



Improving the Estimate of Trafficking in Human Beings and Modern Slavery by Integrating Data From ILO/Walk Free/IOM and UNODC

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Abstract

An improved global estimate of the amount of trafficking in human beings/modern slavery is produced. The paper develops the methodology for data to populate Indicator 16.2.2 in the UN SDGs, ‘the estimated number of victims of human trafficking per 100,000 population, by sex, age, and form of exploitation’. The improved estimate is constructed by integrating data from the International Labour Organization/Walk Free/International Organization for Migration (ILO/Walk Free/IOM) with administrative data from United Nations Organization on Drugs and Crime (UNODC) rather than from the Counter Trafficking Global Data Collaborative (CTDC). The data from the UNODC is more comprehensive and less volatile than that from the CTDC on registered victims of trafficking. The new estimate is more than 30% larger, increases the proportion of trafficking for purposes of sexual exploitation from 27 to 56%, and increases the proportion of victims of trafficking who are female from 54 to 64%. This has implications for the priorities for social and public policy for prevention and for the provision of services to mitigate harms.

Keywords Modern slavery · Trafficking · Global estimates · Sex · UNODC

1 Introduction

The inclusion of trafficking in the UN Sustainable Development Goals illustrates the importance of this rapidly developing global policy field. The harms produced by trafficking are severe and long-lasting. Producing accurate estimates of the amount and distribution of trafficking in human beings/modern slavery matters since estimates influence priorities over diverse public and social policies and are used to test theories. These policies and

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theories are gendered. Producing estimates is challenging since trafficking is illegal and the victims and perpetrators are therefore hard to engage in data collection.

Trafficking in human beings was defined as a transnational crime by the UN in 2000 (UN, 2000), an EU-level crime by the EU Directive in 2011 (European Commission, 2011), and the crime of modern slavery by the UK in 2015 (UK, 2015), after a long period of international cooperation that has been developing legal definitions (ILO, 1930; UN, 1956). Trafficking/modern slavery is the exploitation of the vulnerability of others, the use of coercion to extract profit from labour, sex, and bodies. A vibrant field of policy and research is developing aiming to reduce and eliminate it (Bales, 1999; Cockayne, 2021; IOM, 2007; UNODC, 2022; Walby & Shire, 2024).

The data required to measure progress in this field is debated and under development. The global estimates, including those from the collaboration between ILO, Walk Free and IOM, are contested from multiple directions; and there are many calls for the improvement of data (Barrick & Pfeffer, 2024; Cameron et al., 2023; Fedina & DeForge, 2017; Guth et al., 2014; Raphael, 2017; Weitzer, 2013, 2015; Yea, 2017). We propose improvement of the methodology to estimate the extent of global trafficking/modern slavery.

This paper reviews the recent work by the ILO/Walk Free/IOM which generates global estimates of the extent and distribution of trafficking/modern slavery. It offers an improvement to one component of the estimate, and smaller improvements to others. Administrative data on registered victims is used to provide the ratio between trafficking for labour and sexual exploitation, which has implications for the sex ratio of victims. We show that using administrative data from the UNODC rather than CTDC dataset would substantially improve data quality. This change would have significant effects on the total amount of trafficking/modern slavery (increasing this by 32%), increasing the proportion that is trafficking for sexual rather than labour exploitation (from 27 to 56%), and increasing the proportion of victims that are female (from 54 to 64%).

Indicators summarize complex data using measurement frameworks. Potential indicators of trafficking and modern slavery include the number of victims who are registered by relevant authorities, the number of alleged traffickers in contact with the authorities, and the estimated number and proportion of victims in the population. They use different methodologies and measurement systems based on different epistemic systems rooted in different organizations with path dependent histories with implications for the extent and profile made visible to the public, policy makers and researchers (Counter Trafficking Global Data Collaborative (CTDC), 2023a; International Labour Organization (ILO), 2005, 2012a, b; International Organization for Migration (IOM), 2022, 2007; UNODC, 2009, 2012, 2014, 2016, 2018, 2021, 2022; Walk Free, 2013, 2014, 2018).

Our purpose is to improve the selection of data to support the development of a key global indicator. The estimates are tentative; and the methodology needs to be further improved. Not all think that quantification aids the evidence base for theory and policy development, however. Merry (2016) for example considers that reliance on indicators to guide policy in trafficking is fallacious, as indicators are unlikely to be well done. While Gallagher (2017) does not object to metrics in themselves, she criticizes any turn to metrics without sufficient quality, arguing that current data especially from Walk Free over-state their reliability and that the data practices are too speculative to generate robust estimates. However, it is important to develop measurement of illegal activities to support transnational research (Bello y Villarino, 2021); and the pace of development of indicators and data in the field of trafficking and modern slavery has been rapid. The paper offers contributions to the improvement of the methodology to generate a new estimate, and a specific contribution concerning the administrative data.

One of the key frameworks that locates policies and indicators in relation to policy goals is the UN Sustainable Development Goals (SDG) (United Nations, 2015), in which targets and an indicator for trafficking have been identified. These are concerned with both the extent and the distribution of trafficking among the population. The 'Indicator' for trafficking in the SDGs includes a figure for the distribution of trafficking between female and male victims and different types of exploitation. The extent to which violence and coercion are disproportionately perpetrated against women or men is widely debated. The methodology used to count victims has implications for the gender profile of victims (Walby et al., 2014, 2016).

The paper starts with a discussion of the development of indicators and data on trafficking in the context of the UN SDGs, followed by an account of the current methods of collection of data and their transformation into indicators, and a discussion of current approaches. The paper reviews the methodology used to produce the leading global estimates of trafficking/modern slavery. It compares the quality of data sources on registered victims and proposes the use of the higher quality data source. It calculates an alternative estimate using dataset from the UNODC rather than CTDC. We recommend that the ILO/Walk Free/IOM consortium (and others) replace the CTDC dataset with that from the UNODC on data quality grounds.

1.1 Indicators on Trafficking in the UN Sustainable Development Goals

The UN has developed a set of key measurements of progress by States in its 17 Sustainable Development Goals and their associated policy Targets and quantitative Indicators (UN, 2015). This is part of the UN's role as a standard setter. Trafficking is included in the UN instruments for the Sustainable Development Goals as an Indicator and in the Targets.

Indicators consolidate a field of knowledge and influence around a presentation of that knowledge preferred by the organization platforming that indicator. In the case of trafficking/modern slavery, some key concepts are defined in international legal instruments: trafficking is defined in these; but modern slavery is not a term in international law, though it is in some national jurisdictions including the UK, although its meaning is very close if not identical with trafficking. Collecting and organizing data to exactly match the intended concept behind the indicator is challenging. The match is not exact, with debate as to how to achieve greater alignment, and what trade-offs might be made in the process.

In the UN SDGs trafficking in human beings is named in three Targets (5.2, 8.7 and 16.2) and one Indicator (16.2.2) within three of the Goals (5, 8, 16), while modern slavery and forced labour are named adjacent to human trafficking in Target 8.7, and forced marriage is named in Target 5.3. Target 5.2 'Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation' and Target 5.3 'Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation' are linked to Goal 5 'Achieve gender equality and empower all women and girls'. Target 8.7 to 'Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms' is linked to Goal 8 'Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all'. Target 16.2 to 'End abuse, exploitation, trafficking and all forms of violence against and torture of children' and Indicator 16.2.2, the 'Number of victims of human trafficking per 100,000 population, by sex, age and form of exploitation' are

linked to Goal 16 ‘Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels’.

Indicator 16.2.2, the ‘Number of victims of human trafficking per 100,000 population, by sex, age and form of exploitation’, is the sole part of the SDG framework that refers to the estimated numbers that underpin the Targets and Goals. The Targets are largely aspirations for policy outcomes concerning trafficking, using the key words of ‘eliminate’, ‘eradicate’, and ‘end’ together with references to policy actions ‘take immediate and effective measures’, and ‘secure the prohibition’. The 17 high level Goals do not separately identify trafficking.

The lead concept in Indicator 16.2.2 is ‘human trafficking’. This is defined in the UN Palermo Convention (UN, 2000) as ‘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’. Additional concepts used in Target 8.7 are ‘modern slavery’ and ‘forced labour’, while Target 5.3 names ‘forced marriage’. The concept of forced labour is defined in the ILO Convention on Forced Labour (ILO, 1930) and the concept of forced marriage in the UN Convention on Practices Similar to Slavery (UN, 1956). The concept of ‘modern slavery’ is not defined in international legal instruments but is widely understood as an advocacy term (Bales, 1999; Cockayne, 2021). Jointly, these form a single field of trafficking/modern slavery (Walby & Shire, 2024).

There are currently no datasets that exactly match the requirements of Indicator 16.2.2. The Metadata for this SDG Indicator notes that both detected and undetected victims should be included, but that the published data currently include only detected victims (UN Statistics 2022). Building this more complete dataset would require development and implementing a measurement framework which includes definitions which align with international legal instruments, data collection that includes all countries and extends over time and is consistent and comparative.

2 Global Estimates of Victims of Trafficking/Modern Slavery by ILO, Walk Free and IOM

The International Labour Organization (ILO), Walk Free Foundation, and the International Organization for Migration (IOM) (ILO, Walk Free and IOM, 2022) provide the most recent global estimates of modern slavery, building on a prior programme of work. Global estimates of trafficking/modern slavery have been produced by Walk Free since 2013 (Walk Free, 2013) and Walk Free has joined with the ILO and IOM to produce more recent estimates (ILO, Walk Free and IOM, 2022). This section summarises their definitions, findings, and methodology. The following section addresses the administrative data used in the estimates in more detail and offers a different approach.

ILO, Walk Free and IOM (2022: 2, 13) define modern slavery as ‘situations of exploitation that a person cannot refuse or cannot leave because of threats, violence, deception, abuse of power or other forms of coercion’. This definition is not specifically included in

international legal instruments, but components of it are. Modern slavery is described in their report as ‘comprised of two principal components—forced labour and forced marriage’. Forced labour is sub-divided into privately-imposed forced labour and state-imposed forced labour. Privately imposed forced labour is sub-divided into forced labour exploitation and forced commercial sexual exploitation of adults and commercial sexual exploitation of children (ILO, Walk Free and IOM, 2022: 13). Forced labour exploitation includes begging, personal services and domestic labour (including domestic slavery) (ILO/Walk Free, 2017a). However, ‘other main concepts of modern slavery...trafficking in persons... are not included explicitly in the global estimates’ (ILO/ Walk Free /IOM, 2022: 13–15).

ILO/Walk Free/IOM (2022) estimates that there were 49.6 million people in modern slavery in any given day in 2021. This is divided into 27.6 million in forced labour and 22 million in forced marriages (Table 1). This means that 0.35% of the global population are in forced labour; and 0.28% of the global population are in forced marriages, amounting to 0.64% in modern slavery (ILO/ Walk Free/IOM, 2022: 2).

Of the 27.6 million in forced labour, 11.8 million (43%) are women and girls, while 3.3 million (12%) are children (see Table 1). There were 6.3 million people in situations of forced commercial sexual exploitation, which is 23% of all forced labour, among whom 78% were women and girls. Most (86%) forced labour occurs in the private economy, though an estimated 3.9 million people are in state imposed forced labour (ILO, Walk Free and IOM, 2022: 2–4). Forced commercial sexual exploitation, treated in this account as a part of forced labour though in other accounts as trafficking for purposes of sexual exploitation, is largely (78%) female (4,929,000 out of 6,332,000 victims). Of the 22 million people in forced marriages, 14.9 million (68%) are women and girls (ILO, Walk Free and IOM, 2022: 2–4).

The estimates of the ILO, Walk Free and IOM are based on data from population-based surveys in 75 countries, administrative sources, expert judgement supported by secondary literature, and statistical modelling that draws on further socio-economic data.

The estimates for adult non-sexual privately imposed forced labour and for forced marriage draw on survey data. The report however states that there are too few sexual exploitation and child exploitation cases in these surveys (p. 115). The estimates for child labour (split by sex) and for sexual exploitation (split by age and sex) are therefore derived from applying statistical models built on the administrative data collected by the CTDC. The estimates for *state imposed* forced labour rest on expert judgement. The estimates are supported by statistical modelling, drawing on socio-economic data.

The population-based surveys have been developed over time. The first global estimates of forced labour had been produced by ILO based on reports in the media and by organisations (ILO, 2005, 2012b). Population sample surveys of forced labour and forced marriage were carried out by Pennington et al. (2009) in five countries. The ILO trialled further surveys, producing a handbook on how to undertake surveys on forced labour at the national level (Datta & Bales, 2013; ILO, 2012a). This was followed by a programme of piloting and developing surveys by the Walk Free Foundation during 2014–2016; in 2016, the ILO and Walk Free joined forces to further develop and carry out more surveys (David, 2017; Walk Free Foundation, 2014).

The estimates draw on data from surveys carried out in 68 countries on forced labour and in 75 countries for forced marriage by the World Gallup Poll for the ILO and Walk Free. These surveys ask whether the respondent or any family member had been forced to work or marry. For the forced labour survey, 1000 to 2000 people were interviewed per country, amounting to 77,914 respondents, and, since they were asked about the experiences of other family members, potentially collecting data relevant to 628,598 people. For

Table 1 Global estimates of modern slavery from ILO, Walk Free and IOM (2022): number and proportion of persons by sex and age

Type of modern slavery	Number of males ('000s)	% of male popn	Number of females ('000s)	% of female popn	Number of adults ('000s)	% of adult popn	Number of children ('000s)	% of child popn	Total number ('000s)	% of total world popn
1. Privately imposed forced labour excluding FCSE	11,303	0.29	6,022	0.16	16,017	0.29	1,308	0.06	17,325	0.22
2. Private forced commercial sexual exploitation (FCSE)	1,403	0.04	4,929	0.13	4,644	0.09	1,688	0.07	6,332	0.08
(1 + 2) All private forced labour and sexual exploitation	12,706	0.32	10,951	0.28	20,661	0.38	2,997	0.13	23,657	0.30
3. State imposed forced labour	3,072	0.08	848	0.02	3,603	0.07	317	0.01	3,920	0.05
(1 + 2 + 3) Total forced labour	15,779	0.40	11,798	0.31	24,263	0.45	3,314	0.14	27,577	0.35
4. Forced Marriage	7,060	0.18	14,933	0.39	13,020	0.24	8,973	0.38	21,993	0.28
(1 + 2 + 3 + 4) Total modern slavery	22,839	0.58	26,731	0.69	37,283	0.69	12,287	0.52	49,570	0.64

Source: Adapted from Table 1 in ILO, Walk Free and IOM (2022: 17). Percentages are out of the relevant world population

the forced marriage survey, 109,798 respondents were interviewed, collecting data relevant to 931,394 people since they were asked about the experiences of their family networks (ILO, Walk Free and IOM, 2022). The questions in their surveys asked, 'Have you or has anyone in your immediate family has... ever been forced to' (Walk Free Foundation, 2014: 117).

The estimates reported in the *Global Index* are the number of people in modern slavery at any one moment in time (ILO, Walk Free and IOM, 2022). Since trafficking/modern slavery is a process with a temporal duration, not a one off-single event, and forced marriage is likely to last for life, the estimate of numbers of people who are victims at any one time requires an estimate of duration to support calculations of 'stocks and flows' (Datta & Bales, 2013).

Extrapolation and statistical imputation modelling are used to fill the gaps in data for countries where there were no surveys. This modelling used additional country-level data on vulnerability and state responses. There are 24 variables in 'vulnerability', 'grouped into four dimensions, including civil and political protections, and social, health and economic rights'. State responses were identified using 98 indicators to address 'five outcomes: survivors of slavery are identified, supported to exit and remain out of slavery; criminal justice mechanisms function effectively to prevent modern slavery; coordination occurs at the national and regional level, while governments are held accountable for their response; risk factors, such as attitudes, social systems and institutions, that enable modern slavery are addressed; and, businesses and governments stop sourcing goods and services that use modern slavery' (Walk Free, 2018).

Questions have been raised as to whether some variables are currently omitted, including an under-specification of labour inspectors despite sources of data on these being available from the ILO (Chuang, 2015), a relative lack of survey data on Western Europe and North America, and about improving the quality of comparative data on the regulation of the sex trade.

This is the procedure used in the 2018 report to estimate sexual and child exploitation:

Administrative data from IOM's databases of assisted victims of trafficking were used in combination with the 54 datasets to estimate forced sexual exploitation and forced labour of children, as well as the duration of forced labour exploitation. This involved calculating the ratio of adults to children and also of "sexual exploitation" cases to "labour" cases in the IOM dataset, which contained information on 30,000 victims of trafficking around the world who had received assistance from the agency. These ratios were then applied to the estimates taken from the survey data on forced labour of adults to arrive at an estimate of the number of children in forced labour and another estimate of "sexual exploitation." (Walk Free Foundation, 2018: 179).

In the recent report (ILO, Walk Free and IOM, 2022), the administrative data is no longer drawn from the IOM dataset alone, but from the CTDC dataset, which consists of data from IOM, Polaris and Liberty. This dataset contains data on over 156,000 individuals, although those with complete data on sex, age and type of exploitation are considerably fewer. Odds ratios concerning age and sex were applied to the corresponding global estimates of forced labour exploitation of male and female adults and children derived from the national surveys to derive the estimate of cases of forced commercial sexual exploitation of adults and commercial sexual exploitation of children (ILO, Walk Free and IOM, 2022: 115).

Henceforth, we focus on the CTDC dataset and contrast it with the UNODC dataset. The selection of the source of administrative data on the ratio of labour to sexual

exploitation has implications for the estimate of the size and distribution of modern slavery since this ratio differs between the datasets of the UNODC and CTDC datasets (see below).

The estimates for state imposed forced labour are not derived from surveys:

As the surveys focused on the non-institutionalized population, meaning that people in prisons, labour camps or military facilities, and other institutional settings are not sampled, the surveys are not suitable for estimating state-imposed forced labour (Walk Free Foundation, 2018).

Instead, estimates of state-imposed labour were identified through a systematic review of the comments from the ILO supervisory bodies followed by a review of secondary sources. (ILO, Walk Free and IOM, 2022: 116).

3 Administrative Datasets on Registered Victims

Information from administrative datasets is used in the estimates. Administrative datasets on registered victims of trafficking, on victims who register with the authorities and other help-providing agencies, necessarily do not include information on all the victims in the population. Information is extracted from this administrative data to estimate the proportion of trafficking that is for sexual or labour exploitation, the ratio of female to male victims, and the ratio of child to adult victims. There is more than one dataset on registered victims, including those collated by the UNODC and the Counter Trafficking Data Collaborative (CTDC). We identify and compare the data and quality of these administrative datasets on registered victims of trafficking. We find that the datasets have different distributions of victims by type of exploitation (sex or labour), and by sex of the victim.

Victims that come to the attention of the authorities, or other agencies providing assistance, are one sub-set of the victims of trafficking. Information on the ratio between different types of victims is extracted from the administrative data for building into the models for estimation. The ILO/Walk Free/IOM assume that the distribution of registered victims across sex, age, and type of exploitation, sex and age (adult/child) reflects their distribution in the population. This data is not used to estimate trends in the population over time. An increase over time in the recorded numbers of victims cannot be relied upon to indicate an increase in the ‘real’ population of victims, since it may be a result of an improvement in the actions of these services that leads to a higher proportion of the ‘real’ population coming to the attention of the authorities.

The UNODC collates data collected by states on those victims of trafficking who register with authorities and agencies for assistance. This uses the legal definition in the UN Protocol on Trafficking and includes information on their numbers, sex, age (adult/child), and form of exploitation (as required by the SDG Indicator). This information is collected and available at country level and aggregated by the UNODC for the world.

The Counter Trafficking Data Collaborative (CTDC, 2023a) is a Consortium including the International Organisation for Migration (2022), Polaris (US hotline) (Polaris, 2021), and Liberty (sometimes Liberty Asia or Liberty Shared) (CTDC, 2023e) that collates data collected on victims that are seeking assistance from a range of organisations. The CTDC dataset and its documentation is complex, so we take some space to untangle its parts, in order to provide a fair evaluation.

Table 2 Worldwide trafficking estimates for 2018: percentage of detected victims by sex and age: UNODC

	Men %	Boys %	Total male%	Women %	Girls %	Total female %	Total %
All victims of trafficking	20	15	35	46	19	65	100

Source: Derived from data in UNODC (2021), boys and girls defined as those under 18 years of age
N = 48,478

The ILO, Walk Free and IOM currently use the data collated by the CDTC, not the UNODC, to provide information on the ratio of sexual to labor exploitation and the ratio of child to adult labour exploitation.

(a) UNODC in 2018

The UNODC data covers victims of trafficking who are registered by competent authorities in each country, including the police, non-governmental organizations (NGOs), doctors, and other service providers. This is provided by central national authorities who process the data and give it to relevant entities, including the UNODC. It is also provided to Eurostat for Member States of the EU. There is variation between countries and over time in the extent to which countries identify and register victims of trafficking (European Commission, 2020). There can be a process of learning in which authorities develop their capacity to do this over time (Farrell et al., 2010).

The UNODC (2022) collects data on the number and distribution of victims of trafficking in UN member states, publishing its findings every two years. The UNODC data includes the distribution of victims of trafficking by sex, age, form of exploitation, world region, citizenship, and nationality.

In 2018, this UNODC data included information from 148 countries encompassing more than 95% of the world's population, and 49,032 detected victims (UNODC, 2021: 25, 31). UNODC (2021) findings for 2018 are presented here rather than those for 2020 (UNODC, 2022) since the latter were distorted by COVID and the lockdowns.

The UNODC (2021) dataset is presented in different subsets according to the level of data disaggregation provided. The full 2018 dataset has 49,032 victims in 148 countries, encompassing more than 95% of the world's population (UNODC, 2021: 25). However, not all countries reported on the disaggregation by sex, age, and type of exploitation. In 135 countries, there was information on both sex and age on 48,478 victims. In 115 countries, there was information on type of exploitation on 39,213 victims. In 106 countries, there was information on all of sex, age, and type of exploitation on 22,852 victims. In the 135-country dataset, 65% of the victims were female. In the 115-country dataset, 50% of the exploitation was for sex (38% for labour, and 12% other) (see Table 3). When the 106-country dataset is used, the percentages dis-

Table 3 Worldwide trafficking estimate for 2018: percentage of detected victims by form of exploitation: UNODC

	Forced Labour %	Sexual %	Other %	Total %
All victims of trafficking	38	50	12	100

Source: Derived from data in UNODC (2021), all data with complete information on type of exploitation
N = 39,213

Table 4 Worldwide trafficking estimates for 2018: column percentages of detected victims for each sex and age, by form of exploitation: UNODC

Form of trafficking	Men %	Boys %	Women %	Girls %	Total %
Sexual exploitation	17	23	77	72	61
Labour	66	66	14	21	29
Other	15	11	9	7	10
Total	100	100	100	100	100

Source: Derived from data in UNODC (2021), boys and girls defined as those under 18 years of age. N = 22,852

Table 5 Worldwide trafficking estimates for 2018: row percentages of detected victims for each form of exploitation by sex and age: UNODC

Form of trafficking	Men %	Boys %	Women %	Girls %	Total %
Sexual exploitation	5	3	67	25	100
Labour	38	21	26	15	100
Other	27	10	48	15	100
All	16	9	53	21	100

Source: Derived from data in UNODC (2021), boys and girls defined as those under 18 years of age. N = 22,852

aggregated by sex and type of exploitation are different from those in the 115 and 135 datasets. Since the comparison and the analysis depends on having all three items of information, it is unfortunately necessary to use the dataset with the smaller number of countries.

Women were 46%, girls 19%, men 20%, and boys 15% of detected victims (UNODC, 2021: 31), amounting to 65% female and 35% male, in 2018, as shown in Table 2 (135 country dataset).

The most frequent form of exploitation was sexual exploitation (50%), followed by forced labour (38%), with 12% for other forms (including 6% forced criminal activity; 1.5% forced begging; 1% forced marriages and 1% mixed forms including baby selling and removal of organs) (UNODC, 2021: 34), as shown in Table 3 (115 country dataset). Using the smaller 106 country dataset where there is complete information on sex, age and form of exploitation, these percentages become sexual exploitation 61%, forced labour 29%, and other 10% (Table 4).

The sex and age distribution varies between forms of exploitation. Trafficking for sexual exploitation was most frequent for women (77% of victims) and girls (72%), trafficking for forced labour was most frequent for men (67% of victims) and boys (66%) UNODC (2021: 33) (see Table 4).

Among victims of sexual exploitation, 67% were women, 25%, girls, 5% men and 3% boys, so females made up 92% of such victims (Table 5) (UNODC, 2021: 36). The distribution of victims across sex, age, and form of trafficking varies between world regions (UNODC, 2021: 31, 35).

Data is missing on some countries. The 'UNODC elaboration on national data' (2021) shows that gaps where countries have provided no data are filled by simple extrapolation from the other countries in that world region.

The UNODC data from other years are reported in Table 6. As above, the dataset that contains information on all of sex, age, and form of exploitation is the one reported here. This shows that the percentage of females and percentage of sexual exploitation

Table 6 UNODC detected victims for forced labour and sexual exploitation, per 100,000 population with the derived percentage of sexual exploitation, 2003–2020

Central year of data	Number of countries	Forced labour	Sexual exploitation	Forced labour+ sexual exploitation	% sexual exploitation
2003	77	0.02	0.15	0.17	88
2004	74	0.04	0.12	0.16	75
2005	86	0.09	0.2	0.29	69
2006	87	0.07	0.27	0.34	79
2007	97	0.15	0.29	0.44	66
2008	104	0.13	0.28	0.41	68
2009	107	0.14	0.24	0.38	63
2010	101	0.17	0.2	0.37	54
2011	97	0.15	0.22	0.37	59
2012	108	0.15	0.25	0.4	63
2013	104	0.17	0.28	0.45	62
2014	110	0.16	0.32	0.48	67
2015	117	0.21	0.36	0.57	63
2016	116	0.17	0.42	0.59	71
2017	137	0.29	0.42	0.71	59
2018	86	0.29	0.43	0.72	60
2019	77	0.39	0.48	0.87	55
2020	87	0.37	0.37	0.74	50
Average			0.29	0.47	65

Source: Adapted and calculated from data in UNODC (2022) p.22 Fig. 5. “Other” has been excluded in the calculation of the percentage of sexual exploitation

in 2018 (reported in UNODC, 2021) are consistent with and similar to those in other year of UNODC reports (UNODC, 2009, 2012, 2014, 2016, 2022).

(b) The Counter-Trafficking Data Collective (CTDC) in 2023

The Counter Trafficking Data Collaborative (CTDC, 2023a) is led by the IOM and works with partners on a dataset of victims seeking assistance. The dataset is continually added to; we report in the next section on the earlier, 2019 version of the CTDC. By 2023 (CTDC, 2023a), the CTDC dataset amounted to 156,330 cases from 189 countries in the total dataset that included data drawn from two decades, but this includes a substantial amount of missing data. The analysis below concerns the data as presented on the CTDC website in September 2023, most of which refer to data up to 2018. The CTDC (2023a) reports that the victims were 70% female, 25% male and 5% unknown, transgender or non-conforming. The CTDC (2023b) reports that the types of exploitation were sexual 54%, labour 42%, and other 11% [*sic*], which sums to more than 100%.

The contributing organizations of the CTDC dataset (IOM, Polaris, and Liberty (Asia/Shared)) will be considered separately below (CTDC, 2023c). In 2023, their relative contributions were IOM 45% of cases, Polaris 41%, and Liberty Shared 14%. Summing the contributions of these three sources, the number of victims comes to 106,382.

When using the CTDC data to calculate odds ratios to estimate the global number of sexual exploitation victims from the survey data on forced labour, a subset of the 106,382 cases were used, as complete information was needed on all of age, sex and type of exploitation. There is no documentation on the size of this subset, but an earlier methodological report from ILO and Walk Free (2017b; p. 65) which used similar methodology on IOM administrative data (see section d) below) reduced the sample size to 23% of the full data and we might reasonably assume a similar reduction in cases for this dataset. We can calculate the percentage of sexual exploitation cases from Table 1 of this paper. The odds ratios, when applied to the estimated number of forced labour cases excluding sexual exploitation (17,325,000) give an estimate of 6,332,000 cases of sexual exploitation, giving a sexual exploitation percentage of 27%. It is not possible to calculate the percentage of females in the reduced dataset, but Table 1 gives an estimated percentage of 46% with the additional inclusion of survey data.

(c) CTDC in 2019

DiRienzo (2022) analyses an earlier version of the CDTC dataset, reviewing the structure of its data from 2002 to 2018, when the dataset contained 55,434 cases from IOM, Polaris, and Liberty Asia, from 55 countries. One issue with the DiRienzo analysis is that the research does not specify when the data was downloaded, and since the dataset is updated regularly, this matters. The CTDC reference in DiRienzo's paper was retrieved in June 2019 and we take this to be the date for the dataset. DiRienzo reports that the early CTDC dataset was 74% female. In terms of exploitation, 53% involved some form of sexual exploitation, with labour 27%, forced marriage 0.4% and other 19%. DiRienzo (2022: 295) states that the 'database cannot be considered a representative sample of all victims of trafficking' because the US data is collected from hotlines unlike data from the other countries, includes information only on those forms more likely to be identified, and has variations in the definitions between countries.

(d) IOM in ILO and Walk Free (2017b)

The IOM has been working to counter human trafficking since 1994 and has been collecting and improving collection for many years (IOM, 2007, 2017, 2022; Surtees & Craggs, 2010). By 2011 the IOM was regularly collecting data on the victims it assists, with data collected and organized through the IOM Migrant Management Operational System Application (MiMOSA) Counter Trafficking Module (CTM) (CTDC, 2023d). The dataset has been built up over time, with each year's data being added onto the existing years of data.

In different years, the IOM data has reported significantly varying proportions of female victims and of trafficking for sexual exploitation (IOM, 2017; CTDC, 2023b). In 2017, the IOM data was further used in the production of sexual exploitation estimates for the 2016 Global estimates of Modern Slavery (ILO and Walk Free, 2017a) reported in the methodology document of the International Labour Organization and Walk Free (ILO and Walk Free, 2017b). The full dataset consists of 44,905 cases and uses data from 2012 to 2016 from the IOM's database. To create sexual:labour odds ratios, only cases with complete information on sex and age are used. This reduces the number of cases to 10,268, or 23% of the main sample. The percentage of those sexually exploited can be obtained from Table 1 of ILO and Walk Free (). There are an estimated 4,816,000 sexual exploitation victims and 15,795,000 forced labour victims, giving a sexual exploitation percentage of 23%. It is not possible to calculate the percentage of females in the reduced dataset, but Table 1 gives an estimated percentage of 67% with the additional inclusion of survey data.

(e) IOM in CTDC (2023a, b, c, d, e, f, g)

The next three sections disaggregate the CTDC data into its three constituent sources, using information from the CTDC website.

The IOM component of the CTDC data provides data on individuals in receipt of IOM direct assistance for movement and the reintegration process (CTDC, 2023d). The IOM data used in CTDC consists of records on assisted victims from 2002 to 2018. Detailed information on this component is found on the IOM Data Overview page on the CTDC website. The yearly number of IOM assisted victims from 2002 to 2018 are given in the “Total Victims Assisted” spreadsheet in the IOM Data Dashboard, (CTDC, 2023e) with a total of 49,037 victims.

There are quirks in this dataset. For example, there are over 900 cases of victims aged between 0 and 2 (CTDC, 2023d). These are children born into trafficking, but it is unclear whether they should be counted as direct trafficking victims.

The proportions reported were: 54% women, 8% girls, 32% men, 6% boys; thus 62% female and 38% male; while the types of exploitation were: 32% sexual, 63% labour, 1% both and 4% other (CTDC, 2023d).

(f) *Polaris in CTDC (2023a, b, c, d, e, f, g)*

CTDC (2023f) provides through the Polaris Data Overview four years of data (2015–2018) from a US telephone hotline with 44,597 cases. In this dataset, 70% were trafficked for sex, 25% for labour, and 5% for “both”, while 76% were known to be female, 13% male, 1% gender minority, and 10% unknown.

(g) *Liberty in CTDC (2023a, b, c, d, e, f, g)*

Liberty (sometimes Liberty Asia or Liberty Shared) has data from Asia, largely the Philippines (CTDC, 2023g). We report on Liberty data from the CTDC website in 2023 where it contributed 12,648 cases to CTDC over 2 years (2016 and 2017). While Liberty Shared’s dataset potentially contained data from 50 NGOs across Asia, Africa and the Middle East, in the data contributed to the CTDC comprising of 2 years (2016 and 2017) the majority are from the Philippines (11,615), with smaller numbers in other countries: Cambodia (635), Vietnam (14), China (8), Malaysia (4), Bangladesh (1), Myanmar (1), Thailand (1). Of the victims, 72% were females and 28% were males. Of the types of exploitation, sexual exploitation made up only 4%, labour 25%, forced marriage 2%, slavery 4% and other 65%.

3.1 Assessing the Quality of Administrative Datasets on Registered Victims

These administrative datasets of victims of trafficking are compared in Table 7, which shows the proportion of female victims and the proportion of trafficking for sexual exploitation. To calculate the percentage of female cases, we have removed “other” and “gender minority” from the calculations. To calculate the percentage of sexual exploitation, we have excluded “forced marriage”, included “Sexual and Labour” as sexual, and included “other” and “slavery” in forced labour. This latter decision was made as IOM/Walk Free/ILO include “drug production, drug sales, trafficking”, “begging”, “personal services”, “domestic labour” and “other” as types of work categories (ILO and Walk Free, 2017b: Table 4). This is justified by Footnote 17 in this report, which states that:

The categories presented here reflect the one-digit classification of industries from ISIC Rev.4, except begging and illicit activities, which have been introduced to capture those activities that may be outside the economic activities but are still a “sector” in which people are employed in forced labour.

Table 7 Comparison of the percentage of female and the percentage of those sexually exploited in eight datasets

Dataset	N	% female	% sexual exploitation	Source
UNODC 2018 106 Countries	22,852	74	61	UNODC (2021)
IOM in ILO and Walk Free 2017 (reduced dataset)	10,268	Not known	23	ILO Walk Free (2017b)
CTDC June 2019	55,434	74	53	Di Rienzo (2022)
CTDC in ILO/Walk Free/IOM 2022 (reduced dataset)	Not known	Not known	27	CTDC (2023h)
CTDC in ILO/Walk Free/IOM 2022 (full dataset)	106,382	74	50	CTDC (2023b, 2023c)
Of which: IOM	49,037	62	33	CTDC (2023d, 2023e)
Polaris	44,597	86	75	CTDC (2023f)
Liberty	12,648	72	4	CTDC (2023g)

Sources: UNODC (2021), Di Rienzo (2022), CTDC (2023b, c, d, e, f, g, h), IOM and Walk Free (2017b)

Note: 'reduced dataset' refers to the dataset used to calculate the odds ratios in the appropriate global estimate report

Table 7 shows that the percentage female ranges from 62% (IOM) to 86% (Polaris) and that the percentage for sexual exploitation ranges from 4% (Liberty) to 75% (Polaris).

Which is the highest quality data? The criteria here are: the most comprehensive set of countries; the most inclusive range of victims; a clear definition of the inclusion criteria; reasonable consistency over time; and containing a minimum data disaggregation of information on sex, age and type of exploitation. The specifically regional data is less relevant than the global: thus, Polaris is less relevant since it concerns only the US (CTDC, 2023f); Liberty since it is largely the Philippines (CTDC, 2023g). The IOM concerns a subset of victims registered with states, those in need of assistance for migration and repatriation, which is a non-random subset that excludes victims that are citizens of the country in which they were exploited and excludes victims that do not seek assistance with repatriation (Surtees & Craggs, 2010). This is narrower than the UNODC, which contains all victims registered with states. Among the UNODC datasets the one with the larger numbers of countries would be better (135 or 115), but limitations on the provision of disaggregation by sex, age (adult/minor), and type of exploitation mean that it is UNODC 106 that is the highest quality against the criteria proposed.

There is a further complexity in the use by ILO/Walk Free/IOM of the subset of data that has an age disaggregation. This subset (which contains only those cases that have information on age) appears to have a different proportion of females and of trafficking for sexual exploitation than the larger dataset (which contains further cases that do not have information on age). Another issue already described concerns missing data. The administrative data used by the ILO/Walk Free/IOM consortium requires a three-way disaggregation by age (child/adult), sex (male/female) and type of exploitation (labour/sexual) and complete data is required in all three fields. This subset appears to be substantially smaller than the full dataset and appears to have a different proportion of females and of trafficking for sexual exploitation.

The ILO/Walk Free/IOM use data from the CTDC to estimate the ratio of victims of trafficking for labour exploitation to victims of trafficking for sexual exploitation from the data collected by the CTDC. This is applied to the estimates of the extent of trafficking for labour exploitation derived from surveys, separately for male and female child victims (under 18), and male and female adult victims. We focus on the second of these, assuming the estimates of child labour victims are correct.

We examine the UNODC and CTDC administrative datasets. The UNODC has a different overall ratio of sexual to labour exploitation from the IOM/Counter Trafficking Global Data Collaborative (CTDC, 2023a). From Table 8, the UNODC finds that 39% of trafficking is for labour exploitation and 61% is for sexual exploitation, so a ratio of 39: 61, i.e. 1:1.564. The ILO/Walk Free/IOM using the CTDC data estimate 6,332,000 persons in forced commercial sexual exploitation, and 17,325,000 persons in privately imposed forced labour (reported in Table 1), so there is a ratio of commercial sexual exploitation to labour exploitation of: 17,325:6,332, that is, 1:0.365. These ratios differ substantially, and this has implications for the amount of trafficking for sexual exploitation/forced commercial sexual exploitation in the overall figure for trafficking/modern slavery. Statistically, these are odds-ratios, with odds of sexual exploitation over labour exploitation of 1.564 in the UNODC dataset and 0.365 in the CTDC dataset.

Like the CTDC, we divide the UNODC data by sex and age. The methodology blog on the CTDC website (CTDC 2023 h) estimates separate odds-ratios for each combination of sex and age; and provides those odds. We calculate equivalent odds for the UNODC dataset. Figures 4 to 7 of UNODC (2021) provide the proportions of types of exploitation by age and sex, from which odds ratios can be calculated. As before, we combine “other forms of exploitation” with “labour exploitation” when calculating the UNODC odds.

Table 8 shows the odds ratios for the UNODC data and the CTDC data. There are very considerable differences. For female adults, the UNODC dataset finds there are over five times more cases of sexual exploitation than labour exploitation; the CTDC dataset in contrast finds there is more labour exploitation than sexual exploitation in this group. For male children, UNODC data finds sexual exploitation to be relatively rare; in contrast the CTDC dataset finds it to be more common than labour exploitation. The

Table 8 Odds of sexual to labour exploitation for the CTDC dataset as published in 2017 and 2023

Age and sex category	ILO and Walk Free 2017		CTDC (2023a, b, c, d, e, f, g)			
	Proportion of victims		Odds	Proportion of victims		Odds
	Labour exploitation	Sexual exploitation	Sexual: labour	labour exploitation	sexual exploitation	sexual: labour
Female child	0.62	0.38	0.611	0.45	0.55	1.224
Female adult	0.70	0.30	0.436	0.57	0.43	0.769
Male child	0.99	0.01	0.015	0.42	0.58	1.359
Male adult	1.00	0.00	0.003	0.95	0.05	0.049
Overall	0.77	0.23	0.301	0.73	0.27	0.365

International Labour Organisation and Walk Free (2017a, b) odds using IOM data; CTDC (2023a, b, c, d, e, f, g) odds from CTDC (2023g); proportions calculated from odds

CTDC finding of more labour than sexual exploitation for female adults is very different from ratios found in other data sources (see Table 7).

The UNODC has published figures of the number of victims of trafficking registered with authorities, disaggregated by sex, age, and type of exploitation. The UNODC has a larger and more comprehensive collection of registered victims of trafficking than the IOM. The UNODC dataset collects data on victims from more countries around the world than those in the IOM dataset using a consistent methodology of victims registered with state authorities in a single recent year (2018) and reported to the UNODC by National Statistical Offices. The CTDC dataset, in contrast, is an eclectic collection of data from three sources (IOM, Polaris, Liberty) using different methodologies (case files; telephone helpline) and unevenly spread over 20 years (CTDC, 2023a; DiRienzo, 2022). Since the IOM case file dataset concerns victims that the migration-focused organization assisted, this is a subset of registered victims that does not include internal trafficking or those who are not returned to their country of origin. The Polaris dataset concerns those who used a telephone helpline in the US. The Liberty dataset is of casefiles largely from the Philippines though with other cases in Asia, Africa and the Middle East. Further, the information extracted from the IOM and CTDC datasets for use in the global estimates appear to use only those minority of cases where the age of the victim is known, despite the proportions of females and sex trafficking being substantially smaller than in the full dataset.

The conclusion here is that the UNODC 106 country dataset for 2018 has higher quality data than the CTDC dataset used in the ILO/Walk Free/IOM global estimates, when considered against the criteria. The UNODC dataset has a more inclusive range of victims (all those reporting to authorities, not only those victims in need of migration assistance). Both contain the minimum information on sex and form of exploitation). Moreover, if the aim of the ILO/Walk Free/IOM report is to produce a global estimate for the UN SDG indicator 16.2.2, then the UNODC dataset is recommended in the UN metadata report for that indicator (United Nations, 2023. Section 3.b). The UNODC 106 (UNODC, 2021) reports 74% female and 61% sexual exploitation. In contrast, although the full 2023 CTDC dataset reports 74% female (excluding “other”) and 50% sexual exploitation (CTDC, 2023a, b), the subset of data used as compared in ILO, Walk Free and IOM (2022) reports 46% female and 27% sexual exploitation.

4 Developing the Estimate of Trafficking/Modern Slavery

We develop the estimate of trafficking/modern slavery in the light of the discussion of different datasets on registered victims. We compare the quality of the administrative datasets and use data from the higher quality dataset in our estimate. Thus, we are using the general model from the ILO/Walk Free/IOM except for the components that use data from the administrative dataset on registered victims.

In the light of this comparison of the two sources of administrative data, we propose to use the UNODC data rather than the IOM/CTDC data to calculate the distribution of different purposes of exploitation, and the age and sex of victims. We provide a new estimate using this method and show the new scale and distribution of victims of trafficking.

We use the UNODC (2021) ratios of labour to sexual exploitation presented in Table 8 rather than the ratios found in the IOM/CTDC data. We substitute these UNODC odds for the CTDC odds that were used by the ILO/Walk Free/IOM. We show the implications of

Table 9 Odds of sexual to labour exploitation for the CTDC dataset and the UNODC dataset (by age and sex)

Age and sex category	CTDC			UNODC			
	Proportion of victims		Odds	Proportion of victims			Odds
	Labour exploitation	Sexual exploitation		Labour exploitation	Sexual exploitation	Other	
Female child	0.45	0.55	1.224	0.21	0.72	0.07	2.571
Female adult	0.57	0.43	0.769	0.14	0.77	0.09	3.348
Male child	0.42	0.58	1.359	0.66	0.23	0.11	0.299
Male adult	0.95	0.05	0.049	0.67	0.17	0.16	0.205
Overall	0.73	0.27	0.365	0.38	0.5	0.12	1.316

CTDC: odds from CTDC (2023g); proportions calculated from odds. UNODC: proportions from UNODC (2021) Figures 4–7; odds calculated from proportions

Table 10 Estimated global number of victims in privately imposed labour exploitation and commercial sexual exploitation by sex and age, using CTDC odds

	CTDC odds sexual: labour	IOM/Walk Free/ILO existing estimates of number of victims ('000s)		
		Privately imposed labour exploitation	Commercial sexual exploitation	Total privately imposed exploitation
Female child	1.224	661	809	1470
Female adult	0.768	5361	4120	9481
Male child	1.358	647	879	1526
Male adult	0.049	10,656	524	11,180
Total		17,325	6332	23,657

restricting the dataset to only those cases where the age is known, as compared with the larger dataset.

Table 9 gives the current estimates of the number of victims using CTDC data. Although there is no disaggregation by both sex and age in Table 1, the CTDC methodology blog (CTDC 2023 h) gives the global estimates for the number of adult males and adult females involved in privately imposed forced labour. These are 10,656,000 for adult males and 5,361,000 for adult females. This allows us to calculate the estimated number of male and female children involved in commercial forced labour. From there, the odds ratios in the blog allow us to calculate the estimated number of victims of commercial sexual exploitation in each category.

Table 11 presents the proposed estimates of the number of victims using UNODC odds. We use the global estimates of privately imposed labour exploitation by sex and age, and instead apply the UNODC odds to these figures.

From Tables 10 and 11, we can see that the estimates for the number of commercially sexually exploited victims increases from 6,332,000 to 22,025,000, a change of 15,693,000. The estimates for male children have decreased, but there is a large increase of over one

Table 11 Our proposed estimates of the global number of victims in privately imposed labour exploitation and commercial sexual exploitation by sex and age, using UNODC odds

	UNODC odds sexual: labour	Our proposed estimates of number of victims ('000s)		
		Privately imposed labour exploitation	Commercial sexual exploitation	Total privately imposed exploita- tion
Female child	2.571	661	1699	2360
Female adult	3.348	5361	17,949	23,310
Male child	0.299	647	193	840
Male adult	0.205	10,656	2184	12,840
TOTAL		17,325	22,025	39,350

and a half million for adult male victims, and a very substantial increase for adult female victims of commercial sexual exploitation of over 13 million.

Our new estimates are presented in Table 12, which is our suggested replacement for the findings by the ILO/Walk Free/IOM that were presented in Table 1. We find that 19,648,000 victims of trafficking for sexual exploitation/commercial sexual exploitation are female (previously 4,929,000) and 2,377,000 are male (previously 1,403,000). To obtain total numbers, we add the estimates for state imposed forced labour and forced marriage to the above figures.

Using the UNODC rather than CTDC data in the method increases the number of victims of trafficking/modern slavery by over 30%, from 49,570,000 to 65,263,000. It increases by over 50% the estimate of the number of victims of trafficking/modern slavery who are female from 26,731,000 to 41,451,000. It implies that one in every hundred females in the world are trafficked. It also increases the *proportion* of victims of trafficking who are female from 54 to 64%.

Table 11 also updates the estimated global prevalence rates, reported as percentages rather than the preferred number per 100,000 population required by the UN indicator. The percentage of those in modern slavery worldwide increases from an estimated 0.64% to 0.84%; with the percentage of women in modern slavery is now estimated to be over one per cent (1.07% compared with 0.69%).

5 Potential Further Improvements in Data

Currently, the estimates are experimental and tentative, rather than robust. A substantial programme of research is needed to improve data quality. In addition to our contribution to improving estimates by using different administrative data on registered victims, we report on further proposals for the development of the data and indicators on trafficking. They involve more surveys, the inclusion of additional relevant variables in the datasets, and the use of further statistical practices.

The most important development would be to carry out of more surveys to increase the range of countries on which there is survey data, and to create time series data.

If context data is to be used to assist in the modelling of data gaps, it is important to include more variables, for example, information on national variations in labour inspectors, and the extent and forma of the regulation of the sex trade.

Table 12 Our revised Global Estimates of Modern Slavery instead using UNODC odds ratios: Number and Proportion of Persons by Sex and Age

Type of modern slavery	Number of males ('000s)	% of male popn	Number of females ('000s)	% of female popn	Number of adults ('000s)	% of adult popn	Number of children ('000s)	% of child popn	Total number ('000s)	% of total world popn
1. Privately imposed forced labour excluding FCSE	11,303	0.29	6,022	0.16	16,017	0.29	1,308	0.06	17,325	0.22
2. Private forced commercial sexual exploitation (FCSE)	2,377	0.06	19,648	0.51	20,133	0.37	1,892	0.08	22,025	0.28
(1 + 2) All private forced labour and sexual exploitation	13,680	0.35	25,670	0.66	36,150	0.67	3,200	0.14	39,350	0.51
3. State imposed forced labour	3,072	0.08	848	0.02	3,603	0.07	317	0.01	3,920	0.05
(1 + 2 + 3) Total forced labour	16,752	0.43	26,518	0.68	39,753	0.74	3,517	0.15	43,270	0.56
4. Forced Marriage	7,060	0.18	14,933	0.39	13,020	0.24	8,973	0.38	21,993	0.28
(1 + 2 + 3 + 4) Total modern slavery	23,812	0.60	41,451	1.07	52,773	0.69	12,490	0.53	65,263	0.84

Percentages are out of the relevant world population

There are developments in statistical methods to address the gap between the number of victims who are registered with the authorities and the number of victims in the population. The ‘multiple systems estimation’ technique offers a potential methodology to estimate the scale of trafficking by providing a method of estimating the number of victims in the population using data from the victims who have contact with several different authorities (Bales et al., 2015, 2020; Chan et al., 2021). However, the method depends on assumptions that not all accept (Whitehead et al., 2021, 2022), especially over how to address victims that do not report to any authority. It may be best regarded as an experimental technique (ONS, 2020).

Some of these developments may be underway, as potentially indicated in the following processes: the cooperation between the IOM and UNODC on the First International Classification Standard for Administrative Data on Trafficking in Person (ILO, Walk Free and IOM, 2022: 97); and the partnership between ILO, Walk Free, IOM and UNODC on a bespoke survey module on forced labour (ILO, Walk Free and IOM, 2022: 97).

6 Conclusion

There has been significant development in the estimation of the extent and distribution of trafficking/modern slavery that is needed to support the development of theory and policy to counter trafficking/modern slavery required by the UN Palermo Protocol 2000. This is recognized in the UN Sustainable Development Goals: 16.2.2, the ‘Number of victims of human trafficking per 100,000 population, by sex, age and form of exploitation’.

The ILO, Walk Free, and IOM have developed methodology to provide one estimate of the number and distribution of victims of trafficking/modern slavery in the population. They estimate that there were 49,570,000 people in modern slavery in 2022 with a rate of 640 victims per 100,000 world population. The estimate is constructed from four types of sources: surveys that report on experiences of trafficking for labor exploitation and forced marriage; administrative data on victims of trafficking registered with authorities, which provides a ratio of labor and sex trafficking; expert judgement, drawing on secondary literature, which provides estimates of state-led trafficking/modern slavery; and statistical modelling that draws on data on socio-economic type context to fill data gaps for countries and over time.

Each of these components can be subject to improvement. The needs include more surveys to provide more raw data points on more countries and more points in time, the use of better administrative data on registered victims, and more studies on which systematic reviews could draw to reduce the scale of the contribution of expert judgement. All of the three improvements would reduce the need for statistical modelling to generate estimates.

This paper focused on the second component: improving the quality of the administrative data. We reviewed and compared the administrative data on registered victims held by the IOM/CTDC and UNODC. We demonstrated that the UNODC holds better quality and more stable data than the IOM/CTDC. The reason is that the UNODC dataset is more comprehensive, since it includes a wider range of registering authorities than the IOM/CTDC.

We offer the integration of the findings of the ILO/Walk Free/IOM with those of the UNODC to produce better estimates of the amount and distribution of trafficking/modern slavery.

The choice of administrative dataset for the ratio of labour to sexual exploitation by ILO, Walk Free and IOM (2022) has significant consequences for the proportion of trafficking/modern slavery involving sexual exploitation and thus, because these victims are disproportionately female, for the relative proportion of women and men among victims, as well as for the total

amount of trafficking/modern slavery. When the UNODC data rather than IOM/CTDC data is the basis of the ratio, then the amount of trafficking for sexual exploitation/forced commercial sexual exploitation increases by 15,693,000, more than trebling. Similarly, the number of female victims of modern slavery increases by 14,720,000 and 55%, and the overall number of victims of modern slavery increases by 15,693,000 and 32%.

This methodological improvement (UNODC rather than IOM/CTDC administrative data) has implications for three aspects of the estimates of trafficking/modern slavery: it increases the overall amount by 32%; it increases the proportion of victims of trafficking for sexual exploitation (as compared with labor exploitation) from 27 to 56%; and increases the proportion of female victims from 54 to 64%. This is a contribution to methodological debates as to how to measure the gender of violence and coercion.

This revised estimate has implications for theory concerning the uneven gender profile of violence and coercion. It has implications for policy and for law enforcement priorities, including the need for greater provision of resources to address the support needs of victims of trafficking for sexual exploitation who are disproportionately female. It has implications for wider strategies to prevent trafficking and modern slavery.

Appendix

As the Counter Trafficking Global Data Collaborative is a live website, and is updated at regular intervals, we provide archive web links for the references used in this paper. These are given below.

Reference and URL link	Archive link (Archived 18 September 2023)
CTDC (Counter Trafficking Global Data Collaborative) (2023a) Web site https://www.ctdatacollaborative.org/	https://archive.ph/RJ9ha
CTDC (2023b) Exploitation of Victims: Trends https://www.ctdatacollaborative.org/story/exploitation-victims-trends	https://archive.ph/fQqpv
CTDC (2023c) The Global Dataset at a Glance https://www.ctdatacollaborative.org/global-dataset-glance	https://archive.ph/Vf9MT
CTDC (2023d) IOM Data Overview IOM Data Overview https://www.ctdatacollaborative.org/dashboard/iom-data-overview	https://archive.ph/PSBsH
CTDC (2023e) Liberty Shared Data Overview. https://www.ctdatacollaborative.org/dashboard/liberty-shared-data-overview	https://archive.ph/p41MC
CTDC (2023f) Polaris Data Overview. https://www.ctdatacollaborative.org/dashboard/polaris-data-overview	https://archive.ph/BZvMe
CTDC (2023g) Global Estimates of Modern Slavery: Estimation Method https://www.ctdatacollaborative.org/story/gems2022	https://archive.ph/uwDqE

It may also be useful to readers to provide the previously archived CTDC home page from January 2019.

CTDC (Counter Trafficking Global Data Collaborative) Web site from 2019 https://www.ctdatacollaborative.org/	https://archive.ph/KV2Wg
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