cases are currently distributed across different agencies, such as the Philippines Internet Crimes Against Children Center and IACAT, depending on how the case was prosecuted. OSEC may be prosecuted as a violation of the Anti-Cybercrime Law (RA 10175), the Anti-Child Pornography Law (RA 9775), or the Anti-Human Trafficking Laws (RA 9208 and 10364). IACAT only records OSEC cases that are prosecuted under anti-trafficking laws, and not cases that are filed as violations of the other laws. For the purposes of this study, data were limited by availability to IACAT complaints of cybersex with U18 individuals from January 2010 to March 2021. While we do not present these data as direct measures of OSEC, the data are useful for comparative assessments.

When interpreting IACAT data, we also collected data from NCMEC, which is a US-based nonprofit organization dedicated to finding missing and exploited children and combating child sexual exploitation and victimization. NCMEC's CyberTipline serves as a centralized reporting system for OSEC globally. While NCMEC reports cannot be used alone to directly measure OSEC, as one OSEC incident may be reported multiple times by multiple entities, they can serve as a useful indicator.

Using IACAT and NCMEC data as indicators, our analysis confirms that the Philippines has among the highest rates of OSEC in the world. Between 2019 and 2020, the Philippines moved from having the sixth-highest to the second-highest number of CyberTipline reports made to the NCMEC. When

[10] While a useful indicator, reports cannot be used alone to measure directly OSEC, as one OSEC incident may be reported multiple times by multiple entities.

normalized for population, Philippines NCMEC reports fall from second-highest to fourth-highest. The ages of the victims range from one through 17. The median female victim age was 13 and the median male age was 12. 88 percent of OSEC victims were female and 12 percent were male, which is a similar distribution to sex TIP. The "traffickers," or those perpetrating OSEC, were 54 percent female and 46 percent male.

Our analysis suggests that OSEC is predominantly a form of exploitation that occurs "in-place," as 83.7 percent of OSEC victims with known origins reported being trafficking in their origin province. Our findings are compatible with the finding that 83 percent of OSEC traffickers are the biological parents or relatives of the victims (International Justice Mission, 2020), and with media reports that point towards family members as OSEC traffickers (Associated Press, 2020).

Figure 5 shows the number of inferred OSEC victims, as measured by U18 cybersex victims for whom an origin province was recorded by IACAT. The blue bars show the percentage of OSEC victims who were trafficked in place (within the same province) and the grey bars represent the percentage of victims who were trafficked from elsewhere (from a different province). The pie chart shows that 83.7 percent were trafficked within their own province.

Figure 5: OSEC Victims with Known Origins Identified by IACAT

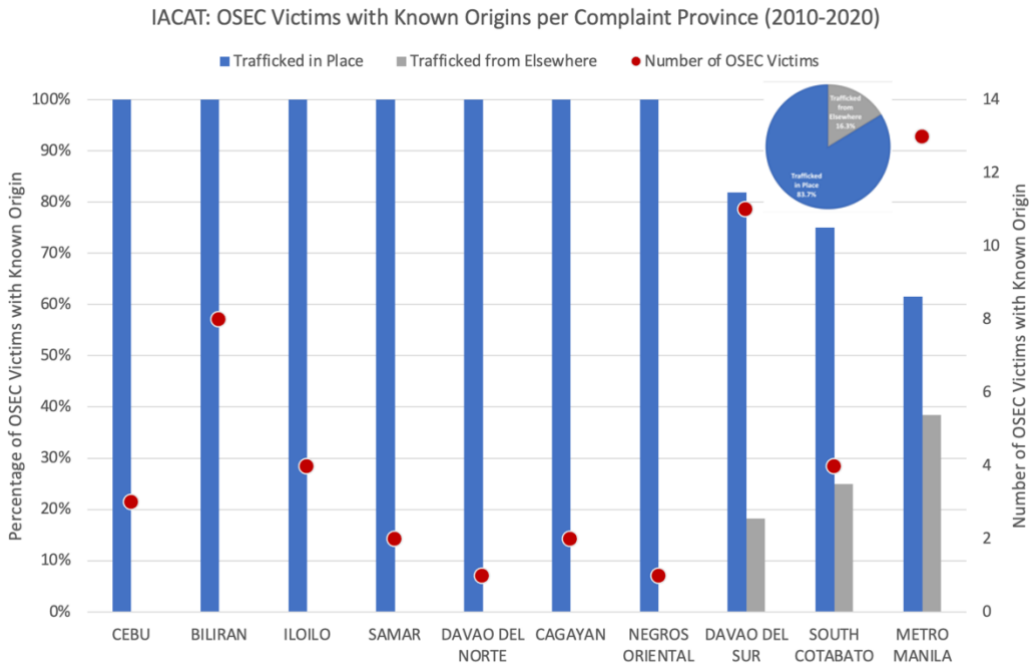


Figure 5 caption: OSEC is largely an in-situ crime. Approximately 84 percent of OSEC victims are trafficked in place.

Our analysis shows that Metro Manila, Cebu, Davao del Sur, and Pampanga are the top complaint provinces for OSEC TIP victims and have disproportionally high numbers of OSEC victims relative to their population. Our analytical findings provide support for statements that Taguig City (Manila), Metro Manila, Cordova (Cebu), and Cebu are hotspots for OSEC (United States Agency for International Development [USAID], Pers. Comm., 2020); and statements that identified hotspots for OSEC in Luzon and Visayas, including Iligan (Lanao del Norte), Lapu-Lapu (Cebu), Pampanga, Quezon City (Manila), Malabon (Manila), Pasig (Manila), Taguig (Manila), and Caloocan (Manila) (US DoS, 2020). Notably, Biliran

appears within the IACAT data as the province with the greatest OSEC TIP prevalence (64.1 per 1,000,000) but is not mentioned as an OSEC TIP hotspot in government reports or in searches of media sources.

While OSEC in the Philippines is thought to have increased during COVID-19, that is not the only reason for the increase, and it should not be assumed that exploitation will dissipate when COVID-19 ends. The limited mobility and economic hardship heightened by COVID-19 will still persist. Due to the remote nature of OSEC, in which nearly 84 percent of victims with known origins are trafficked in place and 83 percent of OSEC traffickers are the biological parents or relatives of the victims, vulnerability is more widespread. Enabling technologies such as increased bandwidth, interactive video transmissions (live streaming), encryption, and anonymous payment have also coincided with increases in OSEC. These technologies will only become more prevalent in the future. While the government has several legal structures in place to address OSEC, mentioned above, requirements for ISPs to report OSEC and filtering software to become more available and efficient must be increased. OSEC-related data must be made available in a timely manner.

D. TIP IN RELATION TO OVERSEAS FILIPINO WORKERS

RA No. 8042 defines an OFW as "a person who is to be engaged, is engaged or has been engaged in a renumerated activity in a state of which he or she is not a legal resident." Filipinos work around the world in a broad spectrum of jobs, ranging from high-skilled professionals and officials to low-skilled domestic workers and laborers. As a result, OFWs are exposed to the full range of potentially exploitive industries and sociocultural environments. Young female domestic workers can be especially vulnerable because they often work in solitary and isolated environments, where there is little opportunity for inspection or intervention. TIP prevalence is therefore thought to be particularly high among OFWs, and the protection of OFWs has long been a priority of the Filipino government.

OFWs play a significant role in the Filipino economy through the remittances they send home to their families. For many Filipinos, working abroad has been a dream, one that is associated with images of success and prosperity (Hapal, 2014). However, as the domestic economy grows, changes in the decision-making process for OFWs are occurring. These changing contexts are likely to also impact TIP among OFWs.

Data on OFWs are collected by the Philippine Statistical Authority (PSA). These data include not only those who work abroad on contract as registered OFWs, but also those working as unregistered OFWs without working visa or permits. In 2010, of the estimated two million OFWs, 96 percent were working under registered contracts, while four percent were working without contract as unregistered OFWs (PSA, 2011).

In comparing surveys of OFWs between 2010 and 2019, there has been a slight increase of approximately eight percent in the total number of OFWs. However, the prevalence of OFWs among the working age population has decreased by about 14 percent, from 3,551 OFWs per 100,000 working age population in 2010 to 3,055 in 2019. Similarly, the total value of remittances received has increased from United States Dollar (USD) 21.5 billion in 2010 to USD 34.9 billion in 2020, but remittances received as a percentage of gross domestic product (GDP) has fallen slightly, from 10.4 percent in 2010 to 9.7 percent in 2020 (World Bank, 2020). The changes during this time reflect two trends: first, that

the growing domestic economy in the Philippines is generating more economic opportunities, and second, that a larger proportion of the working age population is choosing not to become OFWs.

Novametrics conducted an analysis of OFW trends using data from the 2010 and 2019 Survey of Overseas Filipinos. While the top ranking three sending regions (Region IV-A, Region III, and the National Capital Region [NCR]) kept their positions between 2010 and 2019, a number of other regions saw a rapid increase in the OFW population. The five regions experiencing the largest percentage increase in numbers of OFWs are: (1) Region XII with 46.3 percent, (2) Region XIII with 46.3 percent, (3) Region XI with 42.4 percent, (4) Region IV-A with 39.4 percent, and (5) Region V with 39.1 percent. Region IV-A in particular saw the largest increase in terms of total numbers of OFWs, with 128,934 workers added between 2010 and 2019.

On the other hand, the following five regions have experienced the largest percentage decline in the OFW population: (1) Region IX with -25.0 percent, (2) NCR with -24.2 percent, (3) Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) with -20.0 percent, (4) Region VII with -16.7 percent, and (5) MIMAROPA Region with -4.9 percent. NCR experienced the largest decrease in terms of total numbers of OFWs, with 68,340 workers lost between 2010 and 2019.

Next, Novametrics analyzed time-series TIP case data among OFWs from two datasets. The first, dating mainly from 2019 to early 2021, was assembled using the Blas F. Ople Policy Center & Training Institute (Ople Center) Integrated Case Management System (ICMS).[11] These data were compared with a second dataset consisting of previously assembled proprietary data from 2000-2013 with anonymized OFW TIP victim data from the Philippines with individual characteristics such as religion, age, sex, and type of TIP.

Overall, the prevalence of TIP among the OFW population has decreased from 44.8 TIP victims per 100,000 OFWs to 38.5 when comparing the annual TIP case average from 2000-2013 to TIP cases in 2019 (Figure 6). Region XI, which had the largest decrease in OFW prevalence, is an average sending region, with the number of OFWs increasing from 57,204 in 2010 to 81,474 in 2019. The largest sending region (Region IV-A) increased the number of OFWs from 326,880 in 2010 to 455,814 in 2019 and had an increase in prevalence of 21 TIP victims per 100,000 OFWs. While Region XI may be only a moderate sending region, it has previously had the highest rates of TIP victimization when comparing 2019 data with the multi-year average from 2000-2013. Region IV-A, which is the largest sending region, has typically had relatively low rates of TIP victimization.

Our analysis shows that OFW TIP prevalence has shifted over time, evening out across all regions (Figure 6). Ten of the regions have had a decrease in prevalence of TIP among their OFW population over the last decade, while seven have had an increase. The region with the top OFW TIP prevalence is NCR in 2019, previously it was Region XI. Long-term data collection efforts on OFW TIP prevalence such as the ICMS will continue to be valuable in capturing shifting trends in the future.

[11] The ICMS is a web-based application used by the members of IACAT and other select agencies to facilitate coordination and flow of information, and involve stakeholders in the detection, investigation, case build-up, and prosecution of cases of trafficking of Filipino domestic workers (Ople Center, 2021).

Figure 6: TIP Prevalence among OFWs

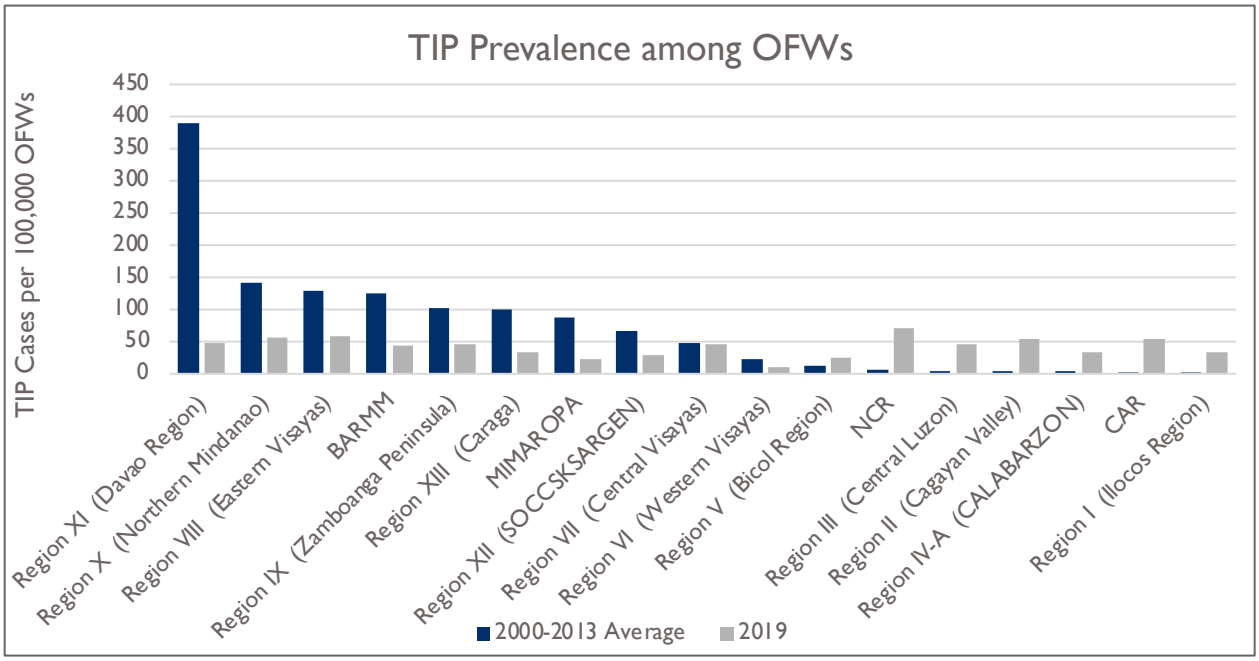


Figure 6 caption: OFW TIP Prevalence has shifted over time. The blue bars show the TIP cases per 100,000 OFWs from the multiyear average between 2000-2013. The grey bars show the TIP cases per 100,000 OFWs in 2019. The 2000-2013 average is taken from the Novametrics proprietary dataset on OFW TIP. The data from 2019 is from the Ople Center's ICMS dataset.

For OFWs, the main vulnerable populations are middle to higher-income individuals (those in the highest and second-highest wealth quintile), in more urbanized areas or with access to an urban area, and who are looking for opportunity and upward mobility. These populations tend to be living in a more developed area, have completed higher levels of education, and have access to information and media, which enables them to seek employment opportunities in other parts of the country or abroad. They also tend to be living in communities with higher rates of gender equality and female empowerment, as measured by female education metrics, female participation in decision-making at home, and female ownership of bank accounts. The Muslim OFW population may have different vulnerability characteristics. Our analysis recognizes the role of unemployment as a vulnerability factor, along with the desire for young mothers to provide for their family members, as evidenced by percentage of women aged 15-19 who have had a live birth. These indicators are positively correlated with the percentage of population who are Muslim, which is also an indicator positively correlated with TIP among OFWs. Populations that are less vulnerable to OFW TIP are from more rural communities that have higher income inequality, higher poverty, lower development, lower literacy, and also rank low in gender equality and female empowerment metrics. This is likely because of their lower mobility and dearth of resources to migrate internationally, so they are not exposed to the risk environment.

E. VULNERABILITY TO LABOR TIP AND SEX TIP IN THE PHILIPPINES

Just as there is no single cause for TIP, there is no single solution. Even when causes appear similar, solutions that work in one location seldom work in another location owing to the vast array of varying sociocultural and economic conditions. The lack of effective universal solutions has frustrated anti-trafficking efforts and limited their success (e.g., Betz, 2009).

From an analytical perspective, TIP can be classified as a "wicked problem,"[12] the type of problem that defies a single solution and is characterized by a myriad of dynamically interconnected variables. Causal relationships are seldom direct, and the circumstances that foster the problem vary from location to location. While "wicked problems" may defy single and universal solutions, they can be addressed through an ecosystem approach (Eck and Clarke, 2019; Clarke, 1995). In using such an analytical approach, we parameterize the ecosystem in which TIP exists to reveal through weak-signal analysis the combinations of characteristics that allow TIP to occur. Once we identify the characteristics of the ecosystem that supports TIP, we can formulate geographically-targeted interventions to disrupt that support system and mitigate TIP in a more effective manner.

We do not assume that any characteristic by itself is predictive of TIP. It is combinations of characteristics that create vulnerability to TIP, and these characteristics vary from location to location. Vulnerability to TIP is not the same as TIP prevalence. Socioeconomic ecosystems can be vulnerable and as-yet unexploited, or the exploitation can be unrecognized.

Analytically, weak-signal analysis provides a means for identifying underlying causal relationships among multiple interrelated variables. Understanding the ecosystem that makes populations vulnerable to TIP, allows us to formulate geographically-targeted interventions that, in turn, can be used to disrupt that ecosystem and make populations less vulnerable. Ecosystem approaches have been proposed for addressing the sex trafficking of children (Finigan-Carr et al., 2019) and for building resilience to trafficking within communities (Gardner et al., 2020).[13]

We begin with millions of data values from diverse, mostly open-source datasets from non-governmental organizations (NGOs), media, the USG, and statistical authorities of local governments. These datasets include detailed national census data, health and educational survey data, remote-sensing data, web-scraped data, and data from both formal and informal media sources.[14] These millions of data values were distilled into over half a million indicator values covering over 2,000 measures for 1,647 municipalities over 20 years representing demographics, governance, land-use, natural resources, education, health, economics, ethnicity, religion, infrastructure, conflict, gender equality, female empowerment, societal norms, and other human-social-cultural-behavioral characteristics. While datasets may be of varying quality and completeness, each has the potential to carry information that reflects a characteristic of a population, either by itself or, more commonly, through combinations with other datasets.

A detailed technical summary of weak-signal analysis is included in Annex 2. In mathematical terms, we use singular-value decomposition, combined with varimax rotation and squared-factor loadings as an unsupervised self-learning algorithm to identify key attributes and their relative weightings (OECD, 2008). In non-mathematical terms, we begin with a wide range of socioeconomic indicators (in this case, over 2,000) to capture the full spectrum of factors that are associated with a population. The algorithm then identifies the optimal combinations of these indicators (in this case, 11 for labor TIP and 14 for sex

[12] The original use of the term "wicked problem" is attributed to design theorist Horst Rittel.

[13] Despite popular belief, research primarily shows that SCP does not necessarily lead to crime displacement (Clarke, 1995; Hesseling, 1994; for a discussion of the literature and the general conclusions on crime displacement, see Crime Prevention and Criminal Justice Module 2 on Crime Prevention). Ref: https://www.unodc.org/e4j/en/cybercrime/module-9/key-issues/situational-crime-prevention.html

[14] Filipino data sources include datasets from the PSA as well as the Demographics and Health (DHS) Surveys conducted by PSA and ICF (PSA and ICF, 2018).

TIP) that are predictive of TIP, while eliminating the combinations that are neither conducive nor preventative. The higher the value of the composite vulnerability measure, the higher the vulnerability for TIP activity.

Figure 7 and Figure 8 show the optimal combination of indicators used to generate the TIP vulnerability measure, along with their respective weightings, for labor and sex TIP. A positive weighting indicates a direct, positive relationship with TIP, and a negative weighting indicates a negative relationship. For the Philippines, all indicators have a positive weighting. Table 1 and Table 2 list the indicators that were used to generate the vulnerability measure, along with possible interpretations of their significance.

For the purpose of this analysis, we have generated two primary vulnerability measures, one for sex TIP and one for labor TIP. Given the differing nature of sex trafficking and labor trafficking, we hypothesize that the ecosystem supportive of one can be differentiated from the ecosystem that supports the other, thus allowing for two measures. Our ability to differentiate sex and labor TIP is a result of the IACAT datasets that frequently include the form of TIP in their reporting.

Figure 7: Vulnerability Measure for Labor TIP in the Philippines

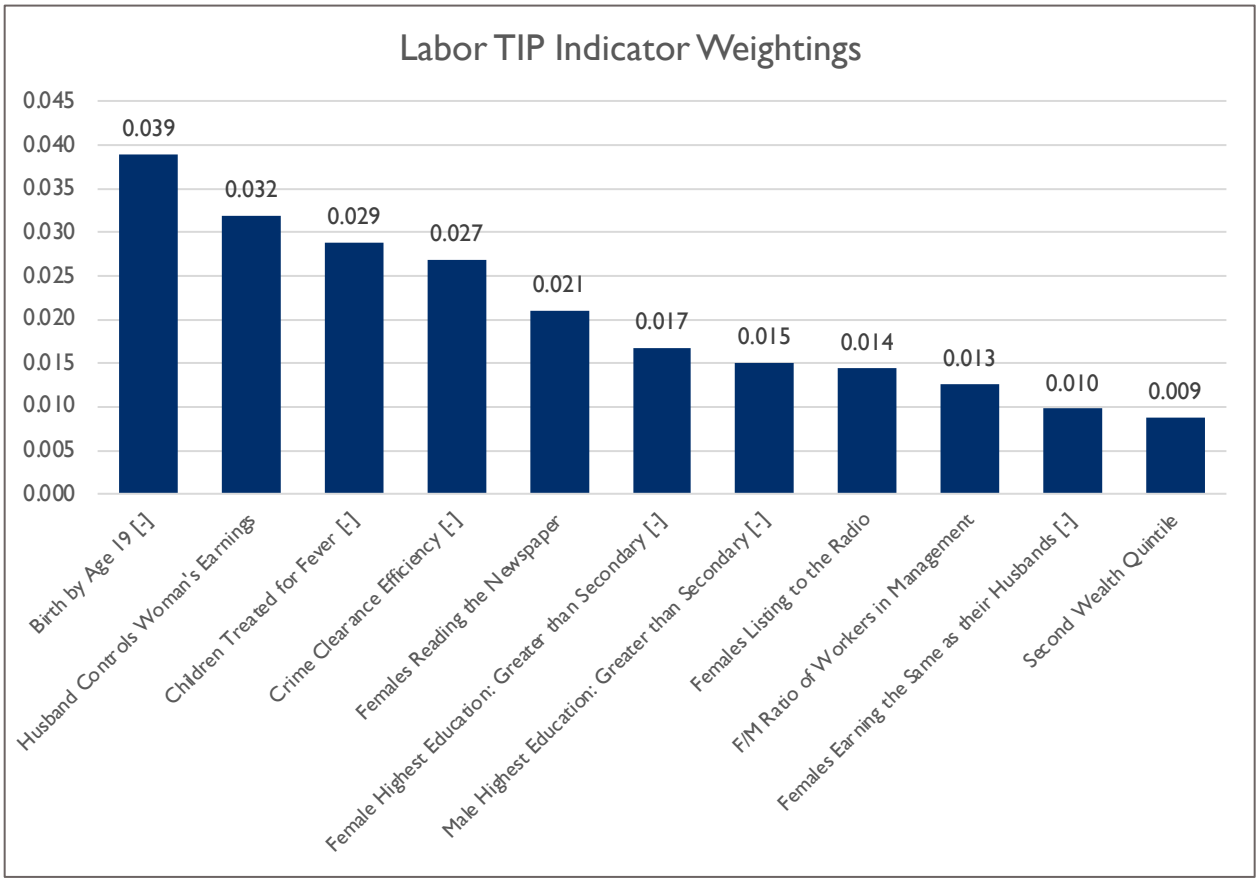


Figure 7 caption: Beginning with over 2,000 measures, the TIP Labor Vulnerability Measure for the Philippines is composed of a relatively small subset of indicators that represent the optimal combination characteristic of the TIP ecosystem. To explain as much of the data as possible while avoiding an overly complicated measure, various threshold values for indicator weightings are used to identify the optimal subset of indicators. The weighted values of the selected indicators are then used as input to the composite measure to generate vulnerability measures for each region. The outputs are sets of indicators (weak-signals) that are proxy measures for the underlying causal relationships. The higher the vulnerability measure, the increased vulnerability for TIP activity.

Figure 8: Vulnerability Measure for Sex TIP in the Philippines

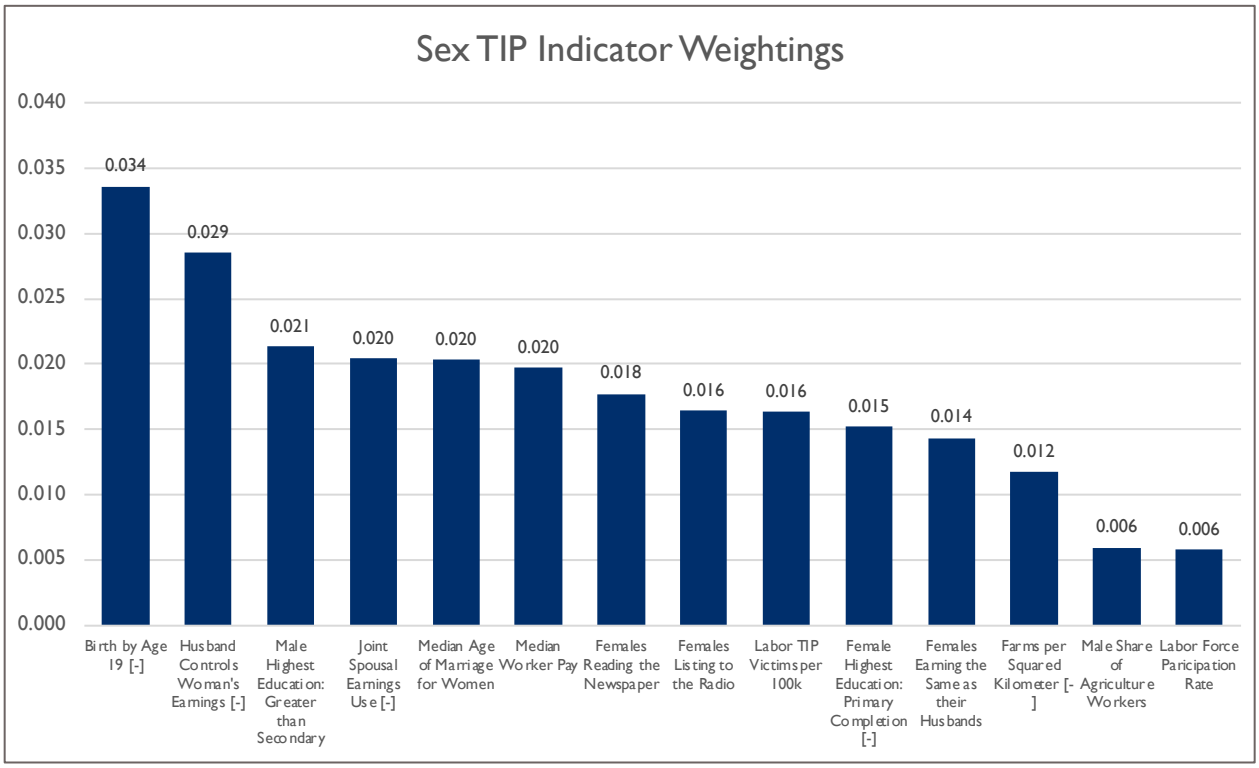


Figure 8 caption: Beginning with over 2,000 measures, the TIP Sex Vulnerability Measure for the Philippines is composed of a relatively small subset of indicators that represent the optimal combination characteristic of the TIP ecosystem. To explain as much of the data as possible while avoiding an overly complicated measure, various threshold values for indicator weightings are used to identify the optimal subset of indicators. The weighted values of the selected indicators are then used as input to the composite measure to generate vulnerability measures for each region. The outputs are sets of indicators (weak-signals) that are proxy measures for the underlying causal relationships. The higher the vulnerability measure, the increased vulnerability for TIP activity.

We do not assume the indicators are necessarily direct causes of vulnerability, rather we interpret them as proxy measures that reflect more complex societal phenomena that are difficult to measure directly. For example, we cannot directly measure gender inequality. However, certain manifestations of gender inequality, such as high female child marriage rates and violence towards women can be measured. For each location, we interpret the causes of vulnerability using the specific indicator values for that location and our interpretation of those indicators. The definitions of each indicator, along with our interpretation and other phenomena with which they have strong statistical relationships, are included in Table 1 and Table 2. The interpretations of the indicators are illustrations and are not intended to be exhaustive.

Our analysis confirms that the causes of TIP are multiple. Because the underlying causal relationships associated with TIP vary with each socioeconomic landscape, it is unlikely that a one-size-fits-all intervention approach for TIP will be successful. Scalability will require an adaptive approach with interventions customized to each geographic location. Our analysis is consistent with the observation that anti-trafficking policies have had limited success at reducing human trafficking because they tend to be applied universally and do not account for the unique circumstances present in the country (e.g., Betz, 2009).

Table 1: Indicators in the Labor TIP Vulnerability Measure

INDICATOR & DESCRIPTION
Birth by Age 19 [-]: percent of women aged 15-19 who have had a live birth Women who have had a live birth by age 19 is a measure of female empowerment. In the Philippines, there is a correlation between older mothers and those who are considered to be "well-kept," a measure of empowerment, and daughters who delayed sex (Gipson & Upchurch, 2017). The negative relationship that this indicator has with TIP implies that young mothers and fathers may be less willing or less able to seek out economic opportunities that result in trafficking if they have a child to care for.
Husband Controls Woman's Earnings: percent of women whose husband decides how the wife's cash is used Although most Filipino households are supported by the income contributions of both spouses, the male historically remains the household head, a position that delegates the majority of the income usage and household decisions (Illo, 1989). Constraints on a woman's degree of financial freedom can be connected to constraints on other aspects of a woman's life, including decision-making and autonomy. Joint marital household decision-making in the Philippines is linked to decreased partner violence for women (Hindin & Adair, 2002) and children (Fehringer & Hindin, 2009), as well as increased educational attainment among daughters (Hindin, 2005). The positive relationship between husbands who control their wife's earnings and labor TIP shows the importance of gender equality in building resilience to TIP.
Children Treated for Fever [-]: percent of children under five who had a fever in past two weeks and sought treatment The percentage of children treated for a fever is related to Millennium Development Goal 6, which aims at achieving effective treatment for malaria, and is measured by children with a fever who were treated with anti-malarial drugs (World Health Organization, 2021). Fever treatment can be seen as a proxy measure for health infrastructure and maternal health knowledge.
Crime Clearance Efficiency [-]: Total Crimes Crime Clearance Efficiency (percent) 2014 Crime clearance efficiency is the percentage of cleared cases out of the total number of crime incidents. For a case to be cleared, at least one of the offenders must be identified and charged before the prosecutor's office (Guadalquiver, 2018). This indicator measures the efficacy of the police and the levels of police-community collaboration. Effective police activity can be a deterrent to traffickers.
Females Reading the Newspaper: percent of women aged 15-49 who read the newspaper at least once a week Access to and consumption of the newspaper helps an individual stay informed and connected to the rest of the world. This can also reflect female literacy rates. Female newspaper usage correlates with higher levels of wealth and female education, and indicates some degree of connection to the greater social sphere, which may facilitate TIP.
Female Highest Education: Greater than Secondary [-]: percent of women whose highest level of education is more than secondary Females attaining education levels higher than secondary is directly tied to wealth and female empowerment. In the Philippines, wealth remains the primary barrier to furthering education: for secondary-school-age children, every one-percentage point change in per-capita expenditure was associated with a 0.74 percent decrease in the odds for not attending school (Albert, David, & Vizmanos, 2018).
Male Highest Education: Greater than Secondary [-]: percent of men whose highest level of education is more than secondary School attendance in the Philippines is largely an economic issue, with three in every five out-of-school children (OOSC) aged 5-15 years in 2017 belonging to families in the bottom 25 percent of the income distribution. 65 percent of these OOSC were boys, who are more often pulled out of school than girls when the family is poor, as boys can work informally for income earlier in their lives (Albert, David, & Vizmanos, 2018). Poor boys who have lower educational attainment are thus more vulnerable to labor TIP, and, conversely, boys who have higher educational attainment are less vulnerable to labor TIP.

INDICATOR & DESCRIPTION
Females Listening to the Radio: percent of women aged 15-49 who listen to the radio at least once a week Females consuming media is an indicator of education, urban access, female empowerment, and gender equality. It reflects an absence of restrictive social norms that discourage females from participating in public life (Carter Center, 2021). This indicator reflects increased access to information. Access to increased information can make people accessible to trafficking, but perhaps not informed enough to differentiate potential trafficking vulnerabilities from safe migration channels.
Female-to-Male Ratio of Workers in Management: Female-to-male ratio of number of workers in management The ratio of female-to-male workers in the management sector is a proxy indicator for gender equality in the labor market. A ranking reported by the ILO placed the Philippines as having the fourth-highest rates of females in managerial positions in the world, with 47.6 percent of management positions held by women (Kikuchi, 2015). A large barrier to women's labor market participation is the burden of caring for family, tending to domestic chores, and bearing and rearing children (Asian Development Bank, 2013).
Females Earning the Same as their Husbands [-]: percent of women whose cash earnings are about the same compared to their husband's Females earning the same amount as their husbands is a measure of gender equality, as it signifies equal participation and value in the workforce. It correlates with wealth measures, such as the richest three wealth index quintiles and increased schooling for both sexes, and gender equality metrics, such as higher median ages of marriage for women and a greater percentage of women who decide on how to spend their earnings jointly with their husband. The relationship between females earning the same as their husbands underlines the importance of gender equality in increasing resilience to TIP.
Second Wealth Quintile: percent of population in the second wealth quintile The wealth quintile indicators measure households' comparative economic status. The indicator may reflect access to basic resources, education, stability of employment, and household ownership (DHS, n.d.). The second wealth quintile is the second-poorest, indicating that while it may not be the most rural and impoverished populations that are most vulnerable to TIP, the search for greater economic opportunities and resources remains a major driver of trafficking.

Table 2: Indicators in the Sex TIP Vulnerability Measure

INDICATOR & DESCRIPTION
Birth by Age 19 [-]: percent of women aged 15-19 who have had a live birth Women who have had a live birth by age 19 is a measure of female empowerment. In the Philippines, there is a correlation between older mothers and those who are considered to be "well-kept," a measure of empowerment, and daughters who delayed sex (Gipson & Upchurch, 2017). The negative relationship that this indicator has with TIP implies that young mothers and fathers may be less willing or less able to seek out economic opportunities that result in trafficking if they have a child to care for.
Husband Controls Woman's Earnings [-]: percent of women whose husband decides how the wife's cash is used Although most Filipino households are supported by the income contributions of both spouses, the male historically remains the household head, a position that delegates the majority of the income usage and household decisions (Illo, 1989). Constraints on a woman's degree of financial freedom can be connected to constraints on other aspects of a woman's life, including decision-making and autonomy. Joint marital household decision-making in the Philippines is linked to decreased partner violence for women (Hindin & Adair, 2002) and children (Fehringer & Hindin, 2009), as well as increased educational attainment among daughters (Hindin, 2005).

INDICATOR & DESCRIPTION
Male Highest Education: Greater than Secondary: percent of men whose highest level of education is more than secondary School attendance in the Philippines is largely an economic issue, with three in every five out-of-school children (OOSC) aged 5-15 years in 2017 belonging to families in the bottom 25 percent of the income distribution. 65 percent of these OOSC were boys, who are more often pulled out of school than girls when the family is poor, as boys can work informally for income earlier in their lives (Albert, David, & Vizmanos, 2018).
Joint Spousal Earnings Use [-]: percent of women who decide how their cash is used jointly with their husband The negative relationship between the percentage of women who decide how their cash is used jointly with their husband and sex TIP demonstrates the importance of gender equality in building resilience to TIP. Constraints on a woman's degree of financial freedom can be commonly connected to constraints on other aspects of a woman's life, including decision-making and autonomy. Joint marital household decision-making in the Philippines is linked to decreased partner violence for women (Hindin & Adair, 2002) and children (Fehringer & Hindin, 2009) as well as increased educational attainment among daughters (Hindin, 2005). Greater female decision-making autonomy was also found to be associated with delayed first sex among boys (Upadhyay & Hindin, 2007) as well as longer birth spacing for mothers (Upadhyay & Hindin, 2005).
Median Age of Marriage for Women: Median age of first marriage for women (age 30-34) While the positive relationship between median age of marriage for women and sex trafficking may appear counterintuitive, as marriage age is an indicator of gender equality, this indicator reflects the outcome of TIP. The majority of female sex trafficking victims in the Philippines are young, either in the 23 to 27 or 18 to 22 age brackets (Leones & Caparas, n.d.). The median age of marriage for women, meanwhile, is approximately 22 years old. This suggests that most women who fall victim to sex trafficking do so before they have the opportunity to get married, or that women who are married are too busy with homemaking and childrearing to seek out the economic opportunities that may lead to being trafficked. This does not mean that the ecosystem supportive of later female marriage is the same as one that supports TIP.
Median Worker Pay: Median monthly basic pay of time-rate workers on full-time basis Worker pay may serve as a proxy indicator for proximity to an urban center. It is positively correlated with urban and wealth metrics such as population density, GDP per capita, the upper three wealth quintiles, schooling, literacy, immunization rates, and the Human Development Index (HDI). It is negatively correlated with the percentage of the population working in agriculture, indicating that areas where workers are paid more are less likely to be rural, heavily agricultural areas.
Females Reading the Newspaper: percent of women aged 15-49 who read the newspaper at least once a week Access to and consumption of the newspaper helps an individual stay informed and connected to the rest of the world. This can also reflect female literacy rates. A positive relationship between females reading the newspaper and TIP demonstrates that the media may serve as a way of luring individuals into trafficking. Female newspaper usage correlates with higher levels of wealth and female education and indicates that some degree of connection to the greater social sphere, which may facilitate TIP.
Females Listing to the Radio: percent of women aged 15-49 who listen to the radio at least once a week Females consuming media is an indicator of education, some migration experience, urban access, female empowerment, and gender equality. It reflects an absence of restrictive social norms that discourage females from participating in public life (Carter Center, 2021). This indicator reflects increased access to information. Access to increased information can make people accessible to trafficking, but perhaps not informed enough to differentiate potential trafficking vulnerabilities from safe migration channels.
Labor TIP Victims per 100k: Number of labor TIP victims per 100,000 population This indicator shows that both labor TIP and sex TIP are related. The vulnerable populations likely overlap, and the two have similar predictors of vulnerability.

INDICATOR & DESCRIPTION
Female Highest Education: Primary Completion [-]: percent of women whose highest level of education is primary completion The maximum primary education for women has positive relationships with the two-poorest wealth quintiles and negative relationships with population density and the percentage of children ages 5-17 who are working, which suggests that often women who only reach the primary education level are from poorer, more rural populations.
Females Earning the Same as their Husbands: percent of women whose cash earnings are about the same compared to their husband's Females earning the same amount as their husbands correlates with wealth measures, such as the richest three wealth index quintiles and increased schooling for both sexes, as well as gender equality metrics, such as higher median ages of marriage for women and the greater percentages of women who decide on how to spend their earnings jointly with their husband. The positive relationship with equal earnings and sex TIP indicates that, compared to labor trafficking, sex trafficking is more likely to affect those in slightly wealthier, more urban areas.
Farms per Squared Kilometer [-]: Number of holdings/farms per kilometers squared The negative relationship between sex TIP and the number of farms per kilometers squared supports the idea that more urban populations have increased vulnerability to sex trafficking.
Male Share of Agriculture Workers: percent of household agriculture workers who are male Males in the Philippines are more likely to drop out of school early to support their families through joining the labor force (Albert, David, & Vizmanos, 2018). An excess of male agriculture workers may indicate an area where economic need necessitates this shift.
Labor Force Participation Rate: percent of population that is either working or actively looking for work Labor force participation rates can be seen as a sign of an active population eager to participate in the workforce. The positive relationship between labor force and sex TIP may indicate the prevalence of sex trafficking among younger, more active populations.

Our TIP vulnerability measures have a high predictive value for TIP in the Philippines, as confirmed by media reports, government reports, NGO reports, and the academic literature. Although the final vulnerability measures are composed of relatively small subsets of indicators that represent the optimal combination characteristic of the TIP ecosystem, the analysis reflects the full sociocultural-economic ecosystem. Indicators that were excluded from the final measures are those that: a) do not have significant associations with TIP, either in a positive or negative capacity, or b) that correlate so strongly with those in the final measure that their inclusion would be redundant.

We confirmed our analysis through "hind-casting," which consists of testing the model against known occurrences in the past. The purpose of hind-casting is to see if the model correctly predicts areas of known TIP when the parameters for those areas are used as input for the model. When the sex TIP vulnerability measure is hind-casted against the number of reported sex TIP victims per 100,000 population, we see that the vulnerability measure is a strong, statistically significant predictor of TIP. The probability of this prediction occurring by random chance is less than one in 100.[15] When the labor TIP vulnerability measure is hind-casted against the number of reported labor TIP victims, normalized by population over the past 10 ten, the measure correctly identified the regions of highest labor TIP

[15] The Sex TIP vulnerability measure has an R-squared value = 0.36, and the p-value is less than 0.05, allowing us to reject the null hypothesis that the relationship occurred by chance. The probability of four of the regions with known Sex TIP occurring among the top six of the 17 regions by chance is approximately one in 79. The Labor TIP vulnerability measure has an R-squared value = 0.12 when adjusted for special cases and the p-value is only slightly over 0.05. The probability of the four regions with known Labor TIP occurring among the top nine of the 17 regions by chance is approximately one in 19.

prevalence (occurrences normalized to population) with high confidence. The probability of this prediction occurring by random chance is less than one in 20.

Figure 9 and Figure 10 are maps of the vulnerability measures for labor TIP (Figure 9) and sex TIP (Figure 10). Each vulnerability measure is combined with the population to reveal concentrations that have the combinations of characteristics where TIP occurs, as identified through weak-signal analysis. We refer to this as the population's vulnerability to TIP and can translate it into a probabilistic assessment, predictive of the number of people within a population that are likely to experience TIP.

The vulnerability map is analogous to the vulnerability maps that are used for natural hazards and should be interpreted in a similar fashion. First-generation hazard vulnerability maps simply used the locations of known past events to predict future vulnerability. As the understanding of the ecosystem in which natural hazards occur improved, scientists were able to identify vulnerability in locations where events were previously unknown. Over time, these projections were validated with new events, and the number of hazard victims were dramatically reduced because of proactive measures to reduce vulnerability. The vulnerability analysis for TIP in the Philippines follows the same developmental logic. By analyzing the ecosystem in which TIP is occurring, we can assess the potential of other locations to support TIP activity and reduce victimization through proactive measures. The corresponding values used in the map, along with a ranking for each province and estimates of prevalence, are presented in Table 3 and Table 4.

The scale is a relative ranking with areas that are most vulnerable to TIP shown in red and areas that have the lowest vulnerability shown in blue. The higher the vulnerability, the increased likelihood for TIP activity. Each map is composed of 345,550 pixels, each with an area of 30 seconds x 30 seconds (approximately 1km^2). We forgo the approach of displaying our results on land area and instead display our results references to population. Such a display helps identify hotspot areas, where there may be large concentrations of vulnerable populations. Two messages are conveyed simultaneously: the color shade indicates the vulnerability index of the location, and the density of color indicates the sizes of vulnerable populations.

Figure 9: Labor TIP Vulnerability

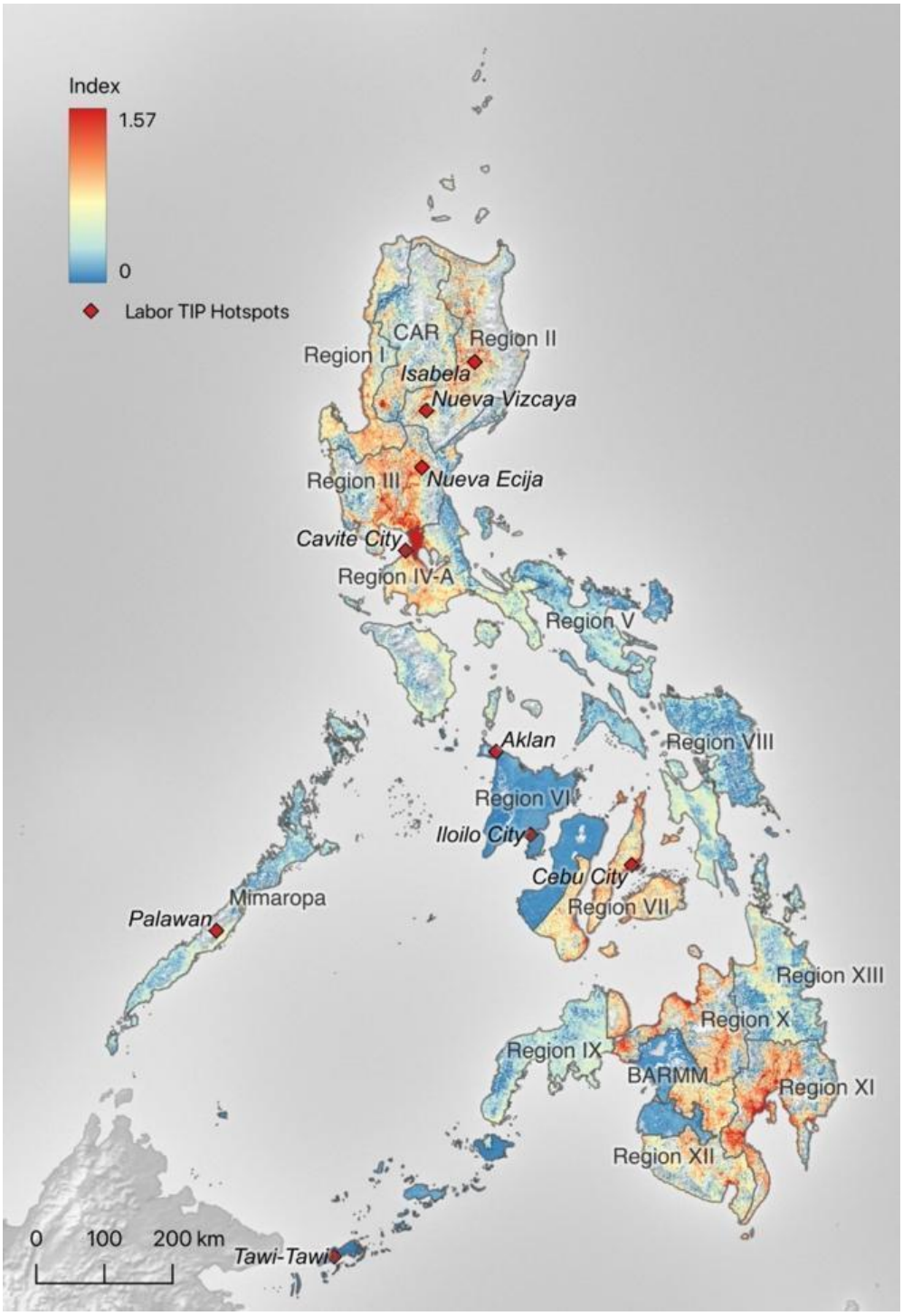


Figure 9 caption: Geospatial presentation of vulnerability to labor TIP, applying our vulnerability measure to values at the region level and to ambient population estimates at the scale of approximately 1km^2 (Rose et al., 2020). The map is composed of 345,550 discrete values. Region boundaries are shown in grey and labeled (National Mapping and Resource Information Authority and PSA, 2020). The topographic base map is from Natural Earth (2020). Labor TIP hotspots are sourced from International Organization for Migration (2018) and from written communication with USAID/Philippines (2021), georeferenced from Google (2021). Note that the vulnerability of local hotspots can be higher than regional vulnerabilities.

Figure 10: Sex TIP Vulnerability

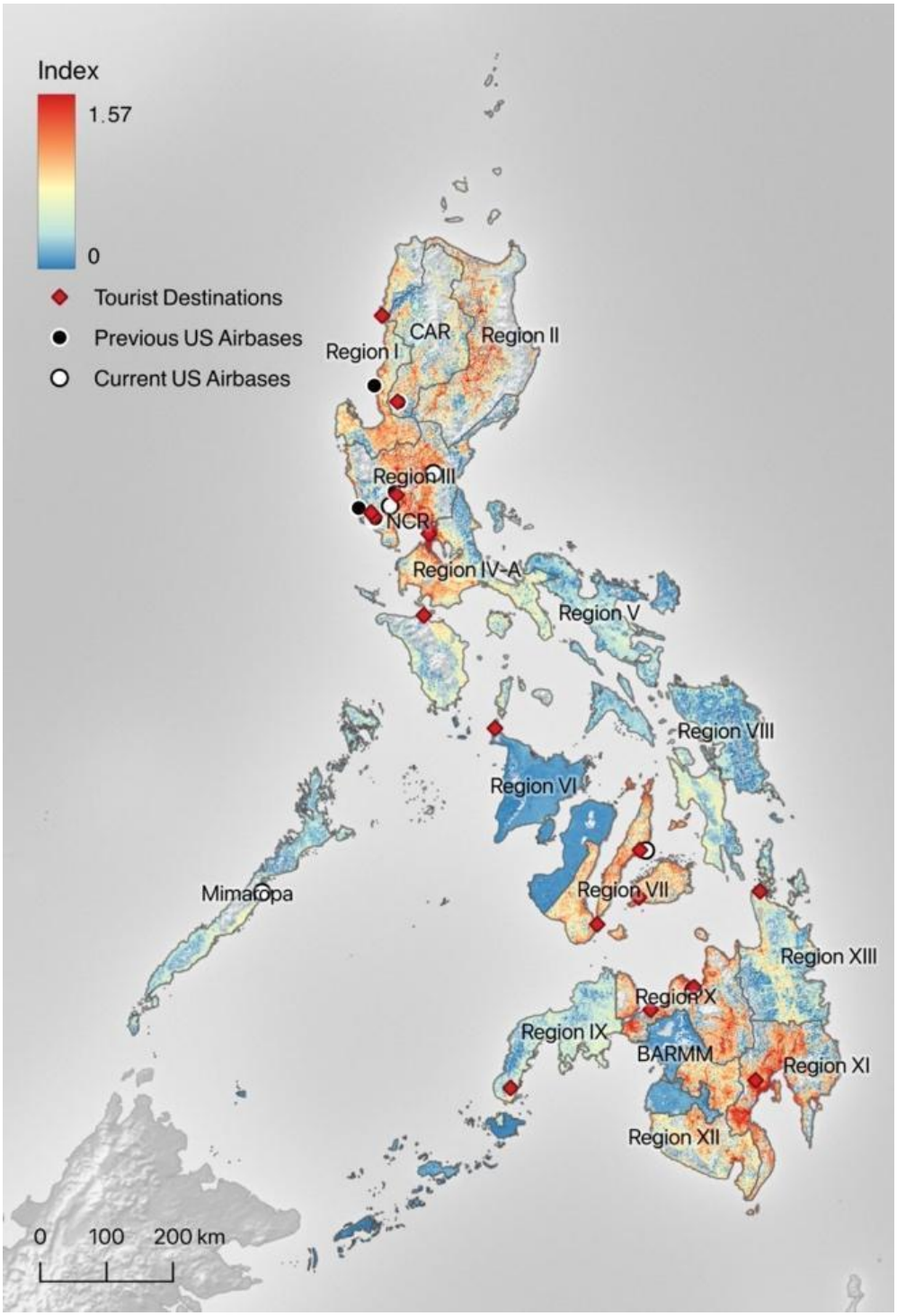


Figure 10 caption: Geospatial presentation of vulnerability to sex TIP, applying a composite measure to values at the region level and to ambient population estimates at the scale of approximately 1km² (Rose et al., 2020). The map is composed of 345,550 discrete values. Region boundaries are shown in grey and labeled (National Mapping and Resource Information Authority and PSA, 2020). The topographic base map is from Natural Earth (2020). Tourist destinations are shown as yellow diamonds, and circles represent the current (white) and previous (black) US military bases, georeferenced from Google (2021). Note that the vulnerability of local hotspots can be higher than regional vulnerabilities.

Table 3 and Table 4 include the vulnerability measure, the projected prevalence (per 1,000 population), and the projected number of TIP victims for each region. The prevalence rate and number of victims are projected from the vulnerability measure. In allocating resources for CTIP, one is often looking to reduce the number of victims in the most cost-efficient manner. One therefore may want to prioritize areas where there is a combination of a high prevalence rate and a population that represents the highest density of potential victims. Prevalence estimates can be misleading when used by themselves. For example, a province with a low prevalence rate but high population can contain more TIP victims than a province with a high prevalence rate and low population. We therefore include projected victims with projected prevalence to account for population differences.

Table 3: Labor TIP Vulnerability Measure by Region

REGION	VULNERABILITY MEASURE	PROJECTED PREVALENCE	PROJECTED VICTIMS	POPULATION	RANKING
NCR	0.310	2.2	28,091	12,877,253	1
Region XI (Davao Region)	0.306	2.1	0,304	4,893,318	2
Cordillera Administrative Region	0.291	1.8	3,140	1,722,006	3
Region XII (Soccsksargen)	0.252	1.2	5,671	4,545,276	4
Region X (Northern Mindanao)	0.243	1.1	5,340	4,689,302	5
Region I (Ilocos Region)	0.241	1.1	5,604	5,026,128	6
Region III (Central Luzon)	0.205	0.8	8,772	11,218,177	7
Region VII (Central Visayas)	0.209	0.8	6,024	7,396,898	8
Region IV-A (Calabarzon)	0.180	0.6	8,873	14,414,774	9
Region II (Cagayan Valley)	0.184	0.6	2,210	3,451,410	10
Region XIII (Caraga)	0.158	0.5	1,289	2,596,709	11
Region VIII (Eastern Visayas)	0.116	0.3	1,456	4,440,150	12
Region IX (Zamboanga Peninsula)	0.117	0.3	1,206	3,629,783	13
Mimaropa (Southwestern Tagalog)	0.109	0.3	904	2,963,360	14
Region V (Bicol Region)	0.077	0.2	1,298	5,796,989	15
Region VI (Western Visayas)	0.036	0.2	1,133	7,536,383	16
BARMM (Bangsamoro)	0.004	0.1	413	3,781,387	17

Table 3 caption: Corresponding labor trafficking vulnerability rankings for the regions, with estimated prevalence (per 1,000 population), estimated number of victims, and population. Rankings were determined using the product of the vulnerability measure produced through weak-signal analysis and the log of the population for each region to better account for areas with high populations of more vulnerable individuals. The ranking color corresponds to the predominant pixel color in the map.

Table 4: Sex TIP Vulnerability Measure by Region

REGION	VULNERABILITY MEASURE	PROJECTED PREVALENCE	PROJECTED VICTIMS	POPULATION	RANKING
NCR	0.260	14.3	183,918	12,877,253	1
Region XI (Davao Region)	0.264	15.0	73,213	4,893,318	2
Region X (Northern Mindanao)	0.246	12.1	56,794	4,689,302	3
Region VII (Central Visayas)	0.211	8.0	59,504	7,396,898	4
Region II (Cagayan Valley)	0.220	9.0	30,911	3,451,410	5
Region XII (Soccsksargen)	0.214	8.3	37,921	4,545,276	6
Region III (Central Luzon)	0.196	6.7	75,331	11,218,177	7
Cordillera Administrative Region	0.199	7.0	11,989	1,722,006	8
Region I (Ilocos Region)	0.172	5.1	25,645	5,026,128	9
Region IV-A (Calabarzon)	0.150	3.9	56,584	14,414,774	10
Region XIII (Caraga)	0.153	4.0	10,496	2,596,709	11
Mimaropa (Southwestern Tagalog)	0.131	3.1	9,333	2,963,360	12
Region VII (Eastern Visayas)	0.105	2.3	10,216	4,440,150	13
Region IX (Zamboanga Peninsula)	0.095	2.1	7,457	3,629,783	14
Region V (Bicol Region)	0.067	1.5	8,563	5,796,989	15
BARMM (Bangsamoro)	0.011	0.8	2,875	3,781,387	16
Region VI (Western Visayas)	0.010	0.7	5,651	7,536,383	17

Table 4 caption: Corresponding sex trafficking vulnerability rankings for the regions, with estimated prevalence (per 1,000 population), estimated number of victims, and population. Rankings were determined using the product of the vulnerability measure produced through weak-signal analysis and the log of the population for each region to better account for areas with high populations of more vulnerable individuals. The ranking color corresponds to the predominant pixel color in the map.

As seen in Figure 10, US military bases are associated with high levels of commercial sex, providing increased demand for prostitution. Linkages between sex trafficking and US military bases overseas has been previously recognized (e.g., Hoots, 2019). On April 28, 2014, the US and the Philippines signed the Enhanced Defense Cooperation Agreement, which will result in an increased US military presence in the Philippines and increased rotation of US military personnel. The US will also continue its military presence in the Western Mindanao Command (Zamboanga City), where they have been providing surveillance capability for the military, particularly in Zamboanga, Basilan, Sulu, and Tawi-Tawi. Current bases with increasing US military presence are: Basa Air Base: Floridablanca, Pampanga; Fort Magsaysay Airfield: Fort Ramon Magsaysay, Nueva Ecija; Antonio Bautista Air Base: Puerto Princesa, Palawan;

Lumbia Airfield: Cagayan de Oro, Misamis Oriental; and Benito N Ebuen Air Base: Mactan Island, Cebu. Past US military bases, where CSE has been prevalent, are: Clark Air Base: Angeles City, NCR, and the Naval Air Station Cubi Point (near Subic Naval Base): Ologanpo City, Zambales.

Tourism locations and sites listed on the sex tourism website WikiSex are also locations of high sex TIP vulnerability. Their locations are identified on the Sex TIP Vulnerability map (Figure 8). While prostitution is illegal in the Philippines, sex tourism is common. By some assessments, 40 percent of male tourists are estimated to have traveled to the Philippines for sex tourism (Simmons, 2019).

Our analysis also allows us to make some estimates on the percentage of TIP victims that are trafficked from other regions, compared to the number of TIP victims that are trafficked in place. These data are limited because many TIP victim records are not complete. For records that contain all information, however, we find that 49.5 percent of labor trafficking victims with known origins are trafficked in their origin province. Using data from 2010 through 2020, NCR is the province with largest number of victims filing complaints (2,466), followed by Cebu (665), and Zamboanga del Sur (527). Provinces with the highest rates of labor trafficking per 100,000 population are Agusan del Norte, Zamboanga del Sur, and Quirino. The median age of labor trafficking victims is 20, and victims are 54 percent female and 46 percent male. Areas with high labor trafficking tend to draw equally from both within and outside of their own province.

In Figure 11, we present a map with the labor TIP victims' locations of origin, along with a Sankey diagram to display the flow of victims to Metro Manila. 29 percent of labor trafficking complaints in Metro Manila are made by victims from Metro Manila. The top three provinces of origin for labor trafficking are Metro Manila, Maguindanao, and Negros Oriental.

Figure 11: Origin Provinces of Victims who Filed Labor TIP Complaints in Metro Manila

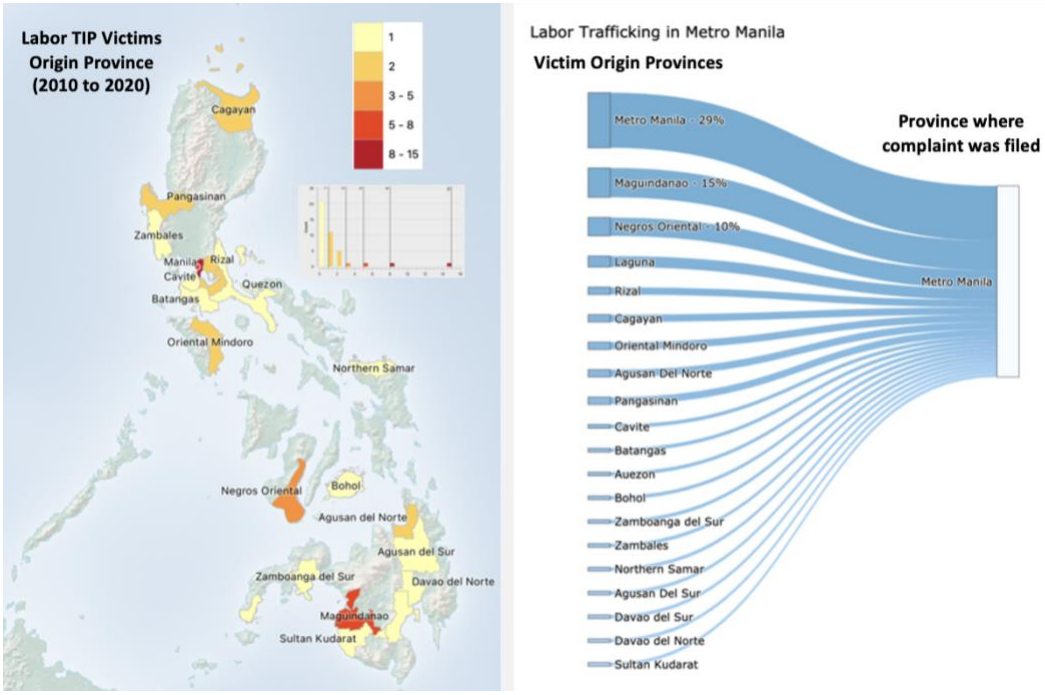


Figure 11 caption: A Sankey diagram is used to display the breakdown of origin provinces for those who filed labor trafficking cases in Metro Manila. 29 percent of labor trafficking complaints in Metro Manila are made by victims from Metro Manila.

Comparatively, 63.3 percent of sex trafficking victims with known origins are trafficked in their origin province (Figure 12). With similar provincial rankings to that of labor TIP complaints, Metro Manila is the province with largest number of victims filing complaints (2,466), followed by Cebu (665), and Zamboanga del Sur (527). Provinces with the highest rates of sex trafficking per 100,000 population are Agusan del Norte, Zamboanga del Sur, and Metro Manila. The median age of sex trafficking victims is 18, and sex trafficking victims are 90 percent female, nine percent male, and one percent lesbian, gay, bisexual, transgender, queer, and intersex. Areas with high sex TIP tend to draw from both within their own province and the surrounding provinces. However, most (63.3 percent) sex trafficking victims are trafficked in place.

Figure 12: Origin Provinces of Victims who Filed Sex TIP Complaints in Metro Manila

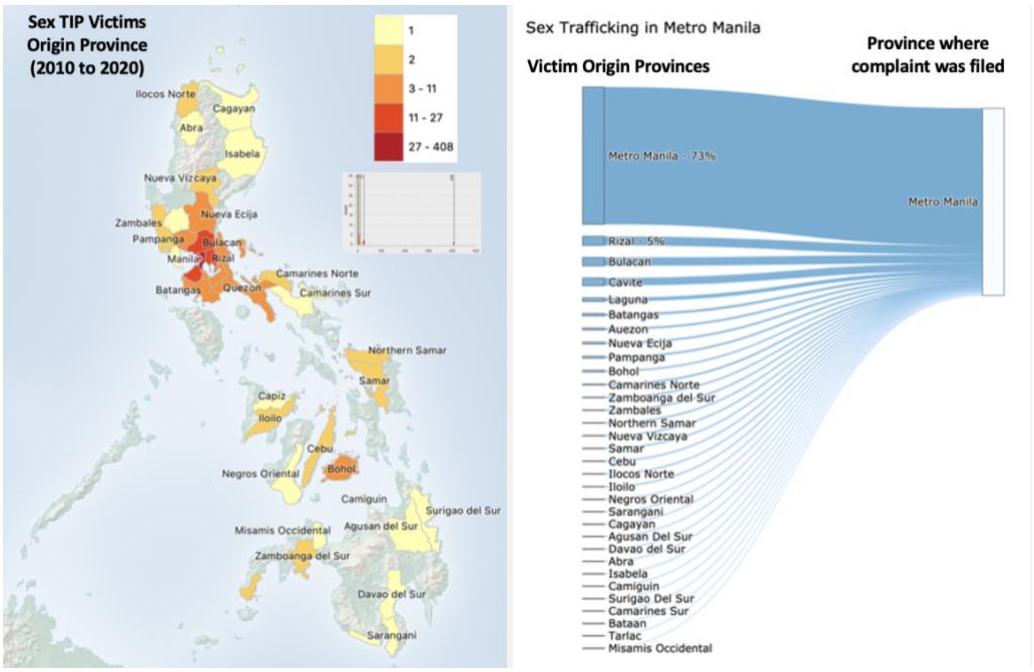


Figure 12 caption: A Sankey diagram is used to display the breakdown of origin provinces for those who filed sex trafficking cases in Metro Manila. 73 percent of sex trafficking complaints filed in Metro Manila are made by victims from Metro Manila.

While one might speculate that rural, poor populations in the Philippines would be most vulnerable to the promise of false opportunities that resulting in TIP, our data analysis reveals more nuanced circumstances. The traditional narrative that poverty is the main driver for human trafficking may be an oversimplification. While this lack of economic opportunity appears to remain a factor for labor trafficking in the Philippines, sex TIP vulnerability is highest among middle class societies with moderate levels of income and education and access to an urban center.

Vulnerability to labor TIP is highest among the second-poorest wealth quintile. This population is further characterized by decreased educational attainment and high levels of societal gender inequality. In the most vulnerable areas, wealth disparity between males and females is apparent, and education is limited regardless of sex. The educational attainment is represented in our analysis through the negative relationships between vulnerability and greater than secondary education for both males and females. Gender inequality is represented in our analysis through the negative relationship between vulnerability and females earning the same as their husbands, and through the positive relationship between

vulnerability and females whose husband controls their earnings. Vulnerability to labor TIP is higher in areas with fewer societal services and safeguards, where health facilities and law enforcement are less prevalent. The low health facilities are represented in our analysis by the negative relationship between TIP vulnerability and children who were treated for a fever. The weak law enforcement is represented by the low efficiency of the local police in solving crimes.

While populations may be motivated by the desire for greater economic opportunities, the poorest, most rural areas are somewhat less vulnerable to labor TIP than those the areas that are poor but have some access to education and an urban center. These areas have higher rates of gender inequality, which may serve as an additional driver for those seeking improved opportunities, and in turn, accepting potentially higher risk environments. It is the second-poorest wealth quintile and greater than secondary education, rather than the poorest wealth quintile and primary or secondary education, that are recognized in the vulnerability measure. This suggests some degree of income and educational attainment in the populations most vulnerable to labor trafficking.

Sex trafficking in the Philippines, on the other hand, is characterized by moderate levels of wealth and education. Positive relationships between sex TIP and measures of education, median worker pay, and labor force participation indicate that sex trafficking is more prevalent among economically active populations where stable income streams are more accessible. Vulnerability to sex TIP is also characterized by proximity or access to an urban area and non-subsistence agriculture. The vulnerability is highest in the areas with the fewer farms, and where the farms are less likely to be subsistence-based. Non-subsistence farms, where males are a higher percentage of the workers, are less dependent on the labor of the entire family. In such circumstances, women may be less involved and therefore more likely to seek alternative income-producing opportunities. The agricultural characteristics are represented in our analysis by the negative relationship between vulnerability and the number of farms per squared kilometer, and the positive relationship with the percentage of agricultural workers who are male.

In the Philippines, gender inequality does not present as a strong indicator of vulnerability to sex TIP. There is a negative relationship between vulnerability and women who spend their earnings jointly with their husband, as well as a negative relationship between vulnerability and husbands who decide how a woman's earnings are used. There is also a positive relationship with women earning the same as their husbands. We interpret this as reflecting an environment with social norms of gender inequality, but where females, who are often equally or more educated than males, have a sense of autonomy and may be seeking opportunity and upward mobility.

In general, vulnerability to labor TIP and sex TIP share a common ecosystem, as exhibited by the shared indicators between the two measures. In addition, the prevalence of labor TIP is an indicator of vulnerability to sex TIP. The at-risk populations characteristically have access to a city or larger town. Such access comes with increased social and global connectedness and access to media. This access allows for exposure to TIP. Access is represented in our analysis through the positive relationship between vulnerability to both labor and sex TIP with females reading the newspaper and listening to the radio. Vulnerability to TIP is higher for young females (15-19) who do not have children. For both labor TIP and sex TIP, the indicator with the largest negative relationship is the percentage of women who give birth by age 19. This indicator has a negative correlation with both forms of TIP, implying that those who are seeking economic opportunities may be less likely to have families.

Poverty and unemployment may not be the main drivers of vulnerability to TIP in the Philippines. The Gini coefficient, which measures wealth inequality in an area; unemployment; and GDP per capita are not included as prominent factors predictive of TIP. The exclusion of these direct wealth measures suggests that while lack of a decent income may remain a factor in trafficking, TIP is not limited to the poor. Vulnerability to TIP in the Philippines is partly societal. The Philippines has a cultural tradition of travelling to pursue improved economic opportunities and upward mobility. Inherent in such activity is the exposure to increased risk environments. Such exposure is not necessarily due to economic need. Vulnerable populations include members of the middle class who live in urban or suburban areas that are not characterized by high levels of employment or underemployment, and where the population has moderate levels of education. The pervasive societal nature of vulnerability to TIP in the Philippines may partially explain why the nation has earned Tier 1 rankings with its efforts to combat TIP yet has an estimated TIP prevalence rate that is increasing and is the highest among Tier 1 nations.

Several studies across nations suggest that perceived "threats to masculinity" or transgression of entrenched norms may incite violence against women (e.g., Duvvury et al, 2002). The threat to the traditional male masculinity model may be due to long-held cultural perceptions that men hold roles in society as providers and protectors. Such roles can be threatened by programs that focus on empowering women. If women are provided opportunities that are not available to men, it can foster resentment and exacerbate violence against women (Rahman, 2020).

In looking at future interventions, it may be important to differentiate female empowerment from gender equality. UN SDG 5, "achieve gender equality and empower women and girls," links the concepts of female empowerment and gender equality (UN 2015). Female empowerment and gender equality share a sociocultural ecosystem, with historically little differentiation between them in the goals set by development organizations. Analyzing the two concepts as separate entities, however, may be helpful in better understanding better how various societal factors affect the achievements and conversely, the subjugation of females, and their roles in the sociocultural ecosystems of TIP.

III. RECOMMENDATIONS AND CONCLUSIONS

Detailed geographically-targeted recommendations specific to the most vulnerable regions are presented in Annex 1. The following consist of cross-cutting and more general recommendations that are based on the findings of our analysis and are supportive of the prioritized recommendations of the TIP Report (US DoS, 2021).

1) Consider investments in democracy, governance, and human rights as investments in CTIP

Our analysis of the relationship between the annual TIP reports, national GSI estimates of TIP prevalence, and various economic and governance measures demonstrates that the traditional economic hypotheses that TIP arises from elevated poverty and unemployment may now be an oversimplification. Economic measures, such as the unemployment rate, poverty rate, and GDP, have only weak relationships with both TIP prevalence estimates and the US's TIP tier rankings. Filipino governance indicators are well below typical Tier 1 nations. The relationships between these metrics and the TIP tier rankings and prevalence estimates suggest that human rights, transparency, and corruption should be addressed as part of the overall CTIP strategy. See Annex 3 for more information.

2) Include the reduction of child marriage in CTIP

Our analysis reveals that child marriage and TIP are interrelated within a common socioeconomic ecosystem. Many of the same strategies that a government would apply to reducing child marriage are strategies that will reduce TIP vulnerability. See Annex 4 for more information.

3) Differentiate female empowerment from societal gender equality, and formulate strategies specifically designed to reduce societal gender inequality

Weak-signal analysis reveals several indicators strongly associated with vulnerability that reflect high gender inequality and traditional male-dominated, patriarchal norms. Indicators that reflect more narrowly female empowerment (e.g., female education) have weaker relationships. Our analysis indicates that CTIP efforts would strongly benefit from complementing efforts to increase female empowerment, with interventions targeted specifically at reducing societal gender inequality. Intuitively, such interventions would need to address societal norms that propagate traditional male and female responsibilities, and include young males in female-focused development initiatives before age ten, when gender roles and expectations begin to be imprinted (Blum et al., 2017).

4) Increase CTIP training and awareness for internal TIP hotspots like sex tourism sites, WikiSex sites, and military bases

Our analysis reveals that hotspots for sex TIP coincide with tourist destinations and military bases. In such areas, CTIP efforts should include: a) increasing awareness of human trafficking; b) training and incentivizing police, employers, and community leaders to screen for TIP victims as well as to identify, assess, and deal with trafficking; and c) raising the roles and prevalence of women in law enforcement. Without discouraging access to medical treatment and preventative care, health workers could be trained to screen, recognize, and offer resources to victims of TIP as part of their medical mission, including giving victims the chance to report TIP to a nonprofit or the authorities.

5) Re-focus culture of success and opportunity towards entrepreneurship

Our analysis indicates that OFWs looking for opportunity and upward mobility may be putting themselves in high-risk environments. CTIP efforts aimed at this population could reduce the incentive for potential victims to place themselves at risk. Entrepreneurship could be promoted, especially in non-urban areas, and *in-situ* small and medium-sized enterprises so that OFWs can have more local economic opportunities. Training for jobs and fields that allow for remote working, such as those in digital media, marketing, communications, administration, and information technology would also reduce vulnerability. In addition, teaching digital skills, migration knowledge, and internet safety awareness and misinformation will help OFWs navigate work opportunities online.

6) Develop incentives for improved application of existing OSEC laws and regulations, along with increased awareness of OSEC and online grooming

Our analysis reveals that while the Philippines has laws and regulations in place to counter OSEC, they are not being effectively enforced. We recommend renewing the 2000-2025 National Strategic Framework Plan for the Development of Children. As part of the renewal, specific OSEC goals and indicators to measure progress towards those goals should be included. In addition, other helpful actions include creating incentives for ISPs to report OSEC through the Anti-Child Pornography Act of 2009 and setting standards for filtering software and updates. We also recommend raising awareness among children, parents, and teachers about what constitutes sexual abuse and online grooming, and what to do when they encounter such behavior.

7) Increase value of on-going UNICEF and USAID household surveys

Our analysis made extensive use of household surveys supported by UNICEF (MICS) and USAID (Demographic and Health Surveys [DHS]) to understand varying sociocultural ecosystems. The openly available datasets that accompany these surveys are essential sources of subnational data. However, we found the surveys lacking in that they did not include substantive questions from which information on TIP can be distilled. The usefulness of these ongoing data collection efforts can be improved by making the data available at the province level to allow for more targeted CTIP investments.

Both surveys contain questions related to indicators that are designed to monitor progress towards the SDGs. Questions designed to address the various SDG goals related to TIP, including SDG 16.2.2. ("number of victims of human trafficking per 100,000 population, by sex, age, and form of exploitation") should be included in the surveys. Violence against women, which is included within SDG 5.2, has appeared and disappeared from the MICS surveys over the years. This question, which is a critical indicator of gender inequality, needs to be included on a consistent basis, and asked of both men and women.

Value would also be greatly increased if data were collected more uniformly, coordinated, and aggregated at lower administrative levels. Warnings on sample size, uncertainly, and other limitations of the survey data should be included in the metadata, but all the data collected should be available so that it can be combined with other datasets and advanced statistical analyses can be applied.

8) Increase reporting and availability of TIP data already collected by the government and other organizations in a comprehensive and timely fashion[16]

Data on human trafficking are of enormous value in prioritizing and targeting CTIP efforts and measuring progress. These data should be anonymized but made available with geographic and demographic information in a timely manner, with no more than a month in arrears.

If databases are openly available, include relevant metadata, and published in a near real-time manner, they can be easily linked and integrated by researchers, implementing organizations, and policymakers. Such policies would effectively meet one of the 2021 TIP Report recommendations, which calls for the creation of a central database for information on illegal recruiters and human trafficking cases.

[16] One subgrantee of Strength CTIP has developed and is now rolling out an online ICMS to be operated by IACAT. It will track progress on legal and other services provided to survivors, generate statistics, and make government agencies accountable (Pers. Comm., 2021).

IV. REFERENCES

Albert, J. R. G., David, C. C., & Vizmanos, J. F. V. (2018). Barriers and bottlenecks to school attendance: An update. Philippine Institute for Development Studies, ISSN 2508-0865. Retrieved August 23, 2021 from https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidspn1817.pdf.

Asian Development Bank. (2013). Gender Equality in the Labor Market in the Philippines. Retrieved August 23, 2021 from https://www.adb.org/sites/default/files/publication/31194/gender-equality-labor-market-philippines.pdf.

Associated Press. (2020, May). Study: Philippines A global Hot Spot for Online Child Abuse. Voice of America. https://www.voanews.com/east-asia-pacific/study-philippines-global-hot-spot-online-child-abuse.

Betz, D. (2009). "Human Trafficking in Southeast Asia: Causes and Implications" June 2009. DTIC. Retrieved from http://www.dtic.mi.

Blum, M.D., Mmari K., and Moreau C. (2017), How Gender Expectations Shape Early Adolescence Around the World, Journal of Adolescent Health, 61:4, Oct. 1, 2017 DOI: https://doi.org/10.1016/j.jadohealth.2017.07.009

Carter Center (2021). Women and the Right of Access to Information. Retrieved July 2021 from https://www.cartercenter.org/peace/ati/women.html

CEDAW: United Nations Committee on the Elimination of Discrimination against Women, 2014. Joint general recommendation No. 31 of the Committee on the Elimination of Discrimination against Women/general comment No. 18 of the Committee on the Rights of the Child on harmful practices, 14 November 2014 (CEDAW/C/GC/31-CRC/C/GC/18).

Cepeda, M. (2021). Senate approves bill on tougher crackdown vs online child sex abuse. Retrieved September 7, 2021 from https://www.rappler.co m/nation/senate-approves-bill-tougher-crackdown-online-sexual-abuse-children.

Cho, S.-Y. (2015). Modeling for determinants of human trafficking: An empirical analysis. *Social Inclusion*, *3*(1), 2–21. https://doi.org/10.17645/si.v3i1.125

Chuang, J. (2006). Beyond a snapshot: Preventing human trafficking in the global economy. Indiana Journal of Global Legal Studies, 13, 137-163

Clarke, R. (1995). Situational Crime Prevention. Crime and Justice, 19, 91-150. Retrieved July 28, 2021, from http://www.jstor.org/stable/1147596

Demographic and Health Surveys (n.d.). Wealth Index. https://dhsprogram.com/topics/wealth-index

Duvvury, N., Nayak, M., & Allendorf, K. (2002). Domestic Violence in India 4: Exploring Strategies, Promoting Dialogue. Men Masculinities and Domestic Violence in India: Summary Report of Four Studies., ICRW: Washington DC. Retrieved from https://www.icrw.org/wp-content/uploads/2016/10/Domestic-Violence-in-India-4-Men-Masculinity-and-Domestic-Violence-in-India.pdf.

Eck J.E., Clarke R.V. (2019) Situational Crime Prevention: Theory, Practice and Evidence. In: Krohn M., Hendrix N., Penly Hall G., Lizotte A. (eds) Handbook on Crime and Deviance. Handbooks of Sociology and Social Research. Springer, Cham. https://doi.org/10.1007/978-3-030-20779-3_18

Economist Intelligence Unit. (2020). Democracy Index 2020. Retrieved July 12, 2021, from https://www.eiu.com/topic/democracy-index

Fehringer, J.A., Hindin, M.J. (2009). Like parent, like child: intergenerational transmission of partner violence in Cebu, the Philippines. Journal of Adolescent Health, 44(4):363–371.

Finigan-Carr N. M., Johnson M. H., Pullmann M. D., Stewart C. J., & Fromknecht A. E. (2019). A Traumagenic Social Ecological Framework for Understanding and Intervening with Sex Trafficked Children and Youth. Child and Adolescent Social Work Journal, 36(1), 49–63. doi: 10.1007/s10560-018-0588-7

Freedom House. (2020). Freedom in the World. Retrieved July 12, 2021, from https://freedomhouse.org/report/freedom-world

Fund for Peace. (2021). Fragile States Index. Retrieved July 12, 2021, from https://fragilestatesindex.org/

Gallagher, A. (2014, November 28). The global slavery index is based on flawed data – why does no one say so? *The Guardian*. https://www.theguardian.com/global-development/poverty-matters/2014/nov/28/global-slavery-index-walk-free-human-trafficking-anne-gallagher

Gardner, A., Northall, P., & Brewster, B. (2020). Building Slavery-free Communities: A Resilience Framework. Journal of Human Trafficking, 1-16. doi:10.1080/23322705.2020.1777828

Guadalquiver, N. (2018). Bacolod police crime clearance, solution rates increase in June. Republic of the Philippines Philippine News Agency. Retrieved from https://www.pna.gov.ph/articles/1040509.

Gipson, J.D., Upchurch, D.M. (2017). Do the status and empowerment of mothers predict their daughters' reproductive outcomes?. BMC Pregnancy Childbirth 17, 348. https://doi.org/10.1186/s12884-017-1497-z

Google (2021). Google MyMaps. https://mymaps.google.com

Grassley, C. (2018, December 21). *S.1312 - 115th Congress (2017-2018): Trafficking Victims Protection Act of 2017* (2017/2018) [Legislation]. https://www.congress.gov/bill/115th-congress/senate-bill/1312

Hapal, D. K. (2021, May 24). *What you think you know about OFW kids is wrong*. Rappler. Retrieved from http://r3.rappler.com/move-ph/balikbayan/voices/58784-ofw-children

Heritage Foundation. (2021). 2021 Index of Economic Freedom. Retrieved July 12, 2021, from https://www.heritage.org/index/.

Hesseling, R. (1994). Displacement: A review of the empirical literature, Crime Prevention Studies, 3, 197-230.

Hindin, M.J. (2005). Family dynamics, gender differences and educational attainment in Filipino adolescents. Journal of Adolescence, 28(3):299–316.

Hindin, M.J., Adair, L.S. (2002). Who's at risk? Factors associated with intimate partner violence in the Philippines. Social Science & Medicine, 55(8):1385–1399.

Hoots, A. (2019). Severing the Connection Between Sex Trafficking and US Military Bases Overseas. 88 Fordham L. Rev. 733

Illo JF. (1989). Who heads the household? Women in households in the Philippines. In: Torres AT, editor. The Filipino woman in focus: a book of readings. Bangkok: UNESCO. p. 244–66. Retrieved from https://pdfcoffee.com/the-filipino-woman-in-focus-1989pdf-pdf-free.html

Inter-Agency Council for Anti-Trafficking (IACAT). (2021). TIP Victim Profiles Dataset. By request only.

International Justice Mission. (2020). Online Sexual Exploitation of Children in the Philippines: Analysis and recommendations for governments, industry, and civil society.

International Labour Office (ILO). (2012). Global estimate of forced labour: results and methodology, Special Action Programme to Combat Forced Labour. ISBN: 9789221264125.

International Labour Office and Walk Free Foundation. (2017). Global Estimates of Modern Slavery: Forced Labour and Forced Marriage, Geneva, 2017, ISBN: 978-92-2-130131-8.

International Organization for Migration. (2018). Human Trafficking Snapshot: Philippines. Retrieved March 2021 from https://iomx.iom.int/sites/default/files/resources/files/philippines20iom20x20human20trafficking20snapshot2028201829_3.pdf

Kikuchi, T. (2015). Philippines leads the region with its women in management. Nikkei Asia. Retrieved August 23, 2021 from https://asia.nikkei.com/Business/Philippines-leads-the-region-with-its-women-in-management.

Leones, C. & Caparas, D. (n.d.). Trafficking in Human Beings from the Philippines: A Survey of Government Experts and Law Enforcement Case Files: Executive Summary. United Nations Global Programme against Trafficking in Human Beings and National Police Commission, Republic of the Philippines. Retrieved August 24, 2021 from https://www.unodc.org/pdf/crime/human_trafficking/Exec_Summary_NAPOLCOM.pdf.

National Mapping and Resource Information Authority, Philippines Statistics Authority (PSA). (2020). Philippines - Subnational Administrative Boundaries. Retrieved May 2020 from https://data.humdata.org/dataset/philippines-administrative-levels-0-to-3

Natural Earth (2020). Cross Blended Hypso with Shaded Relief, Water, and Drainages. Retrieved from https://www.naturalearthdata.com/downloads/10m-raster-data/10m-cross-blend-hypso/

Office for the Coordination of Humanitarian Affairs Philippines, National Mapping and Resource Information Authority, and Philippines Statistics Authority (PSA). (2020). Philippines - Subnational Administrative Boundaries. Retrieved August 1, 2020 from https://data.humdata.org/dataset/philippines-administrative-levels-0-to-3.

Ople Center: Blas F. Ople Policy Center & Training Institute (2021) Integrated Case Management System (ICMS) data. By request only.

Organisation for Economic Co-Operation and Development (OECD). (2008) Handbook on constructing composite indicators: methodology and user guide. ISBN 978-92-64-04345-9. 2008

Perry, K. M., & McEwing, L. (2013). How do social determinants affect human trafficking in Southeast Asia, and what can we do about it? A systematic review. *Health and Human Rights*, *15*(2), 138–159. JSTOR.

Philippine Statistics Authority. (2011). *2011 Survey On Overseas Filipinos—A Report On The Overseas Filipino Workers*. Philippine Statistics Authority. Retrieved from https://psa.gov.ph/sites/default/files/2011%20Survey%20On%20Overseas%20Filipinos%20A%20Report%20On%20The%20Overseas%20Filipino%20Workers.pdf

Philippine Statistics Authority (PSA) and ICF. (2018). Philippines National Demographic and Health Survey 2017. Quezon City, Philippines, and Rockville, Maryland, USA: PSA and ICF. Retrieved April 21, P.L. 115-427, 2017, The Trafficking Victims Protection Reauthorization Act of 2017, enacted in 2019.

Rahman, F. (2020). Trajectories of Gender Inequality, Identify, and Violent Extremism in Rural Bangladesh, in Conflicting Identities: The Nexus between Masculinities, Femininities and Violent Extremism in Asia, UNDP and UN Women 2020, ISBN 978-974-680-434-9.

Redfern, C., 2019. Bangladesh's child marriage problem is the world's human trafficking crisis. Foreign Policy. Retrieved from https://foreignpolicy.com/2019/11/08/bangladesh-child-marriage-human-trafficking-crisis/.

Reporters Without Borders. (2021). Press Freedom Index. Retrieved July 12, 2021, from https://rsf.org/en/ranking

Rose, A. N., McKee, J. J., Sims, K. M., Bright, E. A., Reith, A. E., & Urban, M. L. (2020). LandScan 2019 (2019th ed.). Oak Ridge National Laboratory. https://landscan.ornl.gov/

Simons, M., 2019. 'Do you ever think about me?': the children sex tourists leave behind, The Guardian, Mar. 2, 2019.

Smith, C. H. (2000, October 28). *H.R.3244 - 106th Congress (1999-2000): Victims of Trafficking and Violence Protection Act of 2000* (1999/2000) [Legislation]. https://www.congress.gov/bill/106th-congress/house-bill/3244

Smith, C. H. (2003, December 19). *H.R.2620 - 108th Congress (2003-2004): Trafficking Victims Protection Reauthorization Act of 2003* (2003/2004) [Legislation]. https://www.congress.gov/bill/108th-congress/house-bill/2620

Transparency International. (2020). Corruption Perceptions Index. Retrieved July 12, 2021, from https://www.transparency.org/en/cpi

UNICEF Data. (2020). Child Marriage. Retrieved from https://data.unicef.org/topic/child-protection/child-marriage/.

United Nations (1948), Universal Declaration of Human Rights, United Nations General Assembly Resolution 217 A, 10 Dec. 1948.

United Nations (1956), United Nations Supplementary Convention on the Abolition of Slavery, the Slave Trade, and Institutions and Practices Similar to Slavery, Conference of Plenipotentiaries convened by Economic and Social Council Resolution 608 (XXI), 30 Apr. 1956.

United Nations (1964), The Convention on Consent to Marriage, Minimum Age for Marriage, and Registration of Marriage, United Nations General Assembly Resolution 1763 A (XVII), 9 Dec. 1964.

United Nations (1965), Recommendation on Consent to Marriage, Minimum Age for Marriage and Registration of Marriages", United Nations General Assembly Resolution 2018 (XX), 1 Nov 1965.

United Nations (2000). Protocol to Prevent, Suppress and Punish Trafficking in Persons Especially Women and Children, supplementing the United Nations Convention against Transnational Organized Crime, Article 3.

United Nations (2015) Transforming our world: The 2030 Agenda for Sustainable Development, Pub. L. No. A/RES/70/1. https://documents-dds-ny.un.org/doc/UNDOC/GEN/N15/291/89/PDF/N1529189.pdf?OpenElement

United Nations, Department of Economic and Social Affairs, Population Division. (2017). World Marriage Data 2017 (POP/DB/Marr/Rev2017). Retrieved December 2020 from https://stats.oecd.org/Index.aspx?DataSetCode=GIDDB2019).

United Nations Office on Drugs and Crime. (2010)., United Nations Economic and Social Council's Guidelines for the Prevention of Crime (Resolution 2002/13) https://www.unodc.org/e4j/en/cybercrime/module-9/key-issues/situational-crime-prevention.html

United Nations Office on Drugs and Crime. (2020). Interlinkages between Trafficking in Persons and Marriage, Issue Paper. Retrieved from https://www.unodc.org/documents/human-trafficking/2020/UNODC_Interlinkages_Trafficking_in_Persons_and_Marriage.pdf.

United States Agency for International Development (USAID) Philippines. (2021). Written communication.

United States Department of State (US DoS). (2018). Trafficking in Persons Report. Retrieved from https://www.state.gov/wp-content/uploads/2019/01/282798.pdf.

United States Department of State (US DoS). (2019). Trafficking in Persons Report. Retrieved from https://www.state.gov/wp-content/uploads/2019/06/2019-Trafficking-in-Persons-Report.pdf

United States Department of State (US DoS). (2020a). 2020 Trafficking in Persons Report. https://www.state.gov/wp-content/uploads/2020/06/2020-TIP-Report-Complete-062420-FINAL.pdf

United States Department of State (US DoS). (2020b). Freedom First: Celebrating 20 Years of Progress to Combat Human Trafficking. Office to Monitor and Combat Trafficking in Persons, US Department of State.

United States Department of State (US DoS). (2021). 2021 Trafficking in Persons Report. Retrieved from https://www.state.gov/wp-content/uploads/2021/09/TIPR-GPA-upload-07222021.pdf

Upadhyay, U.D., Hindin, M.J. (2005). Do higher status and more autonomous women have longer birth intervals? Results from Cebu, Philippines. Social Science & Medicine, 60(11):2641–2655.

Upadhyay, U.D., Hindin, M.J. (2007). The influence of parents' marital relationship and women's status on children's age at first sex in Cebu, Philippines. Studies in Family Planning, 38(3):173–186.

van der Vink, G. E., K. N. Carlson, J. Park, S. H. Szeto, X. Zhang, M. E. Jackson & E. Phillips (2021a): Empirical Analysis of the US State Department's Annual Trafficking in Persons Report – Insights for Policy-Makers, Journal of Human Trafficking, DOI: 10.1080/23322705.2021.1897759.

van der Vink, G. E., K. N. Carlson, E. Phillips, S. H. Szeto, J. Park & M. E. Jackson (2021b): Child Marriage, Human Trafficking and Gender Inequality: An Empirical Ecosystem Analysis for Bangladesh, Journal of Human Trafficking, in review.

Walk Free Foundation. (2016). The Global Slavery Index 2016. https://downloads.globalslaveryindex.org/ephemeral/GSI-2016-Full-Report-1589304113.pdf

Walk Free Foundation. (2018). The Global Slavery Index 2018. https://downloads.globalslaveryindex.org/ephemeral/GSI2018_FNL_190828_CO_DIGITAL_P-1595520483.pdf

World Bank. (2020). Ease of Doing Business Scores. Retrieved July 12, 2021, from https://www.doingbusiness.org/en/data/doing-business-score?topic=

World Health Organization. (2021). Children aged <5 years with fever who received treatment with any antimalarial (%). Retrieved August 23, 2021from https://www.who.int/data/gho/indicator-metadata-registry/imr-details/14.

ANNEX 1. GEOGRAPHICALLY-TARGETED INTERVENTIONS BY REGION

The region profiles are ordered by their Sex TIP vulnerability ranking. Their corresponding Labor TIP vulnerability ranking is listed in the table below.

Sex TIP Vulnerability Ranking	Regions	Labor TIP Vulnerability Ranking
1	NCR	1
2	Region XI (Davao Region)	2
3	Region X (Northern Mindanao)	5
4	Region VII (Central Visayas)	8
5	Region II (Cagayan Valley)	10
6	Region XII (Soccsksargen)	4
7	Region III (Central Luzon)	7
8	Cordillera Administrative Region	3
9	Region I (Ilocos Region)	6
17	Region VI (Western Visayas)	16

National Capital Region (NCR)

Socio-Economic Measures:

Population: 12,877,253 (#2)
Percent Urban: 100% (#1)
Female Net Secondary School Attendance: 22.3% (#1)

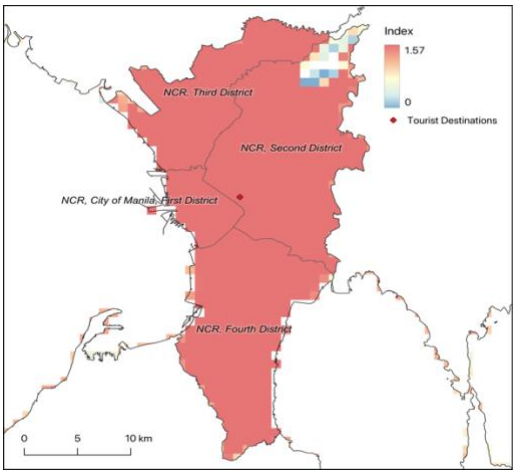
Households with Electricity: 99.4% (#1)
GDP per Capita (thousands of USD): 257.2 (#1)
Poverty Incidence: 2.67% (#17)
Violence against Women: 11% (#15)

Human Development Index: 0.889 (#1)
Percent of women who feel a husband is justified in beating his wife: 3.2% (#17)

Violent Extremism: 58 events since 2015 (#17)
Female Internet connectivity: 90.3% (#1)

Devised from over 1,400 indicators, the vulnerability measure is composed of the subset of indicators and weightings that represent the optimal combination characteristic of the TIP ecosystem. The red bars are the values for the featured region. The grey bars represent the national average for that indicator. The statistical interpretations of these indicator combinations, their correlations with other factors, and the phenomena for which they serve as proxy measures provide insight and evidence for the summaries below. For further discussion of the indicators, see sections 2 and 3 above.

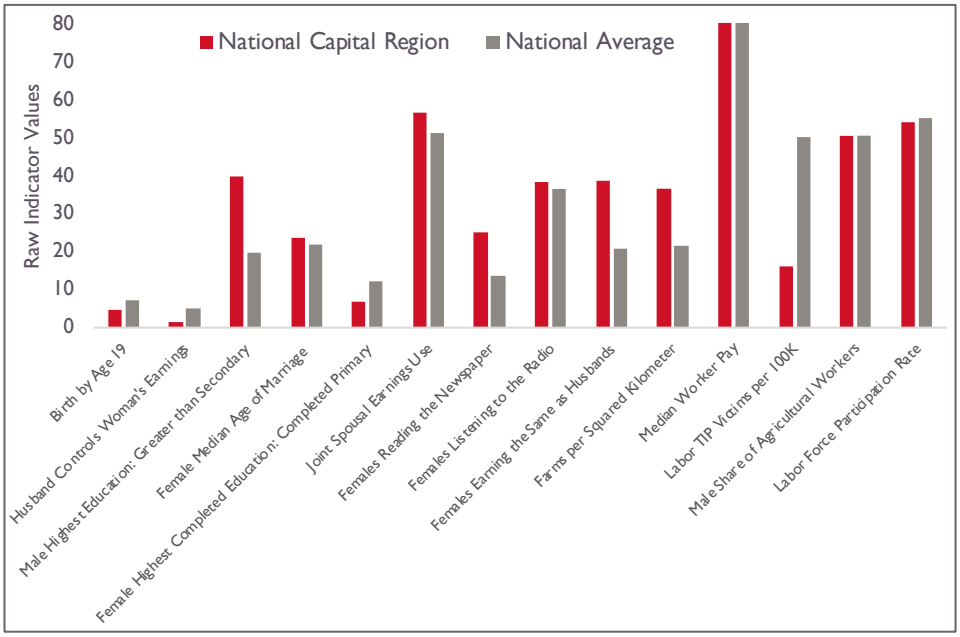
Sex Trafficking in Persons:



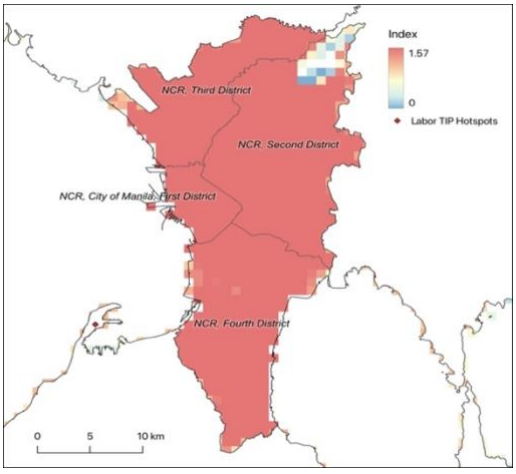
TIP Vulnerability Measure: 0.26 (#2)

Projected Prevalence: 14.282 (#2)

Projected Number of Victims: 183,918 (#1)



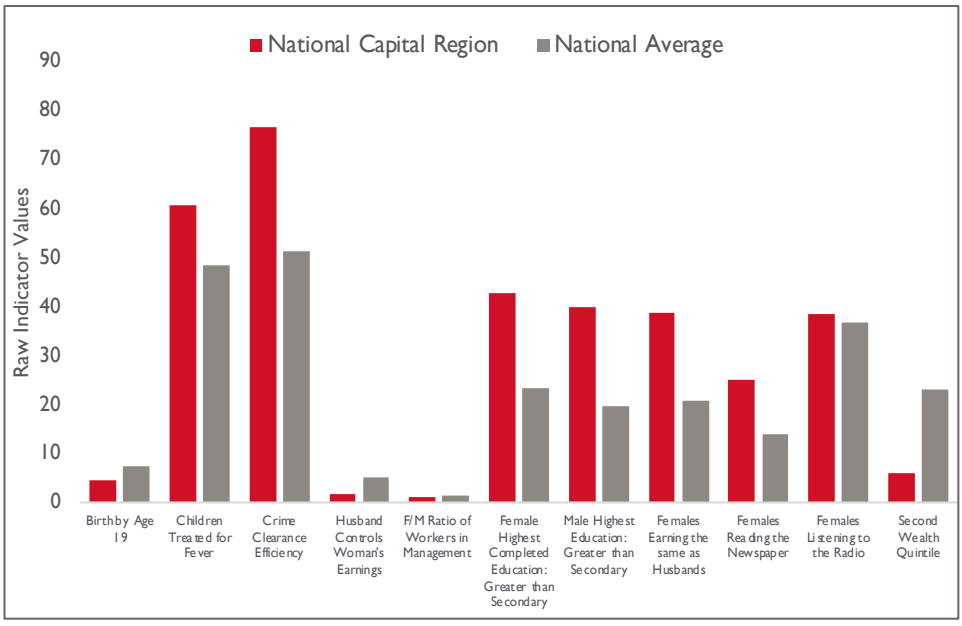
Labor Trafficking in Persons:



TIP Vulnerability Measure: 0.31 (#1)

Projected Prevalence: 2.181 (#1)

Projected Number of Victims: 28,091 (#1)



National Capital Region (NCR)

Online Sexual Exploitation of Children (OSEC):

Manila has been cited as a source and destination for OSEC in the Philippines. Manila had the third-highest prevalence of OSEC at 6.29 per 1,000,000. The victims are primarily female (88 percent). The NCR has very high rates of internet connectivity, especially among women, and a large, developed city, which gives traffickers access to technology and victims. The 2020 International Justice Mission OSEC Report noted Manila as a hotspot for OSEC, however it was not able to measure the prevalence of OSEC owing to inconsistencies in the quality of reporting by electronic service providers (ESPs). Advancing technology should be utilized to detect OSEC and victim services and funding for OSEC-related crimes should be increased in the major cities to service the region.

Overseas Filipino Workers:

NCR was the third-highest sending region for OFWs per 100,000 working age population in 2019. The distribution of OFWs by gender show that 64.8 percent are men and 35.2 percent are women (2018). The male average reported TIP victim per 100,000 is 0.79 and females is 11.1. Female OFWs are more likely to become victims of human trafficking than their male counterparts. Reporting may also be impacted by societal views and stigmas that may affect whether those who have experienced human trafficking to report it to authorities, especially among men.

Summary Description:

- NCR is the capital region of the Philippines, located on the southwestern part of Luzon Island. Unlike other regions, NCR does not have provinces, just four districts: First District, Second District, Third District, and Fourth District. The region is also referred to as Metro Manila. There are 16 cities in the region, including Manila, Quezon City, Taguig, Pasay, and Caloocan, which form the Manila metropolitan area. It is the most densely populated region in the Philippines and the fifth-most populated urban area in the world.
- Manila is the capital of the Philippines and the center for economy, education, culture, and government. The main industries are tourism, trade, finance, and commerce. The city has many expatriates living in it and many foreign organizations and governments.
- NCR is a destination, source, and transit region for both sex and labor trafficking. While a majority of sex trafficking victims are trafficked in place, the opposite is true for labor trafficking victims. The capital city draws in domestic laborers from the rest of the country.
- NCR has the country's busiest international airport, Ninoy International Airport, and several large seaports. There are several tourist destinations north of the region and several military bases with US military presence to the north as well.
- NCR account for more than one-third of the national GDP.
- Manila is the top tourist destination in the country. There are many historical and cultural sites, malls and casinos, and universities. It is also a known sex tourism destination with several red-light districts, karaoke bars, and strip clubs.
- NCR has the strongest wealth measures in the country, in addition to the lowest poverty rates, highest GDP, and highest HDI. There are slums around the outskirts of metro Manila, but there are no exact population estimates or other statistics about these areas.
- NCR has high female empowerment and gender equality measures. Female attendance of school is high and the rates of spousal violence against women are the lowest in the country. Manila is home to several higher education universities.
- NCR has a male employment rate of 58 percent and a female employment rate of 42 percent, revealing a gender gap. Women are more likely to work in the service industry, while a higher percentage of men work in industry or agriculture.

Geographically-Targeted Interventions

In NCR, high priority interventions include increasing awareness of human trafficking among shipping and airport authorities, local community leaders, and local law enforcement; increasing awareness among children and parents of OSEC and proper labor recruiting practices; and reducing societal gender inequality. Manila is the largest destination for both international and domestic tourists. Due to the US military presence in the Philippines, it became a popular sex tourism destination. Metro Manila has several red-light districts that continue to attract domestic and international patrons. While sex work still takes place in physical locations, like hotels and bars, new technology is now being used by many sex workers through online apps or chatting platforms like Facebook Messenger. Many young people are solicited through these online platforms to have sexual intercourse. Programs should be put in place to educate students on the safe and proper way to use the internet and new technologies, as well as providing education on trafficking and sexual exploitation. These trainings should be given to the parents of young students to educate them on the possible consequences of allowing or sending their young children into vulnerable situations. Talikala, an anti-trafficking organization in Davao, has been using a new relatively new approach to increasingly involve men in its project work to combat sexual exploitation from all sides, and has been very successful. Police should regularly inspect brothels, and the local government should start a public service campaign warning residents about signs of trafficking and encouraging people to report any suspicious activity. Further health and employment training programs should be made available to the women.

Manila is the main destination location for both sex and labor trafficking. Anecdotally, many sources reported that traffickers recruit others from other areas around the country and bring victims into the city. However, data from IACAT reveals that 73 percent of victims of sex trafficking report being trafficking in place. Only 29 percent of labor trafficking victims reported being trafficked in place. This reveals that while females in NCR have high empowerment indicators, most young girls are recruited in the same region. Stronger implementation of illegal prostitution laws should be enforced to de-normalize this practice. Programs on safe labor and recruitment should be given at all schools, including universities, to both young men and women. Additionally, information should be made available on how to properly report trafficking to the correct authority, and organizations should help provide legal aid and assistance to victims in order to prosecute traffickers.

NCR has high domestic and international transit through its international airport and several ports, which all are known trafficking routes. The port authority, airport security and local law enforcement efforts should be expanded to include efforts at reducing human trafficking, specifically: a) increasing awareness of human trafficking in the main transit hubs, b) training and incentivizing law enforcement to identify and deal with trafficking, and c) raising the roles and prevalence of female officers. Such efforts should be complemented with community-based programs to increase awareness of human trafficking and safe migration practices.

Region XI (Davao Region)

Socio-Economic Measures:

Population: 4,893,318 (#8)
Percent Urban: 59% (#3)
Female Net Secondary School Attendance: 14.3% (#14)

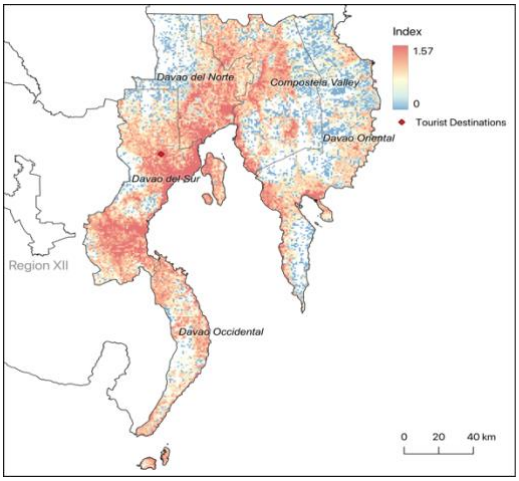
Households with Electricity: 78.7% (#16)
GDP per Capita (thousands of USD): 81.9 (#4)
Poverty Incidence: 25% (#8)
Violence against Women: 23.1% (#4)

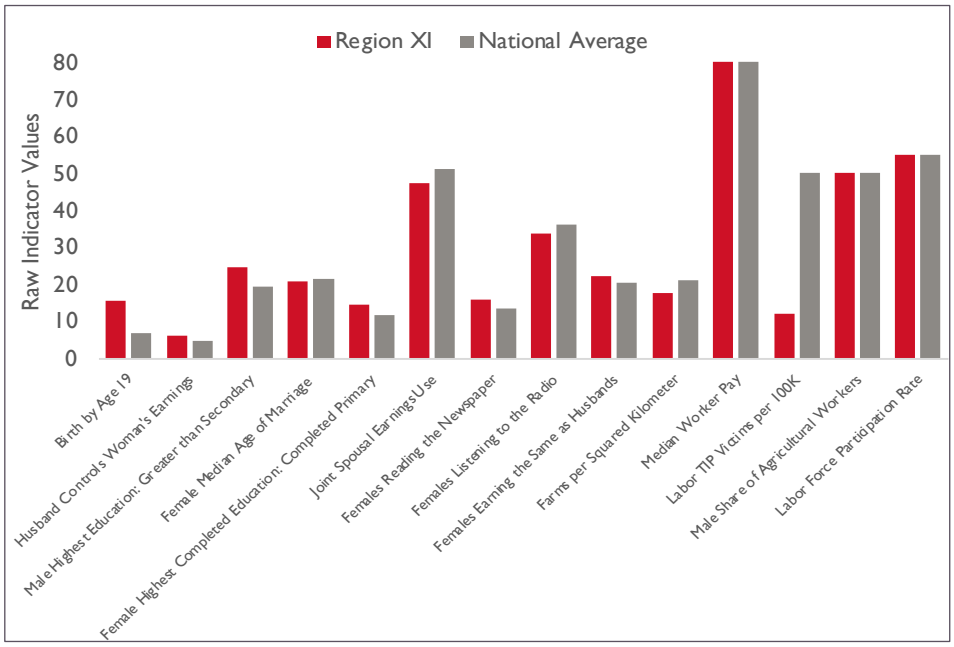
Human Development Index: 0.558 (#12)
Percent of women who feel a husband is justified in beating his wife: 13.3% (#6)

Violent Extremism: 368 events since 2015 (#3)
Female Internet connectivity: 63.6% (#9)

Devised from over 1,400 indicators, the vulnerability measure is composed of the subset of indicators and weightings that represent the optimal combination characteristic of the TIP ecosystem. The red bars are the values for the featured region. The grey bars represent the national average for that indicator. The statistical interpretations of these indicator combinations, their correlations with other factors, and the phenomena for which they serve as proxy measures provide insight and evidence for the summaries below. For further discussion of the indicators, see sections 2 and 3 above.

Sex Trafficking in Persons:



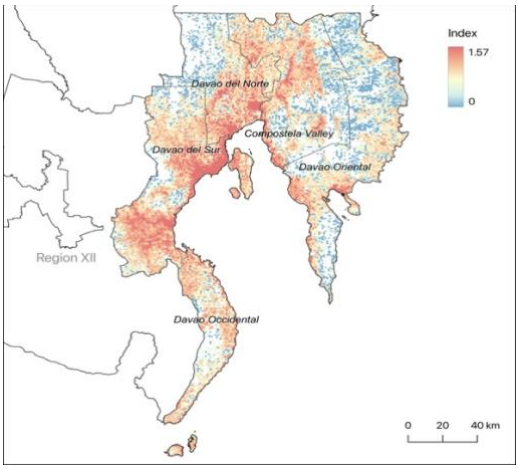


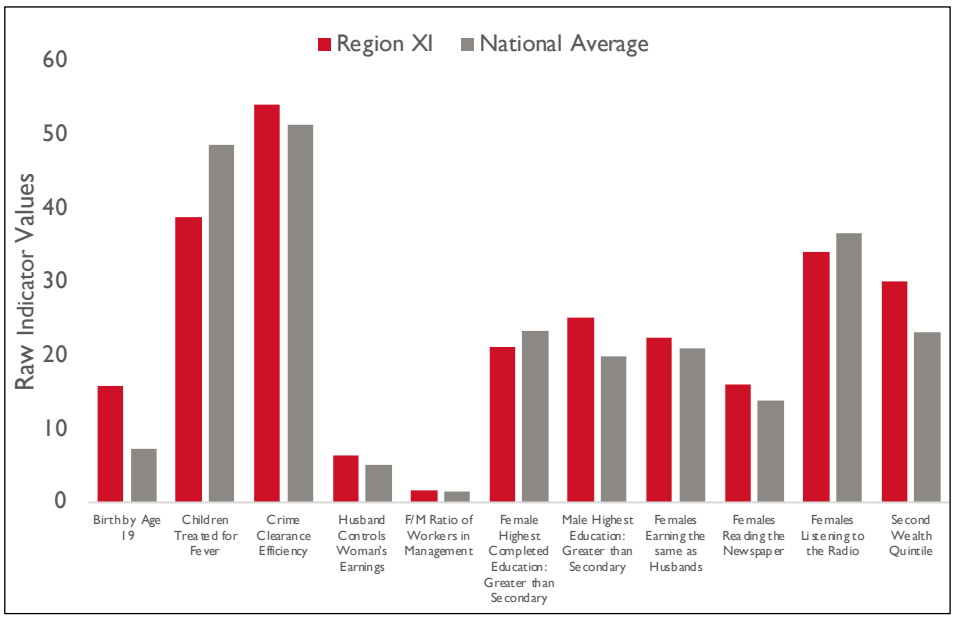
TIP Vulnerability Measure: 0.264 (#1)

Projected Prevalence: 14.962 (#1)

Projected Number of Victims: 73,213 (#3)

Labor Trafficking in Persons:





TIP Vulnerability Measure: 0.306 (#2)

Projected Prevalence: 2.106 (#2)

Projected Number of Victims: 10,304 (#2)

Region XI (Davao Region)

Online Sexual Exploitation of Children (OSEC):

Davao City has been cited as a source and destination for OSEC in the Philippines. According to the IACAT data, it has the second-highest prevalence of OSEC (per 1,000,000) and is the third-highest in total OSEC victims. In Davao del Norte, 100 percent of OSEC victims were trafficked in place. In Davao del Sur, 82 percent of victims were trafficked in place. The victims of OSEC are primarily female (88 percent). Advancing technology should be utilized to detect OSEC, and greater victim services and funding for OSEC-related crimes should be increased in the major cities to service the region.

Overseas Filipino Workers (OFWs):

Region XI was the 10th-highest sending region for OFWs per 100,000 working age population in 2019. The distribution of OFWs by gender show that 36 percent are men and 64 percent are women (2018). The male average-reported TIP victim per 100,000 is 350.6 and females is 412. Female OFWs are more likely to become victims of human trafficking than their male counterparts. Reporting may also be impacted by societal views and stigmas that may affect whether those who have experienced human trafficking report it to authorities, especially among men. Region XI has the highest TIP prevalence among OFWs in the entire country.

Summary Description:

- Region XI is the southeastern area of Mindanao and comprises five provinces: Compostela Valley (Davao del Oro), Davao del Sur, Davao de Norte, Davao Oriental, and Davao Occidental. The regional capital is Davao City, which is the largest city on Mindanao and the third most-populous city in the country. Davao City also is home to large groups of Chinese and Japanese immigrants.
- Region XI is a source, destination, and transit region for sex and labor trafficking. Davao City has several national and international ports and the third-busiest international airport in the country.
- The economy is primarily agriculture-based, but the city is home to growing agro-industrial businesses, trade, and tourism. The main crops are banana, rice, and several other tropical fruits. Fishing is also a primary livelihood along coastal areas.
- Davao del Norte is a main producer of gold, along with other precious metals, and has several quarries for gravel and sand mining.
- Compostela Valley was named the fourth-richest province in 2019. However, one-fourth of the region is living in poverty, with low electricity, low HDI, and low female secondary school completion, indicating that there are large inequalities in access to services and economic mobility.
- Region XI has above-average levels of spousal violence against women and women who believe that spousal beating is justified. These indicators, paired with higher-than-average female births before the age of 19, high percentages of females giving their earnings to their husbands, and a lower-than-average median age of marriage, suggests high gender inequality.
- Davao del Sur, which contains Davao City, is a top origin province within Region XI for sex trafficking, while Davao del Norte is a top origin province for labor trafficking.
- Region XI's percentage of women reading the newspaper is above the national average. It also has a high percentage of women earning the same income as their husbands, but very birth rates before the age of 19, which suggests that the society still has patriarchal cultural views.

Geographically-Targeted Interventions

In Region XI, high priority interventions include increasing awareness of human trafficking among shipping and airport authorities, local community leaders, and local law enforcement; increasing awareness among children and parents of OSEC and proper labor recruiting practices; and reducing societal gender inequality. In 2020, Davao City was estimated to have around 4,000 prostitutes, 40 percent of whom are U18. While sex work still takes place in physical locations like hotels and bars, new technology is now being used by many sex workers through online apps or chatting platforms like Facebook Messenger. However, many young people are solicited through these online platforms to have sexual intercourse. Programs should be put in place to educate students on the safe and proper way to use the internet and new technologies, as well as providing education on trafficking and sexual exploitation. These trainings should be given to the parents of young students to educate them on the possible consequences of allowing or sending their young children into vulnerable situations. Talikala, an anti-trafficking organization in Davao, has also been using a new relatively new approach to involve men in its project work to combat sexual exploitation from all sides, and has been very successful. Further health and employment trainings should be made available to women. Offering small-scale vocational education programs for brothel employees can build skill sets that raise employment chances outside of the brothel.

Police should regularly inspect brothels and the local government should start a public service campaign to warn residents about signs of trafficking and to encourage people to report suspicious activity. Providing comprehensive training to law enforcement and local community leaders and the sex-workers can raise awareness of human trafficking. Without discouraging access to medical treatment and preventative care, health workers should be trained to screen, recognize, and offer resources to victims of TIP as part of their medical mission, including giving victims the chance to report TIP to a nonprofit or the authorities.

Region XI has high domestic and international transit levels through its international airport and several ports (Davao Gulf, Digos Point, and Panabo Port), which all are known trafficking routes. The port authority, airport security, and local law enforcement efforts should be expanded to include efforts at reducing human trafficking, specifically: a) increasing awareness of human trafficking in the main transit hubs, b) training and incentivizing law enforcement to identify and deal with trafficking, and c) raising the roles and prevalence of female officers. Such efforts should be complemented with community-based programs to increase awareness of human trafficking and safe migration practices.

The OFW TIP prevalence in Region XI is the highest in the country and the prevalence is highest among female OFWs. Programs on proper employment and financial and technical trainings should be established to enhance marketable and transferable skills that will make OFWs desirable global workers. NGOs and other organizations should be encouraged to help trained and educated workers identify and pursue economic opportunities through safe migration practices.

Region X (Northern Mindanao)

Socio-Economic Measures:

Population: 4,689,302 (#9)
Percent Urban: 41% (#7)
Female Net Secondary School Attendance: 18% (#5)

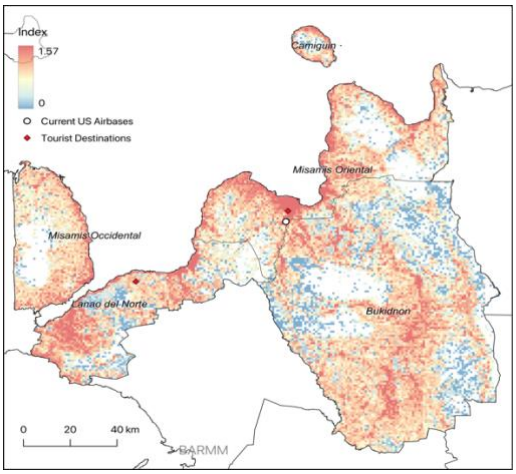
Households with Electricity: 84.8% (#14)
GDP per Capita (thousands of USD): 73.6 (#7)
Poverty Incidence: 26.03% (#7)
Violence against Women: 13.4% (#13)

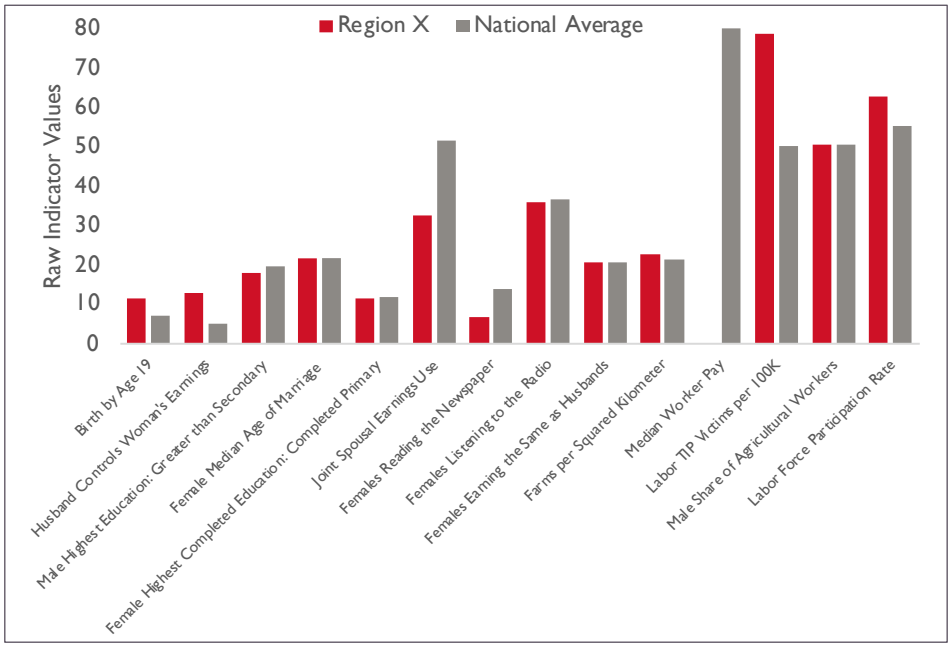
Human Development Index: 0.553 (#13)
Percent of women who feel a husband is justified in beating his wife: 8.3% (#13)

Violent Extremism: 290 events since 2015 (#6)
Female Internet connectivity: 63.9% (#8)

Devised from over 1,400 indicators, the vulnerability measure is composed of the subset of indicators and weightings that represent the optimal combination characteristic of the TIP ecosystem. The red bars are the values for the featured region. The grey bars represent the national average for that indicator. The statistical interpretations of these indicator combinations, their correlations with other factors, and the phenomena for which they serve as proxy measures provide insight and evidence for the summaries below. For further discussion of the indicators, see sections 2 and 3 above.

Sex Trafficking in Persons:



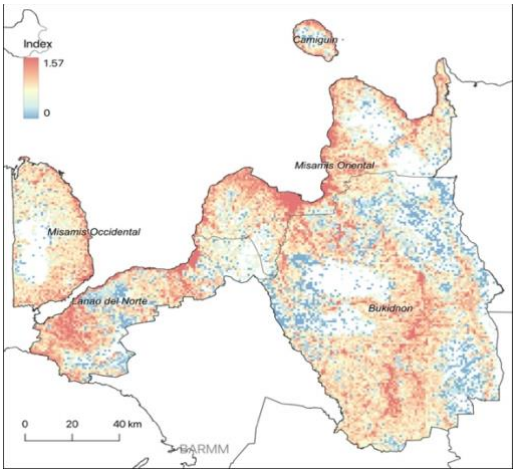


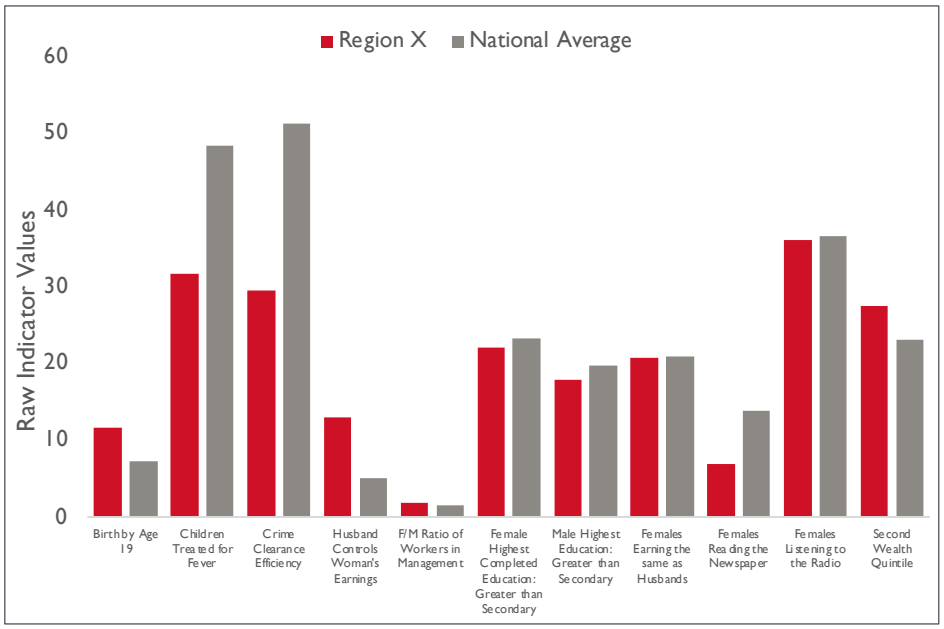
TIP Vulnerability Measure: 0.246 (#3)

Projected Prevalence: 12.111 (#3)

Projected Number of Victims: 56,794 (#5)

Labor Trafficking in Persons:





TIP Vulnerability Measure: 0.243 (#5)

Projected Prevalence: 1.139 (#5)

Projected Number of Victims: 5,340 (#8)

Region X (Northern Mindanao)

Online Sexual Exploitation of Children (OSEC):

Lanao del Norte has been cited as a source and destination for OSEC in the Philippines. Lanao del Norte has an OSEC prevalence of 0.98 per 1,000,000. The victims are primarily female (88 percent). Region X has relatively low internet connectivity rates, especially among females, but connections in the city give traffickers access to technology and victims. The 2020 TIP Report noted Lanao del Norte as a hotspot for OSEC. Bukidnon and Misamis Occidental are also mentioned in the literature as emerging hot spots for OSEC. Advancing technology should be utilized to detect OSEC, and greater victim services and funding for OSEC-related crimes should be increased in major cities to service the region.

Overseas Filipino Workers (OFWs):

Region X was the 11th-highest sending region for OFWs per 100,000 working age population in 2019. The distribution of OFWs is fairly even across genders, 43 percent are men and 57 percent are women (2018). The male average-reported TIP victim per 100,000 is 137.5 and for females is 146.6. Female OFWs are more likely to become victims of human trafficking than their male counterparts. Reporting may also be impacted by societal views and stigmas that may affect whether those who have experienced human trafficking to report it to authorities, especially in the case of males.

Summary Description:

- Region X is located in northern Mindanao and is comprised of five provinces: Bukidnon, Camiguin, Misamis Occidental, Misamis Oriental, and Lanao del Norte. There are two large cities in the region, Cagayan de Oro and Iligan.
- Lanao del Norte has a large industrial sector. The Agus-IV to VII Hydroelectric Plants supply most of the electrical power to Mindanao.
- Region X is the second-largest economy on Mindanao and is mainly agricultural economy, with some industry. The main crops include rice, corn, and coconuts, along with fishing.
- Bukidnon is considered the region's food basket and is a large rice and corn producer, it is also one of the richest provinces in the country.
- The regional capital of Cagayan de Oro is a fast growing and quickly urbanizing city. It has a domestic airport, Laguidingan Airport, and has become a domestic and foreign tourist destination.
- Iligan City is the rapidly growing industrial central of the southern Philippines. The main industries are cement, steel, and flour mills.
- Region X is a destination and source for labor trafficking and a source, transit, and destination, to a lesser extent, for sex trafficking. Misamis Oriental is a source and destination for labor trafficking and Lanao del Norte is a destination for sex trafficking.
- Wealth measures in Region X are not below average, but about one-fifth of the population lives in poverty, especially in the southern area.
- Region X also has high rates of violent extremism (VE) events and low crime clearance efficiency, indicating instability and low rule of law in the region. It also borders the BARMM and is close to where the Siege of Marawi took place in 2016. It is reported that several criminal networks work out of this area due to the high transit options available.
- Region X has high levels of female empowerment and female school attendance is high. However, spousal violence against women is also high compared to the rest of the country, indicating societal gender inequality.

Geographically-Targeted Interventions

In Region X, high priority interventions include increasing awareness of human trafficking among shipping and airport authorities, local community leaders, and local law enforcement; increase awareness among children and parents of OSEC and proper labor recruiting practices; and reducing societal gender inequality. Both Cagayan de Oro and Iligan are large cities that attract people seeking economic opportunity and mobility from the surrounding area. Many young girls are recruited for domestic labor with the promise of education or a job. Anecdotally, many sources reported that traffickers and crime networks recruit victims from areas outside Mindanao and bring victims into Cagayan de Oro. In Lanao del Norte and Misamis Occidental, 100 percent of the sex trafficking victims were trafficked in place. In Cagayan, 30 percent of sex trafficking victims are trafficked in place. This suggests that many of the trafficking recruiters are operating out of Cagayan de Oro and bring in young girls from surrounding areas to supply the growing demand for sex tourism and prostitution in the growing city, or to move victims domestically through the airport. Labor trafficking trends are similar: in Cagayan, only 11 percent of victims are trafficked in place, while in Bukidnon and Misamis Oriental 88 percent of victims are trafficked in place.

Programming in Iligan should be targeted towards people living in the city and surrounding areas on proper employment recruitment and trafficking reporting practices. Efforts should be made to educate community leaders and parents on the possible consequences of sending their young children, especially girls, into vulnerable situations, such as providing household domestic services. Stronger resources for children from difficult home situations should be made available in the area to offer children attempting to escape abusive parents or spouses, such as social services or women and children's homes. Without discouraging access to medical treatment and preventative care, health workers should be trained to screen, recognize, and offer resources to victims of TIP as part of their medical mission, including giving victims the chance to report TIP to a nonprofit or the authorities. Schools in the area should provide trainings on how to recognize abuse and how to safely use the internet and messaging systems. Gender equality trainings should take place and include young men, especially those age 5-10.

Bukidnon has the second-highest level of sugarcane production in the country (14 percent). The sugarcane industry is known for labor exploitation, migrant workers, and labor trafficking. Methods to decrease exploitation within the industry should include labor inspections of sugarcane farming and processing plants, the development of formal and transparent recruitment practices, the institutionalization of health and safety standards for certification, and the education of law enforcement personnel and health inspectors to recognize exploitive labor practices and identify victims. Many sugarcane workers migrated from other areas, so it is important to hold these programs at the beginning and throughout the rest of the season at the farms, because most workers stay in temporary housing on the property.

Cagayan de Oro connects the land routes of the traffickers in the north (Surigao City, Butuan City) with those in the northwest (Dapitan City, Zamboanga City). The city has high domestic and smaller amounts of international transit through the airport and several ports. The port authority, airport security, and local law enforcement efforts should be expanded to include efforts at reducing human trafficking, specifically: increasing awareness of human trafficking in the main transit hubs and training and incentivizing law enforcement to identify and deal with TIP.

Region VII (Central Visayas)

Socio-Economic Measures:

Population: 7,396,898 (#5)
Percent Urban: 44% (#6)
Female Secondary School Completion: 15.8% (#10)

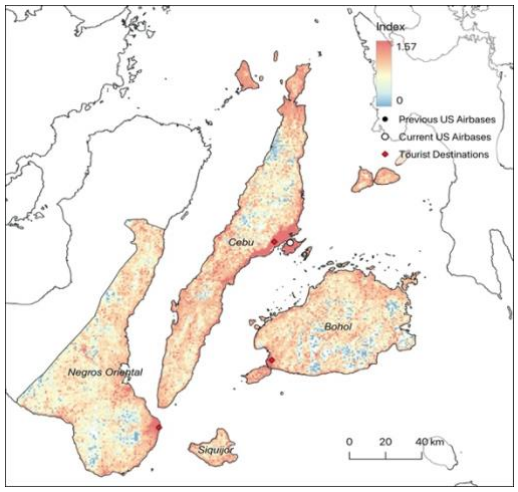
Households with Electricity: 89% (#10)
GDP per Capita (thousands of USD): 80.3 (#6)
Poverty Incidence: 20.4% (#9)
Violence against Women: 19.7% (#6)

Human Development Index: 0.575 (#10)
Percent of women who feel a husband is justified in beating his wife: 13.1% (#7)

Violent Extremism: 130 events since 2015 (#11)
Female Internet connectivity: 74.1% (#4)

Devised from over 1,400 indicators, the vulnerability measure is composed of the subset of indicators and weightings that represent the optimal combination characteristic of the TIP ecosystem. The red bars are the values for the featured region. The grey bars represent the national average for that indicator. The statistical interpretations of these indicator combinations, their correlations with other factors, and the phenomena for which they serve as proxy measures provide insight and evidence for the summaries below. For further discussion of the indicators, see sections 2 and 3 above.

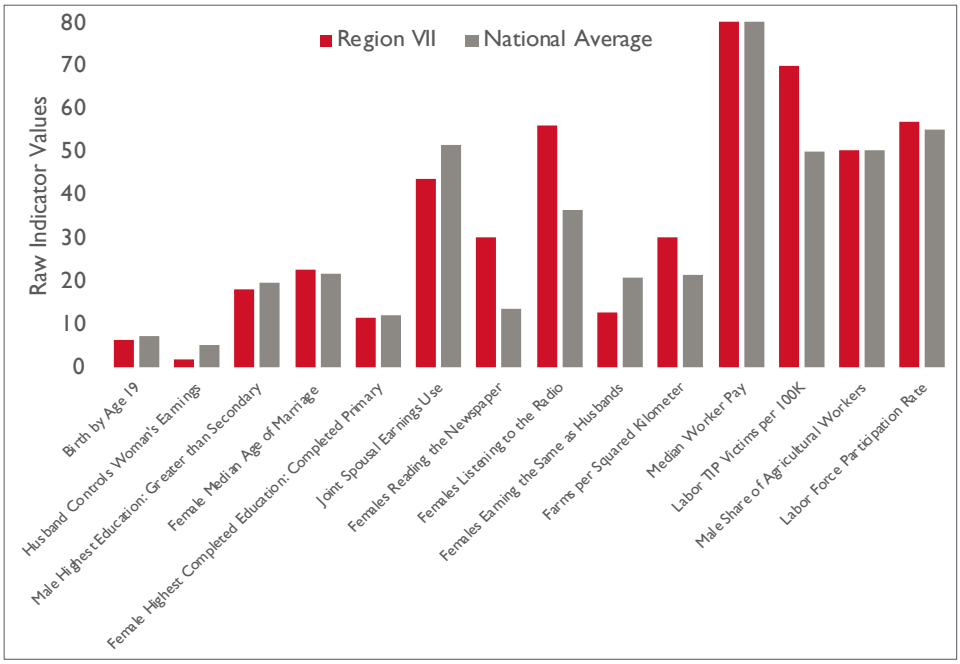
Sex Trafficking in Persons:



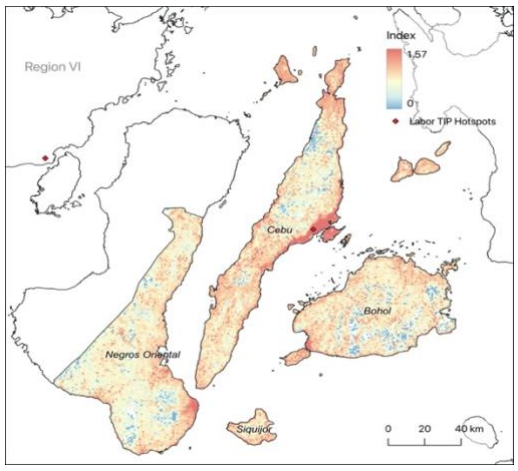
TIP Vulnerability Measure: 0.211 (#4)

Projected Prevalence: 8.04 (#6)

Projected Number of Victims: 59,504 (#4)



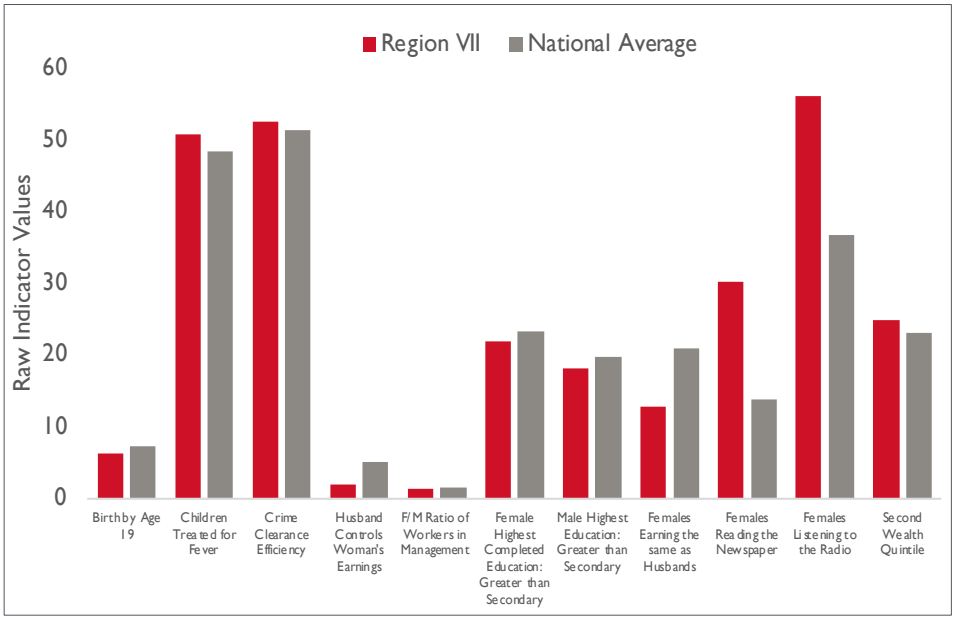
Labor Trafficking in Persons:



TIP Vulnerability Measure: 0.209 (#8)

Projected Prevalence: 0.814 (#7)

Projected Number of Victims: 6,024 (#5)



Region VII (Central Visayas)

Online Sexual Exploitation of Children (OSEC):

Cebu City has been cited as a source and destination for OSEC in the Philippines. In Cebu and Negros Oriental, 100 percent of OSEC victims were trafficked in place. The victims are primarily female (88 percent). Region VII has very high internet connectivity rates and a large, developed city, allowing traffickers access to technology and victims. The 2020 International Justice Mission OSEC Report noted Cebu as a hotspot for OSEC, however, it was not able to measure the prevalence of OSEC owing to inconsistencies in the quality of reporting by ESPs. Advancing technology should be utilized to detect OSEC and victim services and funding for OSEC-related crimes should be increased in the major cities to service the region.

Overseas Filipino Workers (OFWs):

Region VII was the sixth-highest sending region for OFWs per 100,000 working age population in 2019. The distribution of OFWs by gender show that 53.9 percent are men and 46.1 percent are women (2018). The male average reported TIP victim per 100,000 is 27.7 and females is 81.6. Female OFWs are more likely to become victims of human trafficking than their male counterparts. Reporting may also be impacted by societal views and stigmas that may affect whether those who have experienced human trafficking to report it to authorities, especially among men.

Summary Description:

- Region VII is a central region north of Mindanao that consists of four provinces: Cebu, Bohol, Negros Oriental, and Siquijor. There are three main highly urbanized cities in Region VII: Cebu City (the regional capital), Lapu-Lapu, and Mandaue.
- Region VII is a TIP source, destination, and transit region. The port of Cebu is a large port that services both domestic and international transport and trade. The Mactan-Cebu airport, located in Lapu-Lapu, is the second-busiest airport in the Philippines and one of three airports in the Visayas serving international flights.
- Cebu City is called the "Queen City of the South" because of its large trade and commerce sectors. It is a tourist destination and there is a US Mactan-Benito Ebuen Airbase is close to Metro Cebu.
- Mandaue is very close to Cebu City (approximately seven kilometer) and is a large industrial and manufacturing hub of furniture and metalwork. There are also three operational mines in this area.
- Almost one-fifth of the region lives in poverty, but the overall region has high average wealth measures, which suggest that there is high income inequality between urban and rural areas, with a majority of people in the bottom second and third wealth quintiles.
- Region VII has above average levels of spousal violence against women and women who believe that spousal beating is justified. These indicators suggest that there is high gender inequality.
- Central Visayas was directly impacted by Typhoon Haiyan in 2013, which displaced over four million people across the Visayas.
- Females have higher educational attainment levels than men in completing secondary school and holding academic degrees.
- Even though the female labor force participation rate is lower than that of males (49.7 percent to 73.1 percent), women who enter the labor force have a high employment rate (96 percent), which suggests that females do not enter the workforce because of societal constraints, not because of a lack of opportunities.
- Large shipbuilding is a prevalent industry that is known for trafficking. Fishing is also a main income source and is known for trafficking.
- Region VII has a very low percentages of females giving cash to their husbands, a low percentage of women earning the same amount as their husbands, but also double the national average of women reading the newspaper and listening to the radio; these statistics indicate that society is still based around patriarchal ideologies.

Geographically-Targeted Interventions

In Region VII, high priority interventions include increasing female participation in the labor force; increasing awareness of human trafficking among shipping and airport authorities, local community leaders, and local law enforcement; and reducing societal gender inequality. Cebu City is a large commerce and transit hub. The city has grown quickly and contains high levels of income inequality, with wealth concentrated in the metro area and deep poverty in the surrounding communities. The high level of income inequality and developed transportation infrastructure has created a culture of traveling in search of work and economic mobility. This social norm of traveling for work, either within the country or as an OFW, has created the practice of sending young girls to work as domestic helpers or other vulnerable positions in urban centers. These domestic workers often do not receive salaries, instead, their employers promise to pay for their school expenses. Communities and schools should hold trainings on proper labor recruitment practices and safe migration, especially for minors and females. Trainings on gender inequality, safe labor practices, and the consequences of putting children in vulnerable situations should also be given to parents.

Region VII has a low female labor participation rate compared to males. However, the high employment rate suggests that if a woman was looking for a job, she would have a high chance of getting employed. The gender gap in labor participation is the result of societal gender inequality. The traditional gender roles appear to be a major restriction for many women to participate in workforce. In Region VII, the wage gap is large between men and women in the same occupation, even in female-dominated industries. Interventions include supporting female vocational, leadership, entrepreneurial, and employment training programs that include information on how to job-seek. This will likely improve the quality and standing of female employment. Programs for female empowerment through leadership and decision-making trainings should be implemented, starting in primary school. Such programs should also include males, especially boys (age 5-10). When men are encouraged to value women as equals and are actively involved in the process of empowering women, societal attitude and structures can change more rapidly.

Region VII has high domestic and international transit through the Cebu port and the Mactan-Cebu airport, both of which are known trafficking sources. The port authority, airport security, and local law enforcement should be expanded to include efforts at reducing human trafficking, specifically: a) increasing awareness of human trafficking in the main transit hubs, b) training and incentivizing law enforcement to identify and deal with trafficking, and c) raising the roles and prevalence of female officers. Such efforts should be complemented with community-based programs to increase awareness of human trafficking and safe migration practices.

Region II (Cagayan Valley)

Socio-Economic Measures:

Population: 3,451,410 (#14)
Percent Urban: 12% (#15)
Female Net Secondary School Attendance: 17.1% (#6)

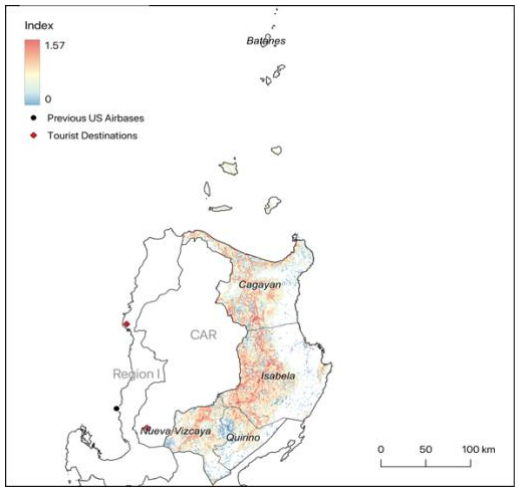
Households with Electricity: 96.7% (#3)
GDP per Capita (thousands of USD): 44.7 (#13)
Poverty Incidence: 15.6% (#13)
Violence against Women: 15% (#12)

Human Development Index: : 0.625 (#5)
Percent of women who feel a husband is justified in beating his wife: 7.1% (#15)

Violent Extremism: 113 events since 2015 (#12)
Female Internet connectivity: 57.9% (#13)

Devised from over 1,400 indicators, the vulnerability measure is composed of the subset of indicators and weightings that represent the optimal combination characteristic of the TIP ecosystem. The red bars are the values for the featured region. The grey bars represent the national average for that indicator. The statistical interpretations of these indicator combinations, their correlations with other factors, and the phenomena for which they serve as proxy measures provide insight and evidence for the summaries below. For further discussion of the indicators, see sections 2 and 3 above.

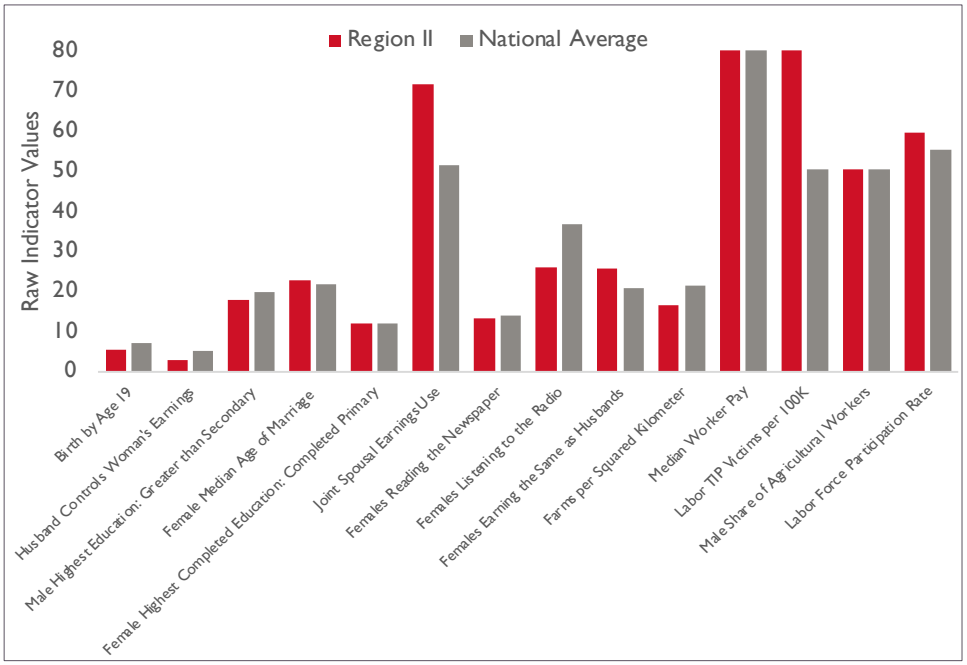
Sex Trafficking in Persons:



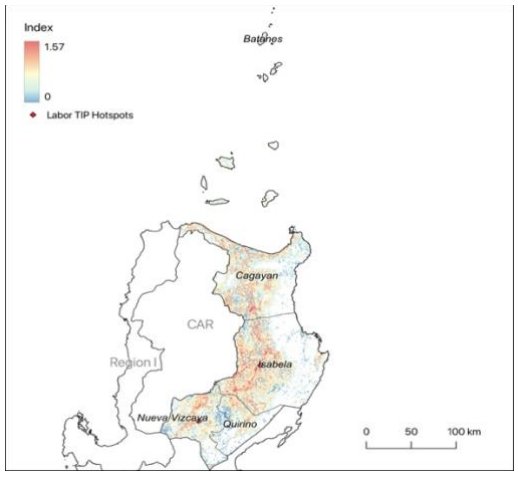
TIP Vulnerability Measure: 0.22 (#4)

Projected Prevalence: 8.956 (#4)

Projected Number of Victims: 30,911 (#8)



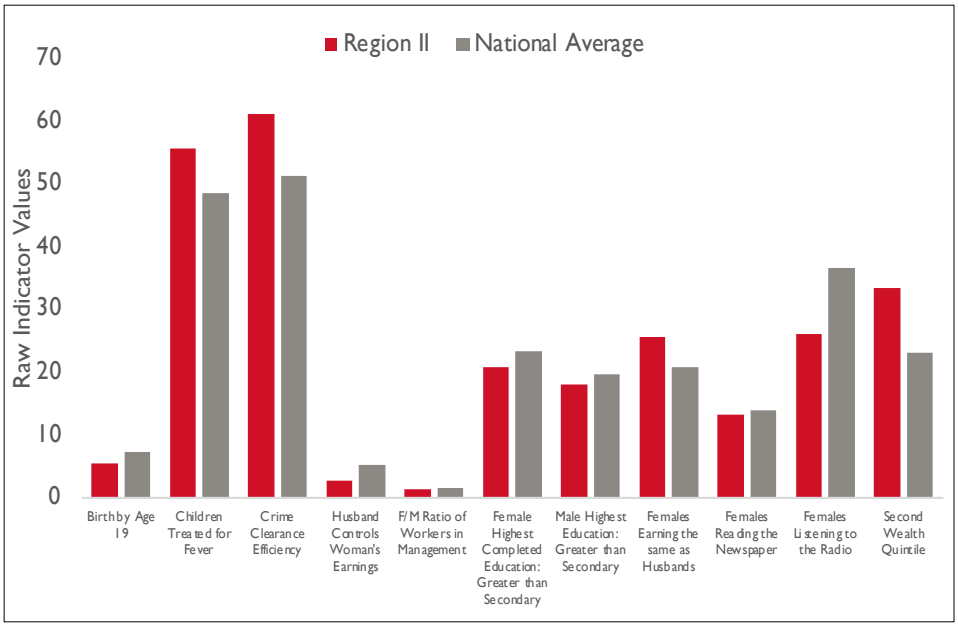
Labor Trafficking in Persons:



TIP Vulnerability Measure: 0.184 (#9)

Projected Prevalence: 0.64 (#9)

Projected Number of Victims: 2,210 (#10)



Region II (Cagayan Valley)

Online Sexual Exploitation of Children (OSEC):

Region II is not cited as a source and destination for OSEC in the Philippines. Cagayan was the only province from the IACAT data with any reported OSEC and an OSEC prevalence of 1.67 per 1,000,000. The victims of OSEC are primarily female (88 percent). Region II has relatively high internet connectivity rates and better connection in the city, allowing traffickers access to technology and victims. Because of the high internet usage, it is possible that this region could become a hotspot for OSEC, so children should be learning safe internet practices. Advancing technology should be utilized to detect OSEC and victim services and funding for OSEC-related crimes should be increased in the major cities to service the region.

Overseas Filipino Workers (OFWs):

Region II was the sixth-highest sending region for OFWs per 100,000 working age population in 2019. The distribution of OFWs by gender show that 25 percent are men and 75 percent are women (2018). The male average reported TIP victim per 100,000 is 1.25 and females is 5.34. Female OFWs are more likely to become victims of human trafficking than their male counterparts. Reporting may also be impacted by societal views and stigmas that may affect whether those who have experienced human trafficking to report it to authorities, especially among men.

Summary Description:

- Region II is located on the northern part of Luzon Island and is comprised of five provinces: Batanes, Cagayan, Isabela, Nueva Vizcaya, and Quirino. Region II is the second-largest region in terms of land area. The region contains a large mountain range and thick forest in the center, primarily in Quirino and Nueva Vizcaya. There are several small cities in the region; Santiago in Isabela and Tuguegarao in Cagayan are the two largest and most developed.
- The province of Isabela and the city of Santiago are the most progressive and richest areas in the region. The province is considered one of the fastest growing in the country.
- Tuguegarao is one of the cities included in the Digital Cities 2025 program to sustain rapid growth in the business and information technology sectors; it has seen fast growth in recent years.
- Fishing and agriculture are the main economic drivers of the region. Sugarcane and citrus farming are some of the largest crops. Sugarcane is considered a highly vulnerable job with connections to labor trafficking.
- Batanes is the furthest-north province and is the smallest in both population and size. Most of the Batanes is protected land and travel and economic growth difficult are due to its extreme distance from the main island.
- Isabela and Cagayan have growing sex tourism industries and are considered a source and destination region. Region II broadly is a source and destination region for labor trafficking.
- Region II is mostly rural but has relatively high rates of health and education services. Strong transit infrastructure encourages movement and trade along internal roads.
- Region II has stable wealth measures, including a low poverty rate, high rates of both spouses earning, and a majority of the population in the second and third wealth quintiles, which means they are middle-income.
- Region II has relatively high levels of female empowerment, with high female secondary education rates, high rates of females earning the same as their husbands, and a higher-than-average female median age of marriage. Gender equality also appears to be relatively high in the region, as there are lower rates of spousal violence and women who justify husbands beating their wives.

Geographically-Targeted Interventions

In Region II, high priority interventions include increasing awareness of human trafficking among local community leaders and local law enforcement, increase awareness among children and parents of OSEC and proper labor recruiting practices, addressing labor exploitation in the sugarcane industry, and reducing societal gender inequality. Isabela, Batanes, Nueva Vizcaya, and Cagayan all had higher percentages of people being trafficking from elsewhere then being trafficked in place for both sex and labor trafficking. Both Santiago and Tuguegarao are large cities in Region II that attract people seeking economic opportunity and mobility from the surrounding area. Many young girls are recruited for domestic labor with the promise of education or a job that turns into sexual exploitation. This suggests that many of the trafficking recruiters are operating out of Region II and bring in young girls from surrounding areas to supply the growing demand for sex tourism and prostitution in the growing city. Programs should take place at all levels of school, especially in rural areas within the region, to educate students on human trafficking and how to safely use the internet. These programs should also be provided to community leaders and parents of young children. Efforts should be made to educate the community leaders and parents on the possible consequences of sending their young children, especially girls, into vulnerable situations, like household domestic service. Stronger resources for children from difficult home situations should be made available in the area to offer children attempting to escape abusive parents or spouses, such as social services and women and children's homes. Without discouraging access to medical treatment and preventative care, health workers should be trained to screen, recognize, and offer resources to victims of TIP as part of their medical mission, including giving victims the chance to report TIP to a nonprofit or the authorities. Schools in the area should provide trainings on how to recognize abuse and how to safely use the internet and messaging systems. Gender equality trainings should also take place and include young men, especially those age 5-10.

Region II had the largest increase in agricultural growth in 2019, at 6.6 percent. The main crops are palay (unmilled rice), corn, and sugarcane. Sugarcane is an industry known for labor exploitation, migrant workers, and labor trafficking. In 2017, 112 victims were rescued from Region II where they were falsely promised pay for working on a sugarcane farm. Methods to decrease exploitation within the industry should include labor inspections of sugarcane farming and processing plants, the development of formal and transparent recruitment practices, the institutionalization of health and safety standards for certification, and the education of law enforcement personnel and health inspectors to recognize exploitive labor practices and identify victims. Programming, like informational flyers, along transit routes and in major city areas should be available and provide information on labor conditions and rights, along with the proper way to report human trafficking. Many sugarcane workers migrated from other areas, so it is important to hold these programs at the beginning and throughout the rest of the season at the farms, because most workers stay in temporary housing on the property.

Region XII (Soccsksargen)

Socio-Economic Measures:

Population: 4,545,276 (#10)
Percent Urban: 47% (#5)
Female Net Secondary School Attendance: 16.6% (#9)

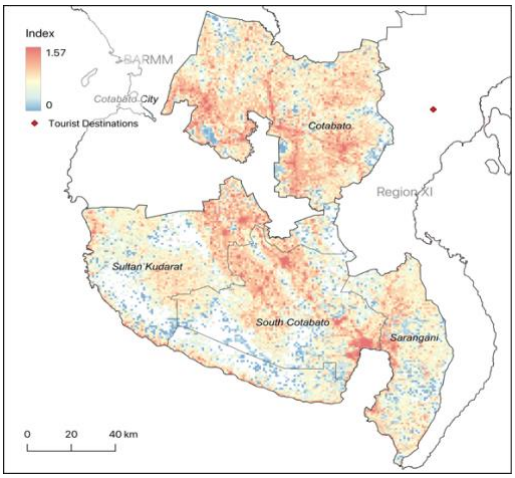
Households with Electricity: 85.4% (#13)
GDP per Capita (thousands of USD): 54.3 (#9)
Poverty Incidence: 29.6% (#5)
Violence against Women: 17.8% (#8)

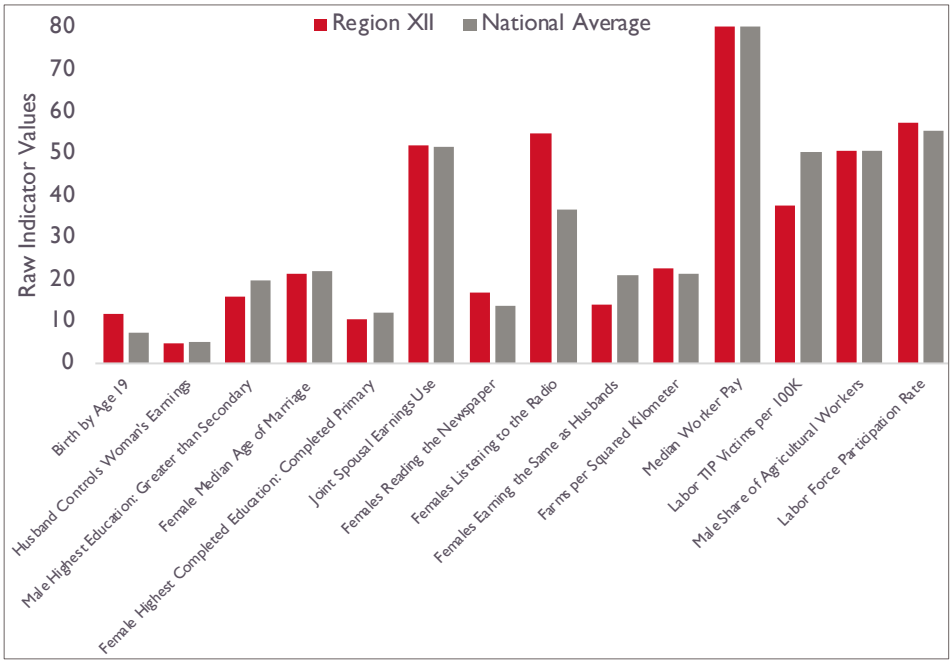
Human Development Index: : 0.561 (#11)
Percent of women who feel a husband is justified in beating his wife: 14.1% (#5)

Violent Extremism: 497 events since 2015 (#2)
Female Internet connectivity: 54.3% (#16)

Devised from over 1,400 indicators, the vulnerability measure is composed of the subset of indicators and weightings that represent the optimal combination characteristic of the TIP ecosystem. The red bars are the values for the featured region. The grey bars represent the national average for that indicator. The statistical interpretations of these indicator combinations, their correlations with other factors, and the phenomena for which they serve as proxy measures provide insight and evidence for the summaries below. For further discussion of the indicators, see sections 2 and 3 above.

Sex Trafficking in Persons:



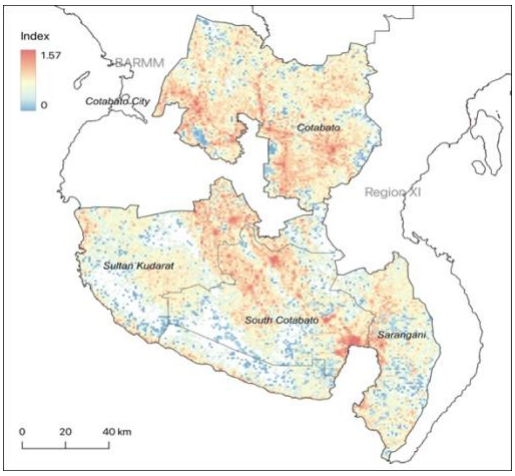


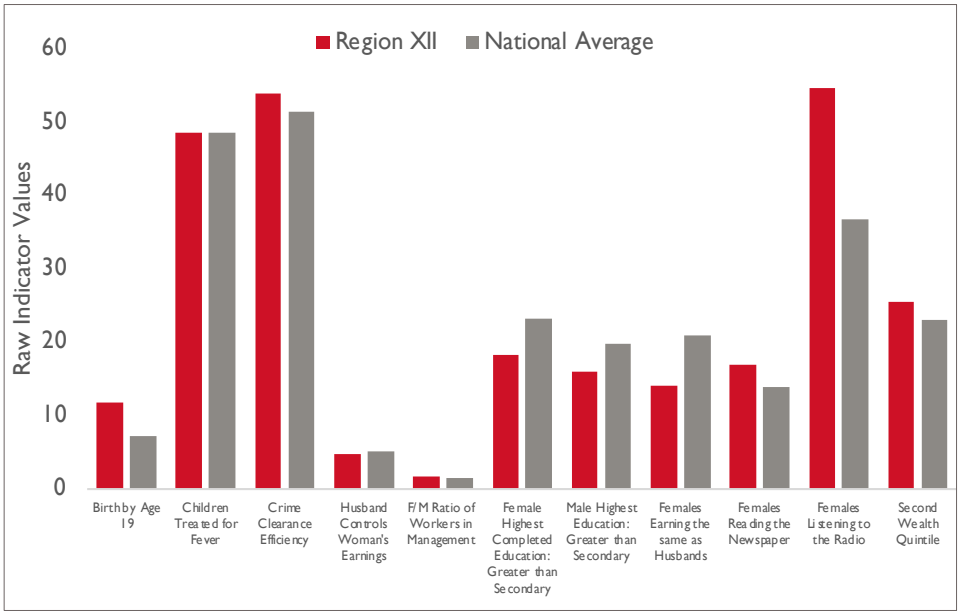
TIP Vulnerability Measure: 0.214 (#5)

Projected Prevalence: 8.343 (#5)

Projected Number of Victims: 37,921 (#7)

Labor Trafficking in Persons:





TIP Vulnerability Measure: 0. 252 (#4)

Projected Prevalence: 1.248 (#4)

Projected Number of Victims: 5,670 (#6)

Region XII (Soccsksargen)

Online Sexual Exploitation of Children (OSEC):

Region XII has not been cited as a source and destination for OSEC in the Philippines. South Cotabato is the only province with any reported OSEC and a prevalence of 2.64 OSEC victims per 1,000,000. In South Cotabato, 75 percent of OSEC victims were trafficked in place. The victims of OSEC are primarily female (88 percent). Advancing technology should be utilized to detect OSEC and victim services and funding for OSEC-related crimes should be increased in the major cities to service the region.

Overseas Filipino Workers (OFWs):

Region XII was the eight-highest sending region for OFWs per 100,000 working age population in 2019. The distribution of OFWs by gender show that 21 percent are men and 79 percent are women (2018). The male average reported TIP victim per 100,000 is 56.04 and females is 70.87. Female OFWs are more likely to become victims of human trafficking than their male counterparts. Reporting may also be impacted by societal views and stigmas that may affect whether those who have experienced human trafficking to report it to authorities, especially among men.

Summary Description:

- Region XII is located in south-central Mindanao and contains four provinces: South Cotabato, Cotabato, Sultan Kudarat, and Sarangani. The regional capital is Koronadal, but the most-populous city and the commercial and industrial center is General Santos.
- General Santos International Airport is the largest and second-busiest airport in Mindanao. The Makar Wharf is a large international seaport.
- General Santos has a small sex tourism industry and several brothels. As it is a growing city, and a large international and domestic hub for Mindanao, sex tourism is likely to increase.
- The economy is predominately agriculturally based, and the main crops are tropical fruits, corn, rice, sugarcane, and rubber. It also has a large livestock output. General Santos is the largest producer of tuna and catches the second-most fish daily.
- Region XII has low wealth measures including high poverty rates, low electricity rates, and a low HDI.
- Region XII has low female empowerment measures, low female secondary school completion and attendance, a relatively high birth rate by the age of 19, and very low female internet usage. High spousal violence against women and low percentages of females earning the same as their husbands reflect societal gender inequality.
- Region XII has the second-most confirmed VE events in the country and borders the BARMM. The VE events and reported crime networks indicate a lack of rule of law and stability within the region.
- Region XII is a source and destination province for labor trafficking, especially in the fishing and sugarcane industries.

Geographically-Targeted Interventions

In Region XII, high priority interventions include increasing local government interactions with rural communities, addressing labor exploitation in the fishing and sugarcane industries, and increasing awareness of human trafficking among community leaders and law enforcement. Region XII had the second-most VE events in the last five years. This contributes to an ecosystem of instability and violence which increasing vulnerability to TIP, as VE and TIP share a similar ecosystem. This reality, coupled with the poverty rate and low empowerment measures, can push people to be more willing to accept risky situations. A large problem in the region is a lack of rule of law and local government presence. Laws in the Philippines are strong and progressive, and at times the police response to VE and TIP has been swift and strict, but the issues remain. The region should focus on implementing programming through their local government to increase the rule of law and to support and protect citizens. Nationalism programming should be adopted to encourage unity and identity. Local governments and community centers should hold programing within the community to foster inter-faith acceptance and disrupt the traditional power structures, like clans. Many rural communities in Mindanao experience "rido," the retaliation of violence against another clan. National identity should be encouraged to help combat these perceived divisions. Beyond the strengthening of local and regional governments, programming on violence against women and gender inequality should be implemented.

Local police around major cities in Region XII should regularly inspect the karaoke bars. The local government should start a public service campaign to warn residents about signs of trafficking and encouraging people to report any suspicious activity. Providing comprehensive trainings to law enforcement and local community leaders and sex-workers can raise awareness of human trafficking. Without discouraging access to medical treatment and preventative care, health workers should be trained to screen, recognize, and offer resources to victims of TIP as part of their medical mission, including giving victims the chance to report TIP to a nonprofit or the authorities. Further health and employment training programs should be made available to women. Offering small-scale vocational education programs for brothel employees can build skill sets that raise employment chances outside of the brothel.

Sugarcane is an industry known for labor exploitation, migrant workers, and labor trafficking. Methods to decrease exploitation within the industry should include labor inspections of sugarcane farming and processing plants, the development of formal and transparent recruitment practices, the institutionalization of health and safety standards for certification, and the education of law enforcement personnel and health inspectors to recognize exploitive labor practices and identify victims. Programming, like informational flyers, along transit routes and in major city areas should be available and provide information on labor conditions and rights, along with the proper way to report human trafficking. Many sugarcane workers migrated from other areas, so it is important to hold these programs at the beginning and throughout the rest of the season at the farms, because most workers stay in temporary housing on the property.

Region III (Central Luzon)

Socio-Economic Measures:

Population: 11,218,177 (#3)
Percent Urban: 52% (#4)
Female Net Secondary School Attendance: 21.5% (#3)

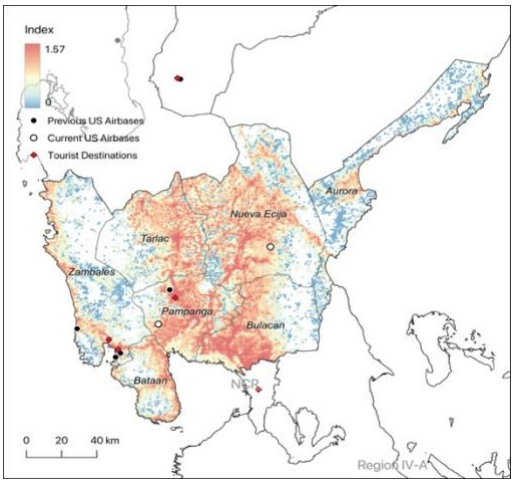
Households with Electricity: 96.2% (#4)
GDP per Capita (thousands of USD): 80.6 (#5)
Poverty Incidence: 8.65% (#15)
Violence against Women: 11.3% (#14)

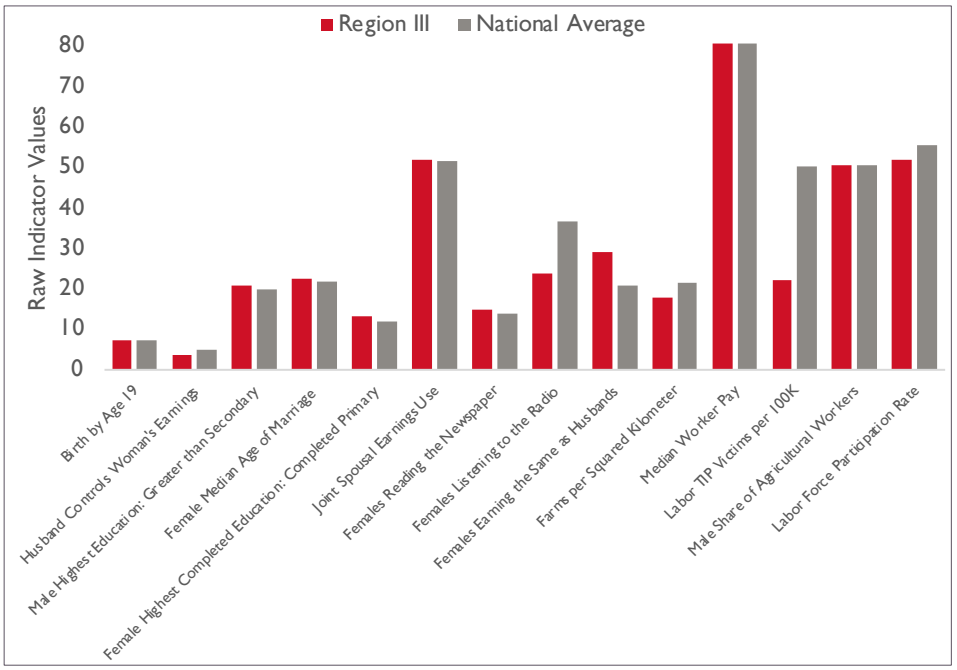
Human Development Index: 0.667 (#3)
Percent of women who feel a husband is justified in beating his wife: 8.2% (#14)

Violent Extremism: 104 events since 2015 (#13)
Female Internet connectivity: 75.5% (#2)

Devised from over 1,400 indicators, the vulnerability measure is composed of the subset of indicators and weightings that represent the optimal combination characteristic of the TIP ecosystem. The red bars are the values for the featured region. The grey bars represent the national average for that indicator. The statistical interpretations of these indicator combinations, their correlations with other factors, and the phenomena for which they serve as proxy measures provide insight and evidence for the summaries below. For further discussion of the indicators, see sections 2 and 3 above.

Sex Trafficking in Persons:



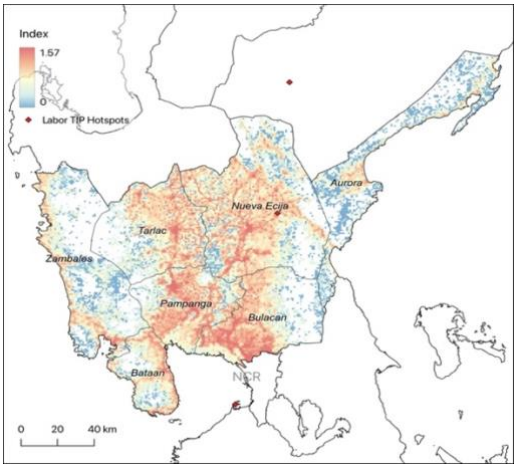


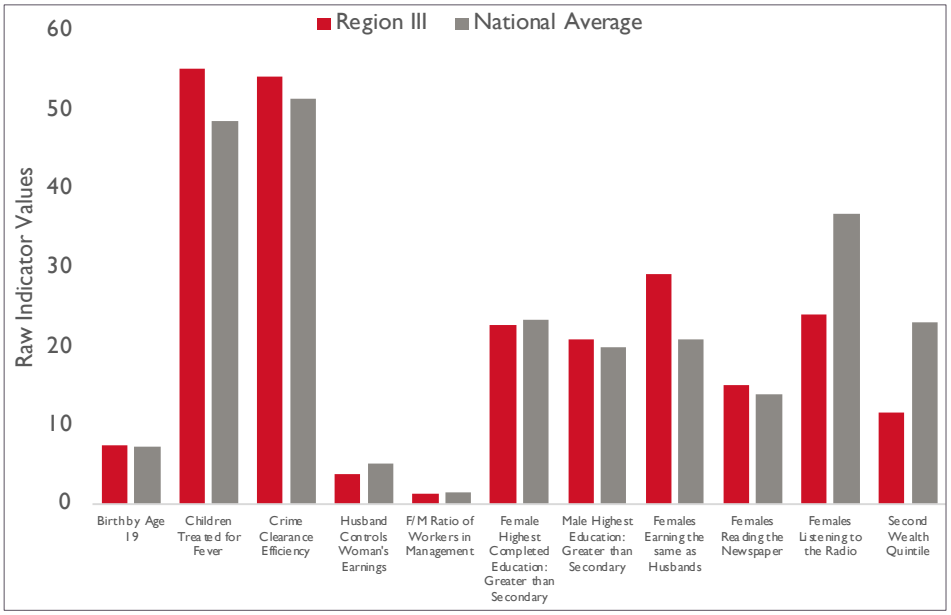
TIP Vulnerability Measure: 0.196 (#8)

Projected Prevalence: 6.72 (#8)

Projected Number of Victims: 75,330 (#2)

Labor Trafficking in Persons:





TIP Vulnerability Measure: 0.205 (#8)

Projected Prevalence: 0.782 (#8)

Projected Number of Victims: 8,772 (#4)

Region III (Central Luzon)

Online Sexual Exploitation of Children (OSEC):

Angeles City has been cited as a source and destination for OSEC in the Philippines. The victims are primarily female (88 percent). Region III has very high internet connectivity rates and a large, developed city, allowing traffickers access to technology and victims. The 2020 International Justice Mission OSEC Report noted Angeles City as a hotspot for OSEC, however it was not able to measure the prevalence of OSEC owing to inconsistencies in the quality of reporting by ESPs. Advancing technology should be utilized to detect OSEC and victim services and funding for OSEC-related crimes should be increased in the major cities to service the region.

Overseas Filipino Workers (OFWs):

Region III was the second-highest sending region for OFWs per 100,000 working age population in 2019. The distribution of OFWs by gender show that 49.8 percent are men and 50.2 percent are women (2018). The male average reported TIP victim per 100,000 is 1.47 and females is 7.75. Female OFWs are more likely to become victims of human trafficking than their male counterparts. Reporting may also be impacted by societal views and stigmas that may affect whether those who have experienced human trafficking to report it to authorities, especially among men.

Summary Description:

- Region III is the central region of the northern island of Luzon that consists of seven provinces: Aurora, Bataan, Bulacan, Nueva Ecija, Pampanga, Tarlac, and Zambales. The city of San Ferando is the capital, and Olongapo and Angeles City are the major cities. Region III consists of large open plains and produces the most rice.
- Angeles City ("Sin City") has a military base, Clark Air Base, that was once the largest US military facility outside of the continental US. Therefore, the city is home to many expatriates and has a commercial and service industry built for US military personnel. Its economy is primarily tourism and gambling with large nightlife and has recently become home to emerging technology and business markets.
- Since the earliest days of the Clark Air Base, Fields Avenue in Angeles City has been frequented by US servicemen and is known as a center for prostitution and sex tourism.
- Olongapo City in Zambales had a military naval base, Subic Bay, which was the second-largest US military facility outside of the continental US until it shut down in 1991. The base was transformed into the Subic Bay Freeport Zone.
- Region III is relatively wealthy. Central Luzon has some of the country's lowest poverty rates and high GDP and HDI measures.
- Region III has high female empowerment and gender equality measures. Female school attendance is high and rates of spousal violence against women are some of the lowest in the country.
- The service industry and domestic work are large employers in Region III, which have been highlighted as possible vulnerable industries for labor and sex trafficking.

Geographically-Targeted Interventions

In Region III, high priority interventions include increasing awareness of human trafficking among community leaders and law enforcement, addressing labor exploitation throughout the region, and increasing awareness of sex trafficking in Baguio, especially near the historical military bases.

The Clark Air Base and Subic Bay Naval Base both were built around the beginning of the 20th century and have housed US military personnel. These two bases have a long history with prostitution, sex tourism, and sex trafficking. Clark Air Base became an airport and air force base for the Philippines and was transformed into the Clark Special Economic Zone and Clark Freeport. Subic Bay became the Subic Special Economic and Freeport Zone. Subic is now a commercial port and has over 135,000 workers employed in the service and manufacturing industries. There is a large shipbuilding industry. The bay is also still a tourist destination, as it is only a short distance from Manila and naval vessels still use the port. Current plans to increase the presence of US troops at several of these locations is likely to exacerbate sex TIP vulnerability at these locations, specifically Basa Air Base in Pampanga, and Fort Magsaysay in Nueva Ecija. Clark and Subic remain destinations for sex tourism even without American military presence. The area attracted expatriates who continue to fuel the red-light districts. Recently, the Central Luzon police and government social workers rescued 52 female human trafficking victims from a karaoke bar at the Fontana Leisure Estate inside the Clark Freeport Zone prior to the Lunar New Year in February 2021. Health service programs should be established for commercial sex workers. Without discouraging access to medical treatment and preventative care, health workers should be trained to screen, recognize, and offer resources to victims of TIP as part of their medical mission, including giving victims the chance to report TIP to a nonprofit or the authorities. Further health and employment training programs should be made available to women. Police should regularly inspect brothels, and the local government should start a public service campaign warning residents about signs of trafficking and encouraging people to report any suspicious activity. Further health and employment training programs should be made available to the women.

Region III has high domestic and international transit through its international airport and several ports (Davao Gulf, Digos Point, and Panabo Port), which all are known trafficking routes. The port authority, airport security, and local law enforcement efforts should be expanded to include efforts at reducing human trafficking, specifically: a) increasing awareness of human trafficking in the main transit hubs, b) training and incentivizing law enforcement to identify and deal with trafficking, and c) raising the roles and prevalence of female officers. Such efforts should be complemented with community-based programs to increase awareness of human trafficking and safe migration practices.

Cordillera Administrative Region (CAR)

Socio-Economic Measures:

Population: 1,722,006 (#17)
Percent Urban: 26% (#11)
Female Net Secondary School Attendance: 15% (#13)

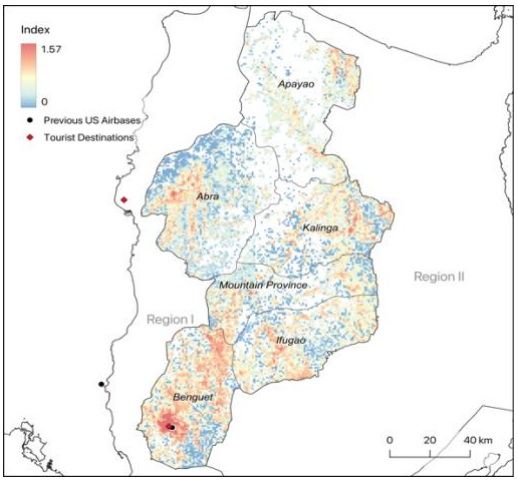
Households with Electricity: 93.6% (#6)
GDP per Capita (thousands of USD): 95.76 (#3)
Poverty Incidence: 16.7% (#12)
Violence against Women: 10.5% (#16)

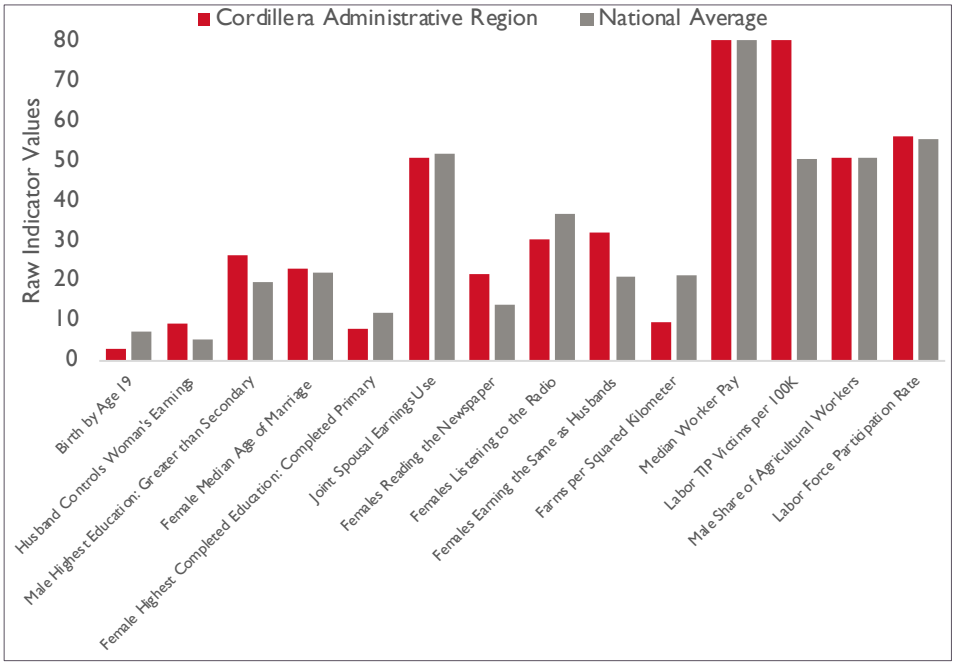
Human Development Index: 0.587 (#8)
Percent of women who feel a husband is justified in beating his wife: 9.6% (#11)

Violent Extremism: 84 events since 2015 (#14)
Female Internet connectivity: 69.5% (#5)

Devised from over 1,400 indicators, the vulnerability measure is composed of the subset of indicators and weightings that represent the optimal combination characteristic of the TIP ecosystem. The red bars are the values for the featured region. The grey bars represent the national average for that indicator. The statistical interpretations of these indicator combinations, their correlations with other factors, and the phenomena for which they serve as proxy measures provide insight and evidence for the summaries below. For further discussion of the indicators, see sections 2 and 3 above.

Sex Trafficking in Persons:



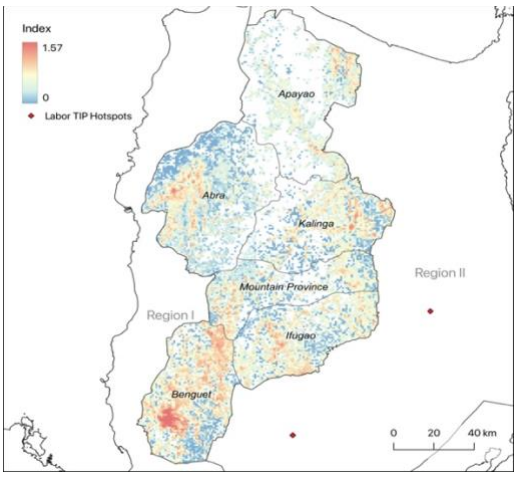


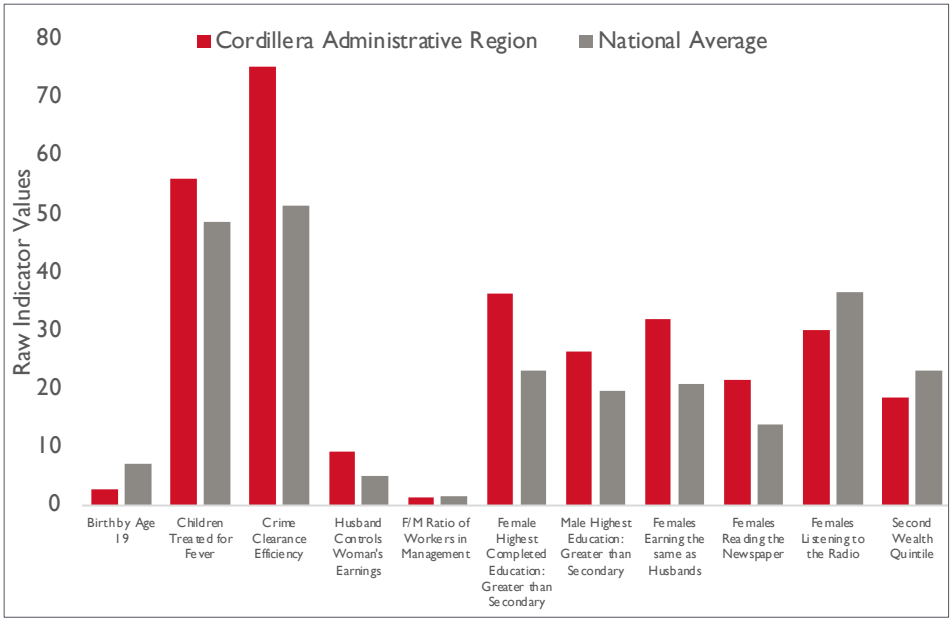
TIP Vulnerability Measure: 0.199 (#7)

Projected Prevalence: 6.96 (#7)

Projected Number of Victims: 11,989 (#10)

Labor Trafficking in Persons:





TIP Vulnerability Measure: 0.291 (#3)

Projected Prevalence: 1.823 (#3)

Projected Number of Victims: 3,140 (#9)

Cordillera Administrative Region (CAR)

Online Sexual Exploitation of Children (OSEC):

CAR has not been cited as a source and destination for OSEC in the Philippines. None of the provinces reported OSEC. The victims of OSEC are primarily female (88 percent). Advancing technology should be utilized to detect OSEC and victim services and funding for OSEC-related crimes should be increased in the major cities to service the region.

Overseas Filipino Workers (OFWs):

CAR was the sixth-highest sending region for OFWs per 100,000 working age population in 2019. The distribution of OFWs by gender show that 31.4 percent are men and 68.6 percent are women (2018). The male average reported TIP victim per 100,000 is 0.92 and females is 2.81. Female OFWs are more likely to become victims of human trafficking than their male counterparts. Reporting may also be impacted by societal views and stigmas that may affect whether those who have experienced human trafficking to report it to authorities, especially among men.

Summary Description:

- CAR is in the center of Luzon and is the only landlocked region in the Philippines. It consists of six provinces: Abra, Apayao, Benguet, Ifugao, Kalinga, and Mountain Province. The regional center is the city of Baguio. The provinces with the greatest populations are Benguet and Abra.
- The main industry is agriculture, with rice, corn, coffee, and vegetables as the main crops.
- Baguio has a large retail industry and a growing tourist industry with several malls and hot springs.
- The economy of Baguio is mainly agricultural. Vegetables, strawberries, and flowers are grown. There is also a large gold and silver mining industry.
- CAR has low numbers of VE events and relatively high crime clearance efficiency, which suggests that there is strong rule of law and stability in the region.
- CAR has high wealth measures, including the third-highest GDP and low poverty levels. The HDI value and the percentage of households with electricity are average. This suggests that the region does not have high levels of income inequality. The largest inequalities in the region are between the more developed and populated south and the less developed and populated north.
- Female empowerment is moderate, with slightly above average levels of female secondary school completion and attendance and low female birth before the age of 19. Gender inequality is also moderate, with slightly below average levels of violence against women and women who justify spousal violence, and a slightly above average median age of marriage for females.
- Baguio is home to the Philippine Military Academy and had US military presence stationed there. John Hay Air Station (Camp John Hay) is also in Baguio. Camp Joy Hay was a major hill station used for rest and relaxation for personnel and dependents of the US Armed Forces in the Philippines. The Americans turned it over to the Philippines in the 1990s, along with several other bases, and it was converted into a tourist site.

Geographically-Targeted Interventions

In CAR, high priority interventions include increasing awareness of human trafficking among community leaders and law enforcement, addressing labor exploitation throughout the region, and increasing awareness of sex trafficking in Baguio, especially near the historical military bases. The Philippine Military Academy is the premier military academy in the Philippines and is modeled after the US Military Academies. Camp John Hay is another military installation in the city that was primarily used in the past for US personnel rest and relaxation. Because of Baguio's altitude, the climate was more moderate. The city of Baguio has continued to grow, and the academy and Camp John Hay have a long relationship with prostitution, sex tourism, and sex trafficking within Baguio. Baguio is only a short distance from Manila and the region has very strong transit infrastructure, which has allowed it to continue to be a tourist destination for domestic and international travelers. Health service programs should be established for commercial sex workers. In Benguet, 61 percent of sex trafficking victims were trafficked from elsewhere. Local police around major cities in CAR, especially in Baguio, should regularly inspect the karaoke bars. The local government should start a public service campaign warning residents about signs of trafficking and encouraging people to report suspicious activity. Providing comprehensive trainings to law enforcement, local community leaders, and sex-workers can raise awareness of human trafficking. Without discouraging access to medical treatment and preventative care, health workers should be trained to screen, recognize, and offer resources to victims of TIP as part of their medical mission, including giving victims the chance to report TIP to a nonprofit or the authorities. Further health and employment training programs should be made available to the women. Offering small-scale vocational education programs for brothel employees can build skill sets that raise employment chances outside of the brothel.

100 percent of labor victims were trafficked in place in Kalinga and Benguet. Agriculture and agroindustry have been known to exploit workers in the area. Methods to decrease labor exploitation should include labor inspections of farms and processing plants, the development of formal and transparent recruitment practices, instituting health and safety standards for certification, and educating both law enforcement personnel and health inspectors to recognize exploitive labor practices and identify victims. Programming, like informational flyers, along transit routes and in major city areas should be available and provide information on proper labor conditions and rights, along with the proper way to report human trafficking. Because many or all the victims come from the same province they are trafficked in, programs should target the communities during the off-season when workers are in their communities. Social services should also go into these communities and inquire with the male workers directly to discern whether they are being exploited or not. There is an under-reporting of labor trafficking and male victims are often unwilling to report.

Region I (Ilocos Region)

Socio-Economic Measures:

Population: 5,026,128 (#7)
Percent Urban: 13% (#14)
Female Net Secondary School Attendance: 21.4% (#4)

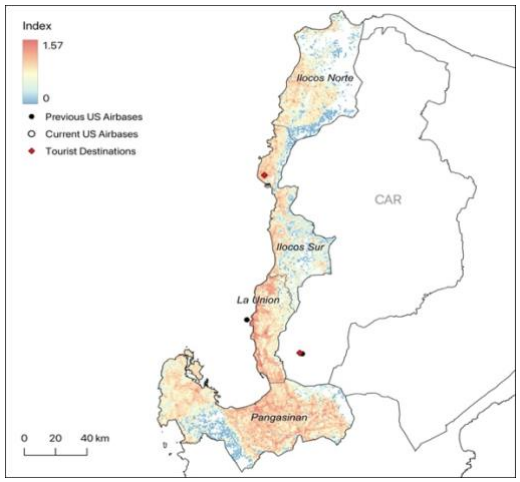
Households with Electricity: 96.9% (#2)
GDP per Capita (thousands of USD): 57.67 (#8)
Poverty Incidence: 8.48% (#16)
Violence against Women: 16.9% (#10)

Human Development Index: 0.646 (#4)
Percent of women who feel a husband is justified in beating his wife: 10.9% (#9)

Violent Extremism: 74 events since 2015 (#15)
Female Internet connectivity: 62.5% (#10)

Devised from over 1,400 indicators, the vulnerability measure is composed of the subset of indicators and weightings that represent the optimal combination characteristic of the TIP ecosystem. The red bars are the values for the featured region. The grey bars represent the national average for that indicator. The statistical interpretations of these indicator combinations, their correlations with other factors, and the phenomena for which they serve as proxy measures provide insight and evidence for the summaries below. For further discussion of the indicators, see sections 2 and 3 above.

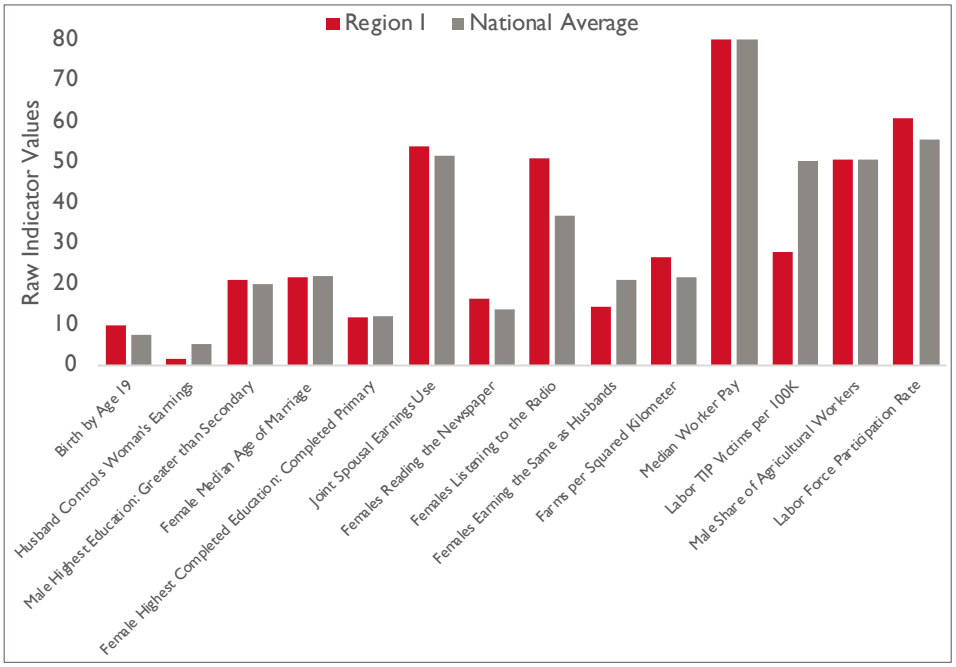
Sex Trafficking in Persons:



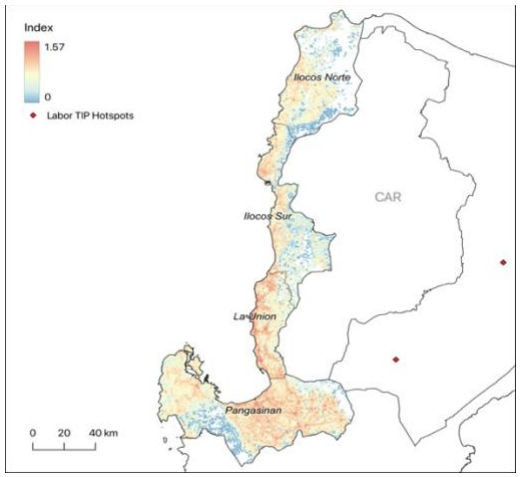
TIP Vulnerability Measure: 0.172 (#9)

Projected Prevalence: 5.102 (#9)

Projected Number of Victims: 25,645 (#9)



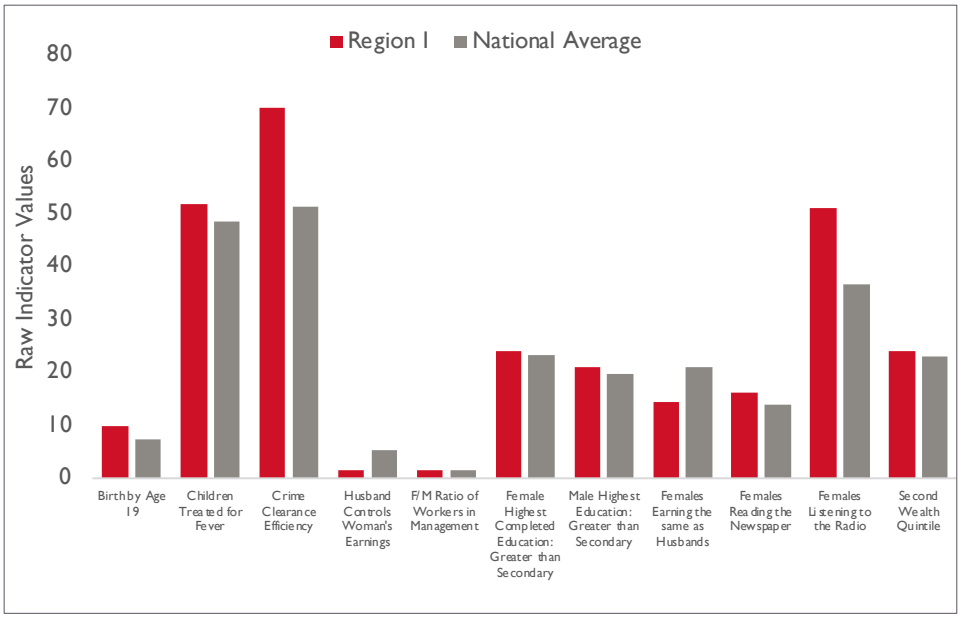
Labor Trafficking in Persons:



TIP Vulnerability Measure: 0.241 (#6)

Projected Prevalence: 1.115 (#6)

Projected Number of Victims: 5,604 (#7)



Region I (Ilocos Region)

Online Sexual Exploitation of Children (OSEC):

Region I has not been cited as a source and destination for OSEC in the Philippines. None of the provinces reported OSEC. The victims are primarily female (88 percent). Advancing technology should be utilized to detect OSEC and greater victim services and funding for OSEC-related crimes should be increased in the major cities to service the region.

Overseas Filipino Workers (OFWs):

Region I was the fifth-highest sending region for OFWs per 100,000 working age population in 2019. The distribution of Filipino workers shows that across genders, 35 percent are men and 65 percent are women (2018). The male average reported TIP victim per 100,000 is 0.24 and for females is 2.18. Female OFWs are more likely to become victims of human trafficking than their male counterparts. Reporting may also be impacted by societal views and stigmas that may affect whether those who have experienced human trafficking to report it to authorities, especially in the case of males.

Summary Description:

- Region I is in the northwestern section of Luzon and contains four provinces: Ilocos Norte, Ilocos Sur, La Union, and Pangasinan. Its regional capital is San Fernando in La Union.
- The main economic activities are services and agriculture. The main crops are rice, tobacco, corn, sugarcane, and citrus fruit.
- Region I is a labor trafficking source and destination region and a sex trafficking source region.
- Region I has very low numbers of VE events and relatively high crime clearance rates, which indicates that the area is stable, and the rule of law is enforced.
- Region I has high wealth measures, including low poverty rates, high GDP, high electricity, and a high HDI.
- Female empowerment measures are high as measured by female secondary completion and attendance rates. However, spousal violence against women and women who feel spousal violence is justified are also high, which indicates high societal gender inequality.
- Ilocos Norte is a northern tourist destination, and the city of Fort Ilocandia has a hotel, resort, and casino. Laoag City has an international airport.
- Ilocos Sur contains the city of Vigan, which is a tourist destination, and it previously had a military base that has since become the Vigan airport. The city is still small but has recently been seeing an increase in growth and tourism.
- La Union has a military base, The Philippine Air Force and Army Engineering Battalion. San Fernando has a large shipping port.
- Pangasinan is a major regional agricultural producer of rice, coconut, and mango. Pangasinan is also a large fish supplier and a major producer of salt. It is the richest province in the region and makes up 61 percent of Region I's economy.
- Region I is known for certain artisan crafts, like blanket-weaving and burnay pottery.
- Fishing is a major industry along the coast of Region I and has known links to human trafficking.

Geographically-Targeted Interventions

In Region I, high priority interventions include addressing labor exploitation in the fishing and agriculture industries and increasing awareness of human trafficking among community leaders and law enforcement. Region I has a large fishing industry, which is known for trafficking and labor exploitation, and many agricultural businesses. Agriculture and fishing companies have been known to exploit workers in the area. Methods to decrease labor exploitation should include labor inspections of farms and processing plants, the development of formal and transparent recruitment practices, the institution of health and safety standards for certification, and the education of law enforcement personnel and health inspectors to recognize exploitive labor practices and identify victims. Programming, like informational flyers, along transit routes and in major city areas should be available and provide information on labor conditions and rights, along with the proper way to report human trafficking. Because many or all the victims come from the same province they are trafficked in, programs should target the communities during the off-season, when workers are in their communities. Social services should also go into these communities and inquire with the male workers directly to discern whether they are being exploited or not. There is an under reporting of labor trafficking and male victims are often unwilling to report.

Most sex trafficking victims are trafficked in place, according to the IACAT victim data. Traffickers recruit young women and girls from their provinces and cities to fill the need for sex work and domestic servitude. This reveals a culture of high societal gender inequality and a lack of value for young girls. Some families may send their girls to live and work within the city to help with income or as way to hopefully get a sponsor or male to pay for the girl's living expenses. Local police around major cities in Region I should regularly inspect the karaoke bars. The local government should start a public service campaign warning residents about signs of trafficking and encouraging people to report any suspicious activity. Providing comprehensive training to law enforcement, local community leaders, and sex-workers can raise awareness of human trafficking. Without discouraging access to medical treatment and preventative care, health workers should be trained to screen, recognize, and offer resources to victims of TIP as part of their medical mission, including giving victims the chance to report TIP to a nonprofit or the authorities. Further health and employment training programs should be made available to the women. Offering small-scale vocational education programs for brothel employees can build skill sets that raise employment chances outside of the brothel. Legal support should be provided to victims of trafficking or illegal recruitment. Without the support of NGOs and similar organizations, the victims are unlikely to be able to sustain the long litigation processes and prosecute their traffickers.

Region I has domestic and international transit through its international airport and several ports (Davao Gulf, Digos Point, and Panabo Port) which all are known trafficking routes. The port authority, airport security and local law enforcement efforts should be expanded to include efforts at reducing human trafficking, specifically: a) increasing awareness of human trafficking in the main transit hubs, b) training and incentivizing law enforcement to identify and deal with trafficking, and c) raising the roles and prevalence of female officers. Such efforts should be complemented with community-based programs to increase awareness of human trafficking and safe migration practices.

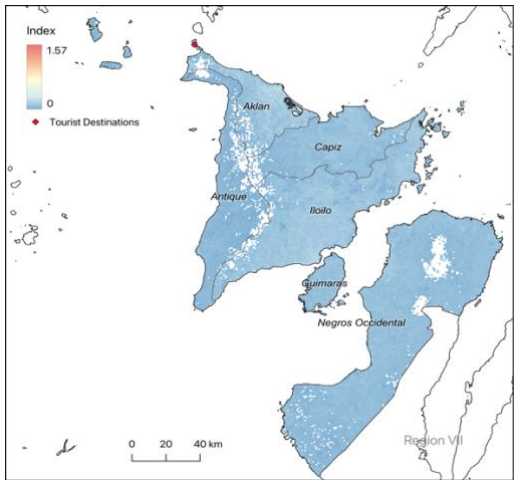
Region VI (Western Visayas)

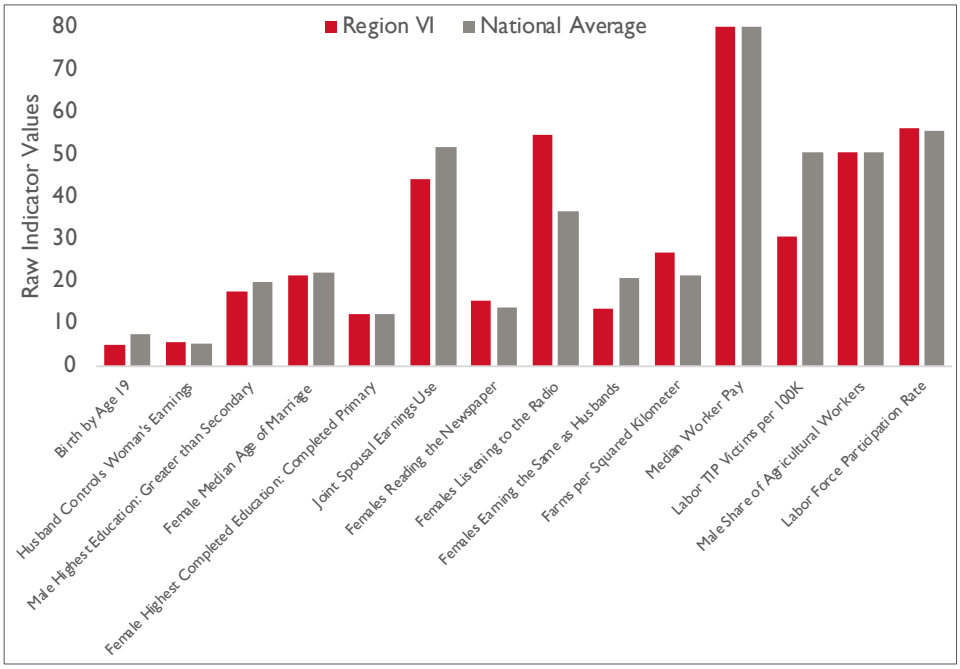
Socio-Economic Measures:

Population: 236,871,412 (#4)
Percent Urban: 34.7% (#8)
Female Secondary School Completion: 16.8% (#8)
Households with Electricity: 93.4% (#7)
GDP per Capita (thousands of USD): 49.5 (#10)
Poverty Incidence: 17.3% (#11)
Violence against Women: 21.6% (#5)
Human Development Index: 0.598 (#7)
Percent of women who feel a husband is justified in beating his wife: 19.4% (#3)
Violent Extremism: 233 events since 2015 (#7)
Female Internet connectivity: 61.2% (#12)

Devised from over 1,400 indicators, the vulnerability measure is composed of the subset of indicators and weightings that represent the optimal combination characteristic of the TIP ecosystem. The red bars are the values for the featured region. The grey bars represent the national average for that indicator. The statistical interpretations of these indicator combinations, their correlations with other factors, and the phenomena for which they serve as proxy measures provide insight and evidence for the summaries below. For further discussion of the indicators, see sections 2 and 3 above.

Sex Trafficking in Persons:



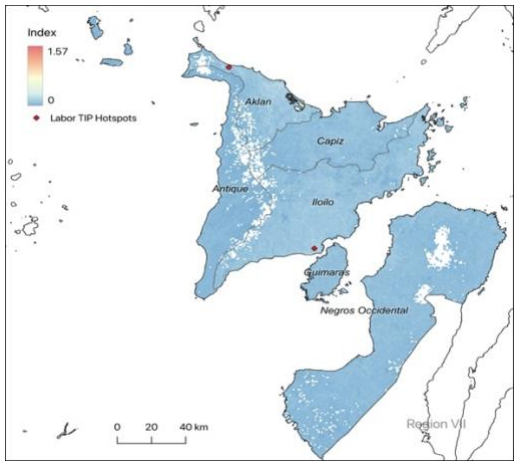


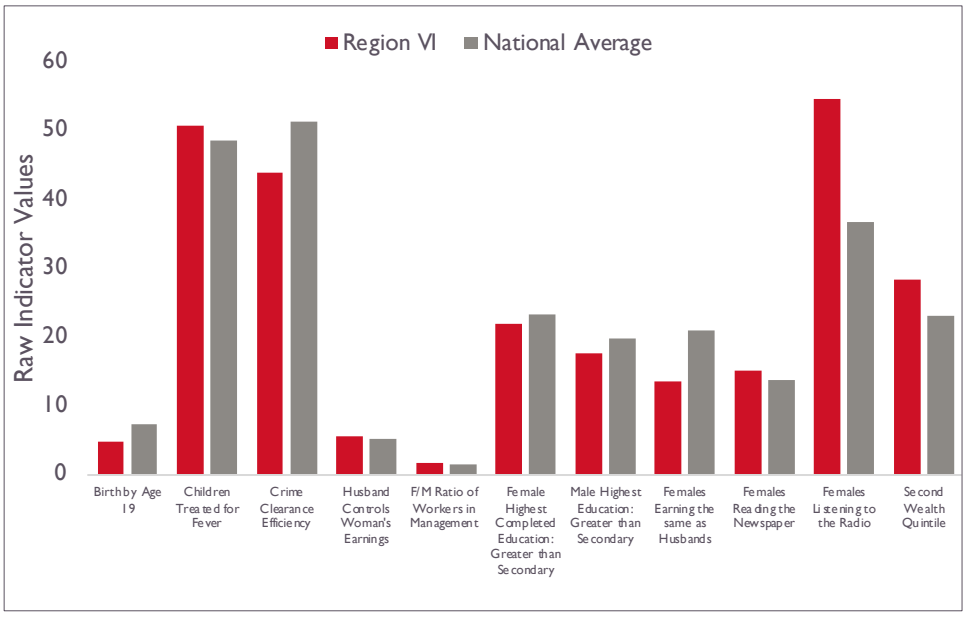
TIP Vulnerability Measure: 0.1 (#17)

Projected Prevalence: 0.75 (#17)

Projected Number of Victims: 5,651 (#16)

Labor Trafficking in Persons:





TIP Vulnerability Measure: 0.036 (#16)

Projected Prevalence: 0.15 (#16)

Projected Number of Victims: 1,133 (#15)

Region VI (Western Visayas)

Online Sexual Exploitation of Children (OSEC):

Iloilo has been cited as a source and destination for OSEC in the Philippines. 100 percent of OSEC victims were trafficked in place. The victims are primarily female (88 percent). Region VI has high internet connectivity rates and a large city, which gives traffickers access to technology and victims. Advancing technology should be utilized to detect OSEC and victim services and funding for OSEC-related crimes should be increased in the major cities to service the region.

Overseas Filipino Workers (OFWs):

Region VI was the fourth-highest sending region for OFWs per 100,000 working age population in 2019. The distribution of Filipino workers shows that across genders, 49.4 percent are men and 50.6 percent are women (2018). The male average reported TIP victim per 100,000 is 11.7 and for females is 31.1. Female OFWs are more likely to become victims of human trafficking than their male counterparts. Reporting may also be impacted by societal views and stigmas that may affect whether those who have experienced human trafficking to report it to authorities, especially among men.

Summary Description:

- Region VI is a central region north of Mindanao that consists of six provinces: Aklan, Antique, Capiz, Guimaras, Iloilo, and Negros Occidental. There are two main highly urbanized cities in Region VII: Bacolod and Iloilo City.
- Region VI is a source and destination region. The large Iloilo port serves domestic and international transport and trade. Kalibo International Airport in Aklan and Iloilo International Airport in Iloilo are the two main airports that serve international flights.
- Aklan is famous for Boracay, a resort island known for white sandy beaches that is a major tourist destination in the Philippines.
- Region VI is a leading producer of fishing and aquaculture products and is situated between the Sibuyan and Visayan seas.
- The main industries in Region VI are services and agriculture. The main agricultural products are palay, corn, and sugarcane.
- Aklan, Iloilo, and Negros Occidental experience seasonal labor trafficking, especially in the sugarcane industry. Negros Occidental has 50 percent of the national sugarcane production.
- About one-fifth of women report having experienced spousal violence. About one-fifth of women also believe a husband is justified in beating his wife. These statistics both suggest that societal gender inequality is high.
- Females have higher educational attainment than men, in terms of completing secondary school and holding academic degrees.
- Even though the female labor force participation rate is lower than that of males (49.7 percent to 73.1 percent), those that enter the labor force have a high employment rate (94.4 percent), suggesting that females don't enter the workforce due to societal constraints more than the lack of opportunities.
- The average daily agricultural wage is one the country's lowest, and women receive a lower daily wage than men.

Geographically-Targeted Interventions

In Region VI, high priority interventions include addressing labor exploitation in the sugarcane industry, increasing employment opportunities for women, reducing societal gender inequality, and increasing victim services on the resort island of Boracay. Boracay, in the province of Aklan, is a resort island known for its beautiful beaches and nightlife. Sex tourism and commercial sex establishments cater to the international and national tourists. There are several public awareness campaigns about human trafficking established on the island, however, 24 women working in Boracay for commercial sex were rescued by members of the Boracay Tourist Assistance Center in August 2021. Boracay police should increase security around the village and regularly inspect the karaoke bars, and the local government should start a public service campaign warning residents about signs of trafficking and encouraging people to report any suspicious activity. Providing comprehensive training to law enforcement, local community leaders, and sex-workers can raise awareness of human trafficking. Further health and employment training programs should be made available to the women. Offering small-scale vocational education programs for brothel employees can build skill sets that raise employment chances outside of the brothel. Improving the social and legal rights of exploited women on the resort island can offer the girls support and the ability to get out of that situation if needed. Supporting local police groups and training them on human trafficking may help to limit the number of exploited women. Transit authorities near the airport and ferries should also receive training on trafficking to intercept trafficked women traveling to the island.

The provinces of Negros Occidental, Iloilo, and Aklan are the highest-producing sugarcane provinces in Region VI, which is known for migrant sugar workers. Referred to locally as "Sacada," Negros Occidental expects around 25,000 sakadas, many of them undocumented workers, to rotate yearly through the sugarcane farms. Methods to decrease labor exploitation within the sugarcane industry should include labor inspections and regulations and local labor laws that protect against trafficking and damaging recruitment fees in the sugarcane industry instituting health, the development of formal and transparent recruitment practices, instituting health and safety standards for certification, and educating both law enforcement personnel and health inspectors to recognize exploitive labor practices and identify victims. Both the vulnerability associated with exploitive industries and the high levels of gender inequality could be reduced by raising the status of working females. Programs should be implemented to provide management and leadership training. So as not to inadvertently exacerbate the high level of existing gender inequality, such management and leadership training should also include males.

Region VI has a low female labor force participation rate compared to males. However, the high employment rate suggests that if a woman was looking for a job, she would have a high chance of getting employed. The gender gap in labor participation is the result of societal gender inequality. The traditional gender roles appear to be a major restriction for many women to get a job. In Region VI, the gender wage gap is large between workers in the same occupation, even in female-dominated industries. Interventions include supporting female vocational, leadership, entrepreneurial, and employment training programs that contain information on how to job-seek and will likely improve the quality and standing of female employment. Programs for female empowerment through leadership and decision-making trainings should be implemented at schools for both young girls and boys (age 5-10). When men are encouraged to value women as equals and are actively involved in the process of empowering women, societal attitude and structures can change more rapidly.

ANNEX 2. TECHNICAL SUMMARY OF METHODOLOGY AND LIMITATIONS ON THE ANALYSIS

1. TECHNICAL SUMMARY OF METHODOLOGY

Novametrics' weak-signal analysis provides a means for predicting vulnerability and for identifying underlying causal relationships among multiple inter-related variables in a dynamic environment. It was originally developed through a series of research seminars at Princeton University and was supported with a USD 1.2M Small Business Innovation Research Award from the US Secretary of Defense to predict conflict in Sub-Saharan Africa. The analysis received an award for "Innovative Use of Data for Increasing Resilience" from USAID.

Weak-signal analysis begins with data fusion through a suite of statistical and regression algorithms for normalization, standardization, and vectorization, which subdivides populations into small units for which distinct attributes can be measured. A raw persistent data-storage layer contains all the raw data in its original form. A virtualized data layer provides an abstraction layer between the physical data sets and the analysis layer. This is where the data are cleaned, standardized, normalized, and vectorized. New indicators are created from the original raw data and stored in logical groupings. Singular-value decomposition is used as an unsupervised self-learning algorithm to identify agnostically key attributes and their relative weightings. The attributes are tested via resampling methods to confirm consistency and sensitivity. The outputs are sets of indicators (weak-signals) that are proxy measures for the underlying causal relationships.

We began with large volumes of data from diverse, mostly open-source datasets from NGOs, media, the USG, and the statistical authorities of local governments. These datasets included detailed national census data, health and educational survey data, remote-sensing data suitable for geospatial analysis, web-scraped data, and data from both formal and informal media sources. The Novametrics Philippines Database contains over half a million socioeconomic indicator values covering over 2,000 measures for 1,647 city municipalities over 20 years, using 345,550 1km^2 pixels. Using information from hundreds of millions of data values, we developed hundreds of thousands of human-social-cultural-behavioral attributes differentiated down to the municipality level.

We consider all data to be valuable. While datasets may be of varying quality and completeness, each has the potential to carry information that reflects a characteristic of a population, either by itself or, more commonly, through combinations with other datasets.

High-resolution geospatial data (typically 1km^2 for population, but down to ten-meter resolution for imagery) and remote-sensing data are converted into tabular data by determining the number of pixels of each data type within each administrative boundary and multiplying the pixel count by the area of each 30" x 30" pixel (approximately 1km^2), totaling 345,550 distinct area-patches for the Philippines. Depending on the data type, either we summed the values, e.g., to determine population, or we took a statistical measure of the values distribution, e.g., average travel distance to a road, market, or urban area. For each pixel, the population was derived from Oak Ridge National Laboratory's LandScan global population data and represents ambient population averaged over 24 hours.

We calculated indicators from raw survey data at the lower administrative levels. We aggregated and compared these indicators to reported values at higher administrative levels to confirm the accuracy of the aggregation. We then translated the responses into indicators based on the nature of the data. For example, we expressed a simple yes/no on whether a mother uses a mosquito net with a single indicator ("Percentage of Mothers Using a Mosquito Net"), whereas we expressed the religion of a household more completely with multiple indicators ("Percentage of Buddhist Households," "Percentage of Christian Households," etc.). Other survey questions, such as "How many hours per week did your child attend school?" are aggregated with averages for each administrative unit.

Additional indicators were calculated by Novametrics either by combining two raw indicators in the database, or by calculating the raw data into more meaningful indicators. For example, we calculated the percentage of female teachers, a useful indicator of gender equality, from the reported number of female teachers and number of teachers.

Non-numerical data were reformatted into numerical values and processed statistically. For example, the typical Likert scale was used to survey attitudes with responses like "Strongly Agree," "Agree," "Neutral," "Disagree," and "Strongly Disagree", with responses centered about zero. For some indicators where the data was a ranked-choice variable, the choices were converted to discrete numbers between -1 and 1, centered on zero.

Missing data were imputed using linear interpolation or a piecewise cubic polynomial that interpolates the given data if derivatives are specified at the interpolation points. If a region was missing so much data that imputation was unreasonable based on examining the distribution, and if there were significant events in the region that would make the data no longer representative, it was rejected from the analysis. Judgment was applied depending on the potential value of the indicator and the availability of alternative "proxy" indicators that might capture comparable phenomena within the socioeconomic ecosystem.

Administrative boundaries were sourced from the PSA. Names and boundaries were updated to the most current at the time of data analysis. Duplicate names that refer to different locations were differentiated by appending the name of the next administrative level up. In the US, this strategy would distinguish two familiar cities named "Springfield" as "Illinois.Springfield" and "Virginia.Springfield."

Novametrics worked closely with the Philippines STRENGTH CTIP's Mr. Eugenio Gonzales as a liaison to compile data on sex and labor trafficking, OFWs, and OSEC. The database sources include:

- The **IACAT prosecutions dataset:** Through calls with IACAT and STRENGTH CTIP on January 29 and March 24, 2021, a data sharing letter of understanding was developed and Novametrics gained access to data from IACAT on April 8, 2021.
- The **Blas F. Ople Policy Center & Training Institute (Ople Center) ICMS dataset:** Through a series of discussions, Novametrics, STRENGTH CTIP and the Ople Center developed a letter of understanding for data use and exchange. On May 19, 2021, Novametrics submitted a data request to the Ople Center and received the data on June 10, 2021.
- **Bantay Bata 163 (BB163):** The BB163 child abuse hotline is operated by ABS-CBN Lingkod Kapamilya Foundation Inc. Novametrics, BB163 and STRENGTH CTIP began discussions on data exchange on February 23, 2021. Novametrics signed a teaming agreement with Partnership for

Development Assistance in the Philippines to represent Novametrics in the Philippines. Novametrics is awaiting a response from BB163 after their acknowledgment of receipt on May 4, 2021.

Novametrics also owns a previously assembled proprietary database with anonymized OFW TIP victim data from the Philippines with individual characteristics such as religion, age, sex, type of TIP, among others. The IACAT database includes both origin and complaint provinces for sex TIP, labor TIP, other TIP, and OSEC. Whenever available, we included within our database sources, transit areas, and destinations. To add more context to the data collected, we complemented the database using literature. Literature survey sources include:

- ECPAT International. (2012). Sex Trafficking of Children in the Philippines. https://www.ecpat.org/wp-content/uploads/2016/04/Factsheet_Philippines.pdf

- Institute for Strategic and Development Studies. (2003). Trafficking in Human Beings from the Philippines: Examining the Experiences and Perspectives of Victims and Non-Governmental Organisations. https://www.unodc.org/pdf/crime/human_trafficking/Exec_summary_ISDS.pdf

- Nyqvist, M. B., Kuecken, M., Artadi, E., & Ferrara, E. L. (2018). *Understanding Human Trafficking Using Victim-Level Data (*p. 52).

Data Preprocessing: Weak-signal analysis requires preprocessing the data for each indicator used in the analysis. If the indicator distribution resembled a Gaussian distribution, we typically subtracted the mean and normalized by the standard deviation. If the indicator distribution was Log-normal or Chi-squared, we used the logarithm or square-root, respectively. If the data distribution showed clustering asymptotically near an upper limit (e.g., percentages that concentrate near 100 percent), we subtracted the indicator values from this limit and computed the logarithm or square-root of the differences. We term this transform a "reverse-log" or a "reverse-sqrt." Given limit value X_L and indicator data X_j, we compute scaled values X'_j as:

$$\text{Reverse-Log: } X'_j = -\log10(X_L - X_j + e)$$

$$\text{Reverse-Sqrt: } X'_j = -\text{sqrt}\,(X_L - X_j + e)$$

Where e is a small adjustable parameter to avoid singularities at $X_j - X_L = 0$, and the minus sign preserves the ordering of indicator values from smallest to largest. In each case, the rescaling preserved the size-ordering of data values, so that relative comparisons were maintained, and the data distribution met the requirement for the statistical analysis.

If data sets had outliers, we winsorized the data to reduce the influence of outsized data values in statistical correlations and regressions. We typically set the outlier values to three standard deviations from the mean, so that they exert strong, but not extreme, influence on statistical computations in the analysis. In some cases, where some data remained skewed in linear, $\log_{10}$ and square-root scaling, with a substantial group (>3 percent) of indicators beyond 3-sigma, the Z-threshold for winsorizing was set to four to preserve the extreme values. Exceptions were applied to indicators whose values clustered in the neighborhood of an upper bound (e.g., literacy rates, which tend to cluster near 100 percent, but

have tails of values downward toward zero percent). In such cases, a reverse-log and a reverse square-root transformation were applied.

Development of the Vulnerability Index: Once the data were cleaned, the indicators were run through a Pearson Correlation Matrix by category for quality assurance and to identify redundant indicators that were highly correlated and did not exhibit sufficient statistical independence to contribute information to the full data set. Singular-value decomposition and varimax rotations were subsequently used as unsupervised self-learning algorithms to identify key attributes and their relative weightings. Thus, the algorithm pares down a large dataset into a smaller one comprised of the most defining and statistically important components. Running the analysis within specific subregions of the nation enables the identification of combinations of characteristics predictive of TIP while eliminating the combinations of characteristics that are neither conducive nor preventative. Attributes and attribute-combinations that are prominent in both areas of known high- and low-level TIP are thus deemed as inconclusive to TIP vulnerability. The attributes are then tested via resampling methods, in which the algorithm is run on different subsections of regions, to confirm consistency and sensitivity. As we want to explain as much of the variance in the data as possible but also avoid having an overly complicated measure, various threshold values for indicator weightings are used to identify the optimal subset of indicators. The weighted values of the selected indicators are then used as inputs to the composite measure to generate vulnerability measures for each province.

Development of the Projected Prevalence and Victim Estimates: The goal of this step is to rescale the prevalence rates to reflect their distributions more accurately. The vulnerability score is obtained from the indicator matrix, within which many of the indicators have been scaled logarithmically to decrease small values. When we transform from the indicator matrix into prevalence estimates, we reapply the scaling. In particular, prevalence estimates are typically lognormal in the indicator matrix because they range by many orders of magnitude. Therefore, exponentiating the vulnerability index enables proper scaling for our inferring province by province prevalence estimates.

2. LIMITATIONS ON THE ANALYSIS

Whenever possible, we have attempted to describe the uncertainties associated with weak-signal analysis in the presentation of our analytical results in the main report. When presenting the vulnerability index, we have also presented an evaluation of the "null hypotheses" that geographical fluctuations of indicator values, and their projections onto our vulnerability index, have occurred by random. We use 95 percent confidence for non-randomness as our threshold for statistical significance, though often the data relationships exceed this threshold greatly. For example, we can determine the statistical significance of the relationship between child marriage rates and the GSI prevalence by testing the alternative hypothesis that there is no relationship. In such a case, the slope would be zero using the t-distribution. The probability that there is *no* relationship between the child marriage and the GSI prevalence estimates (that the slope of their scatterplot is zero) is less than one in 10 million. Even at this confidence level, we do not assume a specific causal relationship, but we confirm that TIP and child marriage are inter-related within a common ecosystem.

Although our statistical arguments can be presented in probabilistic terms with associated confidence levels, there are many additional uncertainties due to the nature of our analysis and what we are trying to evaluate. The major limitations are associated with the nature of human trafficking itself.

Although our analysis can compute estimates of Philippines TIP victims in a region or a province down to single individuals, such precision is an untrustworthy artifact of the mathematics. First, the geographic variation in TIP vulnerability that we estimate across the Philippines, in particular the relative numbers of TIP victims within different locations, is subject to a scaling uncertainty up or down, depending on the accuracy of national TIP-victim estimates. Second, TIP vulnerabilities are probabilistic in nature, expressing the likelihood of TIP activity within a location. If the ecosystem is conducive to TIP, but no activity has been reported, the activity may be unreported or vulnerable populations may not have yet fallen victim. Alternatively, a vulnerable location may attract more TIP activity than expected from ecosystem considerations, e.g., if traffickers establish alliances to support mutual lawbreaking or societal safeguards are compromised.

An analogy with earthquake hazards is useful. Maps of predicted earthquake motion are used to develop building codes, establish insurance rates, allocate resources, and guide development. Even in a region of high probability, no earthquake may occur for several years. Alternatively, a single earthquake can cause damage that exceeds the probabilistic values for multiple years. Despite the lack of precision, earthquake hazard maps have been extremely effective in dramatically reducing the impact of earthquakes by informing policymakers, insurers, architects, planners, and responders on where to prioritize strategies to reduce vulnerability. The TIP vulnerability index should be used in the same manner, focusing policymaker attention on building resilience in the most vulnerable locations, while maintaining baseline programs in regions with lower vulnerability.

Below are limitations associated with the analytical results. They are listed in a hierarchy based on our assessment of their impact.

1) Ambiguity in what we are trying to measure

Ambiguity and differences exist in the terms human trafficking, TIP, modern slavery, slavery, slavery-like practices, etc. The only international legally binding instrument that provides an agreed upon definition of TIP is the Protocol to Prevent, Suppress and Punish Trafficking in Persons Especially Women and Children, supplementing the UN Convention against Transnational Organized Crime (also known as the "2000 UN TIP Protocol" and one of three "Palermo Protocols").[17]

Article 3 of 2000 UN TIP Protocol defines TIP:

(a) "Trafficking in persons" shall mean the 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;

(b) The consent of a victim of trafficking in persons to the intended exploitation set forth in subparagraph (a) of this article shall be irrelevant where any of the means set forth in subparagraph (a) have been used;

[17] The other two Palermo Protocols are the Protocol against the Smuggling of Migrants by Land, Sea and Air and the Protocol against the Illicit Manufacturing of and Trafficking in Firearms.

(c) The recruitment, transportation, transfer, harbouring or receipt of a child for the purpose of exploitation shall be considered "trafficking in persons" even if this does not involve any of the means set forth in subparagraph (a) of this article;
(d) "Child" shall mean any person under eighteen years of age.

The 2000 UN TIP Protocol definition is considered to be a comprehensive definition because it specifies what constitutes the "acts" (recruitment, transportation, transfer, harbouring, receipt), "means" (threat, use of force, coercion, abduction, fraud, deception, abuse of power), and "purpose" (sexual exploitation, forced labour or services, servitude, removal of organs) of human trafficking (Clark, 2003). The US DoS uses the Palermo Protocol definition. It is, however, specifically noted in 2019 TIP report that "a victim need not be physically transported from one location to another for the crime to fall within this definition" (US DoS, 2019).

The USG generally follows the Palermo Protocol definition of TIP, which defines the meaning of "child" as any U18 person (Article 3(d)) and specifies that means are not relevant if the act involves a child (Article 3(c)). The TIP Reports reference child marriage as a contributing factor to girl's vulnerability to exploitation, but it does consider it to be a form of human trafficking and do not include child marriage in their calculation of TIP victims.

In 2017, the ILO began counting forced marriage in their slavery statistics (ILO, 2017) under the general recommendation that "child marriage is considered to be a form of forced marriage, given that one and/or both parties have not expressed full, free and informed consent" (Article VI.B.20, CEDAW, 2014). The recommendation, however, contains the caveat that "marriage of a mature, capable child below 18 years of age may be allowed in exceptional circumstances, provided that the child is at least 16 years of age and that such decisions are made by a judge based on legitimate exceptional grounds defined by law and on the evidence of maturity, without deference to culture and tradition" (CEDAW, 2014).

Many organizations have attempted to measure human trafficking. The DoS included national estimates of human trafficking in their early TIP reports but abandoned the estimates after enduring criticism. The DoS uses the definition of human trafficking presented in Article 3 of the Palermo Protocol and estimates that globally there are 25 million victims of labor and sex trafficking worldwide (US DoS, 2020b). The ILO published its first estimate in 2005 of 12.3 million persons trafficked as a minimum at any given time between 1995 and 2004. As of 2012, the ILO estimates that 20.9 million people suffer forced labor at any given point in time over the ten-year period 2002 through 2011, reporting a standard error of 1.4 million at a 68 percent level of confidence (ILO, 2012). The GSI uses a broader definition for TIP than the DoS and the ILO. The GSI estimates that globally there were 40.3 million victims of modern slavery in 2018, a decrease from their estimate of 45.8 million victims in 2016 (Walk Free Foundation, 2018; Walk Free Foundation, 2016). The GSI published prevalence estimates by country in 2012, 2014, 2016, and 2018. As with the DoS estimates, the GSI estimates have also been subject to criticism (e.g., Gallagher, 2014) and the 2012 and 2014 estimates are no longer distributed due to changes in the methodology. The GSI estimate includes forced marriage, child marriage, and child soldiers, while the DoS and the ILO treat these human rights abuses separately.

2) Use of data analysis in social science

Social science and international development research have been evolving from site visits and case studies to more data-based analysis. Identifying relationships in complex, dynamic systems requires statistical models. The results of the statistical models are expressed in probabilistic terms, for which there is debate over required levels of certainty. In our analysis, we quantify probability as the likelihood that a particular result might have occurred by random chance. We reject the "null hypotheses," the probability that the result occurred by chance, when the confidence level exceeds 95 percent. In other words, the probability of the result occurring by random chance is less than one in 100 for sex TIP and one in twenty for labor TIP.[18]

Quantifying probability in this manner requires assumptions about the statistical distributions of data sets. To the greatest extent possible, our analysis pre-processes raw data into data indicators whose statistical distributions are approximately Gaussian. We reference our uncertainties to Gaussian statistical models, using tools such as chi-squared and F variance-ratio distributions, singular-value decompositions, and bootstrap resampling techniques, depending on the application.

A common criticism of data analysis is that "correlation does not imply causation." For example, deworming children may correlate with increased school attendance. Does this prove that deworming children was the cause of increased school attendance? It is extremely difficult to prove causal relationships in complex systems.

While a statistical relationship may not be proof of a causal relationship, it is evidence for a causal relationship. Without a statistical correlation, there cannot be causation. In fact, one powerful feature of correlation estimates is that they can be used to disprove causal assumptions that seem reasonable but are not supported by the data. Lack of correlation argues that a causal relationship between social indicators is unlikely. More importantly, however, statistical relationships that are opposite to that expected, e.g., a positive correlation when looking for a negative one, can lead to a re-assessment of prior assumptions.

We do not assume in our analysis that correlation implies causation – also known as the fallacy "cum hoc ergo propter hoc" ("with this, therefore because of this"). As an example, we do not assume that a correlation between conflict frequency and male/female literacy rates implies that conflict is caused by a disparity in literacy rates between genders. We assume the indicators we can measure are proxies for sociocultural phenomena that we are unable to measure directly or perhaps even understand. In the example above, lower female literacy rate relative to male literacy rates may indicate gender inequality, religious tenets, shortages of resources (requiring the girls to spend their time collecting water, firewood, etc.), or economic change requiring girls to access markets for alternative income producing activities. Even when we categorize these events as measures of a population's vulnerability, we both recognize and account for the fact that the indicators we are using may not be unique or even directly related to the categories in which they have been assigned. As an example, consider two population

[18] The labor TIP vulnerability measure data has an R-squared value = 0.13 when adjusted for special cases, and the p-value is slightly greater than 0.05. The probability of the top four regions for labor TIP occurring among the top nine of the 17 regions by chance is approximately one in 19 (0.0529). The sex TIP vulnerability measure has an R-squared value = 0.36 and the p-value is less than 0.05, allowing us to reject the null hypothesis that the relationship occurred by chance. The probability of the top four regions for sex TIP occurring among the top six of the 17 regions by chance is approximately one in 79 (0.0126).

characteristics "A" and "B" that correlate with significant statistical confidence. There are at least five options:

Option 1: The correlation is the result of random coincidence and does not reveal any causal relationships between A and B.

Option 2: A is "causing" B, with the independent variable A causing the change in the dependent variable B.

Option 3: B is "causing" A, with the independent variable B causing the change in the dependent variable A.

Option 4: A and B are both dependent variables, following an independent population characteristic C that has not been measured.

Option 5: A and B are part of a larger correlated system with no unique causal factor, that is, no independent variable.

Option 5 is characteristic of "coupled systems," in which "causality" resides in the linkages between variables. In a fully coupled "holistic" system, no variable is truly independent. Such systems are common in natural ecosystems, and we assume they are also common in socioeconomic ecosystems. For example, in atmosphere-ocean interactions that lead to the El Niño and La Niña climate events, there are no dependent versus independent variables. Atmospheric pressure highs and lows induce winds that push surface seawater, and warm and cool patches of the sea surface induce variations in atmospheric pressure. Neither the atmosphere nor the ocean operates independently of the other. Neither can be taken as the independent variable in a causal relationship. Yet the relationship is unambiguous and allows us to predict both the atmospheric and oceanic effects with high degrees of certainty.

An ecosystem approach to complex, dynamic, and multi-variable problems such as human trafficking, child marriage, and VE treats them as coupled systems that lack true independent variables, but nevertheless offer situations where we can predict outcomes and intervene to effect change. The big-data ecosystem approach finds inter-relationships among many variables, not only two. With many variables and many distinct populations, there may be multiple independent correlation patterns. The different patterns indicate the problem has multiple causes, and the causes vary for different places. In an ecosystem approach, the correlations among population attributes are treated as a coupled system that can be influenced at several points, rather than as a cause-effect process that can be modified only through its dependent variable. The advantage of an ecosystems approach is that it allows us to achieve our objectives by identifying the characteristics to be modified, therefore allowing us to identify options for the interventions that will provide the greatest return on investment.

3) The nature of self-identified victims

Victims of human trafficking generally self-identify and therefore include subjective assessments that are affected by different sociocultural norms.

4) Hidden populations

The population of victims is largely a hidden population, and it is therefore difficult to obtain a representative sample for statistical analysis,

5) Extrapolations

In any given survey, the number of self-identified alleged victims is generally small, and extrapolations from small numbers have significant uncertainty.

6) Respondent truthfulness

Survey respondents are not necessarily truthful, and their trafficking may not have been independently verified. They may claim to have been trafficked to receive perceived or actual benefits, or they may deny being trafficked to avoid social stigmas or involvement with legal structures.

7) Human-based data collection

Survey data is collected by human surveyors who may not faithfully follow the design of the survey or record responses accurately.

8) Definitions

International definitions are not consistent with national definitions and the local customs and laws of a particular country.

ANNEX 3. EMPIRICAL ANALYSIS OF THE US STATE DEPARTMENT'S ANNUAL TRAFFICKING IN PERSONS REPORT – INSIGHTS FOR POLICY-MAKERS

Routledge
Taylor & Francis Group

Journal of Human Trafficking

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/uhmt20

Empirical Analysis of the US State Department's Annual Trafficking in Persons Report – Insights for Policy-Makers

Gregory E. van der Vink, Katherine N. Carlson, Jeffrey Park, Sabrina H. Szeto, Xinrei Zhang, Michael E. Jackson & Erica Phillips

To cite this article: Gregory E. van der Vink, Katherine N. Carlson, Jeffrey Park, Sabrina H. Szeto, Xinrei Zhang, Michael E. Jackson & Erica Phillips (2021): Empirical Analysis of the US State Department's Annual Trafficking in Persons Report – Insights for Policy-Makers, Journal of Human Trafficking, DOI: 10.1080/23322705.2021.1897759

To link to this article: https://doi.org/10.1080/23322705.2021.1897759

Published online: 29 Apr 2021.

JOURNAL OF HUMAN TRAFFICKING
https://doi.org/10.1080/23322705.2021.1897759

Routledge
Taylor & Francis Group

Empirical Analysis of the US State Department's Annual Trafficking in Persons Report – Insights for Policy-Makers

Gregory E. van der Vink, Katherine N. Carlson, Jeffrey Park, Sabrina H. Szeto, Xinrei Zhang, Michael E. Jackson, and Erica Phillips

ABSTRACT

The State Department's annual Trafficking in Persons (TIP) Report is the U.S. Government's principal diplomatic tool to engage foreign governments on human trafficking. Each year, the report evaluates efforts to counter human trafficking, assigning each country to a tier level. We evaluate the relative role of various factors predictive of tier-level assignments, including (a) legislated changes to the ranking system, (b) party to the Palermo Protocol, (c) reported numbers of convictions, prosecutions, and identified victims, (d) independent estimates of prevalence, and (e) sample indicators of governance and economic development. We use singular-value decomposition to identify the relative influence among multiple inter-related factors across a matrix of tier rankings for twelve years and 189 nations. Our analysis indicates that investments in democratic institutions and individual rights may be significantly more influential than law enforcement, and the traditional economic theory for TIP vulnerability may be an oversimplification. Most significantly, the large number of attributes with small but statistically significant correlations with TIP tier levels confirms that TIP has many causal relationships. We affirm the need for Countering TIP (CTIP) strategies to apply an ecosystem approach with geographically targeted interventions consistent with Situational Crime Prevention.

KEYWORDS

Trafficking in persons; human trafficking; state department trafficking in persons report; tip; ctip; modern slavery

Introduction

The U.S. State Department's Trafficking in Persons (TIP) Report is the U.S. Government's principal diplomatic tool to engage foreign governments on human trafficking (United States Department of State [U.S. DoS]., 2020a). The report is produced in accordance with the U.S. Victims of Trafficking and Violence Protection Act (TVPA) of 2000 (P.L. 106–386) and establishes U.S. anti-trafficking policy to (1) *prevent* trafficking, (2) *protect* trafficking victims, and (3) *prosecute* and punish traffickers (known as the "three Ps").[1,2]

The TVPA was developed as domestic legislation concurrently and in a manner consistent with the principles set forth in the Protocol to Prevent, Suppress and Punish Trafficking in Persons Especially Women and Children, supplementing the United Nations Convention against Transnational Organized Crime (also known as the "2000 UN TIP Protocol" or the "Palermo Protocol") (U.S.DoS, 2020a).[3] The TVPA requires the Secretary of State to produce an annual report ranking foreign governments based on their anti-trafficking efforts. The U.S. State Department's TIP report uses a ranking system in which the best-ranked countries are identified as Tier 1 and the worst ranked as Tier

CONTACT Gregory E. van der Vink gvdv@novametricsllc.com Novametrics, 4701 Sangamore Road, Suite N100, Bethesda, MD 20816, USA

[1]In addition, the State Department employs a fourth "P," partnerships "as a complementary means to achieve progress across the 3Ps and enlist all segments of society in the fight against modern slavery." U.S. Department of State, Policy Issues, "Human Trafficking," at https://www.state.gov/policy-issues/human-trafficking/.

[2]The US passed the TVPA October 28, 2000. The UN adopted the Palermo Protocol a few weeks later, on November 15, 2000.

[3]The "Palermo Protocol" is actually one of three "Palermo Protocols", the other two Palermo Protocols being: (a) the Protocol against the Smuggling of Migrants by Land, Sea and Air, and (b) the Protocol against the Illicit Manufacturing of and Trafficking in Firearms.

3. Between the best and worst rankings, the State Department classifies nations into two intermediate tiers, Tier 2 and the Tier-2 Watch List, the latter ranking a probationary level. There is also the designation of *Special Case*, which describes countries that are too affected by conflict or natural disaster for a proper analysis of government-led counter-trafficking efforts to be made.

Under the TVPA, Tier-3 countries are subject to potential restrictions on certain types of U.S. foreign aid and other U.S. and multilateral funds. In 2019, for example, certain types of assistance from the U.S. were restricted for the governments of 15 countries that were ranked Tier 3 (U.S.DoS, 2020b).

Placement of each country into one of the tiers is based *not* on the size of the country's trafficking problem, but on the extent of governments' efforts to meet the TVPA's minimum standards for the elimination of human trafficking (22 USC 7106). These standards are generally consistent with the 2000 UN TIP Protocol (U.S.DoS, 2019). The minimum standards used to determine a country's tier rankings are their efforts toward (1) prohibiting severe forms of trafficking in persons and punishing acts of such trafficking, (2) prescribing punishment commensurate with that for grave crimes, (3) prescribing punishment that is sufficiently stringent to deter and reflects the heinous nature of the offense, and (4) making serious and sustained efforts to eliminate severe forms of trafficking in persons.[4] The State Department uses 12 "indicia" of "serious and sustained effort" for their evaluations, several of which have been noted to be subjective.

There are many criticisms of the TIP reports and the process through which nations are assigned to tier levels. The criticisms include not only the specific metrics that are purported to be used, but also the extent to which they are objectively applied. For example, one of the 12 indicia for determining the TVPA's minimum standards calls for reducing the demand for commercial sex acts and participation in international sex tourism. Some commentators consider the argument that certain forms of sex work can be considered legitimate enterprises rather than forms of trafficking (e.g., Jackson, 2019). In addition, there are a range of criticisms that the assignment to tier levels is not only subjective but also ultimately political in nature (e.g., DeStefano, 2007). Within the U.S. government, there are three reports by the Government Accountability Office (GAO) (2006, 2007, U.S.DoS, 2011) and two reports by the U.S. Congressional Research Service (CRS) (2013, 2019) that provide extensive reviews of the criticisms of the TIP Reports. While we recognize there are strong political and subjective aspects to the TIP reports, our goal is to present objective data analysis that both complements and informs the debates surrounding these criticisms.

The 2020 TIP Report evaluates 189 countries on their efforts to meet the TVPA's minimum standards. Figure 1 (a/b) illustrates both the percentage of countries at each tier level (left) and the

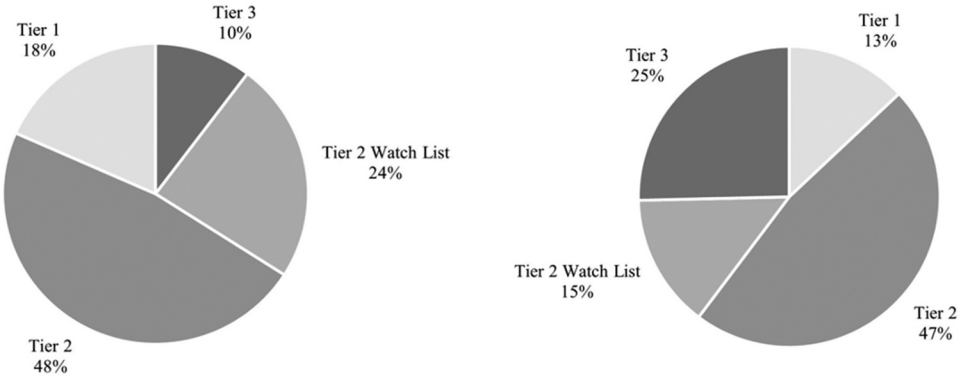


Figure 1. 2020 Global TIP Tier Rankings by Country and by Percent of Population Only about 10% of the countries fall within Tier 3 — the lowest level. However, these 10% of the countries represent 25% of the global population. So, while more nations are in Tier 1 than Tier 3 (18% vs. 10%), only half as many people are in Tier 1 as Tier 3 (13% vs. 25%). Globally, almost 2 billion people live in Tier-3 nations. Population data from United Nations Population Division, 2020.

[4]In determining if serious and sustained efforts are being made (standard #4), 12 criteria are considered as indicators.

percentage of the global population (United Nations Population Division, 2019) at each tier level (right). While the percentage of countries in Tier 3 is small (10%), the number of people living in these Tier-3 countries makes up a quarter of the global population – almost double the percentage of the population living in Tier-1 conditions.[5]

In this paper, we explore the statistical relationships between TIP tier levels and appropriate national attributes. Our analysis includes not only information contained in the annual TIP reports, but also independent measures of TIP prevalence and sample indicators of economics and governance. Various statistical approaches are used to normalize, integrate and analyze the relationships between data sets and the TIP tier-level rankings. As an analytical summary, singular-value decomposition is used to determine inter-relationships among multiple indicators and their ability to explain variance among the TIP tier rankings. Our analysis attempts to provide insight on the following array of policy questions related to TIP:

1. What Has Been the Impact of Legislative and Diplomatic Efforts?
   a) Have modifications to the TIP tier-ranking system motivated governments to intensify their Countering TIP [CTIP] efforts?
   b) Does becoming party to the Palermo Protocol signify a meaningful commitment to enhancing CTIP efforts?
2. Do the efforts represented by TIP tier levels result in meaningful reductions in victimization?
3. What is the role of law enforcement in reducing TIP?
4. To what extent do economic and governance factors influence TIP tier levels?

The goal in understanding the strength and interconnected nature of relationships among the various data sets is to offer policy insights for CTIP strategies that will result in meaningful reductions in victimization.

Question 1: What has been the Impact of Legislative and Diplomatic Efforts?

Have modifications to the TIP tier-ranking system motivated governments to intensify their CTIP efforts?

Since the first TIP Report in 2001, the report's scope has expanded and there have been changes to the methodology for assigning countries to various tier levels. Of particular importance for this analysis are the following:

(a) The Trafficking Victims Protection Reauthorization Act (TVPA) of 2003 added to the original law a requirement that foreign governments provide the Department of State with data on trafficking investigations, prosecutions, convictions (P.L. 108-193, 2003).[6]
(b) The William Wilberforce Trafficking Victims Protection Reauthorization Act of 2008 limited the number of consecutive years a country may remain on the Tier-2 Watch List to four years (P.L. 110-457, 2008).[7]
(c) The Trafficking Victims Protection Reauthorization Act of 2017, enacted in 2019, further reduced the number of consecutive years that a country may remain on the Tier-2 Watch List to three years, and reduced presidential waiver authority to one year (P.L. 115-427, 2017).
(d) The Frederick Douglass Trafficking Victims Prevention and Protection Reauthorization Act of 2018, enacted in 2019, limited to one year the time a country may remain on the Tier-2 Watch List if they previously exhausted their time on the Tier-2 Watch List (P.L. 115-425, 2018).

[5]If China (a Tier-3 nation) is removed from the analysis, the percentage of the remaining global population within Tier 3 is reduced from 25% to 8%.

[6]The 2004 TIP Report collected data on prosecutions, convictions, and identified victims for the first time. The 2007 TIP Report showed for the first time a breakout of the number of total prosecutions and convictions that related to labor trafficking.

[7]The standard limit is two (2) years, but a country may be waived from the automatic downgrade by the Secretary of State for an additional two (2) years, should a country devote significant resources to a written plan that, if implemented, would constitute significant efforts toward meeting the minimum standards for the elimination of human trafficking.

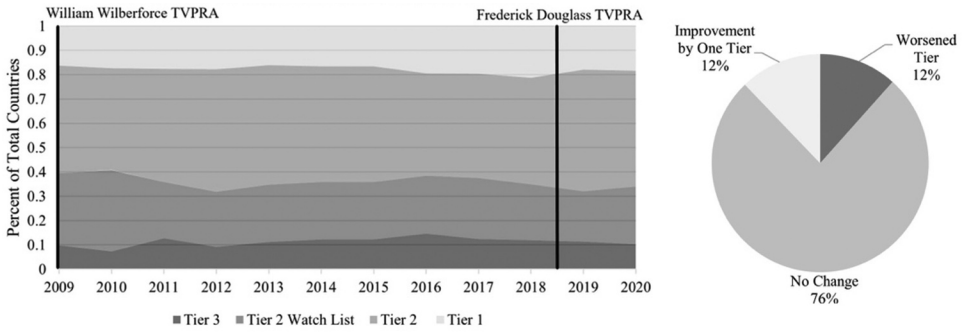


Figure 2. Percent of Countries and Global Population in Each Tier Since 2009. The percentage of countries at each tier level has remained relatively constant since 2009 (left). Of those that change tier level in a given year, equal numbers of nations (12%) improve their tier level as worsen their tier level (right) (United States Department of State annual Trafficking in Persons Reports, 2009-2019, 2020c).

Changes to the TIP Report's methodology are intended to strengthen the credibility of the TIP Report and increase its effectiveness in motivating governments to improve their anti-trafficking efforts. These changes, however, have also raised concerns that the ranking system could be seen as inconsistent, overly elaborate, or beyond reach, thus perhaps eroding some of the Report's effectiveness in motivating countries to improve their anti-trafficking efforts (U.S.CRS, 2019).

Figure 2 (a/b) shows the time-series of tier levels for up to 185 nations (special cases are excluded) from 2009 to 2020 capturing the impact of three changes to the tier-ranking system: (1) the William Wilberforce Trafficking Victims Protection Reauthorization Act of 2008, (2) the Trafficking Victims Protection Reauthorization Act of 2017, and (3) the Frederick Douglass Trafficking Victims Prevention and Protection Reauthorization Act of 2018 (U.S. DoS, 2009-2019, 2020c; P.L. 115-425, 2018).

Since 2009, the average number of countries improving their tier level is roughly equal to the average number of countries that worsen their tier level. The first year that a country received a downgrade to Tier 3 after remaining on the Tier-2 Watch List past the limit was in 2013.[8] Since then, there have been 48 instances where a country was eligible for an automatic downgrade. Of these times, 25 (52%) improved their counter-trafficking efforts and subsequently moved to Tier 2, and 23 (48%) were downgraded to Tier 3. The more recent tier-level adjustments implemented through Congressional Reauthorizations – the Frederick Douglass Trafficking Victims Prevention and Protection Reauthorization Act of 2018 and the Trafficking Victims Protection Reauthorization Act of 2017, both of which further reduced the amount of time for which a nation may be placed on Tier-2 Watch List, have coincided with tier-level changes, although not with a net improvement. In 2020, 23 nations improved a tier level, and 22 nations dropped a tier level.

For certain countries of specific interest, the legislative action may have provided a motivating factor. As of 2020, however, the legislative modifications to the TIP tier-ranking system have yet to demonstrate a significant impact on increasing counter-trafficking efforts as measured by systematic global improvements in tier levels. The number of nations at each tier level has remained stubbornly constant over the last decade.

Does becoming party to the Palermo Protocol signify a meaningful commitment to enhancing CTIP efforts?

[6]The 2004 TIP Report collected data on prosecutions, convictions, and identified victims for the first time. The 2007 TIP Report showed for the first time a breakout of the number of total prosecutions and convictions that related to labor trafficking.

[7]The standard limit is two (2) years, but a country may be waived from the automatic downgrade by the Secretary of State for an additional two (2) years, should a country devote significant resources to a written plan that, if implemented, would constitute significant efforts toward meeting the minimum standards for the elimination of human trafficking.

In concert with the TVPA, the Palermo Protocol is considered a major diplomatic tool for Countering Trafficking in Persons. The Palermo Protocol was adopted and opened for signature, ratification and accession at the fifty-fifth session of the General Assembly of the United Nations on November 15, 2000, and entered into force on December 25, 2003.[9] It is the only international legally binding instrument that provides an agreed-upon definition of trafficking in persons (United Nations, 2000). The Palermo Protocol definition is considered to be comprehensive because it specifies what constitutes the "acts" (recruitment, transportation, transfer, harboring, receipt), "means" (threat, use of force, coercion, abduction, fraud, deception, abuse of power), and "purpose" (sexual exploitation, forced labor or services, servitude, removal of organs) of human trafficking (Clark, 2003). Palermo defines the meaning of "child" to be under the age of 18 and specifies that the means of trafficking are not relevant if the act involves a child.

Becoming party to Palermo is considered part of a nation's effort toward meeting the minimum standards of the TVPA for tier-level rankings, and has been included as a prioritized recommendation for nations within the State Department's TIP Report. One would hope that becoming party to the Palermo Protocol would signal an increased effort by the nation to counter human trafficking, and that increased effort would correspond to an improvement in tier ranking.

While few nations became party to Palermo in 2001, most (107) became party over the following five years (2002–2006). Since 2007, 66 countries have joined (U.S.DoS, 2020a). Improvements in tier level should be detectable among nations that signed the Protocol, especially after the first wave of endorsements ended in 2006. Figure 3 shows the tier rankings by year for each nation that become party to Palermo since 2007.

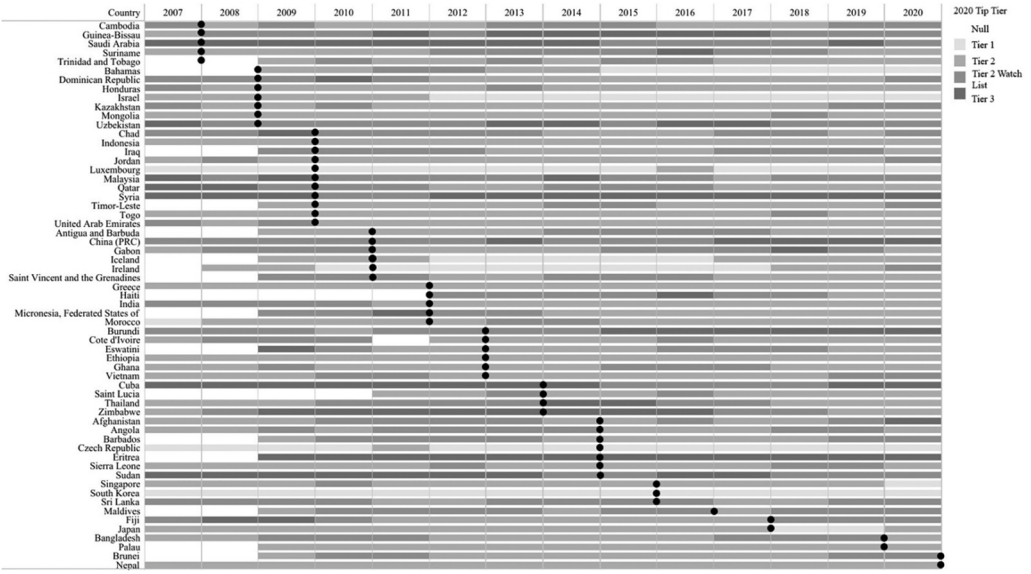


Figure 3. Parties to the Palermo Protocol 2007-2019. Since 2007, 66 countries have become party to the Palermo Protocol, 61 of which are included in the TIP Reports. The colors show the country's tier-level ranking for each year, where the lightest gray is Tier 1, the darkest gray is Tier 3, and white (labeled Null) is a country excluded from that year's TIP Report or designated as Special Case. The black dot represents the year the country became party to Palermo (USDoS, 2020a).

[8]There are discrepancies regarding these limits. For example, Malaysia was downgraded to Tier 3 in 2014 after four years on the Tier-2 Watch List. It is now on its third consecutive year on the Watch List again (since 2018). Additionally, Uzbekistan was downgraded in 2013 after four years on the Watch List and has been on it again since 2018.

Of the countries that became party to Palermo since 2007, 4 (8%) are currently in Tier 1, 27 (55%) are in Tier 2, 12 (24%) are on the Tier-2 Watch List, and 6 (12%) are in Tier 3. Only 21% of the nations that became party to Palermo improved their tier ranking within one year, and 5% fell in tier ranking. The remaining 74% of the signatory nations did not change tier level, which is the same rate of change as the average percent of countries moving in any given year.

If becoming party to the Palermo Protocol is meant to signify a nation's increased effort to CTIP, in most cases, it was not followed by an increased level of effort as measured by an improvement in tier level. While disappointing, this finding is consistent with recent research into global anti-slavery legislation which shows that despite near-universal adherence to international anti-trafficking norms, many nations have not transferred that commitment into domestic law (Schwarz & Allain, 2020), and that gaps persist between human-rights norms and implementation of those rights (de Felice & Graf, 2015).

Question 2: Do the efforts represented by TIP tier levels result in meaningful reductions in victimization?

In looking at the relationships between TIP tier levels and victimization rates, we compare levels of effort toward CTIP (as measured by tier-level assignments) with independent measures of victimization (as measured by national estimates of TIP prevalence). While the TVPA requires the Secretary of State to assign tier levels based on anti-trafficking *efforts*, rather than the extent of human trafficking in the nation, a logical assumption would be that nations providing stronger efforts toward CTIP, as indicated by their tier level, would achieve lower rates of TIP prevalence.

Early versions of the TIP Report included national estimates of trafficking victims. The U.S. GAO found such estimates "questionable" and noted "significant discrepancy" between the estimated and reported numbers of victims (U.S.GAO, 2006, 2007, 2011). Prevalence estimates are no longer included in the TIP reports. The State Department, however, does present global estimates of the number of victims in public statements (U.S.DoS, 2020b).

The State Department uses the definition of human trafficking presented in Article 3 of the Palermo Protocol and estimates that globally there are 25 million victims of labor and sex trafficking worldwide (U.S.DoS, 2020b). The International Labor Organization (ILO) published its first estimate in 2005 of 12.3 million persons trafficked as a minimum at any given time between 1995 and 2004. As of 2012, the ILO estimates that 20.9 million people suffer forced labor at any given point in time over the ten-year period 2002 through 2011, reporting a standard error of 1.4 million at a 68% level of confidence (ILO, 2012). The Global Slavery Index (GSI) published by the Minderoo Foundation's Walk Free initiative uses a broader definition for TIP than the State Department and the ILO. The GSI estimates that globally there were 40.3 million victims of modern slavery in 2018, a decrease from their estimate of 45.8 million victims in 2016 (Walk Free Foundation, 2018, 2016). The GSI published prevalence estimates by country in 2012, 2014, 2016, and 2018. As with the State Department national estimates, the GSI national estimates have also been subject to criticism (e.g., Gallagher, 2014) and the earlier estimates (2012 and 2014) are no longer distributed, due to changes in the methodology.

The GSI estimate includes forced marriage, child marriage, and child soldiers. The State Department and ILO estimates treat these human rights abuses separately. The difference between estimates can be attributed not only to differences in scope of definition, but also to the inherent uncertainty of such estimates; specifically:

1) Ambiguity and differences exist in the terms human trafficking, trafficking in persons, modern slavery, slavery, slavery-like practices, etc.

2) Recorded victims of human trafficking generally self-identify and therefore include subjective assessments that are affected by different sociocultural norms,

[9]The first nations to sign the Protocol met in a December 2000 ceremony at the Palazzi di Giustizia in Palermo, Italy. Although the US Senate did not provide advice and consent to ratification of the Palermo Protocol until November 3, 2005, the US was one of the first signatories on December 2, 2000.

3) The population of victims is largely a hidden population and it is therefore difficult to obtain a representative sample for statistical analysis, and

4) In any given survey, the number of self-identified alleged victims is generally small, and extrapolations from small numbers have significant uncertainty.

In addition, international definitions may not be fully consistent with national definitions and the local customs and laws of a particular country. For example, "forced marriage" is prohibited through the prohibitions on slavery and slavery-like practices, including servile marriage; and "child marriage" can be considered to be "forced marriage", as one and/or both parties by definition are not able to express free and informed consent (ILO & Walk Free Foundation, 2017). In many countries, however, parties under the age of 18 are legally allowed to marry. In the United States, for example, there is no federal law regarding child marriage, and each state has its own regulations.

The discrepancies in definitions and inherent ambiguity in victim identification can make estimating prevalence complex and subjective. TIP is notoriously difficult to measure and quantify. While methods that attempt to do so are imperfect, they still have merit and, as we will see, statistical significance with a nation's CTIP programs and efforts.

As an example of the relationship between the TIP tier rankings and estimates of prevalence, Figure 4 shows the most recent GSI prevalence estimates (2018) grouped by TIP tier rankings. The distribution shows that Tier-1 nations generally have lower estimated prevalence rates, and prevalence rates generally worsen as tier levels worsen. Among Tier-1 nations, the median prevalence rate is 2.0 victims per 1,000 population. The median prevalence rates are 4.5 for Tier 2, and 5.7 for the Tier-2 Watch List. In Tier 3, the median prevalence rate is 10.6.

The overall trend is consistent with the assumption that nations with stronger efforts toward CTIP (as measured by the TIP tier rankings) achieve lower rates of TIP (as measured by the GSI index). Although we are not assuming causal relationships, the correlation between stronger TIP tier rankings and lower estimated rates of TIP is a significant statistical relationship, regardless of its cause. As

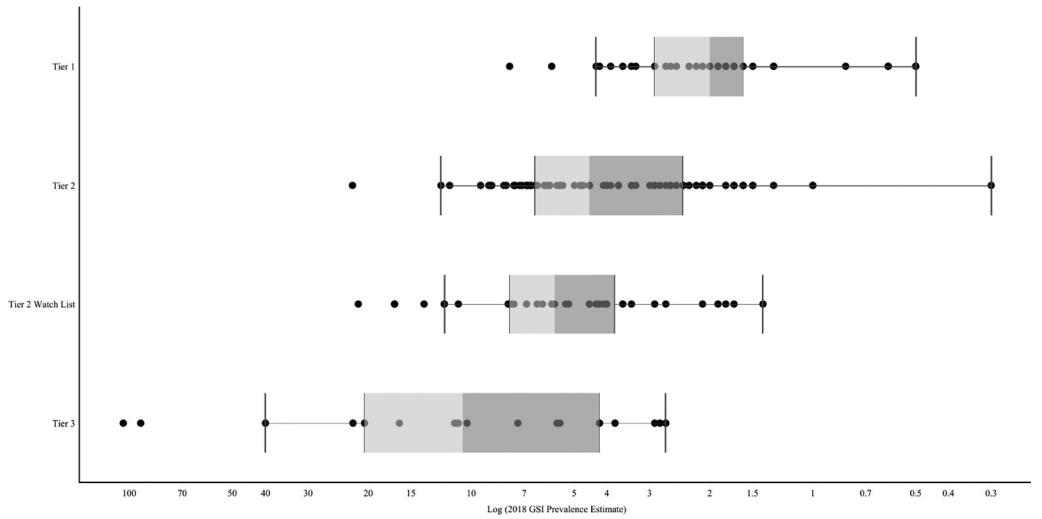


Figure 4. State Department TIP Tier Rankings and GSI Prevalence Estimates. GSI 2018 Estimates of TIP prevalence for each nation grouped by TIP tier assignment. In this box and whisker plot, each nation, represented as a dot, is plotted by its prevalence rate, where prevalence is defined as the estimated number of victims per 1,000 population. The median is marked by the change of shading in the box. The lower and upper hinges are the medians of the first and second halves of the data, roughly representing the 25th and 75th percentiles. The whiskers show the furthest data points within 1.5 interquartile ranges of the hinges. The United States is identified for reference. To increase the fidelity of the prevalence estimates and validity of the statistical representation, we have used the logarithm of the most recent GSI prevalence estimate. Prevalence rates decrease along the x-axis. The trend is consistent with the assumption that nations providing stronger efforts towards CTIP, as measured by the TIP tier rankings, have lower rates of TIP (as measured by GSI prevalence estimates).

Table 1. Factors statistically evaluated against tier levels of the US State department TIP report.
Percentage of variance in TIP tier-level rankings explained by metrics presented in the TIP Reports, selected economic and governance measures, and independent estimates of TIP prevalence. Data were normalized based on their distribution for the statistical analysis. Polarity of the correlation was adjusted for consistency.

Indicator Category	Indicator	Source	Variance (%) Tier-Ranking Explained 2009–2020	Variance (%) Tier-Ranking Explained 2020	Normalization Method	Polarity of Correlation
				2020		
Governance	Democracy Index	Economist Intelligence Unit	58.2	35.7	linear	negative
Governance	Freedom Index	Freedom House	51.0	35.1	linear	negative
Governance	Fragile-State Index	Fund for Peace	47.5	28.4	linear	positive
Governance	Economic-Freedom Index	Heritage Foundation	45.9	24.3	linear	negative
Governance	Corruption-Perception Index	Transparency International	43.7	27.7	linear	negative
Governance	Ease-of-Business Index	World Bank	39.4	18.4	linear	negative
Governance	Press-Freedom Index	Reporters Without Borders	37.7	25.0	linear	positive
Economic	GDP per capita	World Bank	25.9	16.1	logarithmic	negative
Economic	GDP PPP	World Bank	22.7	12.7	logarithmic	negative
Economic	Poverty Rate	World Bank	10.9	3.2	logarithmic	positive
Law Enforcement	Prosecutions/capita	TIP Report	8.9	11.2	logarithmic	negative
Law Enforcement	Identified-Victims/capita	TIP Report	6.5	9.0	logarithmic	negative
Economic	GINI Coefficient	World Bank	4.4	0.9	linear	negative
Economic	Gross National Income Growth	World Bank	0.6	0.0	linear	positive
Economic	Unemployment	World Bank	0.0	0.0	square-root	positive
Law Enforcement	Convictions/Prosecution	TIP Report	0.0	0.6	logarithmic	negative
Independent estimates of prevalence from the Global Slavery Index (GSI) 2016 and 2018 reports						
TIP Prevalence	2018 GSI prevalence	Global Slavery Index (2018)	35.2	26.4	logarithmic	positive
TIP Prevalence	2016 GSI prevalence	Global Slavery Index (2016)	41.9	21.3	logarithmic	positive

demonstrated demonstrated in Table 1 the correlations between GSI prevalence estimates and either the 2020 TIP tier rankings, or decade-average tier rankings are many times larger than the 99% confidence level for nonrandomness. As demonstrated in subsequent sections, however, other factors show stronger relationships; and at the national level, variables such as war, natural disaster, and disease can become overriding factors.

Question 3: What is the Role of Law Enforcement in Reducing TIP?

Since 2004, law-enforcement metrics on prosecutions, convictions, and identified victims have been reported in the Annual TIP Reports (Trafficking Victims Protection Reauthorization Act of 2003). These data are compiled at the regional level and are included in many of the individual nation narratives. The 2020 TIP report, for example, presented totals of 11,841 prosecutions, 10,847 convictions, and 118,932 identified victims (U.S.DoS, 2020b). At the same time, the State Department presented an estimate of 25 million victims (U.S.DoS, 2020c). A comparison of the U.S. State Department's estimate of victims compared to the identified victims in the 2020 TIP report suggests that less than 0.5% (1 in 200) of the globally estimated victims of TIP have been identified.

Nevertheless, law-enforcement metrics reported in the TIP Reports are presented as evidence that government efforts stemming from the Palermo Protocol are working (U.S.DoS, 2019). Others have argued that viewing TIP as a "law and order" problem requiring an aggressive criminal justice response has resulted in hundreds of millions of dollars being invested with no appreciable reduction in the absolute number of people trafficked worldwide (Chuang, 2006). Others express concern that the emphasis on prosecution data means the socio-economic settings that enable trafficking in the first place are being ignored (U.S.CRS, 2019). The underlying debate is one that has been taking place in criminology theory for decades: What is the role of prosecutions in reducing crime?

To assess law enforcement's role in CTIP, we first evaluate the relationship between the law-enforcement metrics reported in the TIP Reports and TIP tier assignments (Figure 5). We next look at the relationship between prosecution rates and changes in victimization rates, using independent measures of prevalence (Figure 6). For each nation in Figures 5 and 6, we normalized the data to the population size and applied the prevalence estimates of the GSI (Walk Free Foundation, 2018) to the estimated size of the TIP victim population.[10] In an effort to account for possible time-delays and variations in justice systems, we used the most recent three-year average of yearly prosecutions scaled by population, the three-year average of convictions scaled by prosecution, and the three-year average of yearly number of identified victims scaled by population.

Figure 5 illustrates that the law-enforcement metrics reported in the TIP Reports generally trend with TIP tier levels, but the relationship is not strong. The weak relationship provides little support for the concern that TIP tier rankings are strongly influenced by the reported law-enforcement metrics. However, the remaining, and more relevant question, is whether law enforcement is an effective means for reducing TIP. To address this question, we use the more direct analysis of comparing changes in the reported prosecutions with changes in the number of victims. In other words, do increases in prosecutions result in decreases in TIP?

In our analysis, we have used two different data sets that relate to human trafficking – one is the numbers of victims that are reported in the TIP reports (these are the numbers of victims identified "rates of victim ID") (Figure 5c) and the other is the independent measures of TIP from the Walk Free Foundation's Global Slavery Index. In the case of hidden crimes (such as TIP, but also including, for example, domestic violence and hate crime) we might expect to see victim identification increase at the same time as prosecution rates. A simultaneous increase between those two metrics could reflect that government and law-enforcement attention is increasing on the issue. We do see such a relationship, albeit weak, in Figure 5c and Figure 9. We would, however, also expect to see a reduction in the estimated amount of criminal activity.

[10]The data distribution is similar for when the reported prosecutions, convictions, and identified victims are normalized to the nation's population and to the estimated size of the number of victims in the nations, as derived from the Global Slavery Index prevalence estimates. Accordingly, we present only one of these figures in the paper.

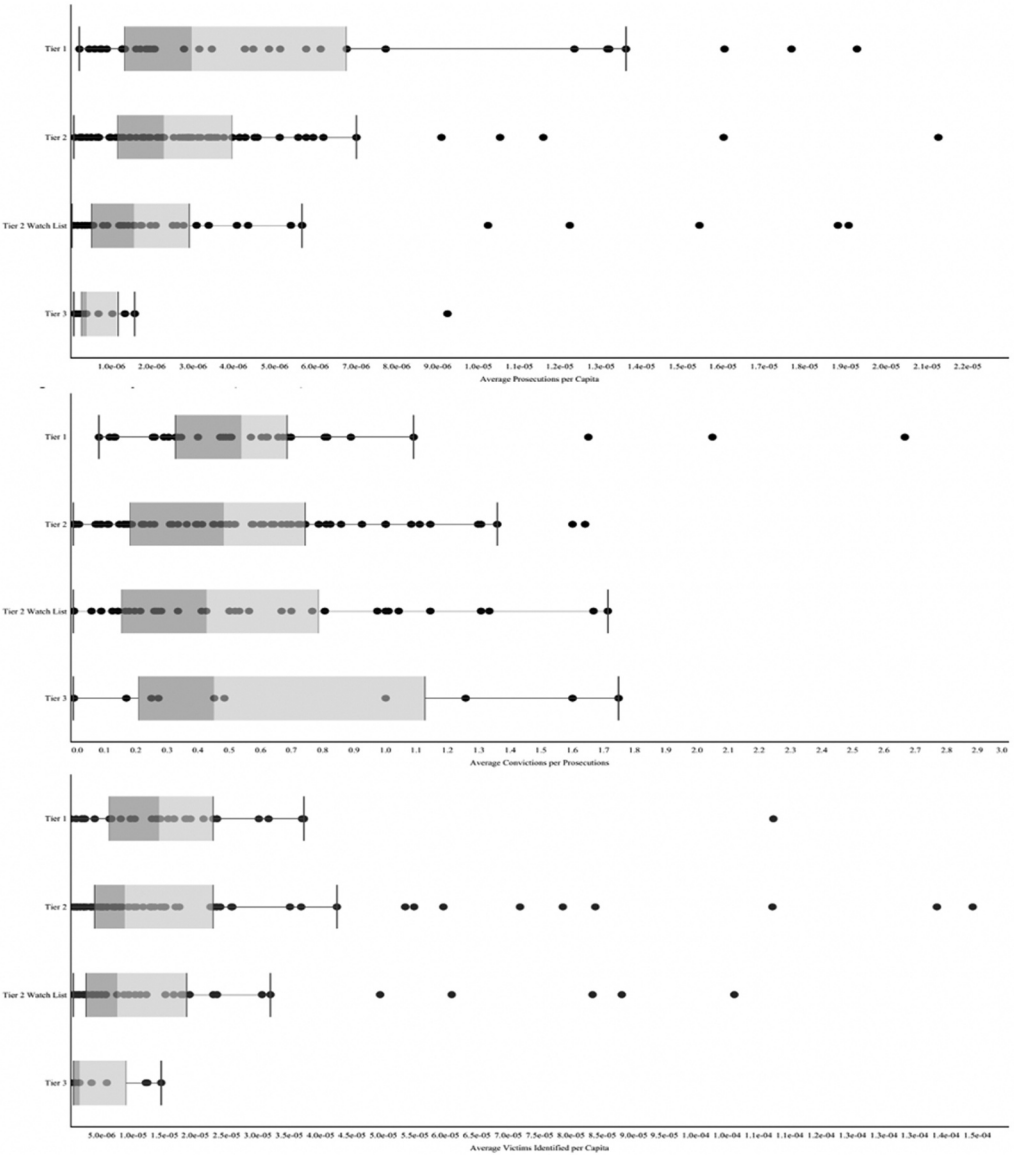


Figure 5. Prosecutions, Convictions, and Identified Victims by Tier Level. The box and whisker plot shows for each nation, the relationship between the law-enforcement metrics reported in the TIP Reports and the tier-level assignments. To make the figure more legible, two outlier countries with high rates of prosecutions per capita were excluded from the figure: Palau and the Federated States of Micronesia, both Tier 2. Three outlier countries with very high rates of convictions per prosecutions were excluded from the figure (although included within the statistical analysis): Ethiopia (Tier 2, with 751 yearly convictions on average and 10 yearly prosecutions on average for a ratio of prosecutions per conviction of 75.1), Suriname (Tier 2, with 9 yearly convictions on average and 1.3 yearly prosecutions on average for a ratio of 7), and Hong Kong (Tier-2 Watch List, with 6 yearly convictions on average and 1.3 yearly prosecutions on average for a ratio of 4.8). Three countries with high rates of victims identified per capita were also excluded: Palau (Tier 2), Saint Maarten (Tier 2), and Aruba (Tier-2 Watch List).

The analysis presented in Figure 6 is the relationship not between prosecutions and the number of reported victims, but rather the relationship between prosecutions and progress toward reducing the size of the TIP problem. In Figure 6, we are testing the hypothesis that over time, nations that devote effort toward decreasing TIP through increased prosecutions (*averaged* over 2015 to 2018 to account

for judicial time-lags) achieve decreases in the size of the problem within their country (change in estimates of TIP between 2016 and 2018).

If increased prosecutions resulted in decreases in TIP prevalence, we would expect to see the data points in Figure 6 trending from the upper right to the lower left. In other words, we would expect to see TIP decrease as prosecution rates increase. The data does not exhibit such a relationship. As presented in the analytical conclusion section of this paper, our statistical analysis reveals that nation-by-nation variations in 2015–2017 prosecutions explain 0.3% of the variance in the change in TIP between 2016 and 2018 at the 51% confidence for nonrandomness. While additional prevalence estimates and time series would improve the analysis, the lack of correlation over this time period challenges the narrative that increasing prosecutions will decrease TIP.

Question 4: To what extent do economic and governance factors influence TIP tier levels?

Many of those who have criticized the focus on "law and order" metrics in the TIP tier reports, have emphasized the need for a more holistic CTIP strategy that addresses the societal vulnerabilities that lead to TIP in the first place (e.g., Bales, 2007; Gallagher & deBaca, 2018; Wooditch, 2011).

One approach to determining the extent to which tier rankings may be associated with national characteristics not directly related to TIP is to evaluate national economic development and governance measures against TIP tier levels. For this analysis, we use indicators that measure and score each country's economy and governance.

In Figures 7 and 8 each dot represents a nation, and the nations are grouped by their tier ranking. The sample economic indicators presented in Figure 7 are: (1) Gross Domestic Product Purchasing Power Parity per capita (World Bank Group, 2020c), (2) Gross National Income Growth (World Bank Group, 2020d), (3) Gross Domestic Product per capita (GDP PPP) (World Bank Group, 2020b), (4) Poverty Rate (World Bank Group, 2020e), (5) Unemployment Rate (World Bank Group, 2020f), and, (6) GINI Index (World Bank Group, 2020d).

The sample governance indicators presented in Figure 8 are: (1) Democracy Index (Economist Intelligence Unit, 2019), (2) Ease of Doing Business (World Bank Group, 2020a), (3) Press Freedom Index (Reporters Without Borders, 2020), (4) Corruption Perception Index (Transparency International, 2019), (5) Freedom in the World (Freedom House, 2020), (6) Fragile State Index (Fund for Peace, 2020), and, (7) Economic Freedom Index (Heritage Foundation, 2020).

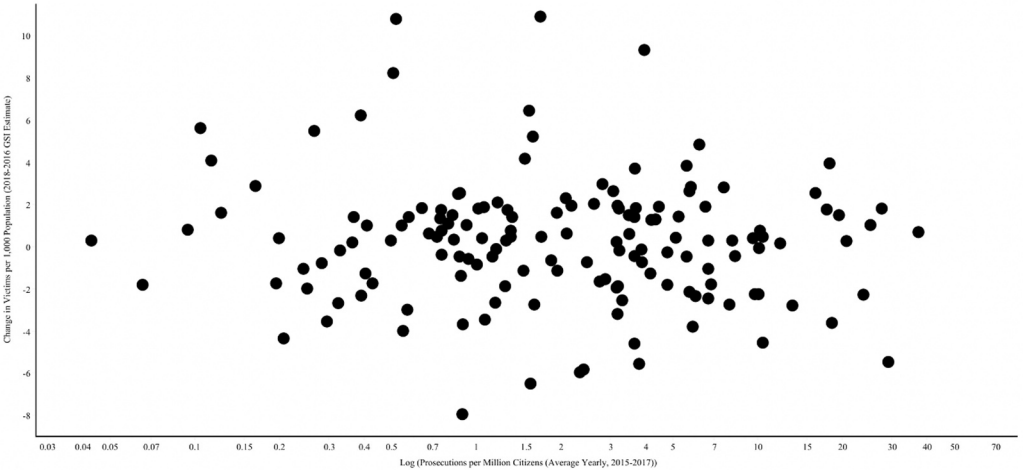


Figure 6. Relationship Between Prosecutions and Changes in TIP. Each dot represents a nation. The prosecution rates are normalized to the nation's population and averaged from 2015-2017. The change in TIP (estimates per 1,000 population) are calculated using the difference between the 2016 and 2018 GSI estimates of prevalence.

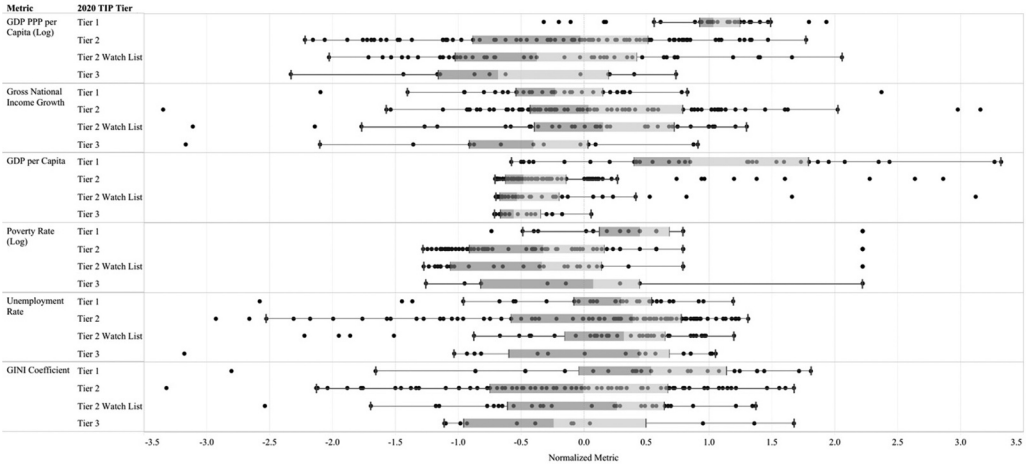


Figure 7. Economic Indicators by TIP Tier. Each dot represents a nation plotted against its economic indicator score. The nations are grouped by TIP tier level. The indicators are normalized to a common scale and adjusted so that larger x values indicate "better" performance.

To produce plots of economic and governance indicators, such that all the indicator values are on a common scale, we normalize the data using deviations from the mean. Indicators that do not demonstrate a normal (Gaussian) distribution across nations are first adjusted using the logarithm of the value, appropriate for logarithmic distributions (e.g., GDP PPP), or in some cases, using the square root of the value, appropriate for chi-squared distributions (e.g., unemployment), before applying the statistical analysis. For the indicators where a lower score is "better" (e.g., Poverty Rate, Corruption Perception Index), the normalized values are multiplied by negative one, flipping the curve over the y-axis so that all indicators can be plotted on the same graph with larger x values indicating "better" performance.

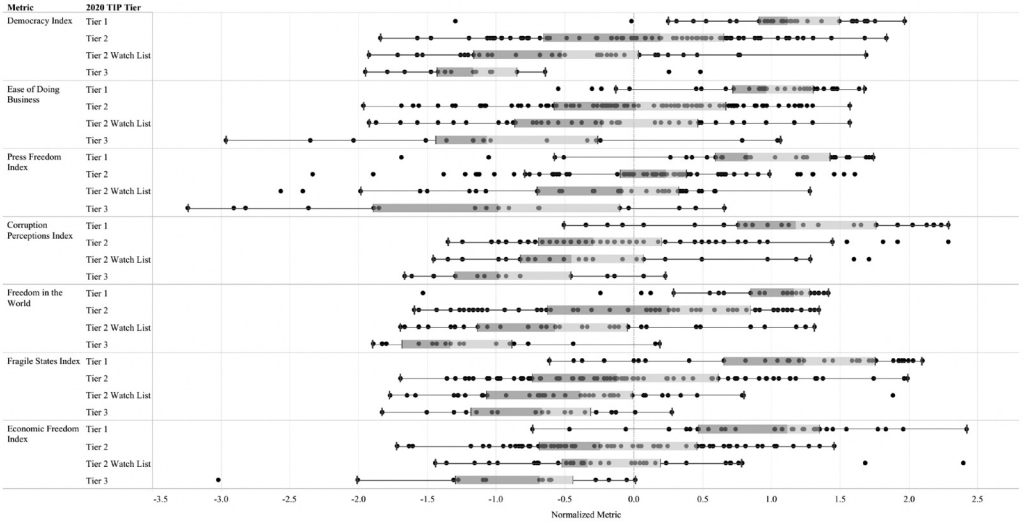


Figure 8. Governance Indicators by TIP Tier. Each dot represents a nation plotted against its governance score. The nations are grouped by TIP tier level. The indicators are normalized to a common scale and adjusted so that larger x values indicate "better" performance.

Figure 7 shows that countries with a higher GDP per capita and lower levels of income inequality (measured by the GINI Coefficient) are more often Tier 1 than Tier 3. The governance indicators shown in Figure 8 display an even stronger relationship with tier level. For example, the median Democracy Index value (a 0–100 score) is 80 for Tier-1 countries, 59 for Tier-2 countries, 43 for Tier-2 Watch List countries, and 29 for Tier-3 countries, indicating the importance of governance in a country's efforts to combat human trafficking.

Our analysis (Figures 7 and 9, and Table 1) shows there are correlations between poverty and TIP tier level (10.9% variance explained, which is twice the 99% confidence for nonrandomness). However, governance indicators correlate with the TIP tier levels more strongly than either economic indicators or law-enforcement indicators (Figure 9). For example, the democracy index explains 58.2% of the variance in the TIP tier rankings, far greater than poverty (at 10.9%), and the highest law-enforcement indicator (prosecutions at 8.9%).

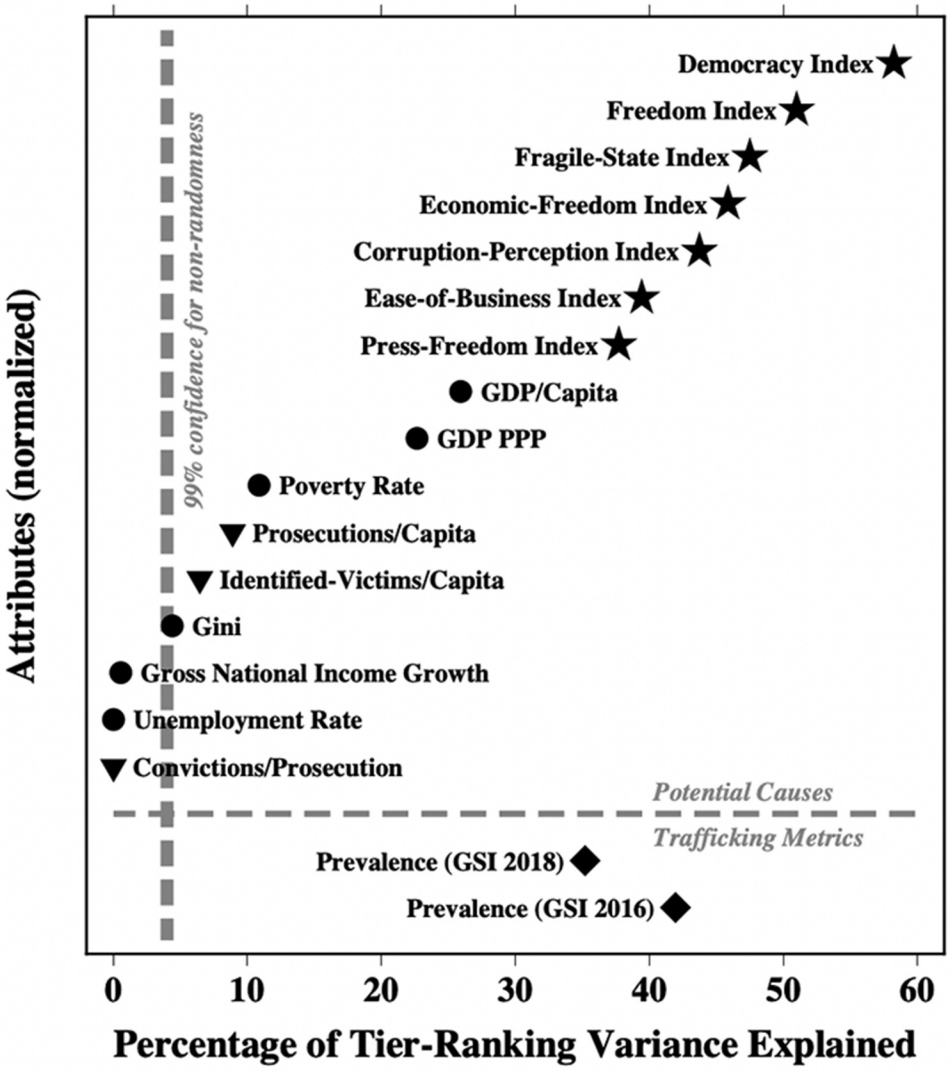


Figure 9. Percentage of Tier-Ranking Variance Explained by Various Measures.

Our sample of economic metrics traditionally associated with TIP (e.g., unemployment, poverty, etc.) are secondary to our governance measures in explaining efforts toward countering TIP, as represented by tier levels, and TIP prevalence rates. The traditional economic hypothesis that TIP arises from elevated poverty and unemployment appears to be an oversimplification. The broader question of why TIP and TIP tier rankings are more reflective of governance and social issues than economic factors is an important area of research (e.g., McGregor McGregor et al., 2013; Cho, 2015), but its full resolution is beyond the scope of this analysis. The strong relationship between governance metrics and tier assignments, however, does provide compelling support for those who have called for CTIP measures to include the promotion of democracy and individual rights (e.g., Landman & Silverman, 2019; Vidwans & Jamal, 2019).

At the broader international scale, it must also be recognized that open, democratic societies may still condone or export conditions of exploitation through transnational business practices. Many nations provide human rights protections for their own citizens but lose sight of their internal standards internationally. Legal protections for migrant workers, for example, are not yet reflected in TIP tier rankings; and international factors are also not accounted for within the Global Slavery Index prevalence estimates. Such shortfalls will perhaps be addressed in the future through revisions to the minimum standards of the TVPA.

Analytical Summary

In the previous sections, we examined relationships between tier-level assignments through time and various factors related to TIP. In this section, we summarize the analysis by quantifying the relationships in probabilistic terms. We use singular-value decomposition to identify the relative weightings among these multiple inter-related attributes across our matrix consisting of tier rankings for 12 years and 189 nations. In doing so, we estimate the relative importance to TIP tier rankings of the law-enforcement measures reported in TIP reports (reported prosecutions, convictions and identified victims), independent measures of trafficking prevalence (GSI prevalence estimates), and indicators intended to capture the nation's economic and governance conditions (e.g., indices of economics and governance). We recognize the limitations and political elements associated with the TIP tier rankings, and the weaknesses in the GSI prevalence estimates. We do not assume that correlations represent direct causal relations. Instead, we assume an ecosystem approach that treats all attributes as inter-dependent, with statistical correlations that measure the strength of the linkages.

Figure 9 and Table 1 summarize the percentage of variance among the TIP tier levels that can be explained by each of the factors analyzed. Table 1 includes the method of normalization applied to the data set before removing the mean and scaling to unit-average variance. Similar to Figures 7 and 8, for the indicators where a lower score is "better" the normalized values are multiplied by negative one so that larger values indicate "better" performance. Our null hypothesis is that the attributes of each nation are independent of the attributes of other nations. Assuming that nations are uncorrelated, the 99% confidence limit for a nonrandom correlation occurs for R-squared values of about 0.05. This means that an attribute can be considered statistically significant even though it explains only 4–5% of the nation-by-nation variance. Three metrics presented in this analysis are found to be statistically insignificant to the TIP tier levels. Two of them are economic measures: Gross National Income Growth, and Unemployment Rate. The third is the law-enforcement metric Conviction Rate (Figure 9).

Average tier rankings in the 2009–2020 TIP reports correlate best with national attributes that relate to governance (star-shaped symbols, Figure 9). The highest correlation involves the Democracy Index, accounting for 58% of its nation-by-nation variance among the 167 nations with index values. Other governance indicators correlate almost as strongly with tier rankings, but the variance explained by them tends to overlap with that explained by the Democracy Index. One of the indicators that augments the explained-variance significantly is the Economic Freedom Index; a joint regression of Democracy Index and the Economic Freedom Index explains 70% of the nation-by-nation variance in

the average tier rankings in the 2009–2020 TIP reports. Adding other national attributes to the regression does not increase this percentage significantly.

Many economic attributes (circular symbols, Figure 9) have relatively weak influence on tier ranking. The Poverty Rate explains only 11% of the tier rankings and the Unemployment Rate, Gross National Income Growth, and Convictions/Prosecution Rate are statistically insignificant. In addressing the underlying causal relationships, our sample of economic indicators suggests that the traditional economic theory of TIP being the result of poverty and unemployment may be an oversimplification.

The TIP tier levels are meant to measure a nation's efforts toward meeting the minimum standards of the TVPA. While special circumstances may apply to various nations at various times, the overall goal is to reduce the number of individuals who fall victim to human trafficking. Accordingly, one would expect that over time, nations that apply more effort would achieve better results than those that apply lesser effort. The GSI prevalence estimates vary greatly from nation to nation, with statistics similar to a log-normal distribution. After logarithmic scaling and demeaning, the 2016 and 2018 prevalence estimates explain 42% and 35%, respectively, of the nation-by-nation variance of the average 2009–2020 TIP Rankings (Figure 9).[11]

Implications for Policy Makers

For policy-makers who wish to combat TIP effectively, the results of our study offer several insights. Some previously hypothesized relationships are confirmed, others are called into question, and a few unexpected relationships emerged. The unexpected relationships are the most intriguing, as they lead to a more sophisticated understanding that, in turn, offers new opportunities for more nuanced and effective approaches.

Changes to the TIP tier-ranking system, and requirements to report prosecutions, convictions, and identified victims, have been implemented through the Congressional reauthorization of the TVPA. These legislative efforts, designed to motivate nations to increase their CTIP efforts, have almost certainly been effective for specific nations at specific times. Similarly, an individual nation's decision to become party to the Palermo Protocol has, at times, signaled a genuine increased commitment to addressing TIP. There are compelling anecdotes suggesting these tools have been effective. Anecdotes, however, are best used as illustrations supporting analysis, not as substitutes for analysis, because they are not always representative of the overall circumstances.

Using attributes for 189 nations and averaging across 12 years of TIP reports to obtain stable assessments, our analysis reveals that the overall impact of changes to tier-ranking requirements and encouraging nations to become party to the Palermo Protocol has been ambiguous. While such diplomatic approaches promote an atmosphere of increased awareness and support for CTIP activities, their role in substantially motivating countries to increase CTIP efforts, as measured by changes in tier levels, is weak. The number of nations at each tier level has remained stubbornly constant over the last decade. Since 2009, 76% of countries have not changed tiers in any given year, while approximately equal proportions (12%) of countries either improved or worsened by one tier level. For nations that become party to the Palermo Protocol, only 21% improved their tier level the following year.[12]

It may be surprising to some that there is only a weak relationship between the law-enforcement metrics reported in the TIP reports (reported prosecutions, convictions, and identified victims) and the TIP tier rankings. In addition, nation-by-nation variation in prosecution rates do not convincingly

[11] If the logarithmic-prevalence estimates for the two GSI surveys are combined, the correlation is even higher, explaining nearly 49% of the tier-ranking variance. This suggests that the GSI prevalence estimates have high uncertainties, but relatively small biases, so that averaging independent surveys may increase the overall accuracy of the prevalence estimate.

[12] At the same time, considerable changes have occurred in the landscape of CTIP over time. Tier rankings in successive years of the TIP report typically correlate with R^2 values of 0.75, but the correlations decrease as the time interval increases. Correlation between the 2009 and 2020 tier rankings has $R^2 = 0.32$.

correlate with decreases in estimates of TIP prevalence. Countries that report more prosecutions tend to report fewer identified victims the following year, but the relationship is disappointedly weak. Reported prosecutions can only explain about 5% of the variance of the reported identified victims. The relationship between prosecutions and independent estimates of *reduction* in prevalence from the GSI is even weaker. Nation-by-nation variations in prosecutions during 2015–2017 explain 0.3% of the change in estimated prevalence between 2016 and 2018, at the 51% confidence for nonrandomness, which is statistically insignificant. While prosecutions have an important role in the overall CTIP strategy, from these data, there is no evidence that prosecutions result in meaningful reductions in TIP.

While this analysis is not presented as exhaustive, it is sufficiently representative to call into question some of the prevailing narratives surrounding TIP. Accepting that the TIP tier levels are designed to measure each nation's efforts toward meeting the minimum standards of the TVPA, the apparent weak relationship between tier levels and traditional global metrics of CTIP effort – reported prosecutions, reported convictions, reported identified victims, and becoming party to the Palermo Protocol, is disappointing. Additionally, it is surprising that our sample of economic metrics traditionally associated with TIP (e.g., unemployment, poverty, etc.) are secondary to our governance measures in explaining TIP tier rankings. The traditional economic hypothesis that TIP arises from elevated poverty and unemployment may be an oversimplification. On the other hand, the strong predictive nature of governance metrics with tier assignments provides support for those who have called for CTIP measures to include the promotion of democracy and individual rights (e.g., Vidwans & Jamal, 2019).

What is perhaps the most compelling result is the high correlation of TIP tier levels and the Democracy Index. The Democracy Index explains 58% of the variance; the joint regression of the Democracy Index and the Economic Freedom Index explains 70% of the nation-by-nation variance in the average tier rankings in the 2009–2020 TIP reports. From an ecosystem perspective, the correlations are consistent with the expectation that nations with strong democratic institutions are more likely to resist the descent of their marginalized subpopulations into forced labor or sex-trafficking, and that nations where entrepreneurs can more easily pursue a legal path to profit are less tolerant of businesses that depend on the coerced labor of their fellow citizens. While no single attribute qualifies as the independent variable, our analysis affirms that nations can best address TIP if their governance is more democratic, their press less fettered, their business environment more open, and their societal institutions are strong.

The strong relationship of TIP to the Democracy Index and the Freedom of Press Index (Figure 9) resonates with the Noble Prize-Winning Economist, Amartya Sen's observation that there has never been a famine in any independent and democratic country with a relatively free press (Sen, 1999). Sen's observation has been extended to natural disasters, finding that the Democracy Index is a leading predictive indicator of the human impact of natural disasters (van der Vink et al., 2007). The strong relationship between tier levels and indicators of governance suggests that investments in democracy, governance, and human rights are also investments in CTIP.

The most exciting and actionable finding for the development of more effective CTIP strategies is the discovery of the multiple independent linkages revealed by the data. These independent linkages indicate multiple causal relationships; and the multiple causal relationships have different relative priorities in different locations. This finding explains why universal solutions have had frustratingly little success in reducing TIP. Causal relationships are seldom direct, and the circumstances that foster vulnerable subpopulations vary from location to location. Just as there is no single cause for TIP, there is no single solution.

So how do we move forward in developing more effective CTIP strategies using the insights from this analysis? The short answer is that we adopt a different approach – an ecosystem approach similar to what has been used so effectively for crime reduction.[13] By identifying the characteristics of

[13]The stability of many governance indices over time suggests that fundamental changes made in social ecosystems should be sustainable.

ecosystems that support TIP, we can formulate geographically targeted interventions to disrupt that system, and mitigate TIP in a more cost-efficient and effective manner. Ecosystem approaches have been proposed for addressing the sex trafficking of children (Finigan-Carr et al., 2019) and for building resilience to trafficking within communities (Gardner et al., 2020). Adopting an ecosystem approach for addressing TIP is consistent with the highly successful criminology theory of Situational Crime Prevention (SCP), and is focused toward the "Prevention" part of the "3P" paradigm for addressing TIP.

SCP focuses on the criminal setting and is different from most criminological approaches as it begins with an examination of the circumstances ("ecosystems") that allow particular types of crime. By gaining an understanding of these ecosystems, mechanisms are then introduced to change the relevant ecosystems and reduce the opportunities for crime. SCP focuses not on apprehending criminals, but on reducing criminal opportunities. SCP is considered an essential part of the United Nations Economic and Social Council's Guidelines for the Prevention of Crime (Resolution 2002/13) (United Nations Office on Drugs and Crime, 2010).[14]

While our analysis is not exhaustive, we feel it provides compelling evidence for an ecosystem approach to CTIP, consistent with SCP. In addition, it demonstrates the opportunity for further quantitative studies to tease out more sophisticated understandings of TIP, and the critical linkages among its array of underlying causal relationships.

Acknowledgments

This research resulted from an on-going project supported by the United States Agency for International Development to counter human trafficking with analysis to help develop geographically-targeted interventions. Aspects of the analytical approach and methodology were developed with support from the United States Office of the Secretary of Defense. We thank Rachel Pizatella-Haswell, Mike Duthie, Julia Kresky, and two anonymous reviewers for their helpful suggestions for this manuscript. The opinions presented in this paper are those of the authors, and do not necessarily represent those of the supporting organizations or any of the institutions with which the authors are affiliated.

Notes on contributors

Dr. Gregory van der Vink is the CEO of Novametrics. He has been an international affairs fellow of the Council on Foreign Relations, a presidential appointee to the US State Department's scientific advisory committees, and a Congressional Science Fellow. He was named a 250th Anniversary Professor for Distinguished Teaching at Princeton University.

Katherine Carlson is a lead data analyst at Novametrics. She is a Systems Engineer from University of Virginia's School of Engineering and Applied Science, and a former Peace Corps Volunteer.

Dr. Jeffrey Park is a Senior Scientist at Novametrics. He is also a Professor at Yale University and former Chair of Yale's Environmental Studies Program. His expertise is data analysis, statistical modeling, and the application of science to public policy and international affairs.

Sabrina Szeto is a lead geospatial analyst at Novametrics. She has a Master's from the School of Forestry and Environmental Studies at Yale University and a Bachelors in linguistics and anthropology from Princeton University.

Xinrei Zhang is an analytical intern at Novametrics and a student in Civil and Environmental Engineering at Princeton University.

Dr. Michael Jackson is a Senior Scientist at Novametrics. His expertise is scientific methodologies, project management, and advanced data analytics.

Erica Phillips is a political science and international studies major from Iowa State University, and a former Peace Corps Volunteer.

[14]Research has largely demonstrated that SCP does not necessarily lead to crime displacement (Clarke, 1995; Hesseling, 1994).

References

22 US Code 7106 (22 USC 7106), Minimum standards for the elimination of trafficking.

Bales, K. (2007). What Predicts Human Trafficking? *International Journal of Comparative and Applied Criminal Justice*, *31*(2), 269–279. https://doi.org/10.1080/01924036.2007.9678771

Cho, S.-Y. (2015). Human Trafficking, A Shadow of Migration – Evidence from Germany. *The Journal of Development Studies*, *51*(7), 905–921. https://doi.org/10.1080/00220388.2015.1010158

Chuang, C. (2006). Beyond a Snapshot: Preventing Human Trafficking in the Global Economy. *Indiana Journal of Global Legal Studies*, *13*(1), 137–163. https://doi.org/10.2979/GLS.2006.13.1.137

Clark, M. (2003). Trafficking in persons: An issue of human security. *Journal of Human Development*, *4*(2), 247–263. https://doi.org/10.1080/1464988032000087578

Clarke, R. (1995). Situational Crime Prevention. *Crime and Justice*, *19*, 91–150. https://doi.org/10.1086/449230

de Felice, D., & Graf, A. (2015). The Potential of National Action Plans to Implement Human Rights Norms: An Early Assessment with Respect to the UN Guiding Principles on Business and Human Rights. *Journal of Human Rights Practice*, *7*(1), 40–47. https://doi.org/10.1093/jhuman/huu023

DeStefano, A. (2007). *The War on Human Trafficking: U.S. Policy Assessed*. Rutgers University Press.

Economist Intelligence Unit. (2019). Democracy Index 2019. Retrieved June 1, 2020, from https://www.eiu.com/topic/democracy-index

Finigan-Carr, N. M., Johnson, M. H., Pullmann, M. D., Stewart, C. J., & Fromknecht, A. E. (2019). A Traumagenic Social Ecological Framework for Understanding and Intervening with Sex Trafficked Children and Youth. *Child and Adolescent Social Work Journal*, *36*(1), 49–63. https://doi.org/10.1007/s10560-018-0588-7

Freedom House. (2020). Freedom in the World. Retrieved June 1, 2020, from https://freedomhouse.org/report/freedom-world

Fund for Peace. (2020). Fragile States Index. Retrieved June 1, 2020, from https://fragilestatesindex.org/

Gallagher, A. T. (2014, November 28). The global slavery index is based on flawed data – Why does no one say so?, The Guardian. https://www.theguardian.com/global-development/poverty-matters/2014/nov/28/global-slavery-index-walk-free-human-trafficking-anne-gallagher

Gallagher, A. T., & deBaca, L. C. (2018, November 20). 4 Ways the US Can Take the Lead in the Fight Against Human Trafficking. World Economic Forum. https://www.weforum.org/agenda/2018/11/here-are-four-challenges-for-the-new-us-ambassador-to-combat-human-trafficking/

Gardner, A., Northall, P., & Brewster, B. (2020). Building Slavery-free Communities: A Resilience Framework. *Journal of Human Trafficking*, 1–16. https://doi.org/10.1080/23322705.2020.1777828

Heritage Foundation. (2020). 2020 Index of Economic Freedom. Retrieved June 1, 2020, from https://www.heritage.org/index/

Hesseling, R. (1994). Displacement: A review of the empirical literature. *Crime Prevention Studies*, *3*, 197–230. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.375.7985&rep=rep1&type=pdf

International Labour Organization. (2012). *Global estimate of forced labour: Results and methodology*. Special Action Programme to Combat Forced Labour (SAP-FL)

International Labour Organization and Walk Free Foundation. (2017). *Global Estimates of Modern Slavery: Forced Labour and Forced Marriage*. ILO and Walk Free Foundation, in partnership with IOM.

Jackson, C. A. (2019). "Sex Workers Unite!": U.S. Sex Worker Support Networks in an Era of Criminalization. *WSQ: Women's Studies Quarterly*, *47*(3–4), 169–188. https://doi.org/10.1353/wsq.2019.0049

Landman, T., & Silverman, B. W. (2019). Globalization and Modern Slavery. *Politics and Governance*, *7*(4), 275–290. http://dx.doi.org/10.17645/pag.v7i4.2233

McGregor Perry, K., & McEwing, L. (2013). How do social determinants affect human trafficking in Southeast Asia, and what can we do about it? A systematic review.. *Health and Human Rights*, *15*(2), 138–159. https://www.hhrjournal.org/2013/12/how-do-social-determinants-affect-human-trafficking-in-southeast-asia-and-what-can-we-do-about-it-a-systematic-review/

P.L. 106-386. (2000). Trafficking Victims Protection Act of 2000

P.L. 108-193. (2003). Trafficking Victims Protection Reauthorization Act of 2003.

P.L. 110-457. (2008). William Wilberforce Trafficking Victims Protection Reauthorization Act of 2008.

P.L. 115-425. (2018) Frederick Douglass Trafficking Victims Prevention and Protection Reauthorization Act of 2018.

P.L. 115-427. (2017). Trafficking Protection Reauthorization Act of 2017.

Reporters Without Borders. (2020). *Press Freedom Index*. Retrieved June 1, 2020, from https://rsf.org/en/ranking

Schwarz, K., & Allain, J. (2020). Tracking the Implementation Gap: Empirically Assessing the Translation of International Antislavery Commitments in Domestic Legislation Globally. *Statelessness and Citizenship Review*, *2*(1), 159–166. https://doi.org/10.35715/SCR2001.1112

Sen, A. (1999). Democracy as a Universal Value. *Journal of Democracy*, *10*(3), 3–17. https://doi.org/10.1353/jod.1999.0055

Trafficking Victims Protection Reauthorization Act of 2003. (TVPA, 2003), P.L. 108-193, 117 Stat. 2875 (2003). https://www.congress.gov/108/plaws/publ193/PLAW-108publ193.pdf

Trafficking Victims Protection Reauthorization Act of 2005. (TVPA, 2005), P.L. 109-164, 119 Stat. 3558 (2005). https://www.congress.gov/109/plaws/publ164/PLAW-109publ164.pdf
Trafficking Victims Protection Reauthorization Act of 2017. (TVPA, 2017), 3. https://www.congress.gov/115/plaws/publ427/PLAW-115publ427.pdf
Transparency International. (2019). Corruption Perceptions Index. Retrieved June 1, 2020, from https://www.transparency.org/en/cpi
United Nations. (2000). Protocol to Prevent, Suppress and Punish Trafficking in Persons Especially Women and Children, supplementing the United Nations Convention against Transnational Organized Crime, Article 3.
United Nations Office on Drugs and Crime. (2010). Situational Crime Prevention. https://www.unodc.org/e4j/en/cybercrime/module-9/key-issues/situational-crime-prevention.html
United Nations Population Division. (2019). World Population Prospects. Retrieved June 1, 2020, from https://population.un.org/wpp/
United States Congressional Research Service. (2013). *Trafficking in Persons*: U.S. *Policy Issues for Congress*. Congressional Research Service.
United States Congressional Research Service. (2019). The State Department's Trafficking in Persons Report: Scope, Aid Restrictions, and Methodology. Congressional Research Service. https://crsreports.congress.gov, R44953.
United States Department of State. (2009). 2009 Trafficking in Persons Report. https://2009-2017.state.gov/j/tip/rls/tiprpt/2009//index.htm
United States Department of State. (2010). 2010 Trafficking in Persons Report. https://2009-2017.state.gov/j/tip/rls/tiprpt/2009/index.htm
United States Department of State. (2011). 2011 Trafficking in Persons Report. https://2009-2017.state.gov/j/tip/rls/tiprpt/2011/index.htm
United States Department of State. (2012). 2012 Trafficking in Persons Report. https://2009-2017.state.gov/j/tip/rls/tiprpt/2012/index.htm
United States Department of State. (2013). 2013 Trafficking in Persons Report. https://2009-2017.state.gov/j/tip/rls/tiprpt/2013/index.htm
United States Department of State. (2014). 2014 Trafficking in Persons Report. https://2009-2017.state.gov/j/tip/rls/tiprpt/2014/index.htm
United States Department of State. (2015). 2015 Trafficking in Persons Report. https://2009-2017.state.gov/documents/organization/245365.pdf
United States Department of State. (2016). 2016 Trafficking in Persons Report. https://2009-2017.state.gov/documents/organization/258876.pdf
United States Department of State. (2017). 2017 Trafficking in Persons Report. https://www.state.gov/wp-content/uploads/2019/02/271339.pdf
United States Department of State. (2018). 2018 Trafficking in Persons Report. https://www.state.gov/wp-content/uploads/2019/01/282798.pdf
United States Department of State. (2019). 2019 Trafficking in Persons Report. https://www.state.gov/wp-content/uploads/2019/06/2019-TIP-Introduction-Section-FINAL.pdf
United States Department of State. (2020a). Freedom First: Celebrating 20 Years of Progress to Combat Human Trafficking. Office to Monitor and Combat Trafficking in Persons, US Department of State.
United States Department of State. (2020b). Statement of Secretary of State Michael R. Pompeo, At the 2020 Trafficking in Persons Report Launch Ceremony, Washington, DC, June 25, 2020. Washington, D.C. https://www.state.gov/at-the-2020-trafficking-in-persons-report-launch-ceremony
United States Department of State. (2020c). 2020 Trafficking in Persons Report. https://www.state.gov/wp-content/uploads/2020/06/2020-TIP-Report-Complete-062420-FINAL.pdf
United States Government Accountability Office. (2006). Human trafficking: Better data, strategy, and reporting needed to enhance U.S. anti-trafficking efforts abroad (Publication No. GAO-06-825). Report to Congressional Requestors.
United States Government Accountability Office. (2007). Human trafficking: Monitoring and evaluation of international projects are limited, but experts suggest improvements (Publication No. GAO-07-1034) Report to Congressional Requesters.
United States Government Accountability Office. (2011) Human Trafficking, State Has Made Improvements in Its Annual Report but Does Not Explicitly Explain Certain Tier Rankings or Changes (Publication No. GAO-17-56) Report to Congressional Requesters.
Van Der Vink, G. E., DiFiore, P., Brett, A., Burgess, E., Sproat, J., Van Der Hoop, H., Walsh, P., Warren, A., West, L., Cecil-Cockwell, D., Chicoine, A., Harding, J., Millian, C., Olivi, E., Piaskowy, S., & Wright, G. (2007). Democracy, GDP and Natural Disasters.. *Geotimes*, 36–39. http://www.geotimes.org/oct07/article.html?id=feature_democracy.html
Victims of Trafficking and Violence Protection Act of 2000, P.L. 106-386, 22 U.S.C. § 7101–7113 (2000). https://uscode.house.gov/view.xhtml?path=/prelim@title22/chapter78&edition=prelim#:~:text=%22(3)%20Since%20the%20enactment,citizens%20into%20the%20United%20States .

Vidwans, P., & Jamal, M. (2019, July 30). Human trafficking has a hidden cause – And it's on the rise worldwide. Time Magazine. https://time.com/5638667/human-trafficking-cause/
Walk Free Foundation. (2016). The Global Slavery Index 2016. https://downloads.globalslaveryindex.org/ephemeral/GSI-2016-Full-Report-1589304113.pdf
Walk Free Foundation. (2018). The Global Slavery Index 2018. https://downloads.globalslaveryindex.org/ephemeral/GSI2018_FNL_190828_CO_DIGITAL_P-1595520483.pdf
Wooditch, A. (2011). The Efficacy of the Trafficking in Persons Report: A Review of the Evidence. *Criminal Justice Policy Review*, *22*(4), 471–493. https://doi.org/10.1177/0887403410386217
World Bank Group. (2020a). Ease of Doing Business Scores. Retrieved June 1, 2020, from https://www.doingbusiness.org/en/data/doing-business-score?topic=
World Bank Group. (2020b). GDP per capita (current US$). Retrieved June 1, 2020, from https://data.worldbank.org/indicator/NY.GDP.PCAP.CD
World Bank Group. (2020c). GDP per capita, PPP (current international $). Retrieved June 1, 2020, from https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD
World Bank Group (2020d). GNI growth (annual %). Retrieved June 1, 2020, from https://data.worldbank.org/indicator/NY.GNP.MKTP.KD.ZG?end=2018&start=2009
World Bank Group. (2020e). Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population). Retrieved June 1, 2020, from https://data.worldbank.org/indicator/SI.POV.DDAY?end=2018&start=2009
World Bank Group. (2020f). Unemployment, total (% of total labor force) (modeled ILO estimate). Retrieved June 1, 2020, from https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS?view=chart .
World Bank Group, Development Research Group (2020). GINI index (World Bank estimate). Retrieved June 1, 2020, from https://data.worldbank.org/indicator/SI.POV.GINI?end=2018&locations=DO&name_desc=false&start=1988&view=chart

ANNEX 4. CHILD MARRIAGE, HUMAN TRAFFICKING AND GENDER INEQUALITY: AN EMPIRICAL ECOSYSTEM ANALYSIS FOR BANGLADESH

Gregory E. van der Vink, Katherine N. Carlson, Erica Phillips, Sabrina H. Szeto, Jeffrey Park, Michael E. Jackson, Nicole Meister

Keywords: child marriage, trafficking in persons, human trafficking, TIP, CTIP, modern slavery, gender inequality, female empowerment, human rights

ABSTRACT

While Bangladesh has among the highest child marriage rates in the world, it also has the opportunity to take a leadership role in ending the practice. The nation has enacted legislation prohibiting child marriage and closed the education gap between females and males. Notwithstanding these accomplishments, most girls marry before the minimum legal age, and illegal dowry payments remain common. While not all child marriage is currently classified as human trafficking, we demonstrate that child marriage and human trafficking share a common sociocultural ecosystem. We first evaluate the relative role of traditional factors predictive of child marriage: poverty levels, education, and rural vs. urban residence. We then explore the hypothesis that in patriarchal societies, female empowerment and gender inequality can be differentiated. Our analysis suggests that increases to female empowerment have been successful, gender inequality remains persistent. Future efforts to reduce child marriage would benefit from complementing female empowerment with efforts targeted at reducing gender inequality, specifically the attitudes of males. In addition to promoting further reductions in child marriage, reducing gender inequality will likely also benefit economic development, democratic governance, resistance to extremism, and the protection of human rights.

AUTHOR BIO SUMMARIES

- Dr. Gregory van der Vink is the CEO of Novametrics. He has been an international affairs fellow of the Council on Foreign Relations, a presidential appointee to the US State Department's scientific advisory committees, and a Congressional Science Fellow. He was named a 250th Anniversary Professor for Distinguished Teaching at Princeton University.
- Katherine Carlson is a lead data analyst at Novametrics. She is a Systems Engineer from University of Virginia's School of Engineering and Applied Science, and a former Peace Corps Volunteer.
- Erica Phillips is a political science and international studies major from Iowa State University, and a former Peace Corps Volunteer.
- Sabrina Szeto is a lead geospatial analyst at Novametrics. She has a Master's from the School of Forestry and Environmental Studies at Yale University and a Bachelors in anthropology from Princeton University.
- Dr. Jeffrey Park is a Senior Scientist at Novametrics. He is also a Professor at Yale University and former Chair of Yale's Environmental Studies Program. His expertise is data analysis, statistical modeling, and the application of science to public policy and international affairs.
- Dr. Michael Jackson is a Senior Scientist at Novametrics. His expertise is scientific methodologies, project management, and advanced data analytics.

1. INTRODUCTION: CHILD MARRIAGE AND TRAFFICKING IN PERSONS (TIP)

In Act 1, scene ii of Shakespeare's Rome and Juliet, we learn that Juliet is thirteen. While girls could legally marry in Elizabethan England at age 12 with parental consent, Juliet's father is concerned about the adverse effects of early marriage – "too soon marred are those so early made" (I.ii.13).

In the ensuing four centuries, there has been remarkably little progress in resolving the debate over the suitable age of marriage, the age of free and informed consent, and how to balance cultural norms against potential violations of human rights. In the United States, for example, many states have what are termed "Romeo and Juliet" laws. These laws attempt to preserve the freedom of young couples to engage in loving relationships while simultaneously protecting children from predatory environments. The "Romeo and Juliet" laws are perhaps an unintentional allegory for child marriage. The Shakespearean play, often presented as a love story, is a tragedy in which a three-day romance results in the death of six people.

Attempts to address "child marriage" and "child, early, and forced marriage" (CEFM) are interwoven with Trafficking in Persons through a fabric of international agreements, domestic laws, and cultural traditions that contain different definitions on the age of a child, the minimum age of marriage, the age of free and informed consent, and the factors that constitute special circumstances. There is general agreement that trafficking and child marriage intersect when marriage is used both in conjunction with force, fraud, coercion, or abuse of power, and as a means to subject spouses to conditions of slavery, often in the form of domestic or sexual servitude (e.g., UNODC, 2020). When applied to different social norms, however, the definitions of these terms and the description of circumstances contain sufficient ambiguity to create inconsistencies regarding enforcement and even interpretation.

At the international level, child marriage can be considered a violation of human rights under a series of linked international agreements to which Bangladesh is party:

1) The United Nations Universal Declaration on Human Rights (UDHR) states as Article 16 (2) "Marriage shall be entered into only with the free and full consent of the intending spouses" (United Nations, 1948).
2) The Convention on Consent to Marriage, Minimum Age for Marriage, and Registration of Marriages[i] refers in its preamble to UDHR Article 16 (2), reaffirms the consensual nature of marriages (Article 1), requires the parties to establish a minimum marriage age by law (Article 2)[ii], and requires parties to ensure the registration of marriages (Article 3) (United Nations, 1964).
3) The non-binding recommendation accompanying the Convention, "Recommendation on Consent to Marriage, Minimum Age for Marriage and Registration of Marriages" recalls Article 2 of the Supplementary Convention on the Abolition of Slavery, the Slave Trade, and Institutions and Practices Similar to Slavery and specifies (Principle II) that any minimum age "shall not be less than fifteen years of age" except "for serious reasons, in the interest of the intending spouses" (United Nations, 1965). The exception for undefined "serious reasons" makes enforcement difficult.

It can also be argued that child marriage is a "practice similar to slavery" under the United Nations Supplementary Convention on the Abolition of Slavery, the Slave Trade, and Institutions and Practices Similar to Slavery (United Nations, 1956). Although child marriage is not specifically addressed in the

convention (and no "suitable" minimum age is specified), child marriage is implicitly prohibited through article 1(C), article 1(D), and article 2.

- Article 1(C) prohibits a woman to be promised or given in marriage without the right to refuse.
- Article 1(D) prohibits "Any institution or practice whereby a child or young person under the age of 18 years, is delivered by either or both of his natural parents or by his guardian to another person, whether for reward or not, with a view to the exploitation of the child or young person or of his labour."
- Article 2 states "With a view to bringing to an end the institutions and practices mentioned in article 1 (c) of this Convention, the States Parties undertake to prescribe, where appropriate, suitable minimum ages of marriage, to encourage the use of facilities whereby the consent of both parties to a marriage may be freely expressed in the presence of a competent civil or religious authority, and to encourage the registration of marriages."

The United Nations Sustainable Development Goal (SDG) 5 is to achieve gender equality and empower all women and girls. Target 5.3 for that goal is to "eliminate all harmful practices, such as child, early and forced marriage and female genital mutilations." To measure progress towards target 5.3, the United Nations uses indicator SDG 5.3.1, "the proportion of women aged 20–24 years who were married or in a union before age 15 and before age 18" (United Nations Sustainable Development Goals, 2015).

The United States Government generally follows the definition of Trafficking in Persons (TIP) contained in the Protocol to Prevent, Suppress and Punish Trafficking in Persons Especially Women and Children, supplementing the United Nations Convention against Transnational Organized Crime, informally known as the Palermo Protocol.[iii] The Palermo Protocol is the only international legally binding instrument that provides an agreed-upon comprehensive definition of trafficking in persons (United Nations 2000). The definition (Article 3(a)) is considered to be comprehensive because it specifies what constitutes the "acts" (recruitment, transportation, transfer, harboring, receipt), "means" (threat, use of force, coercion, abduction, fraud, deception, abuse of power), and "purpose" (sexual exploitation, forced labour or services, servitude, removal of organs) of human trafficking (Clark, 2003). It also defines the meaning of "child" as any person under the age of eighteen (Article 3(d)) and specifies that means are not relevant if the act involves a child (Article 3(c)).

The US State Department Annual Trafficking in Persons (TIP) Reports reference child marriage as a contributing factor to girl's vulnerability to exploitation. They do not, however, consider it a form of human trafficking and do not include child marriage in their calculation of TIP victims. Some argue that if the State Department did consider child marriage as human trafficking and included measures to address it within their prioritized recommendations, governments would take it more seriously (Redfern, 2019).

In 2017, the International Labour Organization (ILO) began counting forced marriage in their slavery statistics (ILO, 2017) under the general recommendation that "child marriage is considered to be a form of forced marriage, given that one and/or both parties have not expressed full, free and informed consent" (Article VI.B.20, CEDAW, 2014). The recommendation, however, contains the caveat that "marriage of a mature, capable child below 18 years of age may be allowed in exceptional circumstances, provided that the child is at least 16 years of age and that such decisions are made by a judge based on legitimate exceptional grounds defined by law and on the evidence of maturity, without deference to culture and tradition" (CEDAW, 2014).

In Figure 1, each dot represents a nation. The Child Marriage Rates U18 on the vertical axis are estimates of the percentage of females (aged 15-49) ever married, divorced or in an informal union before age 18 (UN Dept of Economic and Social Affairs, 2017, UN World Marriage Data, 2017).[iv] The GSI Prevalence 2018 Estimate on the horizontal axis is the Walk Free Foundation's Global Slavery Index (GSI) estimate of the prevalence of "modern slavery" within each country (Minderoo Foundation, 2018). Each dot is colored by that nation's tier assignment in the 2018 US State Department Annual Trafficking in Persons (TIP) report (US DoS, 2018). These tier levels, ranging from Tier 1 to Tier 3, are assessments of a country's efforts to combat trafficking in persons, with a Tier 1 placement indicating the highest level of government-led CTIP effort. The dashed horizontal lines are the median child marriage rates for the countries in each TIP tier level. Even though child marriage rates are not incorporated in the calculation of TIP tier levels, there is an association. Tier 1 countries have on average two to three times lower child marriage rates than Tier 2 and 3 countries.[v]

Figure 1: Child marriage and human trafficking are inter-related within a common ecosystem

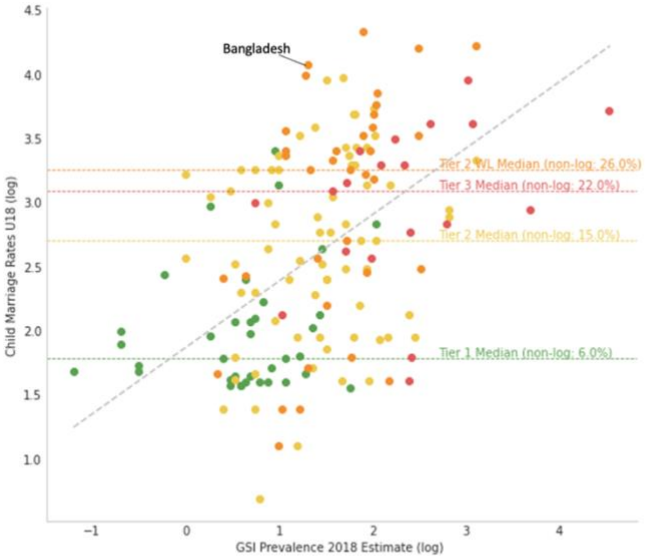


Figure 1 caption: The GSI Prevalence 2018 Estimate is the Walk Free Foundation's Global Slavery Index (GSI) estimate of the prevalence of "modern slavery" within each country. The Child Marriage Rates U18 are estimates of the percentage of girls ever married, divorced or in an informal union before age 18, based on the 2017 UN Dept of Economic and Social Affairs and MICS UNICEF data. Each dot represents a nation, colored by that nation's tier assignment in the 2018 US State Department Annual Trafficking in Persons (TIP) report. The dashed horizontal lines are the median child marriage rates for the countries in each TIP tier level.

Although "Forced Marriage" is a type of modern slavery, the GSI prevalence estimates do not specifically include child marriage. Countries with lower GSI prevalence estimates, however, typically have lower child marriage rates. While there is scatter in the data, the correlation between U18 child marriage rates and the GSI prevalence estimates (Figure 1) is statistically significant, explaining about 20% of the variance.[vi]

While the reporting of child marriage rates, the estimating of human trafficking prevalence, and the assignment to TIP tier levels are distinct activities pursued by different organizations operating under different mandates, Figure 1 demonstrates that these metrics and the associated phenomenon they attempt to measure, are inter-related within a common ecosystem. Countries with higher child marriage rates typically have higher rates of human trafficking and are assigned worse TIP tier levels by the US State Department. Statistically, the chances of the "null hypothesis" being true — that child marriage and human trafficking are not related, is less than 1 in 10 million.[vii]

While many claim that not all child marriage is TIP, the ecosystem of opportunities it creates for TIP and other negative impacts are so large, that there is increasing pressure to provide a minimum age for marriage and to classify marriage under that age as TIP. The hope is that by recognizing child marriage as a form of TIP, it will raise awareness and provide increased leverage for enforcement. If child marriage were classified as slavery, protection against it would be considered, like protection against torture and genocide, a responsibility of the international community as a whole. Under the International Court of Justice, protection could be equally enforced and independently adjudicated to all persons, entities (public and private), and states. The argument is compelling. Child marriage is recognized as a violation of human rights (UNICEF, 2020). Children, by definition, cannot provide free and informed consent. The treatment of a child, especially girls, as a commodity is consistent with the definition of human trafficking, regardless of whether that child is being exchanged in a transaction for money, goods, social status, protection, or family honor.

2. CHILD MARRIAGE IN BANGLADESH

Bangladesh is poised to take a leadership role in child marriage. The Prime Minister has pledged the nation to specific goals and timelines. Recent legislation has established a minimum age for marriage; and dowry payments have been outlawed.

- At the UK Girls Summit in 2014, Bangladesh's Prime Minister, Sheikh Hasina, committed Bangladesh to end marriage for children younger than 15 (U15) by 2021, and for all girls under age 18 (U18) by 2041; and to reduce by at least one third the difference – the number of girls married between ages 15 and 18 (U18diff) by 2021 (DFID, 2014).
- The Bangladesh Child Marriage Restraint Act of 2017 prohibits the marriage of children and defines in the case of marriage, an adult as having completed twenty-one years of age if a male, and eighteen years of age as a female (Section 2 (3)). A provision (Section 19), however, allows for marriage without a minimum age under "special circumstances when it is in the best interests of the minor" at the direction of the court and with consent of the parents or guardians of the minor. The "special circumstances" clause is demonstrably a major loophole in the legislation that makes the legislation all but ineffective, as the majority (59%) of girls in Bangladesh are still getting married before the age of 18.
- The Dowry Prevention Act of 2018 makes the demanding, giving, or taking of dowries an offense punishable by fines or imprisonment. It distinguishes (Section 2(b)) the current "dowry" system of payments to the husband from the traditional "dower" (or "mehr") which is a religiously sanctioned part of Muslim marriage when a husband pays his wife out of honor and respect, and to show that he seriously desires to marry her with a sense of responsibility and obligation (Monsoor, 2003). While illegal, dowry payments remain pervasive in Bangladesh, perpetuating the use of a child as a commodity in a transactional arrangement[viii], and attracting considerable criticism both for creating incentives for harmful practices towards girls, and for being associated with violence against females (Suran et al., 2004; Siddique, 2011; Solotaroff & Pande, 2014,).

But as T.S. Eliot noted more than a century ago, between the idea and the reality falls the shadow. Bangladesh continues to have one of the highest child marriage rates in the world. Most females marry before the legal age; and the payment of dowries remains pervasive. The circumstances in Bangladesh are consistent with research into global anti-slavery legislation that shows that despite near-universal

adherence to international anti-trafficking norms, many nations have not transferred their commitment into effective domestic laws (Schwarz & Allain, 2020), and gaps persist between human-rights norms and implementation of those rights (de Felice & Graf, 2015).

While the current dowry system may seem to be a deeply entrenched cultural norm that has been pervasive throughout Bangladesh's history, it is not. The "dowry system" is not rooted in religious tenets or long-standing social norms, but rather a relatively recent practice instituted, most likely, in response to an imbalance between men and women of marriageable age. Prior to the 1960s, husbands paid a dower to the woman's family in accordance with Islamic law (Quran 4:4). In late 1960s, the practice changed, and the payment of dowries from the families of brides to grooms took hold. The speed of the transformation is reflected in survey data. Less than eight percent of women age 45-60 paid dowries, while over 46 percent of younger women age 15-25 paid dowries (World Bank, 2008). Coincident with this change was an increase in violence towards women by their husbands: 24 percent of women age 45-60 report ever having experienced violence by their husbands, while 30 percent of women age 15-25 have already experienced violence by their husbands (World Bank, 2008).

One explanation for this change in practice is the increased leverage of males during a period of high population growth and increased urbanization and education, resulting in men postponing marriage until they were 25-30 (Rozario, 1998). During a time of increasing population growth, the postponement of marriage by men, who then marry younger women, resulted in a shortage of marriage-age men relative to marriage-age women (Figure 2). Such a surplus of women relative to men of marriageable age coincides with the emergence of the dowry (Amin & Cain, 1997). The new "tradition" continues, even though the circumstances for its creation no longer exist, and in fact, are beginning to reverse.

Figure 2: Male and Female Population Percentages 1950-2020

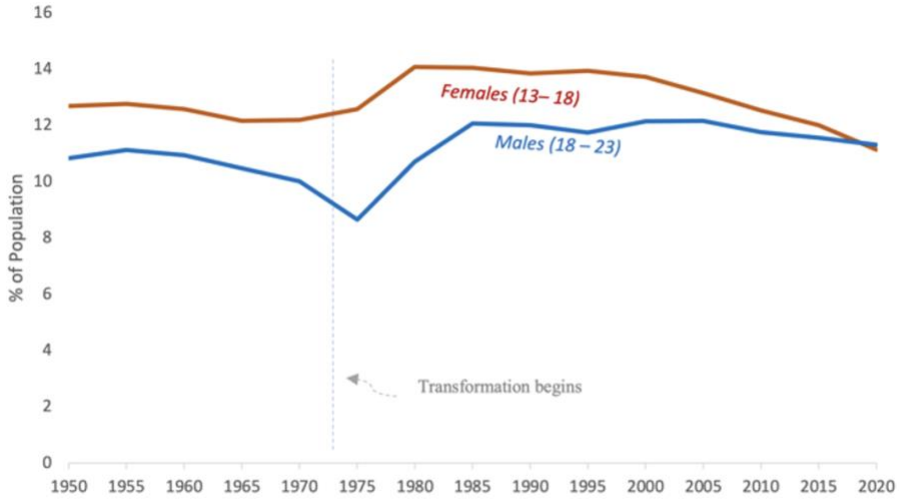


Figure 2 caption: Percentage of population for the age brackets for men and women is from the UN Department of Economic and Social Affairs, Population Division (2019). These two age brackets were chosen based on prevailing marriage practices in Bangladesh. In Bangladesh, the average age difference is currently 8.8 years.

Dowries can exacerbate child marriage because the payment to the groom is often less for a family of a younger bride. Younger brides are considered to be more desirable to Bangladeshi men, and therefore grooms are more willing to reduce their dowry "demand" to marry them (Chowdhury, 2010).

Over the last two decades, development in Bangladesh has been substantial. The poverty headcount ratio has decreased 20.0 percentage points (from 34.5% to 14.5%), and secondary school enrollment has increased 23 percentage points (World Development Indicators, 2021). During this time (2000-2017), marriage rates for children under the age of 15 (U15) have decreased 17.9 percentage points and marriage rates for children under the age of 18 (U18) decreased 9.8 percentage points (Figure 2). While progress has been substantial, the majority of girls (51.4%) are still getting married before their eighteenth birthday (UNICEF, 2019).

In Figure 3, the columns in blue are the percentage of females married under the age of 15 (U15). The columns in grey are the percentage of females married under the age of 18 (U18). The percentage of females married under 18 includes those married under 15. The difference between U18 and U15 is the percentage of females married at ages 15-17 and is designated U18diff. The data are derived from the Multiple Indicator Cluster Surveys (MICS) household surveys supported by the Bangladesh Bureau of Statistics and UNICEF (BBS and UNICEF, 2019), and the Demographic and Health Survey (DHS) implemented by National Institute of Population Research and Training (NIPORT) and ICF, supported by USAID (NIPORT and ICF, 2020). While there is significant difference between the MICS and DHS estimates, the trends within each survey are consistent. Child marriage rates have been decreasing, but the rate of decrease, over the last two surveys for both MICS and DHS, may be slowing.

Figure 3: Female Child Marriage Rates Under 15 (U15) and Under 18 (U18) from both the DHS and MICS Surveys

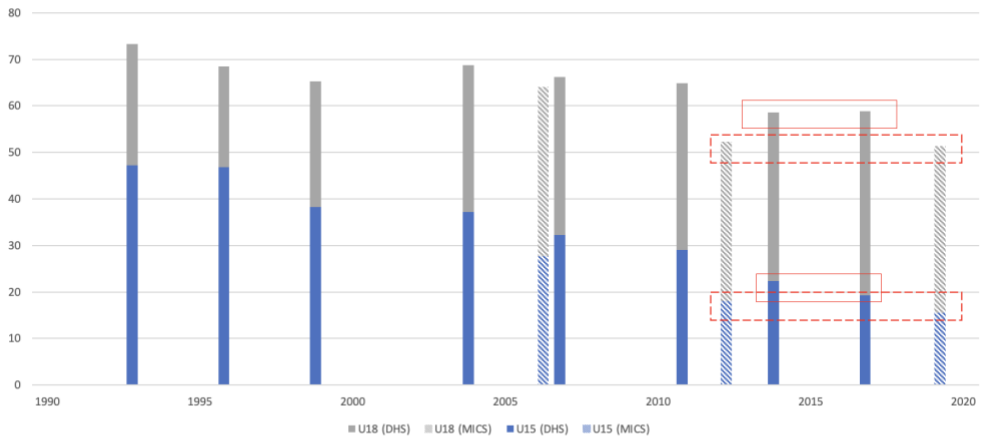


Figure 3 caption: Although child marriage rates in Bangladesh are decreasing, they remain the highest in Asia. U18 child marriage has been decreasing at a rate of about 0.6 percentage points per year (DHS 1993-2017/18), 1.1 percentage points per year (MICS, 2008-2019). U15 child marriage has been decreasing at a rate of about 1.0 percentage points per year (DHS 1993-2017/18), 1.3 percentage points per year (MICS, 2008-2019). Extrapolating these trends forward, Bangladesh is not on track to meet SDG 5.3 or the commitments made by the Prime Minister during the 2014 UK Girls Summit. Child marriage rates are from the USAID-funded National Demographic and Health Surveys (DHS) (solid) (NIPORT and ICF, 2020) and from the UNICEF Multiple Indicator Cluster Surveys (MICS) (dashed) (BBS and UNICEF, 2019).

As shown in Figure 3 there have been significant reductions over the last three decades. U18 child marriage has been decreasing at a rate of about 0.6 percentage points per year (DHS 1993-2017/18), 1.1 percentage points per year (MICS, 2008-2019). U15 child marriage has been decreasing at a rate of about 1.0 percentage points per year (DHS 1993-2017/18), 1.3 percentage points per year (MICS, 2008-2019). Extrapolating these rates using a simple linear regression curve (Table 1), reveals that, with the possible exception of the SDG 5.3 indicator goal for U15, Bangladesh is not on track to meet either its national or international goals. Furthermore, such an extrapolation seems optimistic given the apparent decrease seen in the estimated rates for the last two surveys by both DHS (2012 and 2017/18) and MICS (2012 and 2019). Neither survey shows any meaningful decrease in U18 child marriage.

Table 1: Progress towards meeting SDG 5.3 and UK Girl's Summit Pledge

	SDG 5.3 PROJECTION		UK SUMMIT PLEDGE PROJECTION		
	2030 U15	2030 U18	2021 U15	2041 U18	2021 1/3 15-17*
Goal	0.0%	0.0%	0.0%	0.0%	39.1%
Continuing at historical rate (DHS)	5.0%	53.0%	15.5%	47.4%	41.1%
Continuing at historical rate (MICS)	4.1%	39.1%	12.4%	28.6%	36.2%

* At the 2014 UK Girls Summit, the Prime Minister pledged to end marriage for children younger than 15 by 2021 and to reduce by at least one third the number of girls married ages 15 and 18 by 2021. For this calculation, the 2021 commitment is considered to be the equivalent of reducing the U18 rate from the 2014 rate by one-third. In 2014, the U18 rate was 58.6. Subtracting one-third of 58.6 = 39.1.

The MICS surveys report child marriage rates at the division level and at the zila level for some (about 30%) of the zilas. The survey data allows us to estimate rates at the for all of the zila level.[ix] Using the full 2019 survey data set of 68,713 respondents for the women's MICS survey, we determined the percentage of women married under the age of 15 and 18 who are within the 20-24 age range. Our calculated estimates were aggregated back to the division level and compared to the reported values to confirm consistency. While there is increased uncertainty in the estimates using the smaller sample size, in each case there were over 100 female respondents age 20-24 per zila and our aggregated division values are within two percentage points of the reported values (Table 2).

Table 2: Calculated and Reported Child Marriage Rates at the Division and Zila Level

DIVISION/ZILA	# FEMALE RESPONDENTS (20-24)	REPORTED U15(%)	CALCULATED U15(%)	DIFFERENCE (% POINTS)	REPORTED U18(%)	CALCULATED U18(%)	DIFFERENCE (% POINTS)
Barisal	870	16.2	15.3	0.9	55.6	55.9	0.3
Barguna	138		12.3			60.9	
Bhola	152	19.0	19.1	0.1	60.0	60.5	0.5
Barisal	141		18.4			49.6	
Jhalokati	139		9.4			48.2	
Patuakhali	154	14.0	14.3	0.3	59.0	57.8	1.2
Pirojpur	146		17.8			57.5	
Chittagong	2,063	10.6	11.0	0.4	44.1	43.1	1.0
Brahamanbaria	165		14.5			46.7	
Bandarban	120		8.3			32.5	
Chittagong	410	7.0	7.6	0.6	39.0	39.5	0.5
Chandpur	159		13.8			49.7	
Cox's Bazar	184		9.8			37.0	
Comilla	231	10.0	10.4	0.4	53.0	53.2	0.2
Khagrachhari	152		12.5			42.1	
Feni	168		11.9			38.7	
Lakshmipur	163		13.5			48.5	
Rangamati	136		10.3			43.4	
Noakhali	175		12.6			42.9	

DIVISION/ZILA	# FEMALE RESPONDENTS (20-24)	REPORTED U15(%)	CALCULATED U15(%)	DIFFERENCE (% POINTS)	REPORTED U18(%)	CALCULATED U18(%)	DIFFERENCE (% POINTS)
Dhaka	2,122	14.2	13.7	0.5	48.6	49.1	0.5
Dhaka	432	16.0	16.5	0.5	41.2	41.0	0.2
Faridpur	149		14.8			57.7	
Kishoreganj	122		9.0			40.2	
Madaripur	147		8.2			43.5	
Manikganj	118		19.5			63.6	
Munshiganj	163		14.7			48.5	
Narsingdi	132		9.8			41.7	
Narayanganj	174		14.9			44.3	
Rajbari	131		9.9			55.7	
Gazipur	153		13.1			59.5	
Gopalganj	135		9.6			48.1	
Shariatpur	121		18.2			50.4	
Tangail	145	17.0	17.0	0.0	61.0	61.0	0.0
Khulna	1,548	19.1	19.1	0.0	61.8	62.7	0.9
Bagerhat	151	20.0	19.9	0.1	70.0	70.0	0.0
Chuadanga	159		14.5			60.4	
Khulna	143	18.0	16.8	1.2	59.0	58.0	1.0
Kushtia	169	18.0	18.3	0.3	59.0	59.2	0.2
Jessore	149		18.1			56.4	
Jhenaidah	159		22.6			67.3	
Magura	143		18.2			58.0	
Meherpur	163		14.1			58.9	
Narail	148	27.0	27.0	0.0	71.0	72.0	1.0
Satkhira	164		22.0			67.1	
Mymensingh	531	17.0	17.5	0.5	52.2	53.7	1.5
Jamalpur	125	22.0	21.6	0.4	59.0	58.4	0.6
Mymensingh	153	17.0	17.0	0.0	50.0	49.7	0.3
Netrakona	131	8.0	8.4	0.4	43.0	44.3	1.3
Sherpur	122	24.0	23.8	0.2	64.0	63.9	0.1
Rajshahi	1,110	25.1	25.4	0.3	66.7	65.9	0.8
Bogra	125	19.0	18.4	0.6	69.0	69.6	1.0
Joypurhat	134		14.2			50.0	
Naogaon	124	31.0	32.3	1.3	71.0	71.0	0.0
Natore	116		21.6			69.0	
Nawabganj	195	39.0	39.0	0.0	73.0	72.8	0.2
Rajshahi	139	28.0	27.3	0.7	70.0	69.8	0.2
Sirajganj	131		15.3			61.1	
Pabna	146		28.1			61.6	
Rangpur	1,238	18.7	18.2	0.5	57.9	58.1	0.2
Dinajpur	157		19.1			59.2	
Kurigram	159		22.0			50.3	

DIVISION/ZILA	# FEMALE RESPONDENTS (20-24)	REPORTED U15(%)	CALCULATED U15(%)	DIFFERENCE (% POINTS)	REPORTED U18(%)	CALCULATED U18(%)	DIFFERENCE (% POINTS)
Lalmonirhat	164		8.5			56.7	
Gaibandha	124		25.8			62.1	
Nilphamari	173	16.0	15.6	0.4	59.0	57.8	1.2
Panchagarh	155		24.5			63.9	
Rangpur	138		18.1			59.4	
Thakurgaon	168		14.3			56.5	
Sylhet	876	7.3	7.4	0.1	31.0	31.8	0.8
Habiganj	204		6.4			32.4	
Maulvibazar	224		8.0			27.2	
Sylhet	261		5.0			27.2	
Sunamganj	187		11.2			43.3	
Totals	10,358	15.1	15.5	0.4	51.4	52.1	0.7

* Calculated from survey data. Statement about comparison with reported number of respondents.

Applying the same analysis to the previous MICS Survey (2012), we estimate the change in child marriage rates at the zila level over the last seven years (2012-2019) (Figure 4). Changes in the U15 child marriage rates are shown in blue. Changes in the child marriage rates of girls 15-17 (U18diff) are shown in grey. In some zilas, the decrease in U15 has been accompanied by an increase in U18diff, suggesting that girls who may previously have been married under the age of 15 are now being married in the 15-17 age range. In other zilas, the opposite appears to occur. U15 rates are increasing, while U18diff rates are decreasing. Such cases suggest that girls who may previously have married at ages 15-17 are now getting married younger.

Figure 4: Estimates of Changes in Child Marriage Rates (2012-2019) by Zila

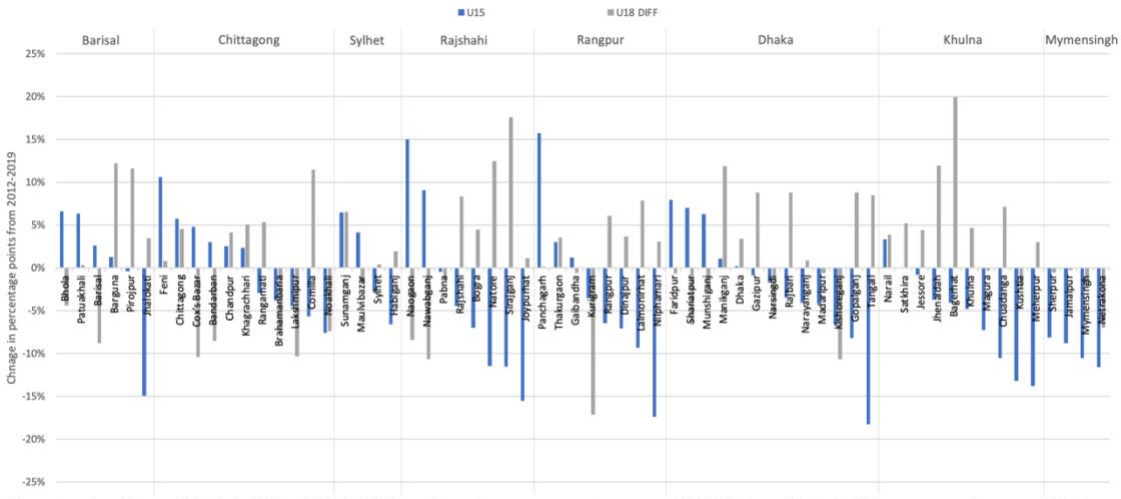


Figure 4 caption: Changes in both the U15 and U18diff child marriage rates among surveyed women aged 20-24 between 2012 and 2019 vary among zilas, even within the same division. In some zilas, the decrease in U15 has been accompanied by an increase in U18diff, suggesting that girls who may previously have been married under the age of 15 are now being married in the 15-17 age range. In other zilas, the opposite appears to occur. U15 rates are increasing, while U18diff rates are decreasing. Such cases suggest that girls who may previously have married at ages 15-17 are now getting married younger. Overall, there has been no significant reduction in child marriage during this time period. Changes in child marriage rates calculated from the 2012 and 2019 MICS (BBS and UNICEF, 2012, 2019).

The variation in progress, or recent lack thereof, towards reducing child marriage suggests that child marriage in Bangladesh has multiple causal relationships, and that further advancements may require

strategies that go beyond universally-applied solutions. Multiple causal relationships indicate multiple sociocultural ecosystems. Future progress is therefore likely to require additional, more geographically-targeted approaches.

3. CAUSES OF CHILD MARRIAGE WITHIN BANGLADESH

Child marriage in Bangladesh has been considered largely a consequence of poverty. Such a narrative is supported by the general trends between child marriage rates and measures of wealth, education, and urban versus rural populations. As progress has been made towards improving female education and reducing poverty, progress has also been made in reducing child marriage. As previously noted, however, more recent surveys show little or no meaningful reduction in child marriage, calling into question whether efforts successful in the past are sufficient for the future.

As reflected by the median age of first marriage (NIPORT et al., 2020), child marriage is most severe among the poorest wealth quintiles, the least educated, and the rural populations (Figure 6). These are also the populations where the most progress has been made (Figure 6). Since 2004:

- the median age of marriage for females with no education has risen 1.8 years (from 14.4 to 16.2), while the median age of marriage among females with secondary school education has *decreased* slightly (from 16.9 to 16.6) (Figure 6a);
- the median age of marriage for rural residences has risen 1.4 years (from 15.8 to 17.2), while the median age of marriage among urban residents has risen only 0.6 years (from 17.1 to 17.7) (Figure 6b); and
- the median age of marriage among the poorest wealth quintile has risen 1.7 years (from 14.5 to 16.2), while the median age of marriage among the wealthiest quintile has risen only 0.2 years (from 18.2 to 18.4) (Figure 6c).

Figure 5: Changes in Median Age of First Marriage 2004 – 2018

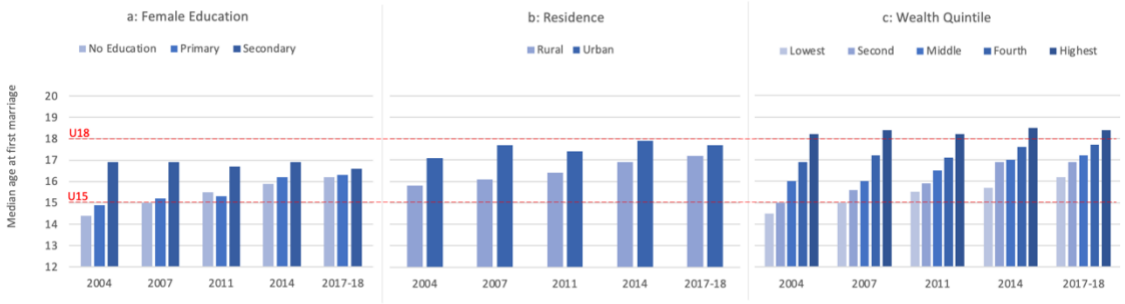


Figure 5 caption: Median age of marriage is lowest for the poor, those with less education, and who live in rural areas. These are also the populations where the most progress has been made (NIPORT et al., 2020). Ages 18 and 15 are shown with a red-dashed line.

Previously (1993-2011), female education was the single most significant determinant of child marriage (Kamel et al., 2014). Today, females have closed the education gap, and the differences in child marriage rate are less significant. The median age of marriage for those with no education, primary education, and secondary education is now within one year. The median age of marriage difference between rural and urban residence is now also less than a year. Wealth quintiles continue to be a more determining factor, with a difference in median age of two years, but that difference has decreased almost in half, with little change among the wealthiest quintile.

4. FEMALE EMPOWERMENT AND GENDER INEQUALITY

The United Nation's Sustainable Development Goal (SDG) 5, to "achieve gender equality and empower women and girls", links the concepts of female empowerment and gender equality. Female empowerment and gender equality share a sociocultural ecosystem, with historically little differentiation between them in the goals set by development organizations.

Female empowerment can be defined as the "fostering of a woman's sense of self-worth, her decision-making power, her access to opportunities and resources, her power and control over her own life inside and outside the home, and her ability to affect change" (Peace Corps, 2021). Female empowerment is related to gender equality but is generally focused on a female's degree of autonomy on a personal level, independent of the attitudes and opinions of men.

Gender equality can be defined as a state "in which both men and women have equal opportunity to benefit from and contribute to economic, social, cultural and political development; enjoy socially valued resources and rewards; and realize their human rights" (USAID, 2012). To achieve gender equality, females must feel empowered on an individual level, but the broader societal structure must also allow for equal opportunities, rights, and representation regardless of sex.

Analyzing the two concepts as separate entities, however, may be helpful in understanding how various societal factors affect the achievements and conversely, the subjugation of females, and their roles in the sociocultural ecosystems of child marriage. To evaluate the hypothesis that female empowerment and gender inequality can be differentiated, and that advances in female empowerment may not necessarily correspond to advances in gender equality, we select sample indicators consistent with our definitions of female empowerment and gender equality. We take an ecosystem approach selecting sample indicators that reflect empowerment at an individual level and indicators that reflect societal norms. There is a subjective component to the selection of indicators, and we recognize other researchers might characterize individual indicators differently. Afterall, female empowerment overlaps with gender equality, as female empowerment is a necessary pathway towards gender equality.

While recognizing the overlap, we differentiate female empowerment indicators as more representative of an individual's capacity in the decision-making process, while gender equality indicators are more representative of a society's attitudes towards women as a whole. We consider, for example, a female's attitude towards violence against women as an indicator of female empowerment, while we consider the prevalence of violence against women as an indicator of gender equality. Similarly, we consider female education to be a measure of female empowerment, while we consider a female's ability to participate in the work force as a measure of gender equality.

Increasing education, specifically female education, has been a focal area for reducing child marriage by enhancing female empowerment. Both female and male education rates have been rising in Bangladesh, with female rates improving at about twice the rate of males (slope of 1.5 vs. 0.7) (Figure 7). A generation ago (age cohort 40-45), the median years of schooling for females was near zero at 0.1 and males had almost four (3.8) more years of education than females. Today, females in the age 20-24 age cohort have a median level of education of 7.5 years and are as educated as their male peers.

Figure 6: Female Education and Sample Indicators of Gender Equality

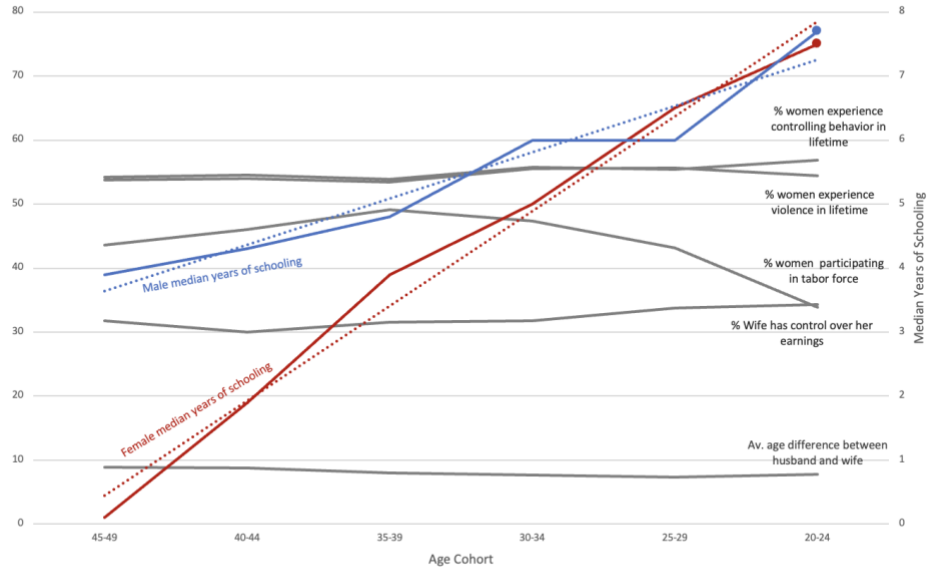


Figure 6 caption: Both female and male education rates have been rising in Bangladesh. With female rates improving at about twice the rate of males (slope of 1.5 vs. 0.7), females have closed the education gap. Despite this increase in female education, many measures of societal norms indicative of gender inequality, remain unchanged.

Despite the increase in female education, many measures indicative of gender equality, such as exposure to controlling behavior and violence, age disparity between husbands and wives, a woman's ability to control her own earnings, and participation in the workforce, show little change. As illustrated in Figure 7, females in the age 20-24 cohort are as likely to have already been exposed to violence and controlling behavior[x] as the previous generation (age 40-45 cohort) (BBS, 2016). The age disparity between husbands and wives has remained an average of eight years (BBS, 2019). Little more than a third of women have the ability to control their own earnings (NIPORT and ICF, 2020). Less than half the women at every age bracket participate in the labor force (ILO, 2020). The experience of physical violence is a leading indicator of societal inequality, and statistically explains 13.5% of the variance in child marriage rates among the 64 zilas in Bangladesh. While females have closed the education gap within a generation, many of the societal norms that support inequality stubbornly persist.

5. THE GENDER INEQUALITY AND CHILD MARRIAGE IN THE GLOBAL CONTEXT

The relationship between gender inequality and child marriage can be seen also at the global scale. Several national-level indices have been developed by various organizations to measure gender inequality among nations. The major ones are listed in Table 3.

Table 3: Sample Gender Inequality Indices Evaluated Against Child Marriage Rates

INDEX NAME	SOURCE	BASIS	INCLUSION IN ANALYSIS	REFERENCE
Gender Development Index (GDI)	UNDP	Ratio of Human Development Index using indicators of health, education, income.	Yes	UNDP 2020a UNDP 2020b
Gender Inequality Index (GII)	UNDP	Measures disparities in reproductive health (maternal mortality and adolescent birth rates), empowerment (parliamentary seats and education), economic status (labor force participation)	Yes	UNDP 2020c
Gender Social Norms Index (GSNI)	UNDP	measures gender equality in politics, work, and education.	No (recent data not available)	UNDP 2020d
Gender Parity Index (GPI)	UNESCO	measures relative access to education for females and males	No (limited to education data)	UN Statistics Division, n.d.
Global Gender Gap Index (GGGI)	World Economic Forum	measures gender equality in economic participation and opportunity, educational attainment, health and survival, and political empowerment.	No (inconsistent with other indices due to weightings (Stoet and Geary, 2019))	World Economic Forum, 2020
Social Institutions and Gender Index (SIGI)	OECD	measures of social inequality using discrimination in the family, restricted physical integrity, restricted access to productive and financial resources, and restricted civil liberties.[xi]	Yes	OECD, 2020
Gender Equity Index (GEI)	Social Watch	measures the gap between women and men in education, the economy, and political empowerment.	No (data is not as recent as other indices that cover similar metrics)	Social Watch, 2012

Rather than select any one of these indices, we combined the Gender Inequality Index (GII), the Gender Development Index (GDI), and the Social Institutions and Gender Index (SIGI) into a composite measure, so as to capture a broad range of indicators. The indices were collected for all countries, transformed to adjust for skewness in the data distribution, statistically standardized using z-scores, and averaged. The composite average was plotted against the U18 marriage rates (UNICEF Data, 2020; United Nations Department of Economic and Social Affairs, 2017) (Figure 9).[xii]

Figure 7: Gender Inequality Indices and Child Marriage at the National Level

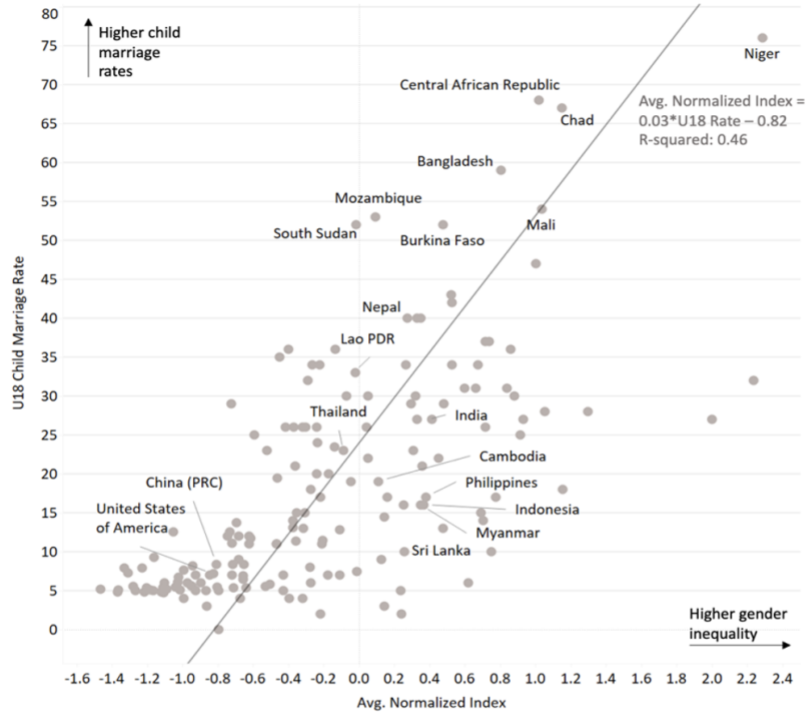


Figure 7 caption: As gender inequality increases, so does child marriage. The Average Normalized Gender Inequality Index is a composite of the Gender Inequality Index (UNDP, 2019), the Gender Development Index (UNDP, 2018), and the Social Institutions and Gender Index (OECD, 2018). The combined measure encompasses a variety of indicators (Table 2). These indices were collected for all countries, standardized using z-scores, and then the average of the three normalized scores for each country was plotted against U18 child marriage rates (UNICEF Data, 2020; United Nations Department of Economic and Social Affairs, 2017). The relationship between the averaged gender inequality indices and the U18 child marriage rate has an R-squared value of 0.46.

Child marriage rates (U18) increase with increasing gender inequality (Figure 9), with an R-squared value of 0.46. The U15 child marriage rate (not shown) has a similar relationship, with an R-squared value of 0.43. Bangladesh fits within this relationship. The nation is high, both in the combined gender inequality measure and in child marriage. The relationship between gender inequality and child marriage that we see among zilas within Bangladesh, we also see among nations at the global scale.

5. CONCLUSIONS

Internationally, there is increasing pressure to provide a minimum age for marriage and to classify marriage under that age as TIP. Our data analysis reveals that the sociocultural ecosystem that supports child marriage has attributes in common with the sociocultural ecosystem that supports TIP. Child marriage rates statistically correlate with TIP prevalence rates and with efforts to counter TIP as represented in the TIP tier level rankings of the US State Department's Annual TIP Report. The chance of the null hypothesis being true — that child marriage rates and human trafficking metrics are not related – is less than 1 in 10 million.

Bangladesh has a potential leadership role in ending child marriage. They have set national goals, enacted domestic legislation, and become party to international agreements. The Prime Minister committed Bangladesh to end marriage for children younger than 15 by 2021, and for all girls under age 18 by 2041. The Child Marriage Restraint Act of 2017 prohibits the marriage of children and defines the

age of a child. The Dowry Prevention Act of 2018 prohibits the payment of dowries. Internationally, Bangladesh is party to the series of United Nations conventions that provide a basis for prohibiting child marriage and classifying it as a slavery-like practice. Bangladesh is also among the selected countries covered under the UNFPA-UNICEF Global Programme to Accelerate Action to End Child Marriage (UNICEF, 2020).[xiii]

Within a generation (between the age cohorts of 45-49 and the age cohort of 20-24), the female education gap has been eliminated. The female rate of increased education is twice that of males. Other benefits for women and girls have also been realized over this time period. The age of first child has increased from 17.7 years to 18.6 years (NIPORT and ICF, 2020), and female life expectancy has increased from 66 years to 75 years (World Bank, 2021). While many of the negative consequences associated with child marriage have been mitigated, the broader consequences of gender inequality persist. Despite the 2017 Marriage Act, Bangladesh still has among the highest child marriage rates in the world with most girls marrying before the legal age of 18. The illegal dowry system continues. Most women experience violence during their lifetime, and 17.1% of women in 2015 (14.9% of women in 2011) are restricted from contact with their families by their spouse (Bangladesh Bureau of Statistics (BBS), 2016).

Bangladesh is not on track to meet either their national goals or SDG 5.3, which aims to end marriage for all girls under age 18 by 2030. Even assuming continuation of their overall rate of reduction, the U18 child marriage rate will be 39-53% by 2030 and 36-41% by 2041. Perhaps even more worrisome is that the last two MICS and DHS surveys show no meaningful reductions in U18 child marriage rates, suggesting the rate of progress may be stalling. How can a society in which females have taken such strong strides in education maintain such high levels of gender inequality?

Bangladesh is a male-dominated, patriarchal society. It has a traditional dominant male model of masculinity, where males are expected to be the providers and guardians. Rural areas are highly influenced by mullahs (local religious leaders), imams (mosque prayer leaders) and d'objectifs (village political elites) that promote patriarchal hierarchies and male-dominated social norms (Rahman, 2020).

Several studies globally suggest that perceived "threats to masculinity" or transgression of entrenched norms may incite violence against women (e.g. Duvvury et al, 2002). The threat to the traditional male masculinity model may be due to long-held cultural perceptions that men hold roles in society as providers and protectors. Such roles can be threatened by programs that focus on empowering women. If women are provided opportunities that are not available to men, it can foster resentment and exacerbate violence against women (Rahman, 2020). Perhaps we are seeing such an effect in Bangladesh.

Early efforts to address child marriage in Bangladesh correctly focused on empowering women through education and career resources, giving them more options and opportunities in life, which in some cases can threaten traditional masculinity. It is not clear that gender inequality can be addressed within a patriarchal society without consideration of masculinity (Mel, Peiris, and Gomez, 2013). There is the possibility that by encouraging circumstances within a patriarchal society whereby women are more educated and have emerging roles as family providers, we are threatening the traditional dominant male model of masculinity and inadvertently exacerbating gender inequality (Karim et al., 2018). Without addressing masculine gender roles, the effectiveness of initiatives designed to empower women may be

limited, and there is increasing recognition of the need to engage men in women-focused development initiatives (Karim et al., 2018).

Our data analysis provides empirical support for these theories being applicable to child marriage. We find that while there is strong overlap between female empowerment and gender equality, the two concepts can, and perhaps need to be differentiated. While efforts to promote female empowerment have been successful, as evidenced by improved education and changes in female attitudes towards gender-based violence, the impact of female empowerment in promoting sociocultural norms of societal gender equality has been disappointedly slow. Violence against women is unchanged, dowries remain prevalent, and the marriage age difference is unchanged.

Our analysis suggests that further reductions in child marriage may require complementing efforts to increase female empowerment with interventions targeted specifically at reducing gender inequality. Such interventions would need to encourage men to revise their patriarchal attitudes and views of masculinity, address societal norms that propagate traditional male and female responsibilities, and include males in female-focused development initiatives. When men are encourages to value women as equals and are actively involved in the process of empowering women, societal attitudes shift away from viewing women as commodities for early marriage and child-rearing.

The nearly forty percentage point variation in changes of child marriage rates among zilas suggest a need to move from universally applied solutions to geographically-targeted interventions customized to the varying sociocultural ecosystems that drive child marriage. Such an undertaking may seem disproportionate to the problem of child marriage, especially when it can be argued that many of the negative consequences of child marriage are being mitigated. However, addressing gender inequality in concert with female empowerment is likely to have significant additional benefits beyond reducing child marriage. There is an emerging recognition that gender inequality undermines economic development, security, and democracy and that raising the status of women and girls has been shown to increase GDP, improve global health, combat radicalization and extremism, improve the chances of lasting peace, and strengthen democracy (Bigio & Vogelstein, 2020). Investments in reducing child marriage by specifically targeting gender inequality are therefore likely to be investments that also contribute to improvements in democracy and human rights.

REFERENCES:

Ahmed, N. & Kashem, A. (2015). Exploring the Socio-cultural Context of Dowry Practice in Bangladesh. *Sociology and Anthropology, 3*(3), 171-178. DOI: 10.13189/sa.2015.030304.

Amin, S., & Cain, M. (1997). The rise of dowry in Bangladesh. In G. W. Jones, R. M. Douglas, J. C. Caldwell, & R. M. D'Souza (Eds.), *The continuing demographic transition* (pp. 290–306). Oxford, UK: Clarendon Press.

Arends-Kuenning, M. and Amin, S. (2001). Women's capabilities and right to education in Bangladesh. *International Journal of Politics, Culture and Society, 15*(1), 125-42. https://doi.org/10.1023/A:1011124018138.

Bangladesh Bureau of Statistics (BBS) and UNICEF Bangladesh. (2014). Bangladesh Multiple Indicator Cluster Survey 2012-2013. Retrieved from https://mics.unicef.org/files?job=W1siZiIsIjIwMTUvMDcvMDcvMTcvMjAvMDkvNzk2L0JhbmdsYWRlc2hfMjAxMl8xM19NSUNTX0ZpbmFsX1JlcG9ydC5wZGYiXV0&sha=f6f33951c5125263.

Bangladesh Bureau of Statistics (BBS) and UNICEF Bangladesh. (2019). Progotir Pathey, Bangladesh Multiple Indicator Cluster Survey 2019, Survey Findings Report. Retrieved from https://www.unicef.org/bangladesh/en/reports/progotir-pathey-bangladesh.

Bangladesh Bureau of Statistics (BBS). (2016). Report on Violence Against Women Survey 2015. Retrieved from https://evaw-global-database.unwomen.org/en/countries/asia/bangladesh/2015/report-on-violence-against-women-vaw-survey-2015.

Bangladesh, 2017. *The child marriage restraint act, 2017*, (Act No. VI of 2017), Ministry of Women and Child Affairs, Government of the People's Republic of Bangladesh, 10 Dec 2017.

Bangladesh Penal Code, Bangladesh, Act. No. XLV of 1860.

Bangladesh, 1980. The Dowry Prohibition Act, Act No. XXXV, Government of the People's Republic of Bangladesh, 1980.

Bigio, J. & Vogelstein, R. (2020). *Understanding Gender Equality in Foreign Policy*, Discussion Paper, Council on Foreign Relations. Retrieved from https://www.cfr.org/report/understanding-gender-equality-foreign-policy.

Clark, M. (2003). Trafficking in persons: An issue of human security. *Journal of Human Development*, *4*(2), 247-263. https://doi.org/10.1080/1464988032000087578.

Care Bangladesh. (2017). Policy Brief: Child Marriage Restraint Act 2017, *The Tipping Point Project*. Retrieved from https://www.care.org/wp-content/uploads/2020/11/Policy-Brief-final.pdf.

Chowdhury, F. (2010). Dowry, Women, and Law in Bangladesh. *International Journal of Law, Policy, and the Family, 24*(2), 198-221. https://doi.org/10.1093/lawfam/ebq003.

Corno, L., Hildebrandt, N. & Voena, A. (July 2017). Age of Marriage, Weather Shocks and the Direction of Marriage Payments. National Bureau of Economic Research Working Paper, no. 23604, Cambridge (Massachusetts). Retrieved from https://www.nber.org/system/files/working_papers/w23604/w23604.pdf.

De Felica, D. and Graf, A. (2015). The Potential of National Action Plans to Implement Human Rights Norms: An Early Assessment with Respect to the UN Guiding Principles on Business and Human Rights. *Journal of Human Rights Practice, 7*(1), 40–7. https://doi.org/10.1093/jhuman/huu023.

Duvvury, N., Nayak, M., & Allendorf, K. (2002). Domestic Violence in India 4: Exploring Strategies,

Promoting Dialogue. Men Masculinities and Domestic Violence in India: Summary Report of Four Studies., ICRW: Washington DC. Retrieved from https://www.icrw.org/wp-content/uploads/2016/10/Domestic-Violence-in-India-4-Men-Masculinity-and-Domestic-Violence-in-India.pdf.

Geirbo, H. C. & Imam, N. (2006). The motivation behind giving and taking dowry, *Research Monograph Series No. 28*, BRAC, Research and Evaluation Division. Retrieved from https://bigd.bracu.ac.bd/publications/the-motivations-behind-giving-and-taking-dowry/.

I. (2012). *The DHS Program STATcompiler*. Funded by USAID. Retrieved Jan 5, 2021 from http://www.statcompiler.com.

International Labour Office. (2017). *Global Estimates of Modern Slavery: Forced Labour and Forced Marriage*, Geneva, 2017, ISBN: 978-92-2-130131-8.

Kabeer, N. (2005). Gender Equality and Women's Empowerment: A Critical Analysis of the Third Millennium Development Goal. *Gender and Development, 13*(1), 13-24. Retrieved December 31, 2020, from http://www.jstor.org/stable/20053132.

Kamal, S.M.M., Hassan, L, C. H., Alam, G. M & Y. Ying. (2014). Child Marriage in Bangladesh: Trends and Determinants. *Journal of Biosocial Science*. doi:10.1017/S0021932013000746.

The Minderoo Foundation Pty Ltd. (2018). *Global Slavery Index Report*. Retrieved from https://downloads.globalslaveryindex.org/ephemeral/GSI-2018_FNL_190828_CO_DIGITAL_P-1588943477.pdf.

The Minderoo Foundation Pty Ltd. (2016). *Global Slavery Index Report*. Retrieved from https://downloads.globalslaveryindex.org/ephemeral/GSI-2016-Full-Report-1589304113.pdf.

Monsoor, T. (2003). Dower and dowry: its affect on the empowerment of Muslim women. Star Law Analysis, The Daily Star. Retrieved from https://www.thedailystar.net/law/200307/04/index.htm.

National Institute of Population Research and Training (NIPORT), and ICF. (2020). Bangladesh Demographic and Health Survey 2017-18. Dhaka, Bangladesh, and Rockville, Maryland, USA. Retrieved from https://dhsprogram.com/publications/publication-FR344-DHS-Final-Reports.cfm.

National Institute of Population Research and Training (NIPORT), Mitra and Associates, and ICF International. (2016). Bangladesh Demographic and Health Survey 2014. Dhaka, Bangladesh, and Rockville, Maryland, USA: NIPORT, Mitra and Associates, and ICF International. Retrieved from https://dhsprogram.com/publications/publication-fr311-dhs-final-reports.cfm.

National Institute of Population Research and Training (NIPORT), Mitra and Associates, and ICF International. (2013). Bangladesh Demographic and Health Survey 2011. Dhaka, Bangladesh and Calverton, Maryland, USA: NIPORT, Mitra and Associates, and ICF International. Retrieved from https://dhsprogram.com/pubs/pdf/fr265/fr265.pdf.

National Institute of Population Research and Training (NIPORT), Mitra and Associates, and Macro International. (2009). Bangladesh Demographic and Health Survey 2007. Dhaka, Bangladesh and Calverton, Maryland, USA: National Institute of Population Research and Training, Mitra and Associates, and Macro International. Retrieved from https://dhsprogram.com/pubs/pdf/FR207/FR207[April-10-2009].pdf.

National Institute of Population Research and Training (NIPORT), Mitra and Associates, and ORC Macro. (2005). Bangladesh Demographic and Health Survey 2004. Dhaka, Bangladesh and Calverton, Maryland [USA]: National Institute of Population Research and Training, Mitra and Associates, and ORC Macro. Retrieved from https://dhsprogram.com/pubs/pdf/FR165/00FrontMatter00.pdf.

OECD. (2020). *Social Institutions and Gender Index*. Retrieved December 17, 2020 from https://www.genderindex.org/sigi/.

Peace Corps (2021). *Global Issues: Gender Equality and Women's Empowerment*. Retrieved from https://www.peacecorps.gov/educators/resources/global-issues-gender-equality-and-womens-empowerment/.

Rahman, F. (2020). Trajectories of Gender Inequality, Identify, and Violent Extremism in Rural Bangladesh, in *Conflicting Identities: The Nexus between Masculinities, Femininities and Violent Extremism in Asia,* UNDP and UN Women 2020, ISBN 978-974-680-434-9.

Redfern, C., 2019. *Bangladesh's child marriage problem is the world's human trafficking crisis*. Foreign Policy. Retrieved from https://foreignpolicy.com/2019/11/08/bangladesh-child-marriage-human-trafficking-crisis/.

Rozario, S. (1998). Disjunctions and continuities: dowry and the position of single women in Bangladesh in C. Risseeuw and K. Ganesh (eds*), Negotiation and Social Space: A Gendered Analysis of Changing Kin and Security Networks in South Asia and Sub-Saharan Africa*, London: AltaMira Press, 259-275.

Schuler, S.R., & E. Rottach. (2010). Women's Empowerment across Generations in Bangladesh. *Journal of Development Studies, 46*(3), 379-396. doi: 10.1080/00220380903318095.

Schwarz, K., & Allain, J. (2020). Tracking the Implementation Gap: Empirically Assessing the Translation of International Antislavery Commitments in Domestic Legislation Globally. *Statelessness and Citizenship Review, 2(*1), 159–166. https://doi.org/10.35715/SCR2001.1112.

Siddique, K. (2011). *Domestic Violence against women: The Cost to the Nation*. CARE Bangladesh. Retrieved from https://www.carebangladesh.org/publication/Publication_5421518.pdf.

Social Watch. (2012). *Measuring Inequity: The 2012 Gender Equity Index*. Retrieved December 11, 2020 from https://www.socialwatch.org/node/14365.

Solotaroff, J. L., & Pande, R. P. (2014). Violence against Women and Girls: Lessons from South Asia. South Asia Development Forum; World Bank Group, Washington, DC. Retrieved from https://openknowledge.worldbank.org/handle/10986/20153.

Stoet, G., & Geary, D. C. (2019). A simplified approach to measuring national gender inequality. *PloS one*, *14*(1), e0205349. https://doi.org/10.1371/journal.pone.0205349

Suran, L., Amin, S., Huq, L., & Chowdhury, K. 2004. Does dowry improve life for brides? A test of the bequest theory of dowry in rural Bangladesh. Policy Research Division Working Paper no. 195. New York: Population Council. Retrieved from https://knowledgecommons.popcouncil.org/departments_sbsr-pgy/46/.

USAID. (2012). *Gender Equality and Female Empowerment Policy*. Retrieved from https://www.usaid.gov/sites/default/files/documents/1865/GenderEqualityPolicy_0.pdf.

United Nations Committee on the Elimination of Discrimination against Women, 2014. *Joint general recommendation No. 31 of the Committee on the Elimination of Discrimination against Women/general comment No. 18 of the Committee on the Rights of the Child on harmful practices*, 14 November 2014 (CEDAW/C/GC/31-CRC/C/GC/18).

United Nations Department of Economic and Social Affairs, Population Division. (2017). World Marriage Data 2017. Retrieved from https://www.un.org/en/development/desa/population/theme/marriage-unions/WMD2017.asp

UNICEF Data. (2020). *Child Marriage*. Retrieved from https://data.unicef.org/topic/child-protection/child-marriage/.

United Nations 1948, *Universal Declaration of Human Rights*, United Nations General Assembly Resolution 217 A, 10 Dec. 1948.

United Nations 1956, *United Nations Supplementary Convention on the Abolition of Slavery, the Slave Trade, and Institutions and Practices Similar to Slavery,* Conference of Plenipotentiaries convened by Economic and Social Council Resolution 608 (XXI), 30 Apr. 1956.

United Nations 1964, *The Convention on Consent to Marriage, Minimum Age for Marriage, and Registration of Marriage,* United Nations General Assembly Resolution 1763 A (XVII), 9 Dec. 1964.

United Nations 1965, *Recommendation on Consent to Marriage, Minimum Age for Marriage and Registration of Marriages*", United Nations General Assembly Resolution 2018 (XX), 1 Nov 1965.

United Nations 2000, *Protocol to Prevent, Suppress and Punish Trafficking in Persons Especially Women and Children, supplementing the United Nations Convention against Transnational Organized Crime*, Article 3.

United Nations 2000b, *Optional Protocol to the Convention on the Rights of the Child on the sale of children, child prostitution and child pornography*. Chapter IV, 11c Human Rights, 25 May 2000.

United Nations 2017, Department of Economic and Social Affairs, Population Division. World Marriage Data. Retrieved from https://www.un.org/en/development/desa/population/theme/marriage-unions/WMD2017.asp#:~:text=World%20Marriage%20Data%202017%20provides,or%20areas%20of%20the%20world.&text=The%20database%20contains%20data%20on,age%20at%20marriage%20(SMAM).

United Nations, Department of Economic and Social Affairs, Population Division (2019). *World Population Prospects 2019, Online Edition. Rev. 1*. Retrieved from https://population.un.org/wpp/.

United Nations Development Programme (2020a). *Gender Development Index*. Retrieved December 11, 2020 from http://hdr.undp.org/en/content/gender-development-index-gdi.

United Nations Development Programme (2020c). *Gender Inequality Index.* Retrieved December 10, 2020 from http://hdr.undp.org/en/content/gender-inequality-index-gii.

United Nations Development Programme (2020b). *Technical Notes*. Retrieved December 22, 2020 from http://hdr.undp.org/sites/default/files/hdr2020_technical_notes.pdf.

United Nations Children's Fund. (2020). *Ending Child Marriage: A profile of progress in Bangladesh*.

UNICEF, New York. Retrieved from https://data.unicef.org/resources/ending-child-marriage-a-profile-of-progress-in-bangladesh/.

United Nations Children's Fund. (2021). *COVID-19: A threat to progress against child marriage*. UNICEF, New York. Retrieved from https://data.unicef.org/resources/covid-19-a-threat-to-progress-against-child-marriage/.

United Nations Office on Drugs and Crime (UNODC). (2020). *Interlinkages between Trafficking in Persons and Marriage, Issue Paper*. Retrieved from https://www.unodc.org/documents/human-trafficking/2020/UNODC_Interlinkages_Trafficking_in_Persons_and_Marriage.pdf.

United Nations Department of Economic and Social Affairs, United Nations Statistics Division. (2021). *United Nations Sustainable Development Goals*. Retrieved from https://unstats.un.org/sdgs/metadata/?Text=&Goal=5&Target=5.3.

United States Department of State (US DoS). (2018). Trafficking in persons Report. Retrieved from https://www.state.gov/wp-content/uploads/2019/01/282798.pdf.

U.S. Department of State. (2016). Trafficking in Persons Report. Retrieved from https://2009-2017.state.gov/j/tip/rls/tiprpt/2016//index.htm.

DFID. (2014). *UK International Development Minister Lynne Featherstone Visits Bangladesh*. GOV.UK. Retrieved from https://www.gov.uk/government/news/uk-international-development-minister-lynne-featherstone-visits-bangladesh.

The World Bank. (2021). Open Data Portal. Retrieved on May 13, 2021 from https://data.worldbank.org/.

The World Bank South Asia Region. (2008). Whispers to Voices: Gender and Social Transformation in Bangladesh. Bangladesh Development Series Paper No. 22. Retrieved from www.worldbank.org.bd/bds.

World Economic Forum (2020). *Global Gender Gap Report 2020*. Retrieved December 9, 2020 from http://www3.weforum.org/docs/WEF_GGGR_2020.pdf.

END NOTES

[i] The Convention on Consent to Marriage, Minimum Age for Marriage, and Registration of Marriages is a treaty agreed upon in the United Nations on the standards of marriage. The treaty was opened for signature and ratification by General Assembly resolution 1763 A (XVII) on 7 November 1962 and entered into force 9 December 1964

[ii] The Convention on Consent to Marriage, Minimum Age for Marriage, and Registration of Marriages also contains the statement that "No marriage shall be legally entered into by any person under this age, except where a competent authority has granted a dispensation as to age, for serious reasons, in the interest of the intending spouses."

[iii] The "Palermo Protocol" is actually one of three "Palermo Protocols", the other two Palermo Protocols being: a) the Protocol against the Smuggling of Migrants by Land, Sea and Air, and b) the Protocol against the Illicit Manufacturing of and Trafficking in Firearms.

[iv] Many western nations were missing U18 child marriage rates in the MICS UNICEF surveys. The missing values were imputed using the linear relationship between the U15 (U15 = 0.423 * Child Marriage Practice - 1.232, $r^2 = 0.716$) and U18 values (U18 = 1.141*Child Marriage Practice + 4.7, $r^2 = 0.809$) from the UN Child Marriage Practices survey (UN World Marriage Data, 2017). The latter survey measures the percentage of women aged 15-19 ever married, divorced, widowed, or in an informal union. Thus, there are discrepancies between the age groupings of the two datasets, but given the high r-squared values in the relationship between the rates, the interpolation was suitable.

[v] It is notable that seven of the 10 countries with the highest U18 child marriage rates, are on the Tier 2 watchlist.

[vi] We determine the statistical significance of the relationship between child marriage rates and the GSI prevalence, by testing the alternative hypothesis that there is no relationship. In such a case, the slope would be zero using the t-distribution. The probability that there is *no* relationship between the child marriage and the GSI prevalence estimates (that the slope is zero), is less than one in 10 million. We are not assuming a causal relationship, but rather confirming that TIP and child marriage are inter-related within a common ecosystem.

[vii] The data distributions were skewed, so a logarithmic transformation was applied to both variables (Child Marriage Rates and GSI Prevalence Estimates) for a more accurate statistical analysis. The relationship in Figure 1 has an equation of log(U18) = 0.518 x log(GSI) + 1.868 and r^2 of 0.188.

[viii] As a nation that is party to the Optional Protocol to the Convention on the Rights of the Child on the sale of children, child prostitution and child pornography, Bangladesh has a specific obligation because dowry payments can constitute a sale of children as defined in article 2 (a) of the Protocol (United Nations, 2000).

[ix] The DHS reports required specific unknown sampling to get results similar to the reported values and therefore could not be used to calculate child marriage rates at the zila level

[x] Controlling behavior by a partner is defined as experiencing any of these acts; he restricts you from the company of your friends and parental family, going to your parental homes, insist on knowing (with a suspicious mind) what you are doing and where you are at all times, ignore your feelings and opinions without caring or thinking about your priorities, angry if you speak with your relative or non-relative males, suspicious that you are unfaithful, expects you to ask permission before seeking health care for yourself, gets angry without any reason, forces you to use contraception method or forbids using them (BBS, 2016).

[xi] The SIGI index includes U18 child marriage rates, however, it is one of 32 indicators used to construct the index and so its influence is considered minimal.

[xii] U15 and U18 child marriage rates used were primarily by UNICEF (UNICEF, 2020), which compiled values obtained mostly from the Multiple Index Cluster Surveys (MICS) and the Demographic Health Surveys (DHS) dating back to 2006 at the earliest. These report the number of women aged 20-24 who were married before the age of 15 or the age of 18. However, some countries did not have values in this dataset. Another source used was the UN Child Marriage Practices (United Nations Department of Economic and Social Affairs, 2017). This dataset reported the percentage of girls aged 15-19 years ever married, divorced, widowed or in an informal union. While this is a slightly different metric than the UNICEF metric, it was used to impute missing data from the UNICEF dataset by plotting the UN Child Marriage Practices against both the U15 and U18 rates. The equations and R-squared values were as follows: U15 = 0.423 * Child Marriage Practice - 1.232 ($R^2 = 0.716$) and U18 = 1.141 * Child Marriage Practice + 4.7 ($R2 = 0.809$). For those countries missing a U15 or U18 rate but who had a Child Marriage Practice value, the least-squares regression line was used to calculate an estimate of the percentage of women married before age 15 or 18.

[xiii] The National Plan of Action to End Child Marriage (2018-2019) consists of a) enhancing the agency and voice of adolescent girls, b) investing in and supporting adolescent girls through community engagement and positive behavior, c) increasing resources and opportunities for adolescent girls, d) strengthening legislative and policy frameworks to protect and promote the rights of adolescent girls, and d) generating and using robust data and evidence.

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
1300 Pennsylvania Avenue, NW
Washington, D.C. 20523