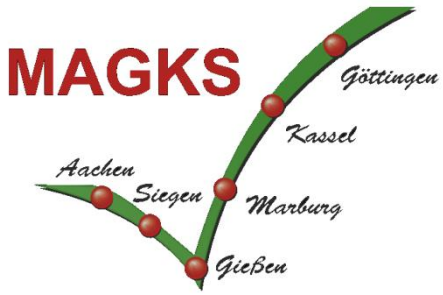


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# Measuring Anti-trafficking Policy - Integrating Text and Statistical Analysis

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# Measuring Anti-trafficking Policy
## - Integrating Text and Statistical Analysis

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**Abstract**: This paper reviews the existing indices on anti-trafficking policy and proposes the integration of statistical indicators into the indices coded from qualitative texts in order to improve the objectivity of evaluation. Examining the validity of the existing indices, the 3P Index and the GRETA-Scorecard, the results suggest that these measurements are not free from subjectivity regarding the selection of policy requirements and evaluation standards. To enhance objectivity, the utilization of the European Statistics is proposed and the validity of these statistics is investigated through multi-covariate analysis. The results show that the EU statistics are relevant indicators reflecting the quality of anti-trafficking policy, suggesting that, by integrating text and statistical information, an index on anti-trafficking policy can enhance its comprehensiveness and objectivity.

**Keywords**: human trafficking; anti-trafficking policy; index; text analysis; statistics

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## 1. Introduction

Addressing human trafficking is one of the priorities for the European Union and many countries worldwide (European Union 2013). To that end, many national governments and intergovernmental organizations have started taking stronger measures to combat human trafficking. However, despite its political relevance, policy evaluation on anti-trafficking performance often lacks systematic analysis based on transparent rules and reliable informational sources which can enable objective comparison across countries and time. Providing an objective and comprehensive evaluation tool for anti-trafficking policy is crucial not only to evidence-based policy making but also to policy-relevant research on the topic. With this in mind, I investigate existing quantitative indices evaluating anti-trafficking policy and address critical issues in developing anti-trafficking evaluation tools in this paper. By doing so, I will propose suggestions to improve the objectivity of anti-trafficking evaluation.

There are three existing evaluation tools on anti-trafficking policy which cover a multiple number of countries: the 3P Anti-trafficking Policy Index (Cho et al. forthcoming), the GRETA-based Scorecard (van Dijk and Klerx-van Mierlo forthcoming), and the US Tier-ranking (United States Department of State 2001-2013). The first two indices provide evaluation on sub-dimensions of anti-trafficking policy ï namely prosecution, protection and prevention (so-called 3Ps), while the Tier-ranking only provides an overall evaluation. Given that the three dimensions of anti-trafficking policy pursue different policy objectives (European Commission 2013; United Nation 2000), it is necessary to evaluate each dimension separately (see discussions of Cho et al. forthcoming, van Dijk and Klerx-van Mierlo forthcoming, and Simmons and Lloyd 2010). Thus, my analysis on the existing indices focuses mainly on the 3P Index and the Scorecard.

Both indices employ a text analysis by collecting information from qualitative narratives of governmental and intergovernmental reports and coding the textual information with quantitative numbers. The text analysis is often used for evaluating policy quality in a quantitative manner (Benoit et al. 2012). On the one hand, through the simplification of coding, the coded data lose some of the details of the information. On the other hand, quantification makes it possible to compare policy performance across different countries and years, so that one can sytematically identify whether policy performance has improved or worsened. One of the most critical issues in applying this method is the validity and reliability

of the coded data. The former concerns whether the coded content reflects the true dimensions of anti-trafficking policy, while the latter is related to replicability. In this paper, I examine these issues by cross-checking the outcome (indexed policy scores) of the 3P Index and Scorecard. The correlation between the two indicates that they share, to a fair degree, the outcome of the evaluation. However their evaluation standards may not be free from subjective selection and judgments.

One reasonable approach toward improving the objectivity of the indices coded from texts is to integrate an objective policy such as statistics. Thus, I make use of the European statistics on human trafficking and investigate whether these statistics ï namely, the numbers of identified victims, protection programs and convictions ï can be used as indicators reflecting the level of anti-trafficking policy, instead of the level of crime prevalence. The results of my multi-covariate analysis show that the statistics have a significant, positive relation with other anti-trafficking policy indicators, while they also partially reflect crime prevelance. It seems to suggest ï albeit with caution ï that integrating textual and statistical data can enable an index on anti-trafficking policy towards more comprehensive and objective evaluation.

In this paper, I looked into the EU statistics because they are the only statistics on human trafficking available to date that cover an entire region and provide time series data. Once global statistics on human trafficking become available, this attempt to build a more comprehensive index by integrating text-based information and statistics can be expanded for a larger number of countries.

## 2. Overview on Indices on Anti-trafficking Policy

As the problem of human trafficking has become one of the most serious transnational crimes, international efforts to fight the illegal, exploitative human trade have also increased. Among others, the *United Nations Convention against Transnational Organized Crime* and its *Protocol to Prevent, Suppress and Punish Trafficking in Persons, especially Women and Children* (hereinafter the Palermo Protocol), adopted by the United Nationôs Genera Assembly in 2000, is the most important international legal instrument in the anti-trafficking policy arena. It provides the internationally recognized definition of human trafficking[1] and

[1] The Palermo Protocol defines human trafficking as following: ñ*trafficking in persons shall mean the recruitment, transportation, transfer, harboring or receipt of persons, by means of the threat or use of force or*

prescribes the prime policy mandates ï prosecution and criminalization, crime prevention, and victim protection (3Ps). The introduction of the Palermo Protocol has been followed by regional legal initiatives such as the *Council of Europe Convention on Action against Trafficking in Human Beings* (2005). In accordance with increasing international policy efforts, there are initiatives to evaluate anti-trafficking policy performance at the international and national level. In this section, I provide an overview on existing quantitative indices on anti-trafficking policies ï namely, the 3P Anti-trafficking Policy Index (Cho et al. forthcoming), the GRETA Scorecard for Anti-trafficking Policies (van Dijk and Klerx-van Mierlo forthcoming), the European statistics on Trafficking in Human Beings (European Commission 2013), and the US Tier-ranking (United States Department of State 2013) ï see table 1 for the summarization of the four measurements.[2]

## 2.1. 3P Index

The 3P Anti-trafficking Policy Index (Cho et al. forthcoming) is the first initiative providing quantitative policy evaluation on each of the 3Ps covering a wide range of countries (up to 188 countries so far) since 2000. The development of the 3P Index can be seen as an advancement of the Tier-ranking (Unites States Department of State 2001-2013) that provides an overall anti-trafficking score without distinguishing each of the 3P dimensions. Evaluating prosecution, prevention and protection, respectively not only provides more detailed information but also recognizes that each of the 3Ps have different policy objectives which potentially conflict with each other ï namely human rights objective versus crime reduction objective (Cho et al. forthcoming; Simmons and Lloyd 2010).

The 3P Index evaluates each of the 3Ps on a five-point scale and the overall anti-trafficking policy score as the sum of each score of the 3Ps (i.e. maximum score of 15). The policy evaluation is based on the policy mandates regulated by the Palermo Protocol. The raw data

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*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 labor or service, slavery or practices similar to slavery, servitude or the removal of organs.*ò

[2] Additionally, there are several qualitative evaluation reports on anti-trafficking policies. The Protection Project (http://www.protectionproject.org/) provides country reports on anti-trafficking policy and human trafficking patterns worldwide. Also, the United Nations Office on Drugs and Crime (UNODC) publishes Global Reports/Patterns on Trafficking in Persons (2006, 2009 and 2012) including information on the criminalization of human trafficking and its implementation. On the other hand, the Lexis-Nexis introduced the LN Human Trafficking Awareness Index through media analysis (www.nexis.co.uk/humantrafficking.php).

for evaluation is derived from two qualitative informational sources: United Statesô Annual Reports on Trafficking in Persons (TIP Reports, United States Department of State, 2001 - 2013) and Global Patterns on Trafficking in Persons published by the UNODC (2006, 2009 and 2012).

Specifically, the prosecution dimension evaluates the criminalization of human trafficking and enforcement efforts. The protection part focuses on granting amnesty for victims, as well as legal, medical, vocational, rehabilitative and other assistance for them. The prevention sub-index measures preventive policy actions such as awareness campaigns, training of governmental officials and internal and international coordination (see appendix A for further details on the evaluation of the 3P Index).

The 3P Index has several advantages over the Tier-ranking. First, the evaluation is based on the policy requirements defined by the UN Palermo Protocol ï the international standards, while the Tier-ranking follows the Victims of Trafficking and Violence Protection Act (TVPA 2000) ï the US standards. Also, as mentioned earlier, the 3P Index distinguishes and provides evaluation on each of the 3Ps, respectively. In fact, the recent trends of the 3P Index show that many countries are stagnated with victim protection, while improving prosecution and prevention policies worldwide. The deficit in protection is found not only in developing countries but also in several developed countries ï for instance, Germany and Great Britain (Cho 2012). Last, comparing with the EU statistics and the GRETA-based Scorecard, the 3P Index covers a wide range of countries worldwide for a longer period of time (2000-2012, up to 188 countries).

However, the 3P Index also has several drawbacks. First, the utilization of the US TIP Report as the main informational source may not be the best way to assess policy performance based on the international standards of the UN Palermo Protocol. This problem is more pronounced in protection policy as the protection measures used by the US TIP Reports and other measures ï for instance, the EU ï show divergence (van Dijk and Klerx-van Mierlo forthcoming). The utilization of the US Reports is due to a lack of alternative informational sources providing systematic narratives for countries worldwide on an annual basis. On the other hand, the problem of using the US-based sources is partially mitigated by double-checking the validity of the information with the UNODC reports. Second, the 3P Index is criticized for unclear distinction between law adoption and enforcement. This problem is

driven by the fact that the raw information used for the Index often lacks quantitative indicators on prosecution and conviction (van Dijk and Klerx-van Mierlo forthcoming). This can be a serious issue in evaluating prosecution effort because law adoption (de-jure efforts) does not necessarily result in stronger enforcement (de-facto efforts). Sometimes, criminalization can even be used as a policy gesture not to commit to enforcement (Feld and Voigt 2003).

### 2.2. GRETA-based Scorecard

The GRETA-based Scorecard, developed by Tilburg Universityôs INTERVICT (van Dijk and Klerx-van Mierlo forthcoming), assesses anti-trafficking measures of European Countries in four policy dimensions ï legal institutional framework, enforcement, assistance/protection and prevention. The assessment is conducted by reviewing the GRETA (Group of Experts on Action against Trafficking in Human Beings) reports, which is the monitoring mechanism for the implementation of the Council of Europe Convention on Action against Trafficking in Human Beings (2005, so-called Warsaw Convention). The GRETA monitoring is carried out with the member states of the Warsaw Convention and has two phases of evaluation. First, countries fill in the questionnaire developed by the GRETA team regarding main anti-trafficking policy measures and implementation, as well as relevant statistics. After the submission and review of the completed questionnaire, the GRETA team conducts a study visit to each country under evaluation. Based on the completed questionnaire and country-visit, the GRETA team prepares and submits a country report on anti-trafficking policy performance. At present, the country reports are available for 23 countries out of 40 member states (see appendix D for the country list).

The GRETA-based Scorecard provides numeric scores on 34 key-policy requirements (see appendix C for the list of the 34-requirements) for each country under evaluation by reviewing the recommendations of the GRETA country reports (European Commission 2010-2013). Each score is given on a 3-point scale, i.e. score 0 indicates whether GRETA *urges* changes in the implementation of the policy requirement; score 1 reflects whether GRETA *considers or invites* changes; and score 2 stands for *no* recommendation based on the assumption that it indicates the full implementation of the respective requirement (van Dijk and Klerx-van Mierlo forthcoming). The maximum score of the GRETA-based Scorecard is therefore 68 (or 70 due to the double-counting of witness protection for enforcement and

protection). Currently, the Scorecard is available for 13 countries (see appendix D for the country list).

Like the 3P Index, the Scorecard distinguishes three core policy areas of anti-trafficking (3Ps) and furthermore, the Scorecard incorporates two sub-dimensions of prosecution ï criminalization and enforcement ï so as to measure the quality of law-in-book and law-in-practice, separately. Also, the Scorecard has another advantage of including more detailed policy requirements (34 requirements for the Scorecard and 22 for the 3P Index). On the other hand, the Scorecard covers a limited number of European countries (13) ï about a third of the member states of the Warsaw Convention ï and there is no annual variation in evaluation scores, providing an aggregate score for the period of evaluation only (GRETA evaluation was conducted between 2010 and 2012). This limitation of availability makes the Scorecard a less comprehensive evaluation tool for cross-country and cross-time analysis.

### 2.3. European Statistics on Trafficking in Human Beings

There have long been political demands for comparable and reliable statistics on human trafficking in the EU because the European Union recognizes anti-trafficking as one of the priority policy agendas (European Commission 2013). In responding to the demands, the European Statitstics on Trafficking in Human Beings (hereinafter EuroStat on THB) were released in 2013.

These statistics include data on victims and perpetrators of human trafficking for the years of 2008, 2009 and 2010 from 34 EU-member states, candidate and EFTA/EEA (European Free Trade Association/European Economic Association) countries (see appendix F for the list of countries). Statistics on victims comprise the number of identified/presumed victims of human trafficking according to gender, citizenship, age, the forms of exploitation and registering countries, as well as the number of victims provided with protection and assistance and the types of assistance provided. Statistics on traffickers include the number of suspected, prosecuted and convicted traffickers according to citizenship and the forms of exploitation (see appendix E for details on the statistics).

The EuroStat on THB is the first regional initiative collecting statistics on victims and perpetrators of human trafficking across countries and time. This initiative is continued by the

EU-project on Tools for the Validation and Utilisation of EU Statistics on Human Trafficking (TrafStat) launched by Tilburg University. Through the TrafStat project, statistics on victims, protection/assistance and traffickers are collected for 22 EU-member states for the years of 2010, 2011 and 2012 (see appendix F for the list of countries). Compared to the EuroStat on THB, the pool of the TrafStat data is limited to EU-member states only ï excluding five countries (Croatia, France, Italy, Malta and the United Kingdom), which did not provide statistics for TrafStat (Aebi and Campistol 2013). The contents of the TrafStat statistics are basically in line with the EuroStat on THB but include more detailed information on definitions of human trafficking applied in each country, sources of data and the rules of statistical recording.

Regarding the content and methodology of quantification, the EuroStat on THB and TrafStat are different from the 3P Index and GRETA-based Scorecard in several ways. First, the former two are statistics on victims and traffickers through raw-data collection at the national level, while the latter two provide indexed evaluation through text analyses. Second, the EuroStat and TrafStat focus on prosecution and protection, while the 3P Index and the Scorecard include evaluation on all of the 3P areas. On the other hand, alongside the 3P Index, the EuroStat and TrafStat have time-series data, enabling policy evaluation and comparison across time, but cover a shorter period (2008-2012) than the 3P Index (2000-2012). The EuroStat and TrafStat share the regional focus of Europe with the GRETA-based Scorecard, but include a larger pool of countries (22 and 34 countries) than the Scorecard (13 countries).

The EuroStat/TrafStat can be a more objective measurement than the indexed evaluation in which subjective judgments may arise and therefore measurement errors can be arguably larger than the EuroStat/TrafStat. Also, the definitions and statistical rules employed are relatively more consistent across the countries in the EU where the Warsaw Convention and the European Statistics Code of Practice (European Commission 2011) are applied (although it is also acknowleged that the standards are not always strictly observed, consistency is presumably higher for the EU countries than the global sample).

On the other hand, the central question in utilizing the European statistics (EuroStat/TrafStat) in the anti-trafficking context is how to interpret the statistics. For instance, what does the numbers of victims tell us? In fact, this is a reoccuring question in the application of crime

statistics (Soares 2004). Do the statistics reflect the prevalence of human trafficking or policy efforts to identify victims and punish traffickers? Can the statistics be compared across countries, given that the level of law enforcement and data collection differ from country to country? If numbers shown in the statistics tend to capture a greater level of crime prevalence, a larger number will indicate excerbated problems and therefore a lower level of policy commitments. On the other hand, the interpretation can be exactly opposite, if the reporting/recording behaviors of the statistics are influenced by policy performance (Levitt 1998). This could be the case for anti-trafficking because policy efforts often start with recognizing the problem and identifying victims (BKA 2010). In section 4, I will discuss the application and interpretation of the EuroStat/TrafStat as a anti-trafficking measurement in more detail.

### 2.4. US Tier-ranking

In this section, I briefly discuss the Tier-ranking by the United States. The Tier-ranking is the first attempt to provide a quantitative assessment of anti-trafficking policy worldwide. The yearly ranking for up to 190 countries is published in the annual report on Trafficking in Persons (TIP report) and available since 2000 (the publication date of the first report is 2001 which covers policy activities in 2000). The TIP report provides country narratives on prosecution, protection and prevention based on information gathered through US embassies, NGOs and other sources the Department of State accessed. The evaluation is conducted according to the US legislation the Victims of Trafficking and Violence Protection Act (TVPA 2000).

Despite the division of three dimensions in the country narratives, the score ï Tier-ranking ï is given for the overall anti-trafficking performance only. The score ranges from tier-1 (full compliance with the TVPAôs minimum standard), tier-2 (not fully complied but making significant efforts), tier-2-watchlist (in addition to the condition of tier-2: the absolute number of victims is significant/increasing; failure to provide evidence of increasing efforts; or commitments based on additional future steps over the next year) and tier-3 (not fully complied and making no significant efforts) (see United States Department of State 2013). The tier-ranking is often criticized for the lack of transparent standards on the decision of the scores (United States Government Accountability Office 2006). Moreover, as discussed

earlier, aggregate evaluation across the 3Ps may not fully capture different policy dimensions, by not distinguishing specific needs for improvement in one policy area over another.

## 3. Critical Issues in Developing Indices on Anti-trafficking Policies

### 3.1. Validity and Reliability of Coded Data

The 3P Index and GRETA-based Scorecard are constructed based on coded data transferring qualitative information into ordinal numbers that reflect key indicators of anti-trafficking policies.

- 3P Index: consists of three sub-dimensions (prosecution, protection and prevention) and 22 policy indicators rating anti-trafficking policy performance on a five-point scale ranging from 1 to 5 for each sub-dimension and on a 15-point scale from 3 to 15 for the aggregate policy score.
- GRETA-base Scorecard: includes four sub-dimensions (legal framework, enforcement, protection, and prevention) and 34 policy indicators evaluating anti-trafficking policies on a three-point scale (0-2) for each indicator, summing up to 68-70 points in total.

The central question in using coded data concerns validity and reliability (Benoit et al. 2012). Validity involves whether the coded data reflect the latent quantity of interest, in other words, whether the content of the policy indicators and quantification methods measure the ótrueô values of anti-trafficking policy performance. Reliability is related to the replicability of the coded data, i.e. whether different coders can obtain the same results of processing the data. The replicability of the coded data is heavily affected by the clarity of instructions and the transparency of decision rules for coding. Both validity and reliability questions arise because coded data are fundamentally based on subjective judgments and the interpretation of the underlying variable of anti-trafficking policy can only be observed through noisy processing of available information. With these issues in mind, the estimate process of the latent variable ï anti-trafficking policy ï can be summarized in the following way.

L(anti-trafficking policy) = X(estimated scores) + E(measurement errors) (1)

E(*) = U(uncertainty about the latent quantity) + Z(uncertainty about coding) (2)

The true value of the latent variable (L) ï the quality of anti-trafficking policy ï is decomposed into two components: estimated policy scores and measurement errors. The measurement errors consist of two types of uncertainty. The former, uncertainty about the latent quantity, concerns definitional and methodological issues (validity), namely how to define ónti-traffickingô; which indicators to select; and how to quantify/rate the performance of the chosen indicators. The latter, uncertainty about coding, is related to the replicability of the data (reliability). To ensure the validity and reliability, the coded data of the 3P Index and Scorecard should fulfill the following conditions.

$$Exp(X) = L \quad (3)$$

$$\min E(arg) \quad (4)$$

In reality, we do not know the true values of the latent variable, the quality of anti-trafficking policy. Nor do we know of the sizes of uncertainty. Therefore, we have to address these issues in an indirect way, for instance, by comparing estimated scores of different coded data in order to check for the validity and reliability of the measurements. In this paper, we focus mainly on the validity issue by comparing the content and outcome of the 3P Index and the Scorecard.

Figure 1 shows that the 3P Index and the GRETA-based Scorecard have a positive correlation ($r = 0.41$). It indicates that the two coded measurements likely capture relevant contents of anti-trafficking to a fair extent, despite the fact that different international laws and policy indicators are applied. However, the sub-dimensions of the two indices demonstrate a low level of correlation ï particularly for protection and prevention (see table 2), challenging the validity of the sub-dimensions. There are various potential reasons for such low correlations. First, the pool of countries included in the 3P Index and Scorecard differ: more than 180 countries worldwide vs.13 countries in Europe, respectively. Also, the time-dimensions are different; the 3P Index measures anti-trafficking policy on an annual basis since 2000, while the Scorecard captures the cross-sectional variations of the policy performance during the period of 2010-2012 without yearly variations.

More seriously, the low-correlations may also reflect content issues. The two measurements use different informational sources (the US TIP reports for the 3P Index and the EU GRETA reports for the Scorecard) and also, select different policy indicators for each of the sub-

dimensions (see appendices A and C). Such a disparity indicates that policy mandates taken worldwide and in the EU might have different emphases because the selection of the policy indicators for the 3P Index is based on the prescriptions of the UN Palermo Protocol, while the selection by the Scorecard is based on the EU Warsaw Convention. On the other hand, the differences in the policy scores of the 3P Index and the Scorecard may also suggest differences in the availability and accessibility of information. As the 3P Index includes a large number of countries all over the world, the number of available sub-policy indicators with full information across countries is limited, compared to the Scorecard with a European focus. This results in, at least partially, the differences in the numbers of policy indicators adopted by the 3P Index and the Scorecard (22 and 34, respectively). For instance, the 3P Index could not include several crucial policy indicators related to enforcement and victim protection (such as numbers of investigations, prosecution and conviction, witness protection, victim identification and referral) because of information availability.

To improve the quality of the two coded indices, it seems that there are several possibilities. First, the Scorecard can extend the number of countries evaluated and also possibly, provide yearly evaluation, so that the coverage of the Scorecard in terms of countries and time can reach a similar level as that of the 3P Index, ensuring a broader range of comparison. Second, the 3P Index may add up several important policy indicators that are currently missing in the Index, so as to enlarge the content of policy evaluation to a similar level as that of the Scorecard. The extension of policy indicators can be achieved by exploiting other available global sources of information on anti-trafficking (beyond the US TIP and UNODC reports) and, possibly, by limiting the pool of countries evaluated to some degree, depending on the availability of information. Last but not least, the quality of the coded indices can be improved by supplementing the text analysis with statistics ï arguably a more objective source of information ï such as the European statistics (I will discuss the application of the EuroStat/TrafStat in more detail in section 4).

### 3.2. Assessments on De-jure and De-facto Dimensions of Anti-trafficking Policy

One important issue in evaluating policy performance is distinguishing ópolicy written in bookô and ópolicy performed in practiceô. This concern arises because law adoption does not always lead to enforcing the written law. Furthermore, the adoption of a certain law may

function as a lip-service for some policy makers, separating the de-jure dimension of law from the de-facto dimension (Feld and Voigt 2003).

Conceptually, law adoption should provide a basis for the implementation of the policy and, particularly, with regard to anti-trafficking, criminalization and institutionalization is key to the success of the policy because anti-trafficking is relatively a new policy arena that was not well-established in national legal frameworks in many countries until recent years and thus, recognizing the problem of human trafficking and addressing anti-trafficking as a policy priority are a first step to enforce the policy (UNODC 2009). However, criminalization does not automatically result in enforcement and also enforcement can sometimes be carried out in the existing legal frameworks without the legislative introduction of anti-trafficking law specifically.

In fact, the 3P Index and the Scorecard are subject to the criticism regarding de-jure and de-facto evaluation. Particularly, this issue becomes eminent for the 3P-prosecution index. The prosecution part consists of the criminalization of human trafficking (law adoption) and enforcement such as investigation, prosecution and conviction of offenders. The prosecution dimension of the 3P Index aggregates the criminalization and enforcement and determines a policy score jointly. The evaluation of the 3P Index tends to give an emphasis to legislative adoption over enforcement, i.e. law adoption is required in order to receive the two highest scores ï 5 and 4. On the other hand, the 3P Index also penalizes adopters of anti-trafficking law without any enforcement (i.e. no record on investigation, prosecution and conviction) by giving them score 2 (designated as óinadequateô efforts).

Regarding the design of the 3P-prosecution index, there are two issues to be discussed. First is whether law adoption should be given a higher weight than enforcement in assessing policy performance, and second is how to determine the level of enforcement. The first involves a conceptual argument on defining anti-trafficking based on the assumption that law adoption should be preconditioned for adequate enforcement ï the argument can be justifiable given the early stage of anti-trafficking in policy development, as discussed above. However, this argument can be still challenged by pointing out that the adoption of anti-trafficking law without strong commitments towards enforcement may not be more effective than applying and enforcing other related existing law (such as labor exploitation). On the other hand, the second issue (how to determine the level of enforcement) concerns the availability of

information on investigation, prosecution and conviction ï for instance, crime statistics which can be used as an indicator of enforcement. The informational sources of the 3P Index do not always provide numbers of such enforcement cases in a systematic way, making evaluation on the level of enforcement dependent on descriptive narratives and subjective judgments to some extent.

Different from the 3P Index, the Scorecard provides separate assessments on legal-institutional framework (law adoption) and enforcement. However, it is still unclear how the level of enforcement is assessed on a scale from 0 (urges changes) to 2 (no changes/recommendation). In other words, the evaluation of the Scorecard does not specify in which level of investigation/prosecution/conviction a country can receive a score of 2, for instance. It makes the evaluation of the Scorecard also vulnerable to subjective judgments. Moreover, it is uncertain whether the severity of sentences, one of the enforcement requirements, really reflects enforcement in practice because the highest level of punishment prescribed in law may not be sentenced in practice. The Scorecard does not clarify whether the evaluation is based on the maximum level of punishment written in law (de-jure) or the average level of actual sentences (de-facto). Because of such ambiguity in standards and definitions, the Scorecard cannot clearly distinguish between law adoption and enforcement.

In addition to prosecution, evaluation on protection policy also involves issues regarding de-jure and de-facto levels of performance. Victim protection and assistance programs (such as medical, legal and vocational assistance and recovery and rehabilitative support) are often not efficiently utilized because of the lack of outreach to victims. Moreover, the principle of ónо punishmentô for victims, one of the most crucial protection requirements, is practically not enforced in many countries. This is not caused by a lack of legal provisions granting amnesty but by difficulties in identifying and distinguishing victims from other illegal migrants and perpetrators. Both the 3P Index and the Scorecard are unclear about the evaluation standards distinguishing the de-jure establishment of protection programs and the de-facto utilization (in particular, concerning how many/what percentages of victims receive assistance and benefits).

Clear evaluation on de-jure and de-facto policy efforts can be achieved by refining the definitions and the standards of policy requirements by specifying whether it is written law or actual practice that is being evaluated for each policy indicator. Moreover, assessments on de-

facto efforts can be enhanced by utilizing statistics on law enforcement and assistance programs as evaluation indicators.

### 3.3. Policy Priorities for Destination, Origin and Transit Countries

Another potential concern in evaluating anti-trafficking policy is that needs for specific anti-trafficking policies may differ from country to country depending on the types of human trafficking flows with which a country is confronted. In other words, countries of destination that receive human trafficking inflows from other countries may have different policy priorities compared to countries of origin where traffickers recruit and send victims or transit countries where victims are transferred between source and destination countries. The UN Palermo Protocol and the EU Warsaw Convention do not differentiate policy mandates for each type of country urging countries to implement all of the 3P requirements. However, different policy instruments may be needed for different types of countries to achieve the ultimate goal of fighting and reducing human trafficking. For instance, in destination countries, granting amnesty and repatriation support for victims could be more important than in origin countries which may instead need rehabilitative support for returned victims. For transit countries, preventive actions such as border control may have a higher policy priority than victim protection policy.

Reflecting different policy needs by country type is, however, not as straightforward as one may think because there is no clear international standard on different policy priorities based on country types and also, many countries belong to more than one type. Thus, none of the existing indices evaluate anti-trafficking policy performance based on different standards. Alternative to differentiating evaluation standards, countries can be sub-grouped by country types and ranked inside their group while keeping general criteria of anti-trafficking policy requirements.

### 3.4. Development as Prevention of Human Trafficking

Root causes of human trafficking include poverty, gender discrimination and social unrest in origin countries, pushing people to take risky migration options which may turn into trafficking (Cameron and Newman 2008). Income inequality across countries and demand for cheap, exploitative labor and services in destination countries are also critical pull factors of

human trafficking.[3] Accordingly, the GRETA-based Scorecard takes development aid and poverty alleviation into account in assessing prevention policy. On the other hand, having the developmental criteria in anti-trafficking policy evaluation may broaden the scope of evaluation so much so that anti-trafficking policy indices are not distinguished from other socio-/economic indicators, making focused policy evaluation difficult. With this consideration, the 3P Index does not include developmental agenda specifically and focuses on crime prevention for evaluating prevention policy.

In addition to that, there is another reason for withdrawing development agenda from the anti-trafficking evaluation: the complexity of human trafficking. Indeed, the presumed root causes of human trafficking ï poverty and gender discrimination ï may not have a straightforward, linear relation with human trafficking. In other words, a higher level of gender discrimination may not necessarily lead to higher prevalence of human trafficking because womenôs mobility is constrained ï as one could see from Islamic countries in the Middle East where human trafficking of their own female citizens is low while gender discrimination is relatively high. Also, for the poverty, it may not be the absolute poverty level but rather relative poverty or income disparity with other neighboring countries that pushes people into human trafficking, as prospect theory suggests (Mo 2011). Such complexity makes it difficult for developmental agenda to be included in the evaluation on anti-trafficking policy. What is probably needed at this point is systematic analysis to estimate and quantify the effects of development on human trafficking (and also possibly, vice versa).

## 4. Application of the European Statistics on THB

In this section, I explore the application of the European statistics on human trafficking and discuss the utilization of the EuroStat/TrafStat for evaluating anti-trafficking policy. In doing so, I investigate what determines the number of identified victims, traffickers and protection programs through multi-covariate analysis.

[3] Such developmental agenda are addressed in the UN Palermo Protocol (2000) as a preventive policy instrument against human trafficking.

4.1. Number of Identified Victims

The European statistics provides data on number of victims identified by police, authorities and NGOs for up to 34 countries from 2008 to 2012. As discussed in section 2, the statistics on victims may reflect two different aspects: i) the magnitudes of the problem (or the true number of existing victims); and ii) policy efforts to identify victims of human trafficking. Each interpretation will lead to an exactly opposite conclusion in assessing anti-trafficking policy efforts: the former for poor policy performance as the problem became exacerbated and the latter for improving anti-trafficking policy because of stronger victim identification. In fact, what the statistics on victims really stand for is a tricky question to answer. As seen in table 3, the correlation between the number of identified victims and the Scorecard Protection policy scores is almost non-existing, while the correlation with the 3P-protection index is positive and relatively higher (r = 0.25). To verify this issue, I conduct a multi-covariate regression beyond a simple correlation check to provide a systematic analysis of the nature of the victim statistics.

My empirical model takes the following form.

$$Vot_{it} = Ŭ + Pop_{it} + Migration_{it} + Border_{it} + Income_{it} + Risk_{it} + Police_{it} + t + u_{it} \quad (1)$$

The dependent variable is the number of victims identified by police and assistance organizations coded in the European statistics (EuroStat/TrafStat). The explanatory variables consist of various factors that arguably affect the dependent variable and can be categorized into two sub-groups: factors pulling human trafficking inflows into the country (pull factors) and factors influencing policy efforts towards victim identification (policy factors). The pull factors include the (log) size of the population, (log) net income ï economic factor ï and the fraction of population under risk such as poverty and exclusion ï social factor. The policy factors include border control policy ï proxied with the number of refusals on the border ï and the (log) number of police. The migration factor ï proxied with the (log) number of illegal migrants ï can belong to both groups because illegal migration can increase the pool of potential trafficking victims and, at the same time, the identification of illegal migrants may

also reflect governmental policy towards victim identification (see appendix G on data sources and definitions).[4]

My empirical model covers up to 27 EU-countries (i = 1,,,,27) for the period of 2008-2012 (t = 1,,,,5). u is an error term and Ŭis constant. t captures yearly time trends. As the dependent variable is strictly non-negative and a count variable, a non-negative binomial regression method is applied. Unobserved country characteristics are addressed by controlling for random effect.

Table 4 shows the results. Columns 1-4 exclude the (log) police variable, while columns 5-8 include it. Without controlling for police capacity, all of the pull factors ï income, population and risk ï have positive effects at a level of 1%. For the risk variable, the fraction of the female population under risk is included in addition to that of the total population, given that human trafficking is a gendered problem of which females are the majority victims. Replacing the risk of the total population with the female risk does not alter the finding. On the other hand, strict border control reduces the number of victims, arguably due to governmental efforts to prevent human trafficking decreasing the pool of potential victims. The magnitude of illegal migration flows ï measured by illegal migration of both men and women, as well as female illegal migration only ï increases the number of victims.

However, controlling for the capacity of police, the main stakeholder of identifying victims, alters the findings (see columns 5-8). Two of the pull factors lose the significance of their coefficients ï population and risk. The income variable maintains its effect. Increasing net income by 10% increases the number of victims by 4-7%. Border control still holds its negative effects at 1-5% level, although the magnitude of the effect is minimal. Increasing police capacity by 10% leads to increasing the number of identified victims by 7-8%. Lastly, the positive effect of illegal migration disappears.

Overall, the pull factors become less important for determining the number of identified victims after controlling for policy factors, while the effects of the policy variables remain

[4] I additionally include the legalization of prostitution variable, following Cho et al. (2013). However, the coefficient of this variable does not turn out to be significant. Cho et al. (2013) use the human trafficking incidence index (UNODC 2006) taken from international organizationsô reports and media coverage and find a positive relationship between the prevalence of human trafficking and liberal prostitution law. In this paper, the EU statistics on victims ï mainly provided by police and governments ï are used instead of the incidence index and no effect may be driven by the nature of the statistics reflecting policy efforts towards victim identification rather than the magnitudes of human trafficking.

significant. These results seem to indicate that the number of identified victims reflects policy efforts towards victim identification to a sizable extent.

4.2. Amounts of Protection/Assistance Provided

The European Statistics include data on the amount of protection for victims of human trafficking, i.e. measuring how many assistance programs are provided for victims. The assistance programs include legal support, residence permit and repatriation efforts (European Commission 2013). The EuroStat/TrafStat on protection shares some of the policy requirements with the 3P-protection index and the Scorecard protection and, therefore, has a positive correlation with them to a fair extent (r= 0.18 and 0.19, respectively. See table 3).

The results of the multi-covariate analysis also show that the European statistics on protection have a positive relationship with other related policy indicators of anti-trafficking and migration (table 5). The empirical regression model takes the equation below.

$$\text{Protection}_{it} = \check{U} + \text{Victim}_{it} + \text{Migration}_{it} + \text{Border}_{it} + \text{Income}_{it} + \text{Risk}_{it} + t + u_{it} \quad (2)$$

The dependent variable is the amount of protection provided. As the amount of protection provided depends on the size of the target group, the number of identified victims is controlled for. Here, I take two measurements: the total number of victims identified and the number of foreign victims. The latter is included in order to find whether governments provide assistance exclusively for domestic victims or all victims regardless of nationality. The size of illegal migrants ï the total and female ï and the number of refusals on the border represent policy dealing with illicit migration. Income level and the fraction of the population under risk and poverty are also included to reflect economic and social conditions of the country. Given the limitation of the data, the empirical analysis includes 21 countries instead of 27.

The results show that, the more victims are identified, the more protection is provided. This finding remains when the variable is replaced with the number of foreign victims, implying that governments provide assistance for both domestic and foreign victims. The positive effect of the victim variable has two implications. First, more protection programs are implemented when the target group of victims is larger, which seems to be a natural consequence. Second,

a higher level of victim identification efforts is associated with a higher level of assistance for victims.

Stronger preventive efforts in border control lead to better protection, suggesting that countries with a stronger prevention policy against human trafficking also provide more protection programs for victims. On the other hand, illegal migration has a positive relationship with protection, but this result is not robust to the choice of variables. Regarding the socioeconomic conditions, effects are partially detected ï with a plus sign of income and a minus sign of risk effects ï but the findings are not widely confirmed across the different regressions.

4.3. Number of Convictions

The European Statistics provide data on the number of suspects, prosecution and convictions for human trafficking. Generally speaking, a high level of conviction indicates stronger law enforcement efforts. However, it is not easy to calculate conviction rates (the number of convictions/the number of prosecutions) across countries and time because the data is uneven and particularly, statistics on the number of prosecution have many missing values. Thus, I will instead investigate the absolute number of conviction regarding whether a larger number of convictions can be an indicator reflecting greater efforts to punish traffickers. Below, I try to answer this question by employing correlation check and multi-covariate analysis.

Table 3 shows correlation of the EU prosecution statistics with the 3P-prosecution index and the Scorecard-legal frame and law enforcement scores. With the 3P Index, the EU statistics on suspects, prosecution and conviction have a positive relationship to a fair degree (r = 0.26, 0.43 and 021, respectively). Interestingly, correlation between the EU statistics and the Scorecard-legal frame scores is rather trivial and even negative for the case of conviction (r = 0.05, 016 and -0.04, respectively), while correlation with the Scorecard-law enforcement is significantly high (r = 0.80, 0.94 and 0.75, respectively). This contrast implies that enforcement activities are largely independent from law adoption, as discussed in section 3.2.

The results of multi-covariate analysis (table 6) also show that the EU statistics on conviction have a positive relationship with other anti-trafficking indicators at the conventional level of statistical significance. The regression analysis takes the form below.

$$\text{Conviction}_{it} = \check{U} + \text{Victim}_{it} + \text{Migration}_{it} + \text{Border}_{it} + \text{Income}_{it} + \text{Risk}_{it} + \text{Anti-trafficking}_{it} + t + u_{it} \quad (3)$$

The dependent variable is the number of convictions and the explanatory variables are identical to equation 2 above (see section 4.2). Additionally, the quality of anti-trafficking institutions is taken into account because this is particularly crucial to the implementation of law. Here, the levels of prevention and protection policy ï taken from the 3P Index ï are used as a proxy to the anti-trafficking institution because the measurements of prosecution policy are a tautology of the conviction statistics to some extent, causing endogeneity problems.

As seen in table 6, the anti-trafficking institutions have a positive effect on conviction at 5-10% level. Also, the more victims are identified, the more traffickers are convicted. These results seem to suggest that the number of convictions overlaps with other anti-trafficking indicators. On the other hand, a higher level of border control reduces the number of convictions, signaling that there might be substitution effects in policy choice between border control and punishing traffickers. Interestingly, the wealth of a country (income) constrains convictions, indicating that economic wealth is not directly translated into higher commitments against human trafficking ï at least in the European context. Illegal migration and social risks do not turn out to have significant effects on conviction. Overall, the EU conviction statistics are generally in line with other anti-trafficking indicators but the relationship is not always straightforward, as seen in the case of border control, calling for a cautious utilization of these statistics as an anti-trafficking indicator.

## 5. Conclusion

In this paper, I reviewed the existing indices evaluating the quality of anti-trafficking policy quantitatively. An important issue in evaluating anti-trafficking policy involves the separation of different policy objectives ï namely 3Ps ï and distinction between de-jure and de-facto dimensions of the policies. Among the indices reviewed, the 3P Index and the GRETA-Scorecard correspond to the distinction of (some of) the necessary sub-dimensions. Both policy measures share a fair degree of convergence in their evaluation in spite of the different coverage of countries and periods and the application of different international law. However, each sub-dimension has a lower level of correlation between the two indices, compared to the

overall policy scores. The disparity may have come from not only differences in the policy scopes assessed but also subjectivity in evaluation.

Addressing these challenges, integrating statistical information into the qualitative texts used by the two indices can arguably enhance the objectivity of evaluation. In this paper, I make use of the European statistics and investigate whether these statistics can be indicators reflecting anti-trafficking policy efforts in the 3Ps areas. In particular, I focus on the application of the victim identification, protection/assistance and conviction statistics. Through multi-covariate analysis, I find that these statistics reflect policy efforts ï protection policy for the first two indicators and prosecution for the last ï to a statistically significant extent, although the statistics also indicate the magnitudes of human trafficking (crime prevalence) at least partially. Given that, these statistics can be utilized ï with a caution ï as one of various indicators used to build a composite index. Integrating such statistics adds an objective measurement supplementing the text analysis. There are several ways to reduce the problem that the statistics also represent crime prevalence. For instance, a principal component analysis (PCA) ï checking for variances of (possibly) correlated variables ï can be applied and then, each indicator is weighted based on the results of PCA. Also, countries can be sub-grouped based on country types ï destination, transit and origin ï and/or the level of human trafficking in/out-flows (following the UNODC categorization of high-medium-low flows, see UNODC 2006) and then, sub-grouped countries can be ranked and compared inside the same group.

As informational sources are relatively more available for European countries, one may try to develop a composite index by integrating both statistical and qualitative information for this region first. Such an integrated index could be enlarged on a global scale by further utilizing information worldwide, for instance, by using US TIP reports for text analysis and data collected by the UNODC for statistical application, if available. With regard to this, the enhancement of global data collection through the United Nationsô initiatives is called for. In addition to that, one may also consider some other methods borrowed from other related studies (on corruption or homicide, etc.) and conduct a victimization survey on human trafficking and/or an expert survey on anti-trafficking policy. Integrating different informational sources ï qualitative/quantitative, macro/micro, general public/expert opinions, etc. ï will enable us to minimize biases in making judgments and maximize the credibility of evaluation.

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**Figure 1.** Correlation between the 3P Index (2011) and Scorecard

(aggregate scores, 13 countries)

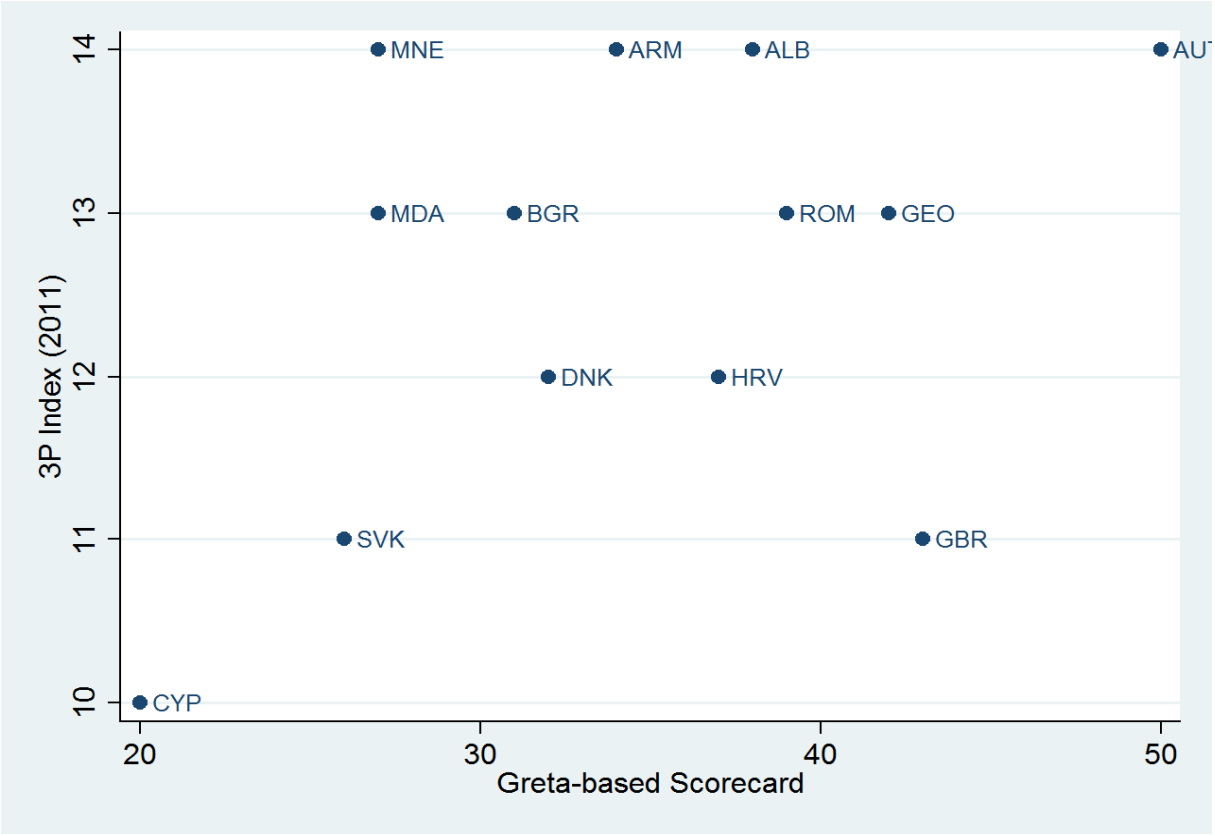

**Table 1.** 3P Index, GRETA-based Scorecard, EuroStat/TrafStat and Tier-ranking

| | Policy Areas evaluated | Measurement | Method | International Law applied | Countries | Period | Issue |
|---|---|---|---|---|---|---|---|
| 3P Index | Prosecution, Prevention, Protection (22 requirements) | Score 1-5 (total 3-15) | Text analysis (TIP reports and UNODC reports) | UN Palermo Protocol (2000) | 188 (worldwide) | 2000-2012 (annual) | No distinction between criminalization and enforcement |
| GRETA-based Scorecard | Legal framework, Enforcement, Protection, Prevention (34 requirements) | Score 0-2 (total 68-70) | Text analysis (GRETA-country reports) | Warsaw Convention (2005) | 13 (Europe) | between 2010-2012 (no yearly score) | No time variation and limited country pool |
| EuroStat / TrafStat | Victim Protection, Prosecution/Conviction | Statistics (raw numbers) | National statistics collection | Warsaw Convention (2005) | 34 / 22 (Europe) | 2008-2012 (annual) | How to interpret statistics |
| Tier-ranking | Overall anti-trafficking | Tier 1, 2, 2-watchlist and 3 | Information gathering (unclear) | US TVPA (2000) | Approx. 190 (worldwide) | 2000-2012 (annual) | No distintion across 3Ps; US standards applied |

**Table 2.** Correlation between the 3P Index (2011) and the Scorecard

| | 3P-Prosecution | 3P-Protection | 3P-Prevention | 3P-Overall |
|---|---|---|---|---|
| Scorecard-Legal Frame | 0.31 | | | |
| Scorecard-Enforcement | 0.39 | | | |
| Scorecard-Protection | | 0.12 | | |
| Scorecard-Prevention | | | 0.21 | |
| Scorecard-Overall | | | | 0.41 |

**Table 3.** Correlation: European Statistics vs. 3P Index and the Scorecard

(27 countries, 2008-2012)

| | Number of Victims | Amount of Assistance | Number of Suspects | Number of Prosecutions | Number of Convictions |
|---|---|---|---|---|---|
| Protection (3P) | 0.25 | 0.18 | | | |
| Prosecution (3P) | | | 0.26 | 0.42 | 0.21 |
| Protection (Scorecard) | 0.05 | 0.19 | | | |
| Legal Frame (Scorecard) | | | 0.05 | 0.16 | -0.04 |
| Enforcement (Scorecard) | | | 0.80 | 0.94 | 0.75 |

**Table 4.** Number of Identified Victims (EuroStat/TrafStat, 27 EU countries, 2008-2012)

Non-negative binomial regression (DV = Number of Identified Victims)

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| Income | 0.77 | 0.86 | 1.30 | 1.38 | 0.41 | 0.52 | 0.74 | 0.69 |
| | (3.60)*** | (3.86)*** | (4.85)*** | (4.92)*** | (1.74)* | (2.14)** | (2.39)** | (2.08)** |
| Population | 0.43 | 0.51 | 0.44 | 0.50 | -0.05 | 0.04 | -0.12 | 0.02 |
| | (3.45)*** | (4.09)*** | (3.50)*** | (4.08)*** | (-0.16) | (0.10) | (-0.32) | (0.06) |
| Illegal Migration | 0.25 | | 0.23 | | 0.12 | | 0.09 | |
| (all) | (0.09)*** | | (2.61)*** | | (1.26) | | (0.92) | |
| Illegal Migration | | 0.15 | | 0.13 | | 0.08 | | 0.07 |
| (female) | | (1.87)* | | (1.67)* | | (0.90) | | (0.09) |
| Border | -4.79e-06 | -4.36e-06 | -4.43e-06 | -4.043-06 | -5.38e-06 | -5.10e-06 | -4.99e-06 | -4.89e-06 |
| | (-2.11)** | (-1.89)* | (-2.01)** | (-1.80)* | (-2.59)*** | (-2.44)** | (-2.47)** | (2.35)** |
| Risk (all) | 0.07 | 0.06 | | | 0.01 | -0.01 | | |
| | (3.51)*** | (3.02)*** | | | (0.19) | (-0.36) | | |
| Risk (female) | | | 0.09 | 0.09 | | | 0.05 | 0.02 |
| | | | (4.59)*** | (4.05)*** | | | (1.68)* | (0.61) |
| Police | | | | | 0.73 | 0.66 | 0.81 | 0.68 |
| | | | | | (1.82)* | (1.62)* | (1.96)** | (1.63)* |
| Country Effects | RE | RE | RE | RE | RE | RE | RE | RE |
| Time Effects | YES | YES | YES | YES | YES | YES | YES | YES |
| No. Countries | 27 | 27 | 26 | 26 | 27 | 26 | 26 | 25 |
| No. Observation | 106 | 101 | 103 | 98 | 74 | 69 | 71 | 66 |
| Log Likelihood | -582.74 | -556.29 | -562.21 | -535.56 | -411.22 | -381.05 | -392.87 | -363.67 |

Note: Parentheses are z-statistics. */**/*** indicates significance at a level of 10/5/1%.

**Table 5.** Amounts of Protection/Assistance provided (EuroStat/TrafStat, 21 EU countries, 2008-2012)

Non-negative binomial regression (DV = Amounts of Protection/Assistance provided)

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| Victim | 0.001 | 0.001 | 0.001 | 0.001 | | | | |
| (all) | (3.53)*** | (3.76)*** | (3.16)*** | (3.29)*** | | | | |
| Victim | | | | | 0.002 | 0.002 | 0.002 | 0.002 |
| (foreign) | | | | | (3.04)*** | (3.27)*** | (2.73)*** | (3.15)*** |
| Income | 0.36 | 0.55 | 0.42 | 0.52 | 0.19 | 0.35 | 0.16 | 0.10 |
| | (1.24) | (1.89)* | (1.19) | (1.47) | (0.61) | (1.11) | (0.37) | (0.25) |
| Illegal Migration | 0.25 | | 0.24 | | 0.32 | | 0.31 | |
| (all) | (1.83)* | | (1.70)* | | (2.27)** | | (2.10)** | |
| Illegal Migration | | 0.09 | | 0.99 | | 0.16 | | 0.15 |
| (female) | | (0.84) | | (0.84) | | (1.40) | | (1.27) |
| Border | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |
| | (2.07)** | (2.92)*** | (1.83)* | (2.70)*** | (2.22)** | (2.73)*** | (1.74)* | (2.49)** |
| Risk | -0.02 | -0.03 | | | -0.04 | -0.5 | | |
| (all) | (-0.74) | (-0.88) | | | (-1.36) | (1.69)* | | |
| Risk | | | 0.02 | 0.01 | | | -0.02 | -0.06 |
| (female) | | | (0.47) | (0.19) | | | (-0.37) | (-1.08) |
| Country Effects | RE | RE | RE | RE | RE | RE | RE | RE |
| Time Effects | YES | YES | YES | YES | YES | YES | YES | YES |
| No. Countries | 21 | 21 | 20 | 20 | 20 | 19 | 19 | 18 |
| No. Observation | 69 | 67 | 66 | 64 | 57 | 55 | 54 | 52 |
| Log Likelihood | -353.10 | -344.05 | -333.70 | -324.72 | -286.24 | -276.07 | -266.91 | -256.52 |

Note: Parentheses are z-statistics. */**/*** indicates significance at a level of 10/5/1%.

**Table 6.** Number of Convictions (EuroStat/TrafStat, 26 EU countries, 2008-2012)

Non-negative binomial regression (DV = Number of Conviction)

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Victim | 0.001 | 0.001 | 0.001 | 0.001 |
| (all) | (1.86)* | (1.74)* | (2.22)** | (2.36)** |
| Income | -0.67 | -0.79 | -0.54 | -0.59 |
| | (-2.25)** | (-2.19)** | (-1.93)* | (-2.11)** |
| Illegal Migration | 0.11 | | 0.15 | |
| (all) | (0.95) | | (1.34) | |
| Illegal Migration | | 0.08 | | 0.13 |
| (female) | | (0.78) | | (1.17) |
| Border | -0.00002 | -0.00002 | -0.00002 | -0.00002 |
| | (-1.88)* | (-1.79)* | (-2.12)** | (-2.09)** |
| Risk | -0.001 | -0.01 | -0.01 | -0.01 |
| | (-0.05) | (-0.37) | (-0.40) | (-0.24) |
| Anti-trafficking | 0.29 | 0.28 | | |
| (prevention) | (2.25)** | (1.90)* | | |
| Anti-trafficking | | | 0.19 | 0.24 |
| (protection) | | | (1.98)** | (2.32)** |
| Country Effects | RE | RE | RE | RE |
| Time Effects | YES | YES | YES | YES |
| No. Countries | 26 | 26 | 26 | 26 |
| No. Observation | 92 | 87 | 92 | 87 |
| Log Likelihood | -369.90 | -347.85 | -370.31 | -347.03 |

Note: Parentheses are z-statistics. */**/*** indicates significance at a level of 10/5/1%.

**Appendix A.** Components of the 3P Index ï Prosecution, Protection and Prevention
(Full coding guideline available at www.economics-human-trafficking.org)

1. Policy Indicators of Prosecution

1) Adoption of anti-trafficking laws prohibiting human trafficking
2) Adoption of child trafficking laws
3) Application of other relevant laws
4) Level of penalty
5) Law enforcement
6) Collection of crime statistics

The adoption of anti-trafficking laws and law enforcement carry a particular weight in the country assessments.

2. Policy Indicators of Victim Protection

1) Amnesty for victims
2) No self-identification required as a prerequisite for recognition of victim status
3) Legal assistance for victims
4) Residence permits
5) Accommodation/housing
6) Medical assistance
7) Job training opportunities
8) Rehabilitative support
9) Assistance for repatriation to the home country

The most important factor with a special weight is amnesty for victims.

3. Policy Indicators of Prevention

1) Public campaigns to raise anti-trafficking awareness
2) Training executive and judicial personnel regarding human trafficking
3) Promotion of information exchange among different governmental authorities
4) Monitoring borders, train stations, and airports, etc.
5) Adoption and implementation of national action plans for combatting human trafficking
6) Cooperation with NGOs and international organizations
7) Cooperation with other foreign governments

**Appendix B.** 3P Index Country Ranking for 2012 (188 countries)

(Source: www.economics-human-trafficking.org/)

| Ranking | Country | Overall | Prosecution | Protection | Prevention |
|---|---|---|---|---|---|
| 1 | Australia | 15 | 5 | 5 | 5 |
| 1 | France | 15 | 5 | 5 | 5 |
| 1 | Korea, Republic of | 15 | 5 | 5 | 5 |
| 1 | Netherlands, the | 15 | 5 | 5 | 5 |
| 1 | Switzerland | 15 | 5 | 5 | 5 |
| 6 | Argentia | 14 | 5 | 5 | 4 |
| 6 | Austria | 14 | 5 | 4 | 5 |
| 6 | Belgium | 14 | 5 | 4 | 5 |
| 6 | Sweden | 14 | 5 | 4 | 5 |
| 6 | Moldova | 14 | 5 | 5 | 4 |
| 6 | Portugal | 14 | 4 | 5 | 5 |
| 6 | Canada | 14 | 5 | 4 | 5 |
| 6 | Italy | 14 | 5 | 5 | 4 |
| 6 | Nigeria | 14 | 5 | 5 | 4 |
| 6 | Armenia | 14 | 5 | 4 | 5 |
| 6 | Norway | 14 | 4 | 5 | 5 |
| 6 | Greece | 14 | 5 | 4 | 5 |
| 6 | Brazil | 14 | 5 | 4 | 5 |
| 6 | Kosovo | 14 | 5 | 4 | 5 |
| 20 | Montenegro | 13 | 4 | 4 | 5 |
| 20 | Chile | 13 | 5 | 4 | 4 |
| 20 | El Salvador | 13 | 5 | 4 | 4 |
| 20 | Serbia | 13 | 5 | 3 | 5 |
| 20 | Spain | 13 | 5 | 3 | 5 |
| 20 | Paraguay | 13 | 5 | 4 | 4 |
| 20 | Poland | 13 | 5 | 3 | 5 |
| 20 | Croatia | 13 | 4 | 4 | 5 |
| 20 | Uzbekistan | 13 | 5 | 3 | 5 |
| 20 | Phillipines | 13 | 5 | 3 | 5 |
| 20 | United States of America | 13 | 5 | 3 | 5 |
| 20 | Ecuador | 13 | 5 | 4 | 4 |
| 20 | Ireland | 13 | 4 | 4 | 5 |
| 20 | Romania | 13 | 5 | 3 | 5 |
| 20 | Czech Republic | 13 | 5 | 4 | 4 |
| 20 | Costa Rica | 13 | 4 | 4 | 5 |
| 20 | Nicaragua | 13 | 5 | 4 | 4 |
| 20 | Finland | 13 | 4 | 4 | 5 |
| 20 | Macedonia | 13 | 5 | 3 | 5 |
| 20 | Slovenia | 13 | 4 | 4 | 5 |
| 20 | Bulgaria | 13 | 5 | 4 | 4 |
| 41 | United Arab Emirates | 12 | 5 | 3 | 4 |
| 41 | Albania | 12 | 4 | 4 | 4 |

| | | | | | |
|---|---|---|---|---|---|
| 41 | Colombia | 12 | 5 | 3 | 4 |
| 41 | Latvia | 12 | 4 | 3 | 5 |
| 41 | United Kingdom | 12 | 5 | 3 | 4 |
| 41 | Thailand | 12 | 5 | 3 | 4 |
| 41 | Indonesia | 12 | 5 | 2 | 5 |
| 41 | Denmark | 12 | 4 | 3 | 5 |
| 41 | Georgia | 12 | 4 | 3 | 5 |
| 41 | Zambia | 12 | 4 | 3 | 5 |
| 41 | Germany | 12 | 4 | 3 | 5 |
| 41 | Ukraine | 12 | 5 | 3 | 4 |
| 41 | Slovak Republic | 12 | 5 | 3 | 4 |
| 41 | Cyprus | 12 | 5 | 3 | 4 |
| 41 | Ghana | 12 | 4 | 4 | 4 |
| 41 | Laos | 12 | 5 | 3 | 4 |
| 41 | Antigua and Barbuda | 12 | 2 | 5 | 5 |
| 41 | Taiwan | 12 | 5 | 3 | 4 |
| 41 | Jamaica | 12 | 4 | 4 | 4 |
| 41 | Burkina Faso | 12 | 4 | 4 | 4 |
| 41 | Israel | 12 | 5 | 3 | 4 |
| 41 | Kazakhstan | 12 | 5 | 3 | 4 |
| 41 | Bangladesh | 12 | 5 | 3 | 4 |
| 64 | Cameroon | 11 | 4 | 3 | 4 |
| 64 | New Zealand | 11 | 2 | 4 | 5 |
| 64 | Panama | 11 | 4 | 3 | 4 |
| 64 | Nepal | 11 | 5 | 2 | 4 |
| 64 | Estonia | 11 | 4 | 3 | 4 |
| 64 | Hungary | 11 | 5 | 3 | 3 |
| 64 | Japan | 11 | 4 | 4 | 3 |
| 64 | Kenya | 11 | 4 | 3 | 4 |
| 64 | Cambodia | 11 | 5 | 2 | 4 |
| 64 | Lithuania | 11 | 4 | 3 | 4 |
| 64 | Dominican Republic | 11 | 4 | 3 | 4 |
| 64 | Mozambique | 11 | 5 | 2 | 4 |
| 64 | Cote d´Ivoire | 11 | 3 | 3 | 5 |
| 64 | Azerbaijan | 11 | 5 | 3 | 3 |
| 64 | Vietnam | 11 | 5 | 3 | 3 |
| 64 | Burma/Myanmmar | 11 | 4 | 2 | 5 |
| 64 | Mexico | 11 | 4 | 3 | 4 |
| 64 | Ethiopia | 11 | 5 | 3 | 3 |
| 64 | Iceland | 11 | 4 | 4 | 3 |
| 64 | Guatemala | 11 | 4 | 3 | 4 |
| 64 | Bolivia | 11 | 5 | 3 | 3 |
| 64 | Turkey | 11 | 5 | 3 | 3 |
| 64 | Peru | 11 | 4 | 3 | 4 |
| 87 | Kyrgyz, Republic | 10 | 4 | 2 | 4 |
| 87 | The Bahamas | 10 | 4 | 3 | 3 |
| 87 | Belarus | 10 | 2 | 4 | 4 |

| | | | | | |
|---|---|---|---|---|---|
| 87 | Rwanda | 10 | 4 | 3 | 3 |
| 87 | Malaysia | 10 | 5 | 2 | 3 |
| 87 | Macau | 10 | 4 | 2 | 4 |
| 87 | Malta | 10 | 4 | 2 | 4 |
| 87 | Fiji | 10 | 4 | 3 | 3 |
| 87 | Malawi | 10 | 5 | 2 | 3 |
| 87 | Singapore | 10 | 4 | 3 | 3 |
| 87 | Namibia | 10 | 4 | 3 | 3 |
| 87 | China | 10 | 4 | 2 | 4 |
| 87 | Qatar | 10 | 4 | 3 | 3 |
| 87 | Mauritius | 10 | 4 | 3 | 3 |
| 87 | Gabon | 10 | 4 | 4 | 2 |
| 87 | Uganda | 10 | 4 | 3 | 3 |
| 87 | Tajikistan | 10 | 4 | 2 | 4 |
| 87 | Niger | 10 | 4 | 3 | 3 |
| 87 | India | 10 | 4 | 2 | 4 |
| 87 | Congo, Republic of the | 10 | 2 | 4 | 4 |
| 87 | Russia | 10 | 5 | 2 | 3 |
| 87 | Liberia | 10 | 4 | 3 | 3 |
| 87 | Guyana | 10 | 4 | 3 | 3 |
| 110 | Togo | 9 | 3 | 2 | 4 |
| 110 | Uruguay | 9 | 2 | 3 | 4 |
| 110 | Suriname | 9 | 4 | 2 | 3 |
| 110 | South Africa | 9 | 4 | 2 | 3 |
| 110 | Brunei | 9 | 4 | 2 | 3 |
| 110 | Egypt | 9 | 2 | 3 | 4 |
| 110 | Mauritania | 9 | 4 | 2 | 3 |
| 110 | Bosnia and Herzegovina | 9 | 2 | 3 | 4 |
| 110 | Hong Kong | 9 | 3 | 3 | 3 |
| 110 | Saudi Arabia | 9 | 4 | 2 | 3 |
| 110 | Benin | 9 | 3 | 3 | 3 |
| 110 | Afghanistan | 9 | 4 | 2 | 3 |
| 110 | Oman | 9 | 4 | 3 | 2 |
| 110 | Comoros | 9 | 4 | 2 | 3 |
| 110 | Pakistan | 9 | 4 | 3 | 2 |
| 110 | Aruba | 9 | 2 | 3 | 4 |
| 126 | Senegal | 8 | 2 | 3 | 3 |
| 126 | Venezuela | 8 | 2 | 3 | 3 |
| 126 | Chad | 8 | 2 | 3 | 3 |
| 126 | Tanzania | 8 | 4 | 2 | 2 |
| 126 | Curacao | 8 | 4 | 2 | 2 |
| 126 | Jordan | 8 | 4 | 2 | 2 |
| 126 | Barbados | 8 | 2 | 3 | 3 |
| 126 | Luxembourg | 8 | 4 | 2 | 2 |
| 126 | St. Vincent and the Grenadines | 8 | 2 | 3 | 3 |
| 126 | Palau | 8 | 2 | 3 | 3 |
| 126 | Turkmenistan | 8 | 4 | 2 | 2 |

| | | | | | |
|---|---|---|---|---|---|
| 126 | Belize | 8 | 2 | 2 | 4 |
| 126 | Honduras | 8 | 2 | 3 | 3 |
| 126 | Iraq | 8 | 4 | 2 | 2 |
| 126 | Bahrain | 8 | 4 | 2 | 2 |
| 126 | Sri Lanka | 8 | 2 | 2 | 4 |
| 126 | Mongolia | 8 | 4 | 2 | 2 |
| 126 | Lebanon | 8 | 4 | 2 | 2 |
| 126 | Sierra Leone | 8 | 2 | 3 | 3 |
| 145 | Mali | 7 | 2 | 3 | 2 |
| 145 | Angola | 7 | 2 | 2 | 3 |
| 145 | Guinea-Bissau | 7 | 2 | 3 | 2 |
| 145 | Tonga | 7 | 2 | 3 | 2 |
| 145 | Cape Verde | 7 | 1 | 3 | 3 |
| 145 | Haiti | 7 | 2 | 2 | 3 |
| 145 | Gambia | 7 | 2 | 2 | 3 |
| 145 | Trinidad & Tobago | 7 | 2 | 2 | 3 |
| 145 | Zimbabwe | 7 | 2 | 2 | 3 |
| 145 | Kiribati | 7 | 2 | 2 | 3 |
| 145 | Guinea | 7 | 2 | 2 | 3 |
| 145 | Maldives | 7 | 3 | 1 | 3 |
| 145 | Central African Republic | 7 | 2 | 2 | 3 |
| 145 | Tunisia | 7 | 2 | 2 | 3 |
| 145 | Timor.Leste | 7 | 2 | 2 | 3 |
| 145 | Djibouti | 7 | 2 | 2 | 3 |
| 145 | Algeria | 7 | 2 | 2 | 3 |
| 145 | South Sudan, Republic of | 7 | 3 | 2 | 2 |
| 145 | Swaziland | 7 | 2 | 2 | 3 |
| 145 | Lesotho | 7 | 2 | 2 | 3 |
| 145 | Burundi | 7 | 2 | 2 | 3 |
| 166 | Equatorial Guinea | 6 | 2 | 1 | 3 |
| 166 | Botswana | 6 | 2 | 2 | 2 |
| 166 | Morocco | 6 | 2 | 2 | 2 |
| 166 | Yemen | 6 | 3 | 1 | 2 |
| 166 | Solomon Islands | 6 | 2 | 2 | 2 |
| 166 | St. Lucia | 6 | 2 | 3 | 1 |
| 166 | Congo, Democratic Republic of the | 6 | 2 | 1 | 3 |
| 166 | Kuwait | 6 | 2 | 2 | 2 |
| 166 | Bhutan | 6 | 2 | 2 | 2 |
| 166 | Madagascar | 6 | 4 | 1 | 1 |
| 176 | Papua New Guinea | 5 | 1 | 1 | 3 |
| 176 | Micronesia, Federated States of | 5 | 2 | 1 | 2 |
| 176 | Sudan | 5 | 1 | 2 | 2 |
| 176 | Libya | 5 | 1 | 2 | 2 |
| 176 | Seychelles | 5 | 1 | 2 | 2 |
| 176 | BES islands | 5 | 2 | 1 | 2 |
| 176 | Eritrea | 5 | 2 | 1 | 2 |

| | | | | | |
|---|---|---|---|---|---|
| 183 | Marshall Islands | 4 | 2 | 1 | 1 |
| 183 | Cuba | 4 | 1 | 2 | 1 |
| 183 | Somalia | 4 | 1 | 1 | 2 |
| 183 | Iran | 4 | 2 | 1 | 1 |
| 183 | North Korea | 4 | 1 | 1 | 2 |
| 188 | Syria | 3 | 1 | 1 | 1 |

**Appendix C.** 34 Policy Requirements used for the GRETA-scorecard

(Source: van Dijk and Klerx-van Mierlo, forthcoming)

| A | Legal-institutional Framework | C | Enforcement |
|---|---|---|---|
| 1 | Criminalization of HT (including for labour/children) | 21 | No punishment clause |
| 2 | Action plans (size of budget) | 22 | Special investigative unit (no. officials) |
| 3 | Interministerial task force (meetings, NGO's, independent evaluation) | 23 | Special prosecutors (no. officials) |
| 4 | National coordinator/rapporteur | 24 | No. prosecutions per mill (related to no. Identified victims) |
| 5 | Comprehensive identification and referral system (incl. in detention centres for illegals) | 25 | No. convictions per mill (related to no. Identified victims) |
| 6 | International cooperation (police, prosecutors, consulars) | 26 | Severity of sentences (years of imprisonment) (incl. confiscation) |
| 7 | Integrated statistical system, incl. data protection | 27 | Maximum penalty for HT (> 5 years) |
| 8 | Training officials (incl. labour inspectors) | 28 | Witness protection |
| 9 | Research (incl. on victim satisfaction) | | |
| **B** | **Assistance/protection** | **D** | **Prevention** |
| 10 | No of victims identified (rel to population) | 29 | Awareness campaigns |
| 11 | Adequate support, incl shelter, health, occupational training | 30 | Screening of visa applicants |
| 12 | Provision of support delinked from cooperation with police | 31 | Border control measures |
| 13 | Recovery/ reflection time of 30 days | 32 | Development aid/poverty alleviation |
| 14 | Temporary residence permits; how many (related to no. identified victims) | 33 | Demand reduction, incl. through criminalization |
| 15 | Information on rights and free legal aid | 34 | Forging of travel documents criminalized etc. |
| 16 | Safe return/reintegration | | |
| 17 | Compensation in trial (related to no. identified victims) | | |
| 18 | State compensation, incl. illegals, non EU res (related to no. identified victims) | | |
| 19 | Identification, services and legal guardian for child victims | | |
| 20 | Witness protection[5] | | |

[5] The item witness protection is listed both under victim protection (20) and under law enforcement/prosecution (28) because it is an important aspect of both dimensions.

**Appendix D.** Lists of Countries: Warsaw Convention*, GRETA-Reports* and Scorecard**

(*www.coe.int/t/dghl/monitoring/trafficking, **van Dijk and Klerx-van Mierlo, forthcoming)

| | Warsaw Convention (date of entry into force) | GRETA-country Report (year of publication) | GRETA-based Scorecard |
|---|---|---|---|
| Albania | 2008 | | ɮ |
| Andorra | 2011 | | |
| Armenia | 2008 | 2012 | ɮ |
| Austria | 2008 | 2011 | ɮ |
| Azerbaijan | 2010 | | |
| Belgium | 2009 | 2013 | |
| Bosnia and Herzegovina | 2008 | 2013 | |
| Bulgaria | 2008 | 2011 | ɮ |
| Croatia | 2008 | 2011 | ɮ |
| Cyprus | 2008 | 2011 | ɮ |
| Denmark | 2008 | 2011 | ɮ |
| Finland | 2012 | | |
| France | 2008 | 2013 | |
| Georgia | 2008 | 2012 | ɮ |
| Germany | 2013 | | |
| Hungary | 2013 | | |
| Iceland | 2012 | | |
| Ireland | 2010 | 2013 | |
| Italy | 2011 | | |
| Latvia | 2008 | 2013 | |
| Lithuania | 2012 | | |
| Luxembourg | 2009 | | |
| Malta | 2008 | 2013 | |
| Moldova | 2008 | 2012 | ɮ |
| Montenegro | 2008 | 2012 | ɮ |
| Netherlands | 2010 | | |
| Norway | 2008 | 2013 | |
| Poland | 2009 | 2013 | |
| Portugal | 2008 | 2013 | |
| Romania | 2008 | 2012 | ɮ |
| San Marino | 2011 | | |
| Serbia | 2009 | | |
| Slovak | 2008 | 2011 | ɮ |
| Slovenia | 2010 | | |
| Spain | 2009 | 2013 | |
| Sweden | 2010 | | |
| Switzerland | 2013 | | |
| Macedonia | 2009 | | |
| Ukraine | 2011 | | |
| United Kingdom | 2009 | 2012 | ɮ |

**Appendix E.** List of European Statistics on Trafficking in Human Beings (EuroStat on THB)

(Source: European Commission 2013)

- Number of identified and presumed victims
- Number of identified and presumed victims registered by the police, NGOs and other agencies
- Identified and presumed victims by gender per sexual exploitation
- Number of identified and presumed victims by form of exploitation: labour (forced labour, domestic servitude)
- Number of identified and presumed victims by form of exploitation: other (forced bagging, criminal activities, removal of organs, other exploitation, unknown)
- Number of identified and presumed victims in the EU by citizenship
- Number of identified and presumed victims holding the same citizenship as the registering country
- Frequency of reporting of identified and presumed victims from the EU, EFTA, EU candidate and potential candidates
- Number of identified and presumed victims by assistance and protection: received assistance
- Number of identified and presumed victims by assistance and protection: reflection period
- Number of identified and presumed victims by assistance and protection: residence permit
- Percentage of suspected traffickers holding the same citizenship as the registering country
- Number of suspected traffickers in the EU by citizenship
- Number of suspected traffickers by form of exploitation
- Number of prosecuted traffickers in the EU by citizenship
- Number of prosecuted traffickers by form of exploitation
- Number of final decisions by the prosecution service for trafficking in human beings
- Number of convicted traffickers

**Appendix F.** Lists of Countries: EuroStat on THB* and TrafStat**

(Source: * European Commission 2013, ** Aebi and Campistol 2013).

F.1. Countries included in EuroStat on Trafficking in Human Beings

a. EU-member States (27)

Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Germany, Denmark, Greece, Estonia, Spain, Finland, France, Hungary, Ireland, Italy, Lithuania, Latvia, Luxembourg, Malta, The Netherlands, Poland, Portugal, Romania, Sweden, Slovenia, Slovakia, United Kingdom.

b. Acceding Country (1)

Croatia

c. Candidate Countries (4)

Iceland, Montenegro, The Former Yugoslav Republic of Macedonia, Turkey

d. Associated Countries (2)

Switzerland, Norway

F.2. Countries included in TrafStat (23)

Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Ireland, Latvia, Lithuania, Luxembourg, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, The Netherlands (all are EU-member states)

**Appendix G.** Data Sources and Definition

| Variables | Definition | Data Source |
|---|---|---|
| Victim (all, foreign) | Number of victims and foreign victims, respectively | EuroStat/TraftStat |
| Convictions | Number of convictions | EuroStat/TrafStat |
| Protection/Assistance | Amounts of protection/assistance provided | EuroStat/TrafStat |
| 3P Anti-trafficking Policy Index | Prosecution, protection and prevention policy scores (1-5, respectively) | Cho et al. (forthcoming) |
| GRETA-based Scorecard | Legal-institutional framework, enforcement, protection and prevention policy scores (0-2, 34 indicators) | van Dijk and Klerx-van Mierlo (forthcoming) |
| Income | Average net income (euro) | EuroStat |
| Population | Number of the population | EuroStat |
| Illegal Migration | Number of illegal migrants (flow) | EuroStat |
| Illegal Migration (female) | Number of female illegal migrants (flow) | EuroStat |
| Risk | Percentage of people at risk of poverty or social exclusion | EuroStat |
| Risk (female) | Percentage of females at risk of poverty or social exclusion | EuroStat |
| Police | Number of police personnel | EuroStat |
| Border | Number of refusals on the border | EuroStat |