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Global Threat Assessment 2023

Assessing the scale and scope of child sexual exploitation and abuse online, to transform the response

AI-generated image

Contents

This document contains content some readers may find distressing. Reader discretion is advised.

Foreword

"Leave that online."

We're often told this as children if we saw negative content or behaviours online. We never understood why the "online world" was perceived so differently from "real life" when we can clearly see how terrible online interactions can leave victims silenced and isolated. This is the mark the online world could leave on you in the real world.

Young people continue to face a thinning bridge between the online and physical worlds, and it's not spoken about enough in policy making. This is why young people need to join these conversations so that decision-makers can learn from those on the frontline of the online world. After all, we are the generation that's grown up online and we know what changes are needed to minimise the potential damage of cyber-abuse.

The internet is one of the most important aspects of modern social life. It allows people around the world to connect. It's also one of the sole sources of information for many. Thanks to the internet, we weren't alone during the COVID-19 lockdowns, with apps allowing us to video-call, host virtual parties, and even continue our schooling. Despite these benefits, the internet has allowed predators and online trolls to cause harm and hide behind screens without facing consequences. Children's vulnerability - as impressionable young minds - make them especially at-risk.

As youth eSafety advocates, online safety is extremely important to us. Earlier this year, our Youth Council released an 'Open Letter to Big Tech' for Safer Internet Day, calling on the industry to "stop putting profits ahead of [users'] safety". We are willing to fight for a safer online space, because while the benefits can't be ignored, neither can the risks.

Our online utopia looks like a diverse variety of platforms, working together to provide Safety by Design preventative features. Platforms will be proactively engineered with safety and inclusivity, rather than through reactive solutions as afterthoughts. The strengths of different organisations will create a web of near-infallible protections. The focus will be on users' rights and safety first and foremost, and not profit.
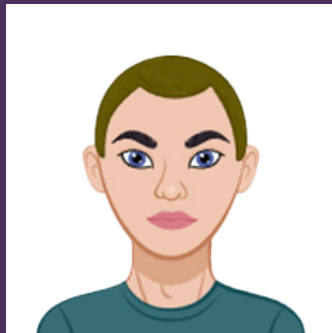
We want to see active feedback loops between abuse survivors, young people, and industry leaders that can be implemented within policy decisions, such as those involved in the 'privacy versus protection' debate. The voices of survivors and the general community need to be heard when making decisions that affect our online world.

Education, particularly at school, is one of the most effective preventative measures to equip young people with tools to safely navigate the internet. This Global Threat Assessment shows that 60% of online abuse cases come from a known adult, signifying the importance of education at home as well. Having accessible and high-quality information to answer questions relating to safety is important, and this information should be freely available to everyone, including young people with disabilities.

Online abuse is too big for any of us to tackle alone. As this report states, we need globally aligned legislation. We need everyone to agree on the standards imposed on platforms. We need government and industry officials to hear our voices in the fight for our safety and help the young people whose daily reality is online abuse.

It's time we stop saying "leave that online".

Ruhani, aged 14, and Elliot, aged 15 | Australian eSafety Youth Council

This foreword is part of a series of opinion pieces from children, young people and adult survivors of child sexual abuse around the world reflecting on the key findings of this Global Threat Assessment. You can read them all here.

Executive summary and recommendations

Child sexual exploitation and abuse online is escalating worldwide, in both scale and methods. To curb current trends, we urgently need to deploy Safety by Design, align internet regulation globally, and apply public health approaches to violence prevention. Incorporating children's voices and a child-centred approach will enhance our understanding of the threat and address gaps in the response.

The volume of child sexual abuse material reports has increased by 87% since 2019. New forms of abuse, like financial sexual extortion and AI-generated imagery, underscore the urgent need for Safety by Design.

In 2022 the US National Center for Missing & Exploited Children (NCMEC) analysed just over 32 million reports of child sexual abuse material received from across the globe.[1] This represents an 87% increase on the number processed in 2019.[2] The true scale of child sexual exploitation and abuse online is likely greater than this as a lot of harm is not reported.[3]

32 million reports of child sexual abuse material analysed in 2022

– National Center for Missing & Exploited Children

Nationally representative surveys conducted under Disrupting Harm (a joint project by ECPAT International, INTERPOL, and UNICEF Innocenti - Global Office of Research and Foresight) across 13 countries in Eastern and Southern Africa and Southeast Asia in 2022, revealed that as many as 20% of children in some countries were subjected to child sexual exploitation and abuse online in the past year.[4] WeProtect Global Alliance's own global survey conducted by Economist Impact in 2021

found that 54% of respondents had experienced 'online sexual harms' during childhood.[5] Other diverse sources support the conclusion that child sexual exploitation and abuse online is a widespread global issue that shows no signs of slowing down.

Since the last edition of the Global Threat Assessment, children have been exposed to new forms of harm. In December 2022, the Federal Bureau of Investigation (FBI) issued a public safety alert about an 'explosion' of financial sexual extortion schemes targeting children and teens. The number of reports NCMEC received on this same harm increased by 7,200% between 2021 and 2022. Since early 2023, generative artificial intelligence has been used to create child sexual abuse material. Emerging technologies like eXtended Reality (XR)[6] pose additional risks for child safety, as does increasing widespread adoption of end-to-end encryption without built-in safety mechanisms.

360% increase in 'self-generated' sexual imagery of 7-10 year olds from 2020 to 2022

– Internet Watch Foundation

Forms of abuse examined in previous editions have intensified, with a trend towards even younger children being sexually abused. From the first half of 2020 to 2022, the Internet Watch Foundation (IWF) reported a 360% increase in the instances of 'self-generated' sexual imagery of 7-10 year olds.[7]

The majority of child sexual abuse material featuring children aged 0-6 years is of the highest severity, classified as 'Category A'.[8] Online grooming, which was identified in the previous Global Threat Assessment as a key concern, has evolved particularly insidiously within social gaming environments. New insight from risk intelligence organisation Crisp reveals that individuals seeking to abuse children in these environments are able to lock them into high-risk grooming conversations in as little as 19 seconds after the first message, with an average time of just 45 minutes.

A key conclusion to draw from emerging evidence is that boys and girls appear to be vulnerable in different ways. For example, boys are more likely to experience financial sexual coercion than girls.[9] Another novel insight featured in this report is that 9-17 year old lesbian, bisexual, gay, transgender, queer, and other sexual minority identified (LGBTQ+) children in the US are twice as likely to stay in contact with someone online who made them uncomfortable, citing friendship as the main cause for maintaining the relationship.[10] Other individual factors that can affect a child's risk of exploitation and abuse include race, ethnicity, and disability. To respond to this growing body of evidence and ensure all children are considered in the response, tailored interventions need to be developed.

60% of cases of online abuse involved a perpetrator likely known to the child

– Disrupting Harm

We are now at a critical juncture where a shift towards prevention, starting with the widespread adoption of Safety by Design, represents the only viable route to curb the sustained increase in child sexual exploitation and abuse online.

Emerging evidence reveals a chasm between children's perceptions of risk and how online harms manifest, exposing the need for child-centred approaches to help bridge the gap.

Most children and young people perceive adults and peers they do not know as most likely to cause them harm or abuse them online. This revelatory finding from the 2022 #MyVoiceMySafety poll of children across the world (conducted by WeProtect Global Alliance and the UN Special Representative on Violence Against Children) suggests that children are generally not aware that the individuals they know can pose a greater risk than strangers online.[11] A systematic review of research on parental protective strategies also found that guidance provided by parents and guardians predominantly reinforced the misleading message of 'stranger danger'.[12] Conversely, across all 13 countries of the Disrupting Harm study, in 60% of all cases of online abuse, the perpetrator was likely to be known to the child.[13] The #MyVoiceMySafety

poll also revealed that boys are less attuned to online risks compared to girls and those of unspecified gender, which is striking in light of evidence on boys being disproportionately targeted for financial sexual extortion and coercion.[14] This new evidence highlights the role youth consultation plays in uncovering opportunities to better prevent child sexual exploitation and abuse online, for example via the development of tailored interventions for children with different personal factors.

"Youth participation and consultation is an important element of a child-centred approach"

The #MyVoiceMySafety findings indicate weaknesses in how governments, online service providers, and educators currently provide accessible, age-appropriate information about online risks to help young people make informed choices about their online activities. Other studies reveal gaps in provision for children suffering sexual exploitation and abuse. Evidence from ECPAT's Global Boys Initiative indicates that gender stereotypes associated with masculinity, and gender-biased laws in certain geographies, create barriers to disclosure and help-seeking, and prevent boys from being recognised as victim-survivors.[15]

Youth participation and consultation is an important element of a child-centred approach because it offers a window into children's experiences and perspectives, exposing both gaps and opportunities while building a more comprehensive, enhanced picture of the threat. The United Nations Convention on the Rights of the Child (UNCRC) recognises the importance of incorporating children's perspectives when making decisions that affect them.[16] However, in practice, more work is needed to leverage children's voices and experiences and translate commitments into action.

Globally aligned internet regulation has significant potential to boost the response by incentivising consistent action from platforms to tackle harm.

Since 2021, Australia,[17] Ireland,[18] Nigeria,[19] the European Union,[20] the Philippines,[21] Singapore,[22] and the US state of California[23] have joined Fiji,[24] France,[25] Germany,[26] New Zealand,[27] and others in enacting or introducing new forms of online safety regulation. At the time of writing, various laws are also proposed including: the Digital India Act; the EU's proposed regulation to tackle child sexual abuse material;[28] the UK Online Safety Bill;[29] and six Bills currently being debated in the US,[30] most notably the Kids Online Safety Act[31] (the federal counterpart to California's Age-Appropriate Design Code Act). Global alignment of new regulatory regimes will be key to realising their transformative potential. Futureproofing is also important to ensure regulation is responsive to new, emerging technologies and effective in countering fast-developing threats.

However, internet regulation is just one component of the legislative response to child sexual exploitation and abuse online. Even with significant investment to ensure correct implementation, internet regulation will be ineffective without robust laws that criminalise child sexual exploitation and abuse online, according to the minimum recommended standards in line with UNICEF's 2022 Legislating for the Digital Age report.[32] Asymmetries and gaps in legal frameworks continue to inhibit cross-border investigations and broader efforts to tackle child sexual exploitation and abuse online, evidencing the important role legislation plays in enabling voluntary cooperation on a global scale.

Voluntary collaboration will remain critical to enable responsiveness, drive innovation, and centre the voices of children and survivors.

Going forward, voluntary action and collaboration will remain a critical complement to legislation. Continued cross-sector dialogue and cooperation will enable responsiveness to emerging strategic challenges including how to address the rise in financial sexual extortion and coercion of children, scale and standardise safety tech solutions in light of increased demand created by regulation, and best leveraging new automated tools to reduce the burden on digital first responders and law enforcement. Multi-sector collaboration is particularly crucial for the incorporation of child and survivor perspectives, and global initiatives like the 2023 UNICEF-INTERPOL agreement, which promises to improve inter-institutional coordination at a country level to better support children and victim-survivors of abuse.[33] Turning the tide on current abuse trends will only be possible with increased prioritisation and commitment from all stakeholders involved in the response, empowered and enabled by maturing legislation.

Urgent calls to action

The evidence presented in this edition of the Global Threat Assessment demonstrates that children are being subjected to sexual exploitation and abuse online at an increasing rate and in increasingly varied, complex forms. To prevent more children from coming to harm, governments, online service providers, civil society organisations, and all responders are urgently asked to:

1 Invest more in public health approaches, prioritising prevention

A recent study by World Vision and FP Analytics found that compared to prosecution, prevention of child sexual abuse is generally under-prioritised and under-funded.[34] This must be urgently corrected, starting with more widespread deployment of Safety by Design to put children at the centre of new technologies like generative AI and XR as they emerge,[35] and to mitigate the risks associated with end-to-end encryption (E2EE).

Governments should lead a broader shift towards prevention by investing in public health approaches. Adapted from the field of public health, such approaches involve both the public and private sector investing in interventions that target the whole community, including those at risk of perpetrating child sexual abuse or experiencing it, those who have already been abused, and those who have abused others.[36] Safety by Design alongside sexuality and healthy relationship education fit squarely within a public health approach because both aim to reduce the risk of children experiencing abuse in the first place.

While prevention-focused public health approaches do not negate the need for policing and criminal justice measures, they have significant potential to drive a step-change in the response to child sexual exploitation and abuse online by addressing the systemic drivers of the issue and the multiple causal pathways to offending.[37]

2 Centre children's rights and perspectives in designing interventions

The findings of the #MyVoiceMySafety poll highlight the importance of engaging children to better understand their views and online experiences. When their perspectives are not considered, gaps in the response emerge, creating opportunities for those who seek to cause harm.

Child-centred approaches are vital as they help ensure interventions and services are responsive to the experiences, rights, and needs of young people. It is important that youth participation opportunities are designed to channel a diverse range of children's voices, and consider the different needs and various personal and societal factors that impact online experiences and risk. To better centre children's rights and perspectives within the current approach, there is an urgent need to prioritise interventions that:

- Remove and reduce barriers to abuse identification and help-seeking, such as shame, victim-blaming, and misconceptions about abuse

- Empower children with age-appropriate knowledge and tools to help them navigate online spaces safely

- Enable children and young people to hold online service providers to account for taking steps to keep them safe online.

3 Implement globally aligned legislation

It is of paramount importance that legislative responses around the world are consistent with one another and that common international standards are pursued. This will prevent offenders from moving between jurisdictions to benefit from legal loopholes and avoid penalisation, while also helping technology companies ensure their systems are workable, efficient, and avoid time-consuming duplicative efforts in reporting, removing, and blocking abusive content.

WeProtect Global Alliance's Global Strategic Response highlights comprehensive and harmonised legislation across borders, as well as investment in international capacity building programmes and sufficient funding, as key factors to develop.

Governments must ratify the Council of Europe Convention on the Protection of Children Against Sexual Exploitation and Sexual Abuse (also known as the 'Lanzarote Convention'), and should be guided by the minimum recommended standards in UNICEF's 2022 Legislating for the Digital Age report.[38] The United Nations Convention on the Rights of the Child includes important provisions that address child sexual exploitation and abuse online, but is yet to be ratified and implemented in all UN Member States. More well-resourced governments have a responsibility to support capacity building. Engagement with those who are beginning to enforce regulation will be useful to governments that are embarking on their own process of rulemaking.

Governments should draft laws to regulate online services and promote the use of technology to combat the rise of child sexual exploitation and abuse online. By requiring online service providers to keep users safe, and introducing a risk of financial, legal, and – in some cases – criminal sanctions for those who fail to do so, internet regulation represents the clearest route to incentivise more effective action to tackle abuse online. By consulting documents like the draft UNESCO guidelines on digital platform regulation to ensure laws are globally aligned, regulators can enhance potential impact and successful implementation.[39]

The most successful legislative and regulatory initiatives will be built on the foundation of respect for fundamental rights and liberties, without restricting innovation. The latter can be achieved through regulation that is 'principles-based' rather than prescriptive, and technology neutral. Examples include the EU's General Data Protection Regulation (GDPR) and Artificial Intelligence Act, Hong Kong's Personal Data (Privacy) Ordinance (PDPO), and Ghana's Digital Financial Services Policy.

Introduction

Aims

This report seeks to assess the scale and nature of child sexual exploitation and abuse online, in order to inform and direct the response. It aims to encourage evidence-based action by recognising the progress achieved to date, recommending solutions and measures based on the evidence presented, and highlighting opportunities to prevent abuse before it happens.

Table 1. Key Terminology

> **Child sexual abuse** is "the involvement of a child [anyone under 18] in sexual activity that he or she does not fully comprehend, is unable to give informed consent to, or for which the child is not developmentally prepared and cannot give consent". Child sexual abuse in defined in many ways, but this is the definition adopted by WeProtect Global Alliance ('the Alliance'), which is based on the World Health Organisation (WHO) guidelines.[40]
>
> **Child sexual exploitation** is a form of child sexual abuse that involves any actual or attempted abuse of position of vulnerability, differential power or trust, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another. This can be perpetrated by individuals or groups of offenders. What distinguishes child sexual exploitation from child sexual abuse is the underlying notion of exchange present in exploitation.[41] This said, it is also important to acknowledge that there is significant overlap between the two concepts, because exploitation is often a feature of abuse, and vice versa.[42]
>
> **Child sexual exploitation and abuse online** is child sexual exploitation and abuse that is partly or entirely facilitated by technology, i.e. the internet or other wireless communications. This concept is also referred to as Online Child Sexual Exploitation and Abuse (OCSEA), and 'technology-facilitated' child sexual exploitation and abuse.

Methodology

The Global Threat Assessment collates and analyses insights from multiple studies to provide a holistic and up-to-date picture of the threat of child sexual exploitation and abuse online around the world, including a nuanced evaluation of information gaps and differing views.

The Assessment is enhanced by various forms of primary research including:

- Findings from Economist Impact's survey on parents and guardians' perceptions of child sexual exploitation and abuse online

- Primary data provided by the United Nations Office of the Special Representative of the Secretary General on Violence Against Children, the Tech Coalition, Suojellaan Lapsia Protect Children, the Child Rescue Coalition, Unicef, and End Violence Global Partnership

- 26 semi-structured interviews with a range of stakeholders including law enforcement officials, child safety advocates, academics, technology industry representatives, and survivors

- Data insights developed by Crisp, a Kroll business

- Case studies provided by Alliance member organisations and affiliates.

The development of this report was guided by a Global Steering Committee comprising 15 experts from law enforcement, governments, technology companies, non-governmental organisations (NGOs), academia, and lived experience advocates. Interviewees were selected to address information gaps uncovered during the development of the report.

Child

Evidence shows children from minority or marginalised groups based on their sexual orientation, race, ethnicity, or disability are more exposed to online sexual harm.

Poverty and inequality – exacerbated by the COVID-19 pandemic, war in Ukraine, and climate change – continue to fuel child sexual exploitation and abuse.

Youth consultations reveal a gap between children's perceptions of risk online and harm experienced, underscoring the need for child-centred approaches, age-appropriate online safety information, and accessible reporting processes.

Children's internet access and the prevalence and impact of abuse online

Since our 2021 Global Threat Assessment, internet usage has continued to increase. As of April 2023, 5.18 billion people – 64.6% of the world's population – have become active internet users, and 4.8 billion of those – 59.9% of the global population – are active social media users.[43] Research from the International Telecommunication Union shows that young people are propelling this connectivity, with 75% of people aged 15-24 online in 2022 compared to 65% of the rest of the population.[44] Generational gaps are most noticeable in Africa, where usage is 55% and 36% respectively.

"Young people are propelling this connectivity"

Further research shows the extent to which ever-younger people are accessing the internet. According to research by the UK's communications regulator, Ofcom, almost all children aged 3-17 (97%) went online in 2022.[45] While increased internet access and usage can bring benefits, it also exposes children to a wide range of risks, including sexual exploitation and abuse. A greater number of children on the internet means there are more potential targets for online predators and other harmful actors.

The Economist Impact survey, commissioned alongside our previous Global Threat Assessment, continues to be the latest available data source on children's reported global exposure rates of online sexual harm. Globally, 54% of respondents had experienced at least one type of online sexual harm.[46]

At a regional and national level, significant new evidence has emerged from Disrupting Harm, a large-scale research project exploring how child sexual exploitation and abuse online is manifesting in 13 countries in Eastern and Southern Africa and Southeast Asia.[47] Data from this project estimates that at a minimum, 1-20% of children were subjected to child sexual exploitation and abuse online in the past year alone, depending on the country. This varied range could certainly be a reflection of the state of child sexual exploitation and abuse online in these countries (e.g. 1% in Vietnam and 20% of children in the Philippines), but it could also be read as presenting a partial

picture of the scale of abuse because of under-reporting. In the US, a similar study on image-based sexual exploitation and abuse of children (IBSEAC) found lifetime exposure rates to range between 2-16% depending on the category of abuse.[48]

There are important differences between the two surveys; Disrupting Harm uses cross-sectional data derived from children's responses about experiences in the past year, while the IBSEAC study was retrospective and focused on lifetime prevalence. Other differences involved the categories of abuse, illustrating definitional and conceptual variations in research even when a victim-survivor-oriented perspective is prioritised. These differences demonstrate the need for continued analysis of multiple sources of quantitative and qualitative data to ensure valid and comprehensive understanding of a complex issue.

Child sexual exploitation and abuse online has a profound impact on children's lives, health and self-concepts.[49] Victim-survivors report issues including psychological trauma,[50] anxiety, depression,[51] self-harming or suicidal behaviour, self-blame,[52] trust issues, impaired relationships,[53] and difficulties at school. The impact extends into adulthood and affects family and intimate relationships. It is important to note that the impact of abuse on each victim-survivor is unique and depends on a complex interplay of factors. Whether or not a victim experiences any or all the impacts mentioned depends on the nature and/or severity of the abuse, how the abuse is psychologically processed, and the reactions and support of responders to disclosure.[54]

54% **of respondents globally had experienced online sexual harm during childhood**

– Economist Impact

Personal factors

More evidence is emerging as to how personal and developmental factors – such as age, sex and gender, race and ethnicity, sexual orientation, and disability – can affect a child's exposure to online sexual harm.

Despite more concerted efforts to understand these factors, relatively little is still known about some elements, and how they interact to compound and heighten risks. The role of 'intersectionality' in child sexual exploitation and abuse online will be an important focus for future research.

Age

Disrupting Harm data for African countries shows 15-17 year olds experiencing child sexual exploitation and abuse online at higher rates than those aged 12-14 years. This was also the case in some Asian countries, though in Cambodia and Thailand it was more common for younger children aged 12-14 to report these experiences. In the IBSEAC study, children under the age of 13 were victim-survivors in less than 10% (9.8%) of incidents. However, other research studies,[55] more narrowly focused on one category of abuse, found age did not seem to determine this type of victimisation.

Whereas Disrupting Harm does not cover children aged 11 years and under, very young children feature prominently in the child sexual abuse imagery detected by the Internet Watch Foundation (IWF). From the first half of 2020 to 2022, the IWF reported a 360% increase in the instances of 'self-generated' sexual imagery of 7-10 year olds.[56] Furthermore, the majority of child sexual abuse material featuring children aged 0-6 years is of the highest severity, classified as 'Category A' material.[57] Children aged 11-13 years have featured in more than half of the child sexual abuse imagery detected in the past three years by the IWF,[58] most of which is 'self-generated'. On the dark web, 45% of respondents in a survey of child sexual abuse material users disclosed that they mostly seek abuse imagery of children aged 4-13 years.[59]

The difference in data may reflect an overall ease in reporting and substantiation when imagery portrays prepubescent children, and the type of offenders who use the dark web to access abuse material and respond to self-help surveys.

Age also appears to influence disclosure of abuse to protective adults. The Economist Impact survey found that of the children who disclosed online sexual harm to their parents or guardians in Latin America and sub-Saharan Africa,

50% were under the age of nine, compared to 5% aged 16-18.[60] Similarly, a survey by the Australia eSafety Commissioner found that 14-17 year olds are more likely to attempt to deal with negative online experiences alone, including by unfriending or blocking abusers, rather than tell their parents.[61]

In 2023, WeProtect Global Alliance and the United Nations Office of the Special Representative on Violence Against Children conducted a global consultation on youth perceptions of online safety, #MyVoiceMySafety. The survey revealed that children aged 7-10 displayed less awareness, of online risks, highlighting an urgent need for earlier, age-appropriate interventions to raise awareness.[62] 'Jack Changes the Game'[63] is an example of one such initiative, from the Australian Centre to Counter Child Exploitation (ACCCE).

'Jack Changes the Game'

The ACCCE partnered with the Australian Federal Police's ThinkUKnow programme to launch a children's picture book about online safety designed for parents, carers, and educators to read with 5-8 year olds.[63] It provides age-appropriate advice about online grooming and what parents can do if something goes wrong. The book is now being delivered to every primary school across Australia.

Findings from #MyVoiceMySafety suggest that children's awareness of online risks is not consistent across age groups and only increases as children enter adolescence. This signals a gap in current prevention and response measures.

Sex and gender

The IBSEAC study in the US found females were victim-survivors in almost 75% of episodes. Female victim-survivors were found to be more likely when it came to nonconsensually produced images.[64] Several European studies[65] have also found that girls are significantly more likely to suffer child sexual exploitation and abuse online than boys, but gender differences were not found to be as significant in Asian samples.[66] Boys may be overrepresented in specific types of child sexual exploitation and abuse online. For example, a national survey of US youth[67] found that boys were significantly more likely to have experienced sexual extortion. Similarly, in open-source analysis of 6,500+ first-hand accounts shared publicly by sexual extortion victim-survivors, the Canadian Centre for Child Protection (C3P) found that, in posts where the victim-survivor's gender was identifiable, 98% were male.[68]

For the past three years, 93% of detected child sexual abuse material processed by the IWF has featured girls,[69] in line with the 92% of material reported to INHOPE in 2022.[70] However, boys feature in an increasing proportion of 'self-generated' sexual material. From 2021 to 2022, the IWF reported a 25% increase in 'self-generated' imagery of boys, and in 2022 boys were the source of almost three-quarters of requests made via IWF's Report Remove tool to erase their intimate imagery from the internet. A quarter of these reports were because of financial sexual extortion.

The #MyVoiceMySafety poll revealed that teenage girls and those of unspecified gender express more concern about online risks than boys, which could be contributing to current abuse trends.[71] On the dark web, surveyed child sexual abuse material users also indicated a preference for abuse material that features girls instead of boys.[72]

The available evidence indicates that boys and girls appear to be vulnerable in different ways. Rather than indiscriminately using the same interventions to target both boys and girls, tailored interventions should be developed. This is especially important where gender stereotypes associated with masculinity, and gender-biased laws in certain geographies, create barriers to disclosure and help-seeking, and prevent boys from being recognised as survivors of sexual exploitation.[73] This, in turn, means that frontline workers are not learning about boys' experiences and are less able to spot the signs of abuse or meet their support needs. Every Child Protect Against Trafficking's (ECPAT) 'Global Boys Initiative' aims to inspire further research on this issue.

Race and ethnicity

In 2023, Economist Impact conducted a study for the Alliance of Childhood Experiences of Online Sexual Harms and their risk factors in France, Germany, the Netherlands, and Poland.[74] Of the 2,000 18 year olds surveyed, 79% belonging to an ethnic or racial minority experienced at least one sexual harm during childhood, compared with 68% who did not belong to a minority. This reinforces findings from the same survey fielded at a global level in 2021.[75] Furthermore, a 2022 study of 9-17 year olds in the US found that Hispanic and Latino children demonstrated heightened risks related to 'self-generated' child sexual abuse material as compared with other groups.[76]

More research is needed to better understand the role of race and ethnicity in respect of children's experiences of sexual exploitation and abuse. This is particularly important given evidence that victims and survivors from racial or ethnic minorities can face unique barriers to disclosure and support due to institutional and systemic discrimination, cultural norms, and taboos,[77] including minimisation of abuse generally,[78] and restricted discussion of sex and intimate relationships.[79]

Sexual orientation, gender identity, and expression

Multiple studies of European and North American children and young people suggest that those who identify as LGBTQ+, transgender, or non-binary are significantly more likely to experience online sexual harms during childhood,[80] engage in sexual or flirtatious online conversations, and rely on the internet for a sense of community than non-LGBTQ+ or cisgender children.[81] In Thorn's latest online grooming study of 9-17 year olds in the US, LGBTQ+ children were more than twice as likely to stay in contact with someone online who made them uncomfortable, citing friendship as the main cause for maintaining the relationship.

In places where their sexuality is illegal or deemed to be culturally unacceptable, children who identify as LGBTQ+ may be more vulnerable to sexual extortion. Disrupting Harm[82] found that the criminalisation of homosexuality and cultural taboos limited help-seeking behaviour in seven of the thirteen countries evaluated. Geographical research gaps persist however, due to safety concerns for children who identify as LGBTQ+[83].

Disability

Children with a disability are three to four times more likely to experience sexual abuse than children without a disability.[84] Lack of awareness, and non-inclusive safeguarding and protection measures that don't consider disabled children's needs are just a few factors that increase a physically or developmentally disabled child's risk of abuse.[85]

A study of children with physical disabilities in Switzerland found that they may be at higher risk for child sexual exploitation and abuse online,[86] and that disabled boys may be at equal or greater risk. A sample of children with physical disabilities in another Swiss study[87] examining lifetime and past-year sexual online victimisation found that although all children with physical disabilities had higher lifetime and past-year prevalence when compared to children without physical disabilities, boys with physical disabilities were significantly more at risk.

The impact of developmental and learning disabilities vary. Some children understand the concept of abuse but struggle to recognise it happening.[88] The lack of sexuality and healthy relationship education for young people with developmental disabilities means that many struggle to describe sexual incidents and develop healthy sexual behaviours.[89]

Children who are deaf are reportedly three times more likely to be abused online than hearing children due to barriers in communication when trying to explain abuse, a lack of accessible resources, and insufficient safeguarding education.[90] Consultations with deaf children in South Africa, Jamaica, and the UK showed that 92% of children were unaware of learning resources on sexual exploitation and abuse online.[91] Tailored solutions, such as DeafKidz Defenders, are critical to tackling the heightened risk of abuse for children with disabilities.

DeafKidz Defenders

The DeafKidz Defenders programme teaches deaf and hard-of-hearing children how to recognise online abuse, say no, and seek help. The Defenders programme has been piloted with more than 600 children across Pakistan and South Africa, teaching children about online safety through deaf children's preferred learning medium. After completion, there was a statistically significant increase in the children's ability to recognise abuse and display suitable protective behaviours.

Societal factors

In 2022 the world economy suffered 'a series of severe and mutually reinforcing shocks – the COVID-19 pandemic, the war in Ukraine and resulting food and energy crises, surging inflation, debt tightening, [and] the climate emergency'.[92] The number of people facing food insecurity more than doubled from 2019 to 2022, reaching almost 350 million. These conditions are hindering progress on a range of societal issues, including addressing the systemic drivers of child sexual exploitation and abuse. Key examples include gender inequality, and the effective functioning of public and justice institutions.[93]

In some parts of the world, poverty and lack of economic opportunities also fuel child sexual exploitation and abuse more directly, offering a route for relatives and organised criminal networks to make money by meeting the sustained demand for child abuse imagery. There is also evidence that 'self-generated' sexual imagery is being produced by young people themselves to escape poverty.[94] Children from Ghana who participated in the Alliance and Praesidio's research on children's perspectives on 'self-generated' sexual material cited the ability and motivation to sell sexual material to make money as overwhelming.[95] While the proportion of economically-motivated sexual exploitation and abuse remains low overall,[96] with an additional 100 million children pushed into multi-dimensional poverty by COVID-19,[97] and continuing economic uncertainty, it is hard to foresee these trends dissipating in the near future.

An additional factor that impacts rates of exploitation and abuse is sexuality and healthy relationship education. Globally, it does not cover the breadth of topics required to address children's lived experiences.[98] Many children struggle to discuss sex with their family as it is seen as taboo. In a 2019 survey of over 1,400 young people in the Asia-Pacific region, less than one in three believed their school taught them about sexuality 'very well' or 'somewhat well'. The lack of relevant and timely sexuality and healthy relationship education leads many children to turn to the internet for information.[99] Most children interviewed as part of the Alliance's research on children's perspectives on 'self-generated' sexual material said they sought education on sexual issues from social media or, in some cases, pornography.[100] This may affect how children understand themselves and others, and their future sexual relationships.

Exposure to pornography

A study published by the UK Children's Commissioner in 2023 describes widespread, normalised exposure to pornography for children.[101] Of the 1,000 children interviewed and surveyed, the average age of first viewing pornography was 13. In a similar study of 1,300 US teens conducted in 2023, 54% reported having first seen online pornography when they were aged 13 or younger.[102] More than half (58%) indicated that they had encountered pornography accidentally. Additionally, the proportion of accidental exposure to sexual content reported by children in the Disrupting Harm study ranged from 22%[103] to 48%[104] depending on the country.

54% of US teens reported seeing online pornography at age 13 or younger

– Common Sense survey

The UK Children's Commissioner study found an association between exposure to pornography below the age of 12, and negative health outcomes. Children who reported having seen pornography aged 11 or under were also significantly more likely to present lower self-esteem scores than average. Frequent users of porn were more likely to have real life experience of a degrading sex act. A separate report by the Children's Commissioner, also published in 2023, found that in a review of peer-on-peer cases of child sexual exploitation and abuse, 50% of the associated interview transcripts included words referring to at least one specific act of sexual violence commonly seen in pornography.[105] Similarly, a mixed-methods UK study found that a 'significant minority' of children and young people want to copy pornographic acts.[106]

A 2021 study of high school students in Indonesia found that the age of first exposure to pornography had a significant relationship with 'risky' sexual behaviours,[107] i.e. those exposed aged under 12 displayed more 'high-risk' sexual behaviours. This finding is consistent with a longitudinal study of adolescents in Taiwan,[108] and a 'review of reviews'[109] which identified a relationship between pornography use and more permissive sexual attitudes and behaviours, such as 'sexting'.

Further research is needed, particularly in other geographies, to better understand possible links between regular viewing of pornography and the likelihood of suffering or perpetrating child sexual exploitation and abuse online — not least because young people themselves recognise the negative impacts of exposure to online pornography.[110] In a survey of young New Zealanders carried out in 2020,[111] most called for steps to be taken by online service providers and governments to restrict access to pornographic and extreme sexual content online.

There is growing concern that children are being exposed to a rising number of mainstream misogynistic influencers online, promoted by 'recommender algorithms' on platforms[112] – most commonly to young boys – despite low engagement levels. Regularly viewing mainstream misogynistic influencers or 'incel' content is considered a potential gateway to participation in more extreme and violent online communities, the development of problematic sexual and gender attitudes, and the perpetration of sexual abuse.[113] Incel communities normalise the sending of unsolicited explicit content, as well as the non-consensual sharing of images, in an attempt to shame and intimidate girls online.[114]

Shifting sexual developmental norms for adolescents

The consensual sharing of sexual images of themselves by young people in relationships, or as a form of sexual curiosity, is broadly considered to be an example of normal developmental behaviour in the digital age.[115] This is corroborated by findings from Disrupting Harm – with the exception of children in Thailand, where most reported having shared such imagery because they were 'flirting, having fun, in love, or trusted the person'.[116] In East Asia and the Pacific, and Eastern and Southern Africa, children commonly reported sharing intimate images with romantic partners/ex-partners, a friend, or someone they knew in person.

Changing norms offer at least a partial explanation for the increase in 'self-generated' sexual material detected online in recent years. As examined in our 2021 report, the diverse motives for producing this material make it a complex issue. Some is produced through coercion, but findings from Disrupting Harm, the Alliance's research on children's perspectives on 'self-generated' sexual material,[117] and various other studies,[118] suggest motivations are commonly voluntary. Fewer respondents reported self-producing imagery due to feeling threatened, grooming, peer pressure, or for financial gain.

What is 'self-generated' sexual material?

We define 'self-generated' sexual material as including a broad span of images or videos from voluntarily 'self-generated' material that is consensually shared between adolescent peers (where harm is typically caused when imagery is reshared against a young person's wishes) to coerced 'self-generated' sexual material – which includes grooming, pressure, or manipulation to share material.[119]

We use inverted commas for this term to recognise that while it reflects current policy consensus around how to refer to this kind of phenomenon and the material it generates, it is not a definition that is universally used or understood by professionals or children.

Some researchers have suggested using 'image-based sexual exploitation and abuse of children' as a broad category to address the dissonance involved in using the terms 'child sexual abuse images' or 'child sexual abuse material' typically used to refer to adult-produced abuse material for youth self-made images.[120]

One geographical exception is the United Arab Emirates (UAE), where 'self-generated' sexual material and instances of financial sexual extortion still make up less than 10% of online sexual exploitation and abuse crimes.[121] This could be because of cultural norms[122] in the UAE. Other causes could include stricter internet regulations[123] (which authorise the widespread blocking of websites and applications deemed harmful by telecommunication authorities), and e-safety education.

Even 'self-generated' sexual material which is produced consensually can cause harm if it is shared without consent or, for example, used for extortion. In the IBSEAC study, 60% of the perpetrators were known to the victim-survivor as intimate partners, friends, and acquaintances.[124]
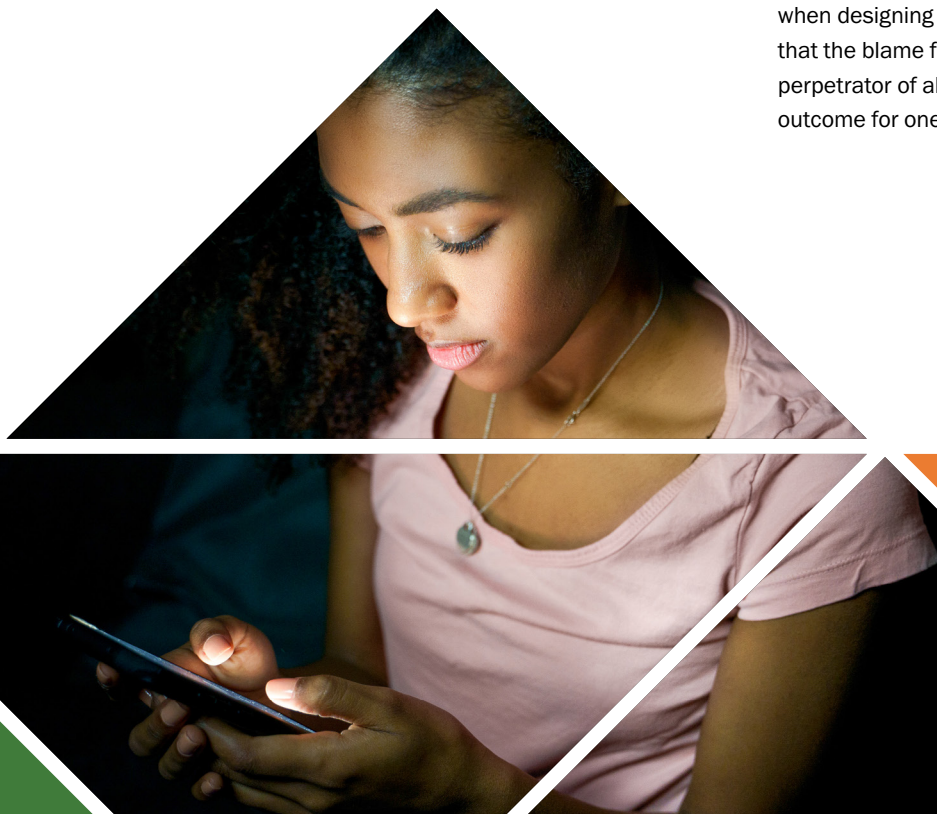
60%

of perpetrators were known to the victim
– IBSEAC study

A form of 'self-generated' sexual material – sexting – and behaviours related to it, for example having friendships with strangers online, and meeting in person with someone met online, significantly increase the risk of online sexual victimisation. A 2019 longitudinal study with children aged 12-14 years found that engaging in 'voluntary' sexting significantly increased the probability of experiencing online sexual solicitation by adults one year later.[125] A possible reason for this finding could be that sexting increases exposure to perpetrators by providing information or intimate images, which can be used to harass, threaten, or coerce the victim-survivor.

Studies undertaken in South Korea in 2023,[126] and in Chile in 2021[127] found that female adolescents' online behaviours, such as having friendships with strangers online and meeting in person with someone they met online, was a significant risk behaviour related to online sexual victimisation.

The #MyVoiceMySafety poll reveals that feelings of discomfort regarding the sharing of personal imagery decrease with age, suggesting that children do not necessarily perceive these risks.[128] This signals the complex factors which impact children's risk perceptions and further underscores the importance of inviting their perspectives to guide the response.

The variability of children's experiences should be kept in mind when designing effective child-centred interventions, recognising that the blame for victimisation should always remain with the perpetrator of abuse. The same experience can lead to a positive outcome for one child and a negative outcome for another.

Incorporating children's voices into the response

The relationship between online risks, shifting developmental norms, and differing perceptions of harm highlight the importance of centring the response on the experiences, rights, and needs of children. Based on research, and our interviews with adult survivors, child-centred approaches are important because they:

- Keep child protection at the centre of the issue[129]

- Enable the voices of children to positively shape the threat response by providing insights on online activities, help-seeking behaviours, and experiences of abuse

- Channel children's views on how their right to privacy can be balanced against the need to ensure access to the internet – with age-appropriate, effective safety mechanisms

- Contribute to the development of better processes and outcomes for child victim-survivors by reducing barriers to support, minimising re-traumatisation, and improving access to relevant institutions

- Underscore the importance of legislation that protects children from abuse, while avoiding the criminalisation of normal developmental behaviours

- Promote consideration of children's diverse and different needs, and the various personal factors that can impact online experiences

- Are 'trauma-informed', considering the support needs of each survivor across each different stage of their recovery journey.[130]

Child-centred approaches also represent a route to plugging evidence gaps in the extent, nature, and impact of child sexual exploitation and abuse online. Disrupting Harm found that one in three children did not disclose their abuse.[131] Parents and guardians surveyed by Economist Impact cited their children's inability to recognise their experiences as harmful as the biggest obstacle to supporting them.[132] Of the children who do recognise their abuse, many use platform measures (such as blocking and reporting user accounts) instead of reporting abuse to authorities and seeking support.[133] Identified barriers to help-seeking include shame, self-blame, and victim-blaming.[134]

The #MyVoiceMySafety consultation revealed that for children across all age groups, unknown individuals – either adults or children – were perceived as the most likely people to cause them harm or abuse online. The perceptions of threat varied by gender, with boys more concerned about unknown children, and girls significantly more worried about unknown adults.[135] This perception is not consistently supported by the body of evidence summarised in the Harm chapter of this report on the relationship between the perpetrators and victim-survivors of child sexual exploitation and abuse online. This gap in perception highlights the need for child-centred approaches, age-appropriate online safety information, and accessible reporting processes.

In addition, a survey of 102 female adolescents in the Netherlands found that the majority of participants consider themselves invulnerable to online solicitations.[136] However, when asked to differentiate between peers and adults with sexual intentions in online interactions, more than half overestimated their ability to detect risk.

Under-reporting creates a gap in our understanding which can be partly addressed by creating safe spaces in which children can share their perspectives and experiences without fear of judgement, blame, or retaliation. Though this perception gap must be closed to ensure that children can recognise harms online and feel comfortable to report, this should not be overemphasised as a solution, as the proportion of reports that originate from the public is extremely low,[137] and it can create undue burden on children to protect themselves from harm. IWF reporting also indicates that public reporting is less likely to be actioned than proactive or industry reporting.[138]

Existing child-centred approaches

In 2022, WeProtect Global Alliance undertook a mapping exercise to identify where and how children and young people are being involved in participatory initiatives to tackle child sexual exploitation and abuse online. The exercise uncovered good practice in various regions across the globe; examples include:

Better Internet for Kids (BIK) Youth – Global

Each year, a BIK Youth Panel is organised for the Safer Internet Forum (SIF), encouraging youth to voice their opinions and those of peers they represent from across Europe and beyond. Youth panellists collaborate to generate principles and ideas to achieve a safer internet.

Snap's Safety Advisory Board – Global

Snap's Safety Advisory Board includes three youth advocates. Youth participation is built into the platform's organisational governance, and in product research and design. In developing its Family Centre, Snap has worked with families to understand the needs of parents and teens.

CAMELEON Youth Advocates – Philippines and Asia

CAMELEON Youth Advocates conduct advocacy campaigns to empower, educate, and inform, and to work towards the elimination of child sexual abuse.

With the exception of the US, every country has ratified the United Nations Convention on the Rights of Child, which guarantees children's right to be heard.[139] This signals near universal recognition of the importance of incorporating children's perspectives when making decisions that affect them. In practice however, more work is needed to leverage children's voices and translate commitments into action. Generated via analysis of the findings from #MyVoiceMySafety, interviews with adult survivors of child sexual exploitation and abuse online, and other child-centred and participatory studies, the following are critical components of a child-centred approach to tackling child sexual exploitation and abuse online:

1 Children and young people want mechanisms that enable them to hold online service providers directly to account for taking steps to keep them safe online

Existing youth campaigning on this includes the work of the Australian eSafety Comissioner's Youth Council. In February 2023 they wrote an open letter to platforms calling on them to "prioritise the safety and wellbeing of their users over profit margins".[140] The Philippine Survivor network similarly wrote to the European Parliament and European Union Council requesting that companies are required to detect both new and known child sexual abuse material and prevent livestreaming of child sexual exploitation and abuse.[141]

2 Access to age-appropriate education on online safety, healthy sexual behaviours, and laws

Children want to be empowered with knowledge to navigate online risks and have voiced their need for up-to-date educational resources that provide harm-specific information and teach them how to use tools to stay safe online.[142] Therefore, governments and tech companies must fulfil their responsibilities to provide accessible support and relevant information on online safety.

3 Laws and frameworks that prioritise children's safety and wellbeing

Legislation must not criminalise voluntary, consensual sharing of sexually explicit imagery between children of similar ages as this behaviour is developmentally normal. However, education on the risks of sharing images is critical, such as the National Crime Agency's 'ThinkUKnow' age-appropriate education programme. In the Alliance's research on children's perspectives on 'self-generated' sexual material in Ghana, Ireland, and Thailand, many recounted their fear of legislation and criminal sanctions as a barrier to seeking help in situations related to 'self-generated' sexual imagery.[143]

Law enforcement should help children understand that they are not at fault and will not be criminally charged if they create or share images of themselves which are then shared onwards without their consent. This should help to encourage survivors of grooming, non-consensual sharing, and financial sexual extortion to report crimes and seek support.

4 Removing or reducing barriers to help-seeking

Investing in initiatives which challenge negative stereotypes that make young people feel scared or ashamed to report will increase children's confidence.[144] Explaining that support will be confidential is also important,[145] especially for children without engaged or informed caregivers,[146] and/or those who have produced 'self-generated' imagery.

Harm

> ▸ Financial sexual extortion and coercion of children, along with AI-generated child sexual abuse material, are new and fast-developing forms of abuse which demand tailored responses.
>
> ▸ Conversations on social gaming platforms can develop into a high-risk grooming situation from the first message in as little as 19 seconds.
>
> ▸ The viewing and sharing of legal imagery of children for sexual gratification is an emerging challenge for technology companies and policymakers.
>
> ▸ New evidence suggests that viewing pornography may form a pathway to perpetrating child sexual abuse.

Child sexual exploitation and abuse online remains a complex and multifaceted issue. Since 2021, new harm trends have emerged while pre-existing ones continue unabated. Images and videos form the largest proportion of abuse type. In 2022, incidents of suspected child sexual abuse material accounted for over 99.5% of reports received by NCMEC.[147] Of the 88.3 million files submitted by electronic service providers in the same year, 49.4 million were images and 37.7 million were videos.

What follows is an analysis of the changing landscape of prevalent harms related to the production, viewing, and sharing of child sexual abuse material, enabling technologies, and what is known about those who perpetrate abuse.

Coercing and producing child sexual abuse material

Financial sexual extortion and coercion of children

Reported cases of financially motivated sexual extortion and coercion of children have increased in the past year. In 2022, NCMEC received over 10,000 reports (compared to 139 reports in 2021), and the FBI issued a public safety alert about an 'explosion' of financial sexual extortion and coercion schemes targeting children and teens.[148] Children are particularly vulnerable; in a survey of over 1,500 victim-survivors, 46% were children.[149] Financially motivated sexual extortion and coercion is highly traumatic for victims, and has led to a number of children taking their own lives.[150]

These criminals deceive and extort children into producing and sharing 'self-generated' sexual content for monetary gain. Many extorters pose as young girls online and predominantly approach boys aged between 15-17 years via social media, proposing the exchange of sexually explicit imagery.[151] IWF data also suggests that boys are more likely to be targeted, although the organisation cautions that they have identified female victim-survivors too.[152] C3P analysis of 6,500+ public posts by sexual extortion victim-survivors in 2022 revealed many extorters use similar strategies.[153] Once sexually explicit imagery is sent, the extorter threatens to send the imagery to the child's friends and family, blackmailing them for money. They make threats appear credible by sending screenshots of the child's social media contacts. Of known cases, many schemes orchestrated by offshore criminal syndicates reportedly originate from countries such as Nigeria, Côte d'Ivoire, and the Philippines, and target children from more affluent countries.[154]

An analysis of perpetrators engaging in cyber sexual extortion found that financially motivated sexual extortion criminals differ from cyber sexual extortion offenders with non-financial motivations.[155] They may both use sex to lure and entrap victim-survivors, but the demands of the first group are strictly financial. They do not appear to be after additional sexually explicit material or physical contact with children. Other offenders may also use impersonation, but financial sexual extortion offences progress rapidly and often involve increasing demands, creating a sense of urgency. The speed at which these cases escalate poses a challenge for tech companies, financial institutions, law enforcement, and child protection agencies seeking to disrupt offending and safeguard children.

A Thorn study of children in the US found that boys generally take a more casual approach to online sexting and perceive the risk of engaging with a female online-only contact to be low.[156] This suggests they may have a lower perception of risk of sexual contact initiated by 'young girls' they don't know online. If this behaviour leads to harm, boys may feel inhibited seeking help. Comparative findings from ECPAT's Global Boys Initiative across eight countries found that help-seeking behaviours are more limited in boys due to socio-cultural norms around shame and abuse.[157] This makes them more likely to pay those who extort them, encouraging further targeting.

> **"…within a year, we're going to be reaching very much a problem state in this area."**
>
> – Chief Technologist at the Stanford Internet Observatory on computer-generated imagery of child sexual abuse[158]

Generative AI and computer-generated child sexual abuse material

The use of generative AI technologies by the public has drastically increased. Generative AI refers to a category of AI algorithms that generate new outputs based on the data they have been trained on. Unlike traditional AI systems that are designed to recognise patterns and make predictions, generative AI creates new content in the form of images, text, audio, and more.[159] ChatGPT, a free-to-use generative AI chatbot that uses natural language processing (NLP) to create humanlike dialogue, receives an estimated one billion visitors each month.[160]

Since early 2023, cases of perpetrators using generative AI to create child sexual abuse material and exploit children have been increasing.[161] Thorn found that while less than 1% of child sexual abuse material files shared in a sample of offender communities are photorealistic computer-generated imagery (CGI) of child sexual abuse, the volume has increased consistently since August 2022.[162] In a five-week period in 2023, the IWF investigated 29 reports of URLs containing suspected AI-generated abuse imagery, of which seven were confirmed as containing child sexual abuse imagery.[163] The webpages removed included Category A and Category B material of both girls and boys, with children as young as 3-6 years old featured. IWF analysts also discovered a 'manual' that teaches perpetrators how to refine the prompts they input in to the tool, training the AI to return more realistic imagery.[164] Some of these perpetrators post their AI-generated content on image-sharing platforms, while promoting links to child sexual abuse depicting "real children" that is hosted on other platforms – some of which is hosted behind a paywall.[165]

AI-generated image

Other cases of misuse of generative AI include:

- Enabling offending, for example by scripting sexual extortion and/or grooming interactions,[166] and suggesting methods for sexually abusing a child online or finding abuse material on the internet

- Masking child sexual abuse material to evade detection,[167] and pooling information on how to destroy evidence and evade law enforcement.

AI-generated imagery complicates the response to child sexual exploitation and abuse online, and may fuel offending for the following reasons:

- Difficulties distinguishing between CGI and real-life content make it difficult to categorise reported imagery (in many countries, but not all, representations of child sexual abuse are illegal regardless of whether a "real child" is involved)

- Irrespective of whether child sexual abuse material features "real children" or not, police must investigate each report to ensure a child is not being abused. As police currently lack the capabilities to automatically identify and triage CGI,[168] backlogs will grow and safeguarding will be delayed, prolonging children's suffering

- The consumption of CGI of child sexual abuse contributes to the market for child sexual abuse material, and could fuel fantasies and lead to more active forms of abuse. It could also encourage a culture of tolerance for the increased sexualisation of children in the long-term.[169]

Generative AI represents a paradigm shift that underlines the need for Safety by Design to encourage the thoughtful development of new tools.[170] Perpetrators have already exploited 'open-source' versions of AI image generators that allow users to produce any images – including illegal ones.[171] In the near term, a range of safety measures are necessary to make existing tools safer. These could include:

- Removing sexual content from training data for AI tools by using hash lists of known child sexual abuse material[172]

- Standardising the classification of CGI of child sexual abuse to help with law enforcement triage and prioritisation

- Watermarking CGI to facilitate detection.[173]

Grooming and coercing children to produce 'self-generated' sexual material

Research suggests that prevalence rates for online grooming range between 9-19%.[174] Reporting data from the National Society for the Prevention of Cruelty to Children (NSPCC) also shows that online grooming crimes have risen by 80% in the past four years.[175] Most studies show greater grooming online among girls, though the gender difference is less marked among children under the age of 13.[176]

Many perpetrators who attempt to groom children online identify targets on social media, in chat rooms, gaming environments, and other platforms that allow user-to-user communication.[177] Perpetrators divert conversations to a private messaging app or an end-to-end encrypted environment due to the lower risk of detection – a technique known as 'off-platforming'.[178] In the Alliance and Economist Impact's joint study of 2,000 18 year olds across four European countries, 54% of respondents who received sexually explicit material received at least some through a private video sharing service, and 46% through a private messaging service.[179]

> **"Perpetrators divert conversations to a private messaging app or an end-to-end encrypted environment due to the lower risk of detection"**

Since the 2021 Global Threat Assessment, our understanding of different risk factors correlated with grooming has improved. New research with primary school children in Italy found that those with high levels of screen time, scarce parental supervision of online activities, low self-esteem, and feelings of loneliness are more at risk of online grooming victimisation.[180] Another global study that examined the impact of parental supervision on the progression of an online grooming event found that "online unstructured socialising with peers in the absence of parental supervision increased online groomers' likelihood to persist".[181] Perpetrators were less likely to continue online grooming if they believed the children they were targeting were in the presence of parental guardianship. This highlights the importance of examining underlying risks and vulnerabilities in children's lives and reiterates the need for a multi-sectoral response between tech companies, law enforcement, and governments to proactively detect and prevent online grooming. Although parental care is a protective factor, the onus of preventing child sexual abuse cannot be placed solely on them.

Research is also beginning to fill gaps in our understanding of online and offline grooming, including how offline grooming incorporates technology, thus erasing the need for the offline-online binary.[182] Online grooming is often described as a non-linear process in which several stages occur simultaneously, speeding up the process compared to offline grooming. However, the incorporation of technology could also expedite the timing of offline grooming, for example by maintaining constant access to the child, offline groomers could build rapport more quickly.[183]

Based on analysis of conversations between volunteer workers purporting to be children and convicted offenders in the US who had groomed children online for offline sexual encounters, four groomer profiles were built based on rapport building, talking about sexual matters, and concealment tactics: the intimacy seeking groomer; the dedicated, hypersexual groomer; the social groomer; and the opportunistic-social groomer.

Grooming is a notable risk in online multiplayer games. The environmental features included in social gaming can increase a child's risk of experiencing sexual harm. While these features exist on some other online platforms, they notably collect in gaming environments, significantly increasing a child's overall risk of exploitation. Bracket Foundation's 2022 Gaming and the Metaverse report provides a broader view of risks across social gaming and metaverse platforms, categorised using the 3C's framework (content, contact, and conduct risks).[184]

Crisp currently co-chairs a key workstream within the World Economic Forum (WEF) as part of the Global Coalition on Digital Safety. The below table sets out the top three environmental features that are unique to gaming and/or metaverse environments when compared to traditional 2D social media.[185] As the mechanisms for online interactions evolve, continued efforts as a community body to track threats, as well as the opportunities to tackle offender groups, are critical.

Grooming is commonly assumed to be a drawn-out activity where a perpetrator builds up trust with a child over days, weeks, and even months. However, insight from Crisp suggests that conversations on social gaming platforms can quickly shift into a high-risk situation.

Children's perceptions

Younger respondents (7-10 years) to #MyVoiceMySafety reported feeling safest on gaming platforms and private messaging app. Older respondents and teenagers (11-18 years) felt most secure using private messaging apps. Girls perceive private messaging apps to be significantly safer than boys and those of unspecified gender, and boys perceive gaming platforms to be safer than girls and those of unspecified gender. However, across all genders, private messaging apps were perceived to be the safest. These perceptions contrast with other evidence of common channels for harm and demonstrate shortfalls in the current response – both in terms of protections afforded to children, and the information they are provided about online risks.

Table 2. Risks specific to gaming and the metaverse space

Feature	How this creates and/or exacerbates risks to child users
Anonymous (potentially adult-child) in-game intermingling	Adults can freely engage in the same spaces as children and are often placed in scenarios where they are encouraged to interact. Games may also have collaboration modes where strangers work together towards a common goal. This is undertaken by offenders to access children.
Exchange or conversion of value	Often in gaming environments, unlike in traditional 2D social environments, there will be the ability to create or exchange value. This often takes the form of offenders gifting items which are earned or can be directly purchased within the game. This is undertaken by offenders as a method to build trust.
Ranking system and status	Publicly visible rankings of high performing players or players with value such as paying memberships can encourage the risk of grooming and the exploitation of children. This is undertaken by offenders to build influence.

Crisp data insight: 45 minutes is the average time for a child to be groomed in a social gaming environment – with extreme examples as low as 19 seconds

Crisp assessed gaming data from across its global customer base to identify the speed with which offenders move from first contact to the point where the interaction is deemed to be high-risk grooming.

The shortest time recorded was 19 seconds, which involved only seven messages. This interaction typifies offenders using a volume-based approach to identifying and engaging victim-survivors. They contact multiple children simultaneously, knowing a small percentage will respond and likely become victim-survivors. This interaction included: an introduction, age identification, confirmation that the instigator had a strong interest in children, request for intimate imagery, then termination of the interaction by the potential victim-survivor.

The average time an offender takes to groom a minor in a gaming environment is just over 45 minutes. In these conversations the offender confirms that the target is a child, seeks to build trust, then typically seeks to identify any vulnerabilities. The perpetrator then turns the conversation sexual, asking about the minor's sexual history and preferences. If they answer these questions the perpetrator quickly looks to move them to a private messaging platform that allows the sharing of images, and voice and video calls. There is a strong preference for apps that are encrypted or where chats are perceived as unmoderated.

Within the most recent period of data, the longest period from first contact to grooming activity being identified was 28 days. These conversations began with talk about the game they were playing, building a relationship with the child. In these situations, the child is highly likely to think they are in a romantic relationship with the offender, and unlikely to recognise the abusive nature of the relationship.

In addition to a desire to meet in real life, many perpetrators groom children to coerce them to create explicit content. One way is through the creation of fake social media accounts, posing as a child and sharing 'self-generated' imagery from other victim-survivors to build trust and encourage intended victim-survivors to 'reciprocate'.[186] In cases where victim-survivors stop reciprocating, the interaction can escalate to coercion or extortion.

From 2018 to 2022, the number of webpages actioned by the IWF featuring 'self-generated' sexual imagery increased from 27% to 78%. Children aged 11-13 feature most in reports of 'self-generated' imagery, with girls in this age group representing 50% of all reports actioned in 2022. In the first half of 2022, IWF identified 20,000 webpages including coerced 'self-generated' sexual abuse imagery of 7-10 year olds.[187]

> ## "Children aged 11–13 feature most in reports of 'self-generated' imagery, with girls in this age group representing 50% of all reports actioned in 2022"
>
> – Internet Watch Foundation

As highlighted in the Child chapter, 'self-generated' sexual material is a complex issue due to the diverse motivations for producing it. This creates challenges for the response because the context in which an image was produced impacts decision-making over appropriate action. Even professionals struggle to differentiate between self-expression and coerced and/or groomed 'self-generated' materials.

Livestreaming of child sexual abuse

The scale of livestreamed child sexual abuse is difficult to ascertain for a number of interrelated reasons. First, livestreaming of child sexual abuse is not consistently criminalised.[188] Second, even in countries where it is an offence, livestreaming is often difficult to investigate and prosecute because once the livestream is over, there may be little evidence unless it was recorded. Third, most platforms don't monitor private livestreams. In August 2022, the Australian e-Safety Commissioner issued the first mandatory transparency notices to Microsoft, Skype, Snap, Apple, Meta, WhatsApp, and Omegle, four of which have livestreaming or video call/conferencing services. Responses revealed that of these four, three do not currently use tools to detect livestreamed child sexual abuse or exploitation.[189]

The 2021 Global Threat Assessment noted that COVID-19 related travel restrictions fuelled an increase in this type of abuse since offenders could not travel. The perpetrator is typically in a different location than the victim-survivor and request specific acts to be performed by the child or perpetrated against the child by another individual. In 2022, 63,050 reports received by the IWF related to imagery which had been created of children aged 7-10 who, in many cases, had been groomed, coerced, or tricked into performing sexual acts on camera by an online predator.[190] This is a 129% increase in reports of this category since 2021.

Livestreaming abuse can also be coerced by online perpetrators. In a study from October 2020 to August 2022 on a popular livestreaming platform, 1,976 users were identified who primarily catalogued and watched livestreams by children and attempted to manipulate children to produce sexual imagery.[191] Over 270,000 children were targeted by hundreds of these accounts.

Additionally, 39% of respondents to Suojellaan Lapsia's survey of dark web users reported they had viewed child sexual abuse livestreaming, indicating significant demand.[192] The survey has broad reach but the findings may be more representative of the habits of offenders with a propensity to seek help, as respondents participated voluntarily.

39% of respondents to a survey of dark web users reported they had viewed child sexual abuse livestreaming

– Suojellaan Lapsia's survey

Many children in the Philippines who are featured in livestreamed videos of abuse are characterised as victim-survivors of trafficking. They could also be exploited by adults they know.[193]

An exploratory study (2023) of Australian perpetrator chat logs found that the vast majority of cases involved a facilitator. In such cases, the perpetrator pays a small amount of money to either the victim-survivor or the facilitator.[194]

Facilitators of live child sexual exploitation and abuse online are often women residing in the same country as the victim-survivor, and family members or adults close to the child.[195] Their motivations typically include a desire to fund basic living costs[196] or financial gain.[197]

The advertisement of children for livestreamed abuse commonly occurs on the surface web. Photos of children are often uploaded in masked posts that use coded keywords to a public social media page to reach a larger pool of buyers. However, the actual livestreaming of abuse tends to occur in secure environments where passwords or encryption prevent open access. A meta-analysis of 19 studies related to livestreamed abuse of children in the Philippines found that harm usually occurred in a secure environment with an encrypted connection between two or more parties.[198]

The newly launched 'Scale of Harm' project (see case study below) aims to close data gaps around livestreaming by accurately estimating the prevalence of child trafficking for sexual abuse in the Philippines, and calls for continued international cooperation to improve knowledge at a global scale. While the Philippines continues to be a 'hotspot'[199] for livestreamed abuse, there's new evidence emerging of victim-survivors in China, India, Indonesia,[200] Thailand, and the United Kingdom.

Scale of harm

The International Justice Mission (IJM) and University of Nottingham Rights Lab have developed a methodology to estimate the prevalence of trafficking of children for child sexual exploitation and abuse online. Experts from the technology, financial, government, and civil society sectors supported the project. Methodology implementation took place from May to June 2022, with the full report shared in September 2023.

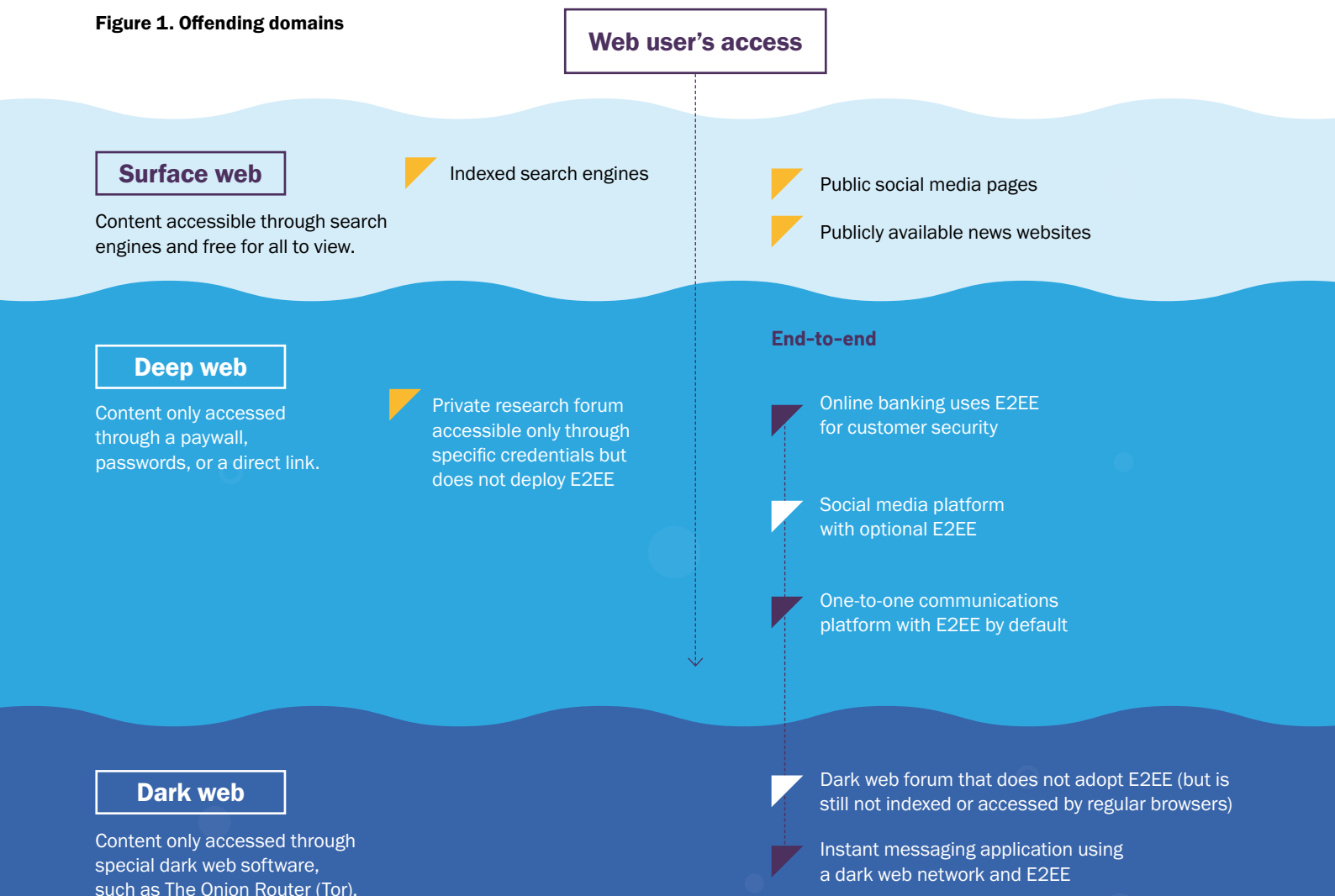**The research data found that:**

- An estimated 500,000 Filipino children were victims in 2022. This translates to roughly one in 100 Filipino children. This did not measure livestreaming on platforms with E2EE

- Video chat and messaging services commonly used to facilitate livestreamed child sexual abuse are either: i) optionally E2EE, ii) E2EE by default, or iii) moving towards E2EE.

The findings highlight the requirement for the incorporation of mechanisms to detect prevalence of abuse in E2EE livestreaming environments as, otherwise, the true scale of abuse will continue to be under reported.

Accessing, viewing, and sharing child sexual abuse material

Perpetrators operate across the surface web, private environments, and dark web.

Figure 1. Offending domains

Web user's access

Surface web
Content accessible through search engines and free for all to view.

Indexed search engines

Public social media pages

Publicly available news websites

Deep web
Content only accessed through a paywall, passwords, or a direct link.

Private research forum accessible only through specific credentials but does not deploy E2EE

End-to-end

Online banking uses E2EE for customer security

Social media platform with optional E2EE

One-to-one communications platform with E2EE by default

Dark web
Content only accessed through special dark web software, such as The Onion Router (Tor).

Dark web forum that does not adopt E2EE (but is still not indexed or accessed by regular browsers)

Instant messaging application using a dark web network and E2EE

Surface web

Most detected child sexual abuse material on the surface web is on image-hosting services,[201] which often involve companies not widely used by mainstream consumers.[202] Image-hosting websites provide on-demand access to new material without requiring download, enabling perpetrators to avoid risks associated with the possession of illegal material. In 2022, 90% (228,927) of URLs identified by the IWF as displaying child sexual abuse material were on openly accessible, free-to-use image hosting services.[203] For the first time since 2019, in 2022 INHOPE identified 'image hosting' as the primary site category hosting reported abuse content.[204] Research into child sexual abuse material available on surface web image-hosting websites found that websites specialise in either hosting or displaying material,[205] with only one in five doing both. It also discovered that over a quarter of such websites display illegal content on their main page. While displaying websites are more likely to overtly disseminate child sexual abuse material, hosting websites were more likely to use coded file names to hide their content.

> **"Perpetrators have adopted 'link-sharing' as a method to access new material and evade detection by 'hash-matching' technology; sharing original, shortened, or modified URLs"**

Many perpetrators have adopted 'link-sharing'[206] as a method to access new material and evade detection by 'hash-matching' technology; sharing original, shortened, or modified URLs.[207] Similarly, steganography – where data is hidden inside an image, audio file, or other media format – is used to hide child sexual abuse material in plain sight.[208] Existing tools for law enforcement to confirm the use of steganography tend to be expensive and require costly training, limiting accessibility for many law enforcement departments.[209] The UK Government are currently delivering their second Safety Tech Challenge Fund to tackle these tactics. Launched in early 2023, the fund invested over £350,000[210] in projects that aim to identify and disrupt link-sharing to child sexual abuse material online.

Further private sector and government investment into research and technological innovation is required to keep pace with evolving offender behaviour.

Exploiting social media security gaps

Across multiple social media platforms, private accounts post illegal child sexual abuse material using a setting that limits visibility to the person logged in. Perpetrators simply share the account password with others to view material.[211] Similar to tactics used by sex traffickers,[212] perpetrators obscure the advertisement of these accounts using slang and jumbled phrases.[213]

Researchers have found that a social media platform's algorithm helps to connect and promote a vast network of accounts openly devoted to the commission and purchases of underage-sex content.[214] The platform's users can search for explicit hashtags related to child sexual abuse material which leads them to accounts that post it.

Not all perpetrators use these more sophisticated techniques to share content on the surface web to avoid detection. Instead, many use search engines and browse public social media pages for child sexual abuse material[215] due to the ease of access, their limited technical skills and, likely, a lack of awareness of these more sophisticated techniques. However, due to accessible and secure E2EE environments without a law enforcement presence, exploitable security gaps on some online platforms, and access to 'how-to' tips from like-minded perpetrators,[216] it's possible for those who aren't technically sophisticated to avoid detection.

There is evidence to suggest that some individuals are also viewing and curating 'legal imagery' (see data insight below) of children on social media services for sexual gratification. Such activity is not illegal, nor a violation of platform policies, and so is low risk for perpetrators. However, it represents a potential pathway to abuse. As such, it signals a new challenge for policymakers, while reinforcing the urgent need for prevention initiatives that also tackle the 'demand side' of abuse.

Crisp data insight: 'Legal' content of interest to predators is the next challenge for the response
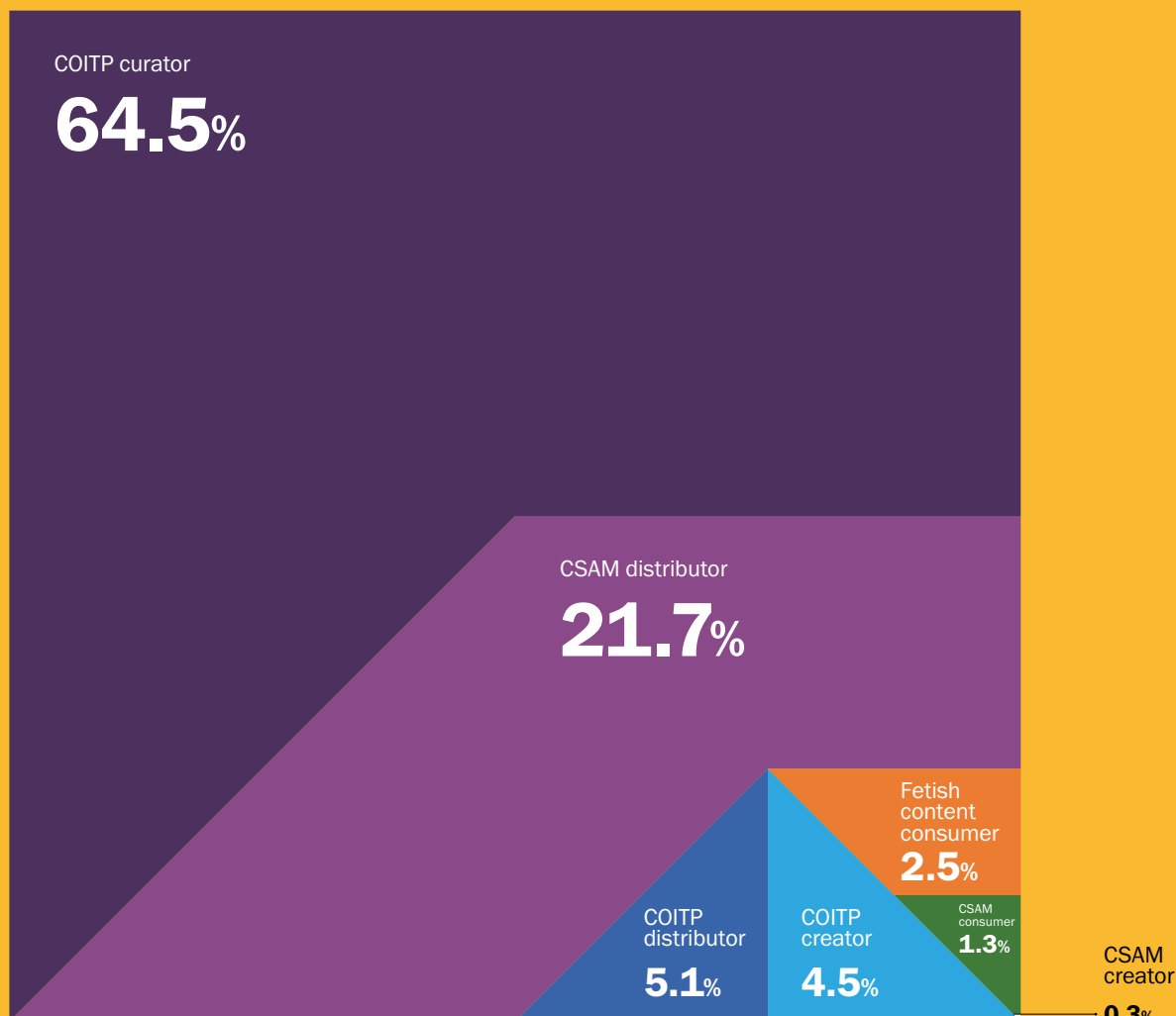
The graph below represents the most common Crisp-reported risks across mainstream social media platforms for the first six months of 2023.

The most significant area of reporting over the period was 'content of interest to predators' (COITP); for example, content of children playing or exercising, or content innocently produced by children but consumed by predators for sexual gratification. This was followed by child sexual abuse material and fetish content consumer.

Unlike child sexual abuse material content, COITP is not illegal. Offender groups are using this to attempt to evade current platform policies and protections. Offender community groups curate this content for consumption, providing collections which can be shared and accessed by wider offender groups via social media services or other fringe services.

Curation of this type of content are strong signals for some form of intervention. They may in certain circumstances indicate wider child sexual abuse material interests as well.

Bad actor classifications January-June 2023

COITP curator
64.5%

CSAM distributor
21.7%

Fetish content consumer
2.5%

COITP distributor
5.1%

COITP creator
4.5%

CSAM consumer
1.3%

CSAM creator
0.3%

Private environments

Examples of private environments include E2EE messaging services, other encrypted services, and peer-to-peer networks, preferred by many perpetrators due to the lower perceived risk of detection.

In addition to being used to groom, off-platforming is used to network and exchange child sexual abuse material.[217] It was recently revealed that a popular online forum had sub-groups with over 50,000 members serving as hubs for exchanging usernames or access to group chats on an encrypted messaging app, through posts with thinly veiled references to child sexual abuse material.[218]

From just one app-based E2EE network in 2022, the Child Rescue Coalition (CRC) collected the following data from criminal groups interested in child sexual exploitation:

- Over two million chat records
- Over 50,000 videos exchanged
- Over 2,000 images exchanged
- Over 250,000 individual accounts[219]

Multiple links to image hosting and other web-based environments were also shared. Given that many perpetrators prioritise anonymity, ease of access, and availability of material or victim-survivors when considering how and where to conduct child sexual abuse online,[220] it is likely that the use of E2EE group messaging services is likely to grow in the future. This could lead to wider distribution of child sexual abuse material, and the sharing of techniques to perpetrate abuse and evade law enforcement in the absence of other safeguards.[221]

Dark web

Offending activity rarely starts on the dark web. The most common pathway is for perpetrators to come upon information about the dark web on the surface web, for example when searching for child sexual abuse material.[222] The dark web is a popular domain for sharing child sexual abuse material. One dark web forum post related to child sexual abuse identified by the US Department of Justice was viewed 1,025,680 times in 47 days (21,822 views per day).[223] Such sites can only be accessed by individuals with the exact URL, often disseminated in popular surface web forums.[224] This pathway offers a significant opportunity to disrupt movement onto the dark web. From 2021 to 2023, Suojellaan Lapsia's global dark web survey – targeted at individuals who had searched for child sexual abuse material – was opened by 302,392 respondents.[225]

"One dark web forum post related to child sexual abuse was viewed 1 million times in 47 days"

– US Department of Justice

Analysis of self-disclosed data from anonymous perpetrators active on the dark web reveals that they are overwhelmingly male,[226] and many have their own children and access to other children. Little is known about geographical differences in dark web activities due to its opaque, anonymous nature. However, language breakdowns from surveys and law enforcement investigations suggest the existence of a diverse pool of offenders.

Alongside accessing the dark web on personal devices, many perpetrators search for, view, and download child sexual abuse material from the dark web on their work devices. In NetClean's 2023 survey of senior IT professionals from Belgium, Sweden, the Netherlands, and the UK, 70% stated that increased working from home has heightened the risk of the spread of child sexual abuse material.[227]

Only a small minority of dark web perpetrators can truly be considered 'technically advanced'. These individuals operate as dark web forum admins or moderators, and support the growth of the community by setting up forums and obfuscating hosting locations. In some cases, they help secure forums against hackers or law enforcement infiltration.[228] Other perpetrators play a role in sharing security-related information,[229] such as the perceived risks of specific technologies, or law enforcement operations and evasion techniques.[230] However, the vast majority of perpetrators on the dark web predominantly download illegal content, post few messages, and only join well-established forums.[231] Data collected from six different dark web forums with more than 600,000 active members and 760,000 posts found that 94% of members downloaded child sexual abuse[232] content, suggesting that this group fuel the demand for material. They are also an active threat, as many seek contact with children on the surface web after viewing illegal material on the dark web. For example, 38% of respondents from Suojellaan Lapsia's dark web survey actively sought online contact with a child after viewing child sexual abuse material.[233]

Because perpetrators operate across multiple domains, dark web investigations provide clues to surface web offending and vice versa. The recent rise of transnational harms (where victim-survivors and perpetrators are based on different continents),[234] and the use of encrypted environments provided by tech platforms, further reinforces the need for strong international law enforcement and tech platform networks to collaboratively address cross-border trends.

Pathways to offending

Motivations for committing child sexual exploitation and abuse include sexual gratification, financial gain, social status, and emotional fulfilment.[235]
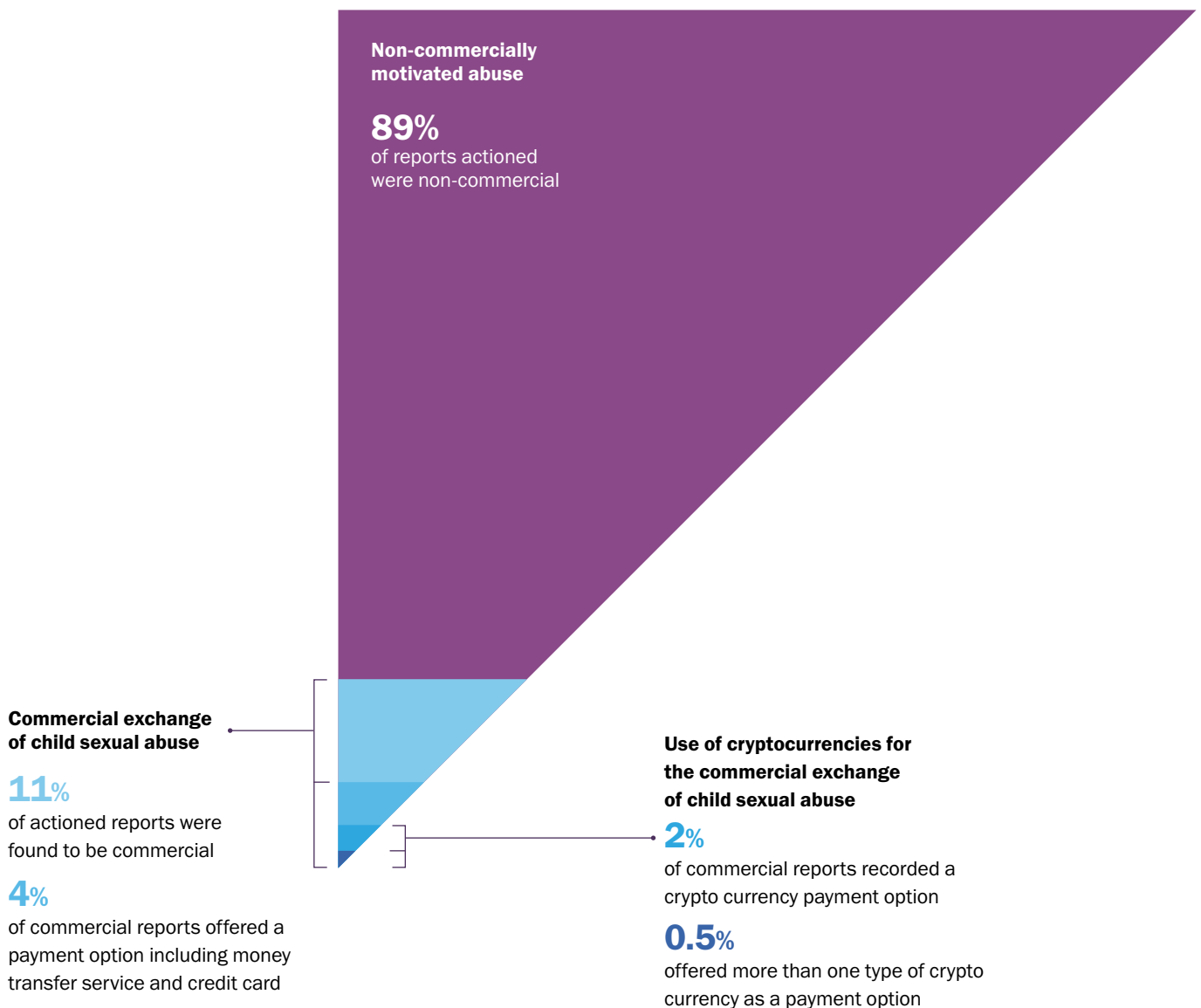
With the exception of some livestreamed cases of abuse that are facilitated by perpetrators to cover basic living costs[236] or for financial gain,[237] financial motivations are less common overall. Generally, the commercial model for selling child sexual exploitation and abuse online is undermined by the sheer amount of widely available, free child sexual abuse material exchanged by perpetrators,[238] and the accessibility of children on social media and gaming platforms. Estimates suggest that only 7.5% of child sexual abuse material on the dark web network is sold for profit.[239]

However, the IWF has warned of a rise in 'invite child abuse pyramid' (iCAP) sites, where website users are incentivised through a points system to 'spam' links (distribute in bulk) to the site across various social media platforms.[240] The more people who click the links, the more points distributors earn, unlocking access to more illegal material. Criminals operating these sites benefit financially from the increased web traffic, as well as perpetrators potentially purchasing content from the sites.[241]

Less is known about financially motivated perpetrators due to the nascent nature of these trends and the fact that research so far has primarily focused on understanding sexual motivations. Given emerging trends, addressing this evidence gap to inform effective prevention and disruption is crucial.

Figure 2. The scale of commercial child sexual exploitation and abuse
(Data taken from IWF's 2022 annual report)

Non-commercially motivated abuse

89% of reports actioned were non-commercial

Commercial exchange of child sexual abuse

11% of actioned reports were found to be commercial

4% of commercial reports offered a payment option including money transfer service and credit card

Use of cryptocurrencies for the commercial exchange of child sexual abuse

2% of commercial reports recorded a crypto currency payment option

0.5% offered more than one type of crypto currency as a payment option

Sexually motivated perpetrators are a diverse category and many sub-groups exist, including individuals who:

- outwardly identify as 'paedophiles' and are open about their abuse[242]

- label themselves 'child lovers' and claim they would never hurt a child[243]

- don't recognise their behaviours are problematic due to cognitive distortions[244]

- display general violent or problematic sexual behaviours[245]

According to available data, perpetrators on the surface and dark web are mostly men with a self-reported interest in children or additional illegal, problematic sexual interests,[246] and acts of child sexual abuse are reportedly overwhelmingly committed by men.[247] Most known cases of female perpetrators are motivated by financial means. In a 2022 WeProtect Global Alliance and ECPAT international survey[248] of 413 frontline workers across Albania, Bosnia and Herzegovina, Colombia, Mexico, Moldova, and Peru, female perpetrators were indicated roughly 20% of the time in abuse cases. Female abusers typically acted as facilitators; coercing, manipulating, and grooming children into situations of sexual exploitation and abuse. However, female offending is relatively under-researched, and more data needs to be gathered.

Grasping the behavioural drivers of sexually motivated offending is key to identifying opportunities to prevent child sexual exploitation and abuse online. Research indicates that not all perpetrators have a specific sexual attraction to children. Instead, many hold general anti-social orientations or display indiscriminate problematic sexual behaviours.[249] A major development in understanding pathways to sexually motivated offending is emerging evidence of an association between the frequent viewing of pornography and progression to viewing child sexual abuse material. Habitually viewing legal adult pornography is considered a potential 'gateway' to offending for perpetrators without specific sexual attractions to children, as is progressive 'clicking'.[250]

In a study of 4,924 men from Australia, the UK, and the US, those who reported sexual feelings towards or a history of offending against children, were 11 times more likely to have watched violent pornography, 17 times more likely to purchase online sexual content, and 27 times more likely to intentionally watch bestiality than men with no sexual feelings towards or history of offending against children.

For some perpetrators, escalation to viewing child sexual abuse material can occur alongside escalation to other violent or taboo material.[251] In a study of 4,924 men from Australia, the UK, and the US, those who reported sexual feelings towards or a history of offending against children, were 11 times more likely to have watched violent pornography, 17 times more likely to purchase online sexual content, and 27 times more likely to intentionally watch bestiality than men with no sexual feelings towards or history of offending against children.[252]

Escalation from legal content to child sexual abuse material can occur due to 'boredom' with legal content, increasing desensitisation, or progression onto more extreme material to continually achieve sexual gratification.[253] In Suojellaan Lapsia's dark web study, which targeted individuals searching for child sexual abuse material, 25% (2,908) of respondents reported viewing images and videos related to violent, sadistic, and brutal material.[254]

However, not all perpetrators purposefully seek out more violent or extreme material due to sexual desensitisation. In multiple studies of convicted mixed and 'online-only' child sexual abusers, most stated they had not intentionally sought child sexual abuse material, rather it was the result of accidental viewing.[255] The majority of perpetrators[256] interviewed in a qualitative study said they accidentally first accessed child sexual abuse material, half of which occurred while they were viewing adult pornography. In some jurisdictions[257] online pornography providers may soon be required to implement age verification to prevent children from accessing adult content, preventing accidental access or progression to more violent or problematic sexual material at a young age.

The availability of early intervention and long-term support are critical to prevent first-time offending before desensitisation, cognitive distortions which rationalise abuse behaviours, addictive behaviours, or other factors embed offending behaviours or sexual thoughts[258] towards children.

Technology and regulation

> ▸ More governments are moving to regulate online services. Global alignment and consistency of laws will be key to realising their transformative potential.
>
> ▸ Gaps and sector-wide challenges in safety tech persist despite continuing innovation. The sector needs to be sustainably and ethically scaled up so that it can meet the increased demand created by regulation.
>
> ▸ Safety by Design[259] is required to ensure that increased adoption of end-to-end encryption, generative AI, and other emerging technologies do not worsen current abuse trends.

Technology developments

Several developments since 2021 threaten to multiply opportunities for child sexual exploitation and abuse online. Most notable is the mainstreaming of generative AI, which has seen widespread public adoption, and an increase in venture capital investment by 425% from 2020 to 2022.[260] In 2022, OpenAI launched Chat GPT,[261] followed by GPT-4,[262] the company's most advanced model to date. While there are many positive uses for generative AI, there is evidence[263] of the technology facilitating sexual exploitation and abuse online via the production of imagery and the provision of information to enable offending.[264]

The gaming sector continues to grow and is expanding into new markets with young populations, such as Turkey and Pakistan.[265] Given the high proportion[266] of child gamers,[267] lack of education and guidance on digital safety in many countries and features of gaming environments that increase risks to children (see Harm chapter for details), increased adoption could further exacerbate the threat.

Another emerging trend is 'eXtended Reality' (XR) gaming. XR includes virtual reality (VR), augmented reality (AR), and mixed reality (MR), and is also referred to using the umbrella term 'immersive tech'. In a world-first, UK police forces recorded eight instances of VR use in child sexual abuse-related crime reports in 2022.[268] As set out in WeProtect Global Alliance's intelligence briefing on XR technologies and child sexual exploitation and abuse, published in 2023, there is currently limited other evidence of use of XR in child sexual abuse exploitation and abuse. However, risks include: opportunities for offenders to access victim-survivors; distribution of child sexual abuse material; simulated abuse of virtual representations of children;[269] and use of integrated tech such as haptics, which simulate real-world sensations such as movements, vibrations, and force.[270]

The metaverse is a central concept of XR. Although interpretations vary, it can be defined as 'a highly immersive virtual world where people gather to socialise, work, and play'.[271] A major global platform and key proponent of the metaverse has openly committed to 'interoperability',[272] a function that threatens to exacerbate risks associated with XR by blurring the lines of accountability for user safety in immersive environments as users seamlessly transition between environments. While there are signs of slowing enthusiasm and investment[273] in the metaverse, the general upwards trajectory remains undeniable.

The global market for XR is forecasted to surpass $1.1 trillion by 2030.[274] It is likely offenders will increasingly exploit XR technologies as they become more accessible and affordable.

The global market for XR is forecasted to surpass...	**$1.1 trillion by 2030**

Another significant development is the incorporation of blockchain into VR games for transparency, and to reduce the possibility of cheating. Blockchain, a shared ledger that creates a permanent unchangeable record,[275] is not a new technology, but its broad application in XR[276] is a recent development. Given the risks associated with XR, a permanent record of what goes on in virtual environments, while preserving evidence of crimes, could enable further distribution of child sexual abuse material and worsen trauma and revictimisation. In 2018, child sexual abuse imagery was discovered in the blockchain of a prominent cryptocurrency.[277]

New decentralised platforms could also impact child sexual exploitation and abuse online. Like blockchain, these have existed for some time. Peer-to-peer sharing dates back to 2000,[278] but 2023 has seen a landmark development with the expansion of Mastodon,[279] a decentralised social media platform which quadrupled its user base to over 10 million in the five months to March 2023.[280] Decentralised services devolve control to user communities to set their own content moderation standards, removing the ability to comprehensively exclude harmful content.[281]

Despite the harms and risks[282] associated with online services, there are no signs of change in usage of them. The number of social media users worldwide has risen to 4.9 billion in 2023[283] from 4.26 billion in 2021.[284] With larger platforms, this is arguably because their scale is such that the value of alternative services is diminished, creating so-called 'network effects'.[285] This offers at least a partial explanation as to why, in the absence of regulation, incentives to date have been insufficient to encourage consistent,[286] proportionate action across the tech industry to tackle online harms.

The regulation of online services

By requiring online service providers to take steps to keep users safe, and introducing a risk of financial, legal and – in some cases – criminal sanctions, internet regulation has the potential to help curb the sustained rise in child sexual exploitation and abuse online. The Organisation for Economic Co-operation and Development (OECD) has highlighted numerous challenges[287] facing governments and regulators when it comes to establishing rules for the regulation of digital environments and emerging technologies. These include being able to keep pace with change, making sure that regulatory frameworks are 'fit-for purpose', overcoming enforcement challenges, and ensuring an effective response to what are often transnational problems.

The past decade has seen a shift from the era of insufficient self-regulation to an age of increasing legislative initiatives and regulation[288] around the world. By introducing clear and constructive regulatory measures for the technology industry, and by empowering regulators with the right enforcement tools, governments can make the internet a much safer place for children to learn, explore, and play. For example, since 2021 Australia,[289] the European Union,[290] Ireland,[291] Nigeria,[292] the Philippines,[293] Singapore,[294] and the US state of California[295] have joined Fiji,[296] France, Germany, New Zealand,[297] and others in enacting or introducing new forms of online safety regulation. At the time of writing, various laws are also proposed including: the Digital India Act;[298] the EU's proposed regulation to tackle child sexual abuse material; the UK Online Safety Bill;[299] and six Bills being debated in the US[300] (most notably the Kids Online Safety Act,[301] which is the federal counterpart to California's Age-Appropriate Design Code Act).

Australian Online Safety Regulator

Australia's 2021 Online Safety Act came into force on 23 January 2022. The Act provides for complaints-based schemes that require the removal of specific content online, including child sexual exploitation and abuse, as well as proactive and systemic powers including new mandatory industry codes and standards that create minimum compliance measures for eight sectors of the online ecosystem, and transparency powers.

To ensure successful implementation, Australia's eSafety Commissioner (the national regulator responsible for compliance with the Act) has focused on:

1   **Development of a holistic response encompassing tackling online harms and compassionate survivor support, through to lifting industry standards transnationally**

2   **Underpinning the response with a focus on awareness and education, including capacity building and understanding of online harms across all demographics**

3   **Strengthening prevention with new regulatory frameworks requiring the digital and online industries to take greater responsibility for how harms occur on their platforms and services, and highlighting industry's responsibilities through Safety by Design.**

In many jurisdictions online safety provisions are not contained in one legal instrument but spread across different pieces of legislation, making it difficult to identify all laws that address online harms. It is early days for internet regulation with many laws enacted but not yet implemented. As such, there is limited evidence of how these laws are impacting harm trends.

Regulating the internet is complex and requires thoughtful action from all stakeholders involved. It requires a multi-layered approach by a variety of bodies to include the supranational and international level, as highlighted in WeProtect Global Alliance's Global Strategic Response.

Legislative and regulatory initiatives need to be built on the foundation of respect for fundamental rights and liberties, while also seeking balance and space to allow for innovation.[302] Technology neutrality[303] – a concept by which regulation should avoid discriminating against or encouraging particular technologies[304] – has become a key principle in global technology regulation.[305] Its flexible approach allows governments and regulators to adapt to new technology, helping tackle new and emerging threats without hindering innovation. Some broad examples of internet legislation that have taken this approach include the EU's General Data Protection Regulation (GDPR)[306] and Artificial Intelligence Act,[307] Ghana's Digital Financial Services Policy,[308] and Hong Kong's Personal Data (Privacy) Ordinance (PDPO).[309] It has also been a guiding principle in national technology strategies such as Kenya's Digital Master Plan 2022-2032.[310]

New laws and regulations need to be transparent to ensure accountability[311] and allow for public scrutiny, as well as allowing for public and stakeholder engagement in the shaping of the rules. Regulators also need to have the right powers and tools to enforce rules and ensure compliance. Approaches to regulation can vary,[312] ranging from lighter touch approaches like voluntary codes of practice, good practice guidance, and reputational incentives, through to more stringent or prescriptive measures such as mandatory codes of practice, investigations, and even legal penalties or prosecutions. The scope of powers of regulators and the approach employed differs across jurisdictions. In August 2022, Australia's eSafety Commissioner issued the first mandatory transparency notices[313] using its powers under the Online Safety Act 2021. Responses from Microsoft, Skype, Snap, Apple, Meta, WhatsApp, and Omegle revealed no common baseline in steps taken to tackle child sexual exploitation and abuse online, but the information itself represents a "significant first step towards greater transparency".

Alignment at a global level

Global alignment across regulatory regimes is key to realising the transformative potential of regulation. While some frameworks are consistent, there are notable differences. For example, both the UK Online Safety Bill[314] and Ireland's Online Safety and Media Regulation Bill[315] include provisions to tackle specified forms of harmful content, in addition to illegal content. By contrast, the Digital Services Act[316] mainly requires action from platforms to remove illegal content on their services. There are also challenges with differing state level regulations in countries with a federal constitution. At a global scale, divergent approaches run the risk of multiplying practical hurdles for transnational service providers.

The recently published draft UNESCO guidelines on digital platform regulation should encourage[317] international consistency. UNICEF's 'Legislating for the Digital Age'[318] report includes minimum recommended standards for businesses and other organisations, couched within a more comprehensive set of guidelines to support legislative alignment on everything from offence definitions through to investigative and survivor support provisions. In November 2022, the Global Online Safety Regulators Network[319] was launched. The aim is to develop a coherent global approach to online safety regulation, foster cross-border cooperation, and positively shape the long-term response. It serves as an exemplary instance of sector-specific international collaboration, where regulators share knowledge, experience, and expertise.

> ## "Due to tactics used by offenders to obscure their locations, it can be hard to identify where they are operating"

Due to tactics used by offenders[320] to obscure their locations, it can be hard to identify where they are operating. In addition to consistency, global coverage of regulation is also important, to mitigate the risk of offenders targeting jurisdictions without laws in place. The case of the Netherlands demonstrates this displacement effect: after a series of interventions led by the Dutch government, the proportion of child sexual abuse material hosted in the Netherlands went from 77% in 2020 to 41% in 2022. The proportion hosted in the US increased in the same period, from 5% to 15%.[321]

In recent years, risk-based regulatory approaches have increased in momentum and popularity. Regulations that require providers to assess risks posed to all children (not just child users – as harms can have an indirect broader impact), such as by conducting a Child Rights Impact Assessment[322] (a tool designed to help governments meet the obligations set out in General Comment 25[323]) and to develop and operate services in such a way as to mitigate specific risks, have most potential to curb trends and encourage Safety by Design by helping to prevent exploitation and abuse. Steps could include integrating features such as age assurance coupled with age-appropriate experiences, and ensuring that information about the service, and how to report abuse, is accessible for child users. Australia's Online Safety Act,[324] Ireland's Online Safety and Media Regulation Act,[325] and the Philippines Anti-Child Sexual Abuse or Exploitation Materials (CSEM) Act[326] are examples of frameworks that require companies to take measures to prevent child sexual exploitation and abuse online in addition to obligations to detect, report, and remove child sexual abuse material, which are also critical.

Despite its transformative potential, internet regulation is just one component of the legislative response to child sexual exploitation and abuse online. An important first step for governments, and an enabler for greater global alignment of all relevant laws, is ratification of the Council of Europe Convention on the Protection of Children Against Sexual Exploitation and Sexual Abuse (also known as the Lanzarote Convention). Countries do not need to be members of the Council of Europe to accede to the Convention, with Tunisia acceding in 2019.[327] Governments around the world are still progressing important action to ensure all forms of child sexual exploitation and abuse are criminalised: in Malaysia, a Bill was recently approved to amend provisions of the Sexual Offences against Children Act (2017)[328] to create distinct offences of sexual extortion and livestreaming of child sexual abuse, to enable improved prosecution of these crimes. Since 2021, regional bodies have also strengthened their policy approach through conventions and declarations; examples include:

- The entry into force of the African Union Convention on Cyber and Cyber Security and Personal Data Protection[329]

- The instrumentalisation (in the Regional Action Plan) of the Declaration on the protection of online exploitation and abuse in ASEAN (Association of Southeast Asian Nations).[330]

Online safety technologies

Realising the transformative potential of new internet laws will rely on regulators and online service providers overcoming a range of implementation challenges. Regulators will need to engage platforms to ensure readiness for new regimes, and design effective mechanisms to monitor compliance. Platforms not currently positioned to comply with new rules will need to make changes to avoid breaking the law. Internet regulation is likely to fuel demand for 'RegTech' (regulatory technology)[331] seen in other regulated industries, as a route to helping platforms evidence compliance with new obligations. But in the first instance, many online service providers will prioritise the integration of online safety technologies.

Increased demand generated by regulation may already be fuelling the growth of safety tech. In the UK, one of the most mature markets for safety tools, revenues increased by 20% from 2022-23, and are on course to reach £1 billion by the mid-2020s.[332] On a global scale, over 350 safety tech providers were operating in 2022.[333] The UK and the US remain the most mature markets,[334] but safety tech innovation hubs are also emerging in Canada, France, Germany, Ireland,[335] and Israel.

Globally, over 350 safety tech providers were operating in 2022

– Publitas report

Since 2021, innovation has led to new safety tech solutions. An example is audio moderation for live streaming which, in an industry first, was implemented in 2022 by social discovery app Yubo across its four largest markets.[336] More device-level solutions are also emerging. In 2023, Apple expanded its 'Communication Safety' features on children's devices to detect content that contains nudity in images or video being received or sent.[337] Developed by SafeToNet, Salus is another new on-device technology, which is notable for being preventative for those at risk of offending.

Salus

Salus, SafeToNet's new device-level safety application, is installed on devices of those at risk of viewing child sexual abuse material. The app monitors network traffic and images viewed on the user's screen in real-time, blocking sexual images of children if detected. The project received €2.1 million of funding from the European Commission. A two-year pilot involving volunteers from Belgium, the Netherlands, and the UK began in March 2023. Project collaborators believe the tool could prove vital for the sustainable, long-term prevention of child sexual abuse content and the revictimisation of survivors.[338]

The study of experiences of online sexual harm during childhood in Europe by WeProtect Global Alliance and Economist Impact revealed that 79% of those surveyed had received sexually explicit content on their mobile phone.[339] According to parents and guardians surveyed by Economist Impact in Latin America and Sub-Saharan Africa, 55% of children have access to the internet through a personal mobile device.[340] The data points to the huge potential of device-level solutions deployed on mobile phones to reduce the production and distribution of child sexual abuse material. Unlike many other safety technologies, they also have the potential to help prevent the livestreaming of child sexual abuse.[341]
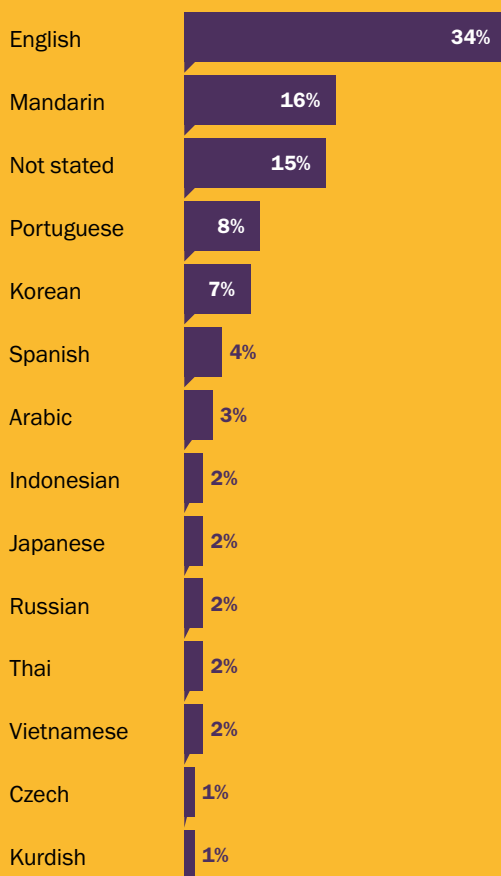
Addressing current gaps in safety tech provision will be key to ensuring that tools help providers to design and operate safer services, and meet new regulatory obligations. One such limitation is the fact that solutions are generally trained on English datasets,[342] and not for language-specific vocabulary or cultural and regional differences. Data from Crisp reveals that while English remains the prevalent language associated with terms signifying risks to children, the proportion traced to Japanese and Mandarin speakers increased by 50% and 45% respectively in a six-month period in 2023.

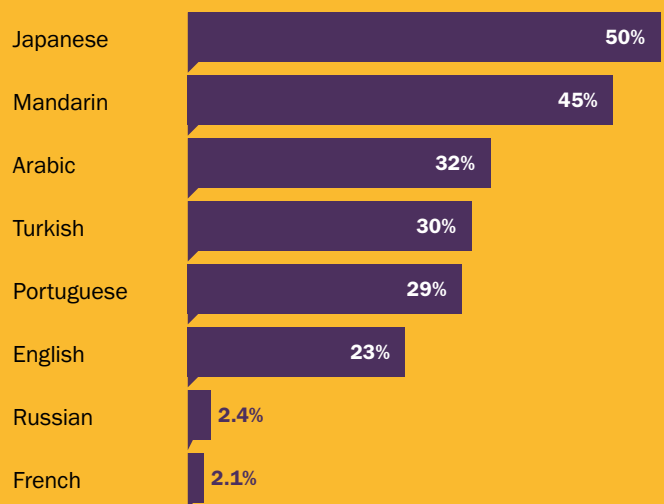# Crisp data insight: Prevalent languages for terms signifying risks to children

English is the most prevalent language for terms signifying risk to children. From January to June 2023, an increase in non-English Asia-Pacific (APAC) region languages was identified in connection with child sexual exploitation and abuse online. The data from across Crisp's global customer base shows a rise in the proportion of APAC languages associated with the provision of child sexual abuse material, advertising access to children for sexual abuse purposes, and selling or advertising child-like sexual dolls. An identified risk is Thai-speaking users offering access to first-person child sexual abuse material. The introduction of automatic translation tools on many social media platforms has removed language barriers in trading child sexual abuse material and tradecraft discussions. Accurate risk detection requires not only translation but cultural understanding to capture colloquialisms, intentional evasion, associated slang, or veiled language.

The chart below indicates up to a 50% growth in non-English language terminology related to child sexual abuse. The increase in Japanese is linked to individuals increasingly signalling intent through sharing anime content showing children involved in sexual acts. As it does not show a "real child", it is not universally considered child sexual abuse material. The 45% increase in Mandarin predominantly relates to terminology used to sell child-like sex dolls. Similarly, these items are not universally illegal. These trends link back to the growing prevalence of 'legal material' discussed in the Harm chapter.

Prevalent languages for terms associated with risks to children, from January to June 2023

Language	%
English	34%
Mandarin	16%
Not stated	15%
Portuguese	8%
Korean	7%
Spanish	4%
Arabic	3%
Indonesian	2%
Japanese	2%
Russian	2%
Thai	2%
Vietnamese	2%
Czech	1%
Kurdish	1%

Percentage increase in terms associated with risks to children, by language, from January to June 2023

Language	%
Japanese	50%
Mandarin	45%
Arabic	32%
Turkish	30%
Portuguese	29%
English	23%
Russian	2.4%
French	2.1%

The Crisp data underscores the urgent need to train online safety technologies using information that is linguistically and culturally diverse, to address a gap in the response that could otherwise increase offending and the risk to children in certain countries and cultures.

Ethical access to diverse datasets, provided using approaches that uphold children's fundamental rights, are key to the continued, sustainable growth of the online safety tech sector more broadly, and the development of non-biased solutions that can meet the needs of all children regardless of background or identity.[343] Currently, data is held by platforms, governments, and sometimes civil society organisations,[344] complicating access for safety tech developers. The Online Safety Data Initiative exemplifies how ethical data sharing can be encouraged and advanced on a global scale.

The Online Safety Data Initiative

Convened by the UK's Centre for Data Ethics and Innovation, the Online Safety Data Initiative brings together online safety tech suppliers and government, academic, and civil society stakeholders to drive innovation, helping companies develop world-class safety tools that identify and remove harmful online content through greater access to ethical data sources.[345]

Data access is one of a number of strategic challenges the online safety tech sector must overcome if it is to scale sustainably. Another is ensuring consistency in the quality and effectiveness of tools. Due to difficulties accessing data, many safety technologies are developed in-house by platforms themselves and are not currently independently tested, so their effectiveness is unknown.[346] As demand for safety tech grows, governments must help to develop and enforce consistent standards for safety technology. By basing these on international frameworks and best practice, they will expand both the market and reach of home-grown tech while helping to make the online experiences of children consistently safer across the globe. The draft international standard for age assurance systems, developed by the International Standards Organisation in close collaboration with the safety tech industry in 2021, is a landmark achievement that signals the achievability of common global standards for safety technology.[347]

Governments can play an important role in fostering technology innovation. In 2019 the French government announced €5 billion in funding for tech companies over the subsequent three years.[348] As of 2021, more than a dozen of those startups are valued at more than $1 billion. Balancing this, governments also have a responsibility to properly evaluate private tech and explore alternatives, such as open-source tools. So-called 'public digital goods'[349] are important because they offer a route for even startups to create safe user experiences, and could help to ensure that the cost of complying with new internet regulation is not disproportionately high for small service providers.

Safety by Design

Although Safety by Design principles were first introduced in 2018, there is still insufficient transparency to ascertain the extent to which Safety by Design is being implemented, and the effectiveness of measures adopted. According to a recently published OECD report on Transparency Reporting on Child Sexual Exploitation and Abuse Material Online by the Global Top-50 Content Sharing Services,[350] 30 of the top 50 online platforms do not issue transparency reports covering steps taken to combat child sexual exploitation and abuse online.

Insights from the Tech Coalition's annual survey, administered with the WeProtect Global Alliance to 31 coalition member companies, also signal an increasing but relative lack of investment in measures associated with Safety by Design[351] (see Table 3). While the adoption of technologies to detect existing illegal or harmful content at both network and platform level is advanced, the adoption of 'age oriented online safety' and 'user protection' is still in development, suggesting that companies are slower to adopt measures to prevent harm from occurring in the first place.

Table 3. Adoption of online safety technologies by industry companies (in partnership with the Tech Coalition)
Taxonomy taken from UK Government, and adapted for relevance to child sexual exploitation and abuse.[352]

Online Safety Technology	Application	Adoption
System-wide governance	Automated identification and removal of child sexual abuse material	**Advanced** (27 companies enable content uploads use hashing detection methods)
Platform level	Content moderation through identifying and flagging to human moderators	**Advanced** (All companies report to the relevant authorities where required by law in their jurisdiction)
Age oriented online safety	Robust age assurance and age verification (i.e. not self-declaration)	**Developing** (While all companies use at least self-declaration of age, only nine use hard identifiers, six use an inference model, and five use facial estimation analysis)
User protection	User, parental, or device-based products that protect the user from harm (e.g. endpoint software and applications)	**Proficient** (15 industry members provide safety resources for children or caregivers, and 11 use advanced tools to moderate in live environments)
Networking filtering	Products or services that actively filter content through 'deny-listing' or blocking content perceived as harmful	**Proficient** (13 use AI image classifiers and 13 use non-grooming or sextortion-related text classifiers)

The growing adoption of E2EE in online platforms since 2021 increases the need for Safety by Design, not least because many of the currently used detection technologies in Table 3 do not work in E2EE environments.[353] E2EE is a capability that ensures the content of messages is visible only to the sender and recipient; no other entity, including the service provider, can decrypt the data and read. As highlighted in the Alliance's Technology, Privacy and Rights briefing, the issue of E2EE reinforces the need for safe design and device-level options that offer an opportunity to intervene early before abuse happens.

E2EE offers important privacy protections for children as much as adults;[354] it keeps their data and images secure, and can protect individuals from being persecuted in oppressive regimes, for example due to their sexuality.[355] However, if not accompanied by the implementation of appropriate measures to mitigate risks to children (through a Safety by Design approach), there is a high risk that E2EE environments make it impossible for third parties to detect child sexual exploitation and abuse online, thereby denying both platforms and law enforcement the opportunity to proactively detect, report, and remove child sexual abuse material.

E2EE also hinders the visibility of the threat. NCMEC anticipates that with the widespread adoption of E2EE, the number of reports of suspected child sexual abuse from larger platforms (of which five accounted for 93% of all reports in 2022) will decrease by almost 80%.[356] This likely drop in reporting is a significant concern. Although industry reports provide only a partial view of the scale of child sexual exploitation and abuse online, they are crucial to informing the global response, particularly in light of low levels of reporting by victim-survivors.

> **It is anticipated that with the widespread adoption of E2EE, the number of reports of suspected child sexual abuse from larger platforms (of which five accounted for 93% of all reports in 2022) will decrease by almost 80%**
>
> – National Center for Missing and Exploited Children

It is technically possible to detect child sexual exploitation and abuse in E2EE environments in a privacy- and security-preserving way.[357] Proposed solutions include:

- Client-side scanning, which involves scanning messages on devices for matches or similarities to a database of illegal child sexual abuse material before the message is encrypted and sent).[358]

- Homomorphic encryption.[359] This is the use of a different type of encryption which allows operations to be performed without data decryption at any point).[360]

- Intermediate secure enclaves, which decrypt the message at server level by a third party and use tools to detect child sexual abuse materials.

Regulation could provide a further boost for such technologies. When the UK Online Safety bill becomes law, the regulator will have the power to require online service providers to use accredited technologies to detect child sexual exploitation and abuse content, including in E2EE environments, if relevant solutions such as client-side scanning are deemed to meet defined standards. An EU 'Flash Barometer' poll conducted in June 2023, comprising 26,270 interviews, revealed broad support for the detection of child sexual exploitation and abuse online in E2EE messages (83% in favour).[361] This suggests that in Europe at least, public perception may not be the primary barrier to adoption of such measures.

> **"Generative AI presents a unique opportunity to act now to put child safety at the centre of this technology as it emerges"**
>
> – Thorn

As highlighted by Thorn, generative AI similarly presents "a unique opportunity to act now to put child safety at the centre of this technology as it emerges".[362] There is currently no evidence that child safety has been integrated into the design and rollout of generative AI services. In the context of the sustained increase in reported child sexual exploitation and abuse online, E2EE adoption and emergent technologies such as AI signal a critical juncture at which urgent, widespread implementation of Safety by Design represents the only viable route to turning the tide on current trends.

Response

> ▸ **More funding is urgently needed to tackle child sexual exploitation and abuse online. Prevention and public health approaches must be prioritised. Investing in frontline responders is essential to supporting the resilience and sustainability of the overall response.**
>
> ▸ **Mature, internationally aligned legislation can provide a strong foundation that empowers organisations – and voluntary and social initiatives – to go beyond the baseline. Voluntary collaboration across sectors and geographies will level up the response and turn the tide on current abuse trends.**

Underfunding

Through multi-year, stable funding, governments can drive national and international capacity-building, incentivise cross-sector investment, and enable the scale-up of evidence-based interventions. A parallel can be drawn with cyber security, where government policies and strategic prioritisation have driven increased investment from all sectors to tackle cyber threats.[363]

Guided by the Alliance's Model National Response, an increasing number of governments are leading coordinated and multisectoral action, with 42 countries actively building capabilities in line with local circumstances and needs over the past few years.[364] Additionally, many governments have allocated funding directly to other stakeholder groups and channelled investment through multi-national funds or organisations combatting the threat.

WeProtect Global Alliance's Model National Response

Launched in 2015, the Model National Response framework is a non-prescriptive and dynamic tool that sets out the capabilities needed for an effective, coordinated national response to prevent and respond to child sexual exploitation and abuse online. In 2023 the Alliance and UNICEF launched the Model National Response Maturity Model to support continuous improvement and tailored strategies using a holistic, system-based approach.

Yet despite positive progress in many countries around the world, child sexual exploitation and abuse online remains under-prioritised relative to other crimes[365] which adversely affect children (such as human trafficking).[366] In 2022, Economist Impact's benchmark study of country responses to sexual violence against children found that fewer than half of the 60 countries assessed had a strategy to end child sexual exploitation and abuse.[367] Of those, just two in five had clear funding plans to strategically direct resources. While online-facilitated sexual abuse is not the focus of their study, it remains indicative. An adequate response to child sexual exploitation and abuse online is less likely within the context of a failure to prioritise the broader, multi-dimensional issue of violence against children.

Local investment is important to strengthen the country-level response. However, current funding for international capacity-building is inadequate.[368] An assessment of national funding allocated for child sexual exploitation and abuse across 20 high-, middle- and low-income countries in Europe, the Americas, the Middle East, Africa, and the Asia-Pacific region found that it was insufficient to meet demand in almost every country.[369] Demands for services and capabilities provided by global organisations like INTERPOL outstrip current budgets.[370] As child sexual exploitation and abuse online is a global, borderless crime, the governments of high-income nations have a shared responsibility to help address capital deficiencies.

Governments are uniquely positioned to direct investment through national policy and legislation. However, the private sector also has an important responsibility to invest adequately to tackle child sexual exploitation and abuse online on their platforms and services. The importance of public-private partnerships to boost online safety was highlighted by the United Nations this year.[371] While limited transparency reporting means the precise sums invested by online service providers are not publicly known, information is available on investment in partnership initiatives:

- The IWF receives 90% of its funding from its majority private sector membership, and reported a turnover of £4.4 million in 2022[372]

- The new NCMEC 'Take It Down' service, a platform to help children and young people request the removal of their imagery from social media, was funded by Meta[373]

- The Tech Coalition Safe Online Research fund, a partnership between Safe Online at End Violence Global Partnership and the Tech Coalition, which represents a cross-section of industry members. The 2021 Fund awarded $1 million[374] and the 2022 Fund awarded $800,000[375] to projects aimed at advancing understanding of child sexual exploitation and abuse. Funding is also channelled through Tech Coalition membership.

Some companies also invest in 'trusted flagger' schemes, a form of public-private partnership aimed at enhancing online safety.[376] Under such schemes, service providers collaborate with stakeholders (usually NGOs and hotlines, but sometimes academia, government entities, other online service providers and individuals) with specific expertise. By prioritising these reports, providers can remove harmful and illegal content more quickly, and with more accuracy. The European Digital Services Act sets specific provisions for the role of trusted flagger entities.[377]

While the above examples attest to pockets of good practice, the sums invested are relatively small. As an example, in 2022, the annual profit for the tech company with the largest social media platforms (by number of active monthly active users)[378] was $43 billion[379] – higher than the individual 2022 Gross Domestic Product (GDP) of 83 countries.[380] In February 2023 after analysing industry responses to the first set of transparency notices, Australia's eSafety Commissioner called out under-investment in technology to detect child sexual abuse material.[381] Recent large-scale layoffs of content moderation and Trust and Safety teams by some of the biggest tech players further undermine commitments to child safety.[382]

Regulation, advocacy, and public awareness campaigns can all encourage online service providers to commit more funding to tackle child sexual exploitation and abuse online. Another powerful force is investors. Recent examples of shareholders advocating for greater transparency and stronger safeguards for online child safety signal their positive influence.[383]

"Shareholders advocating for greater transparency and stronger safeguards for online child safety signal their positive influence"

Overall, the lack of sustained government and private sector funding has led to overreliance on investment from foundations, civil society organisations, and mixed entities (representing both private and public donors),[384] which is vital to enable new research, the testing of solutions, and accelerated innovation. Safe Online at End Violence Global Partnership exemplifies the global and strategic value of such investment. Funded by a combination of government, philanthropic, and private donors, it has channelled more than $77 million into a portfolio of over 100 projects spanning more than 85 countries worldwide,[385] including Disrupting Harm and other ground-breaking initiatives cited in this report. Although not a substitute for sustained commitment from governments and industry, such initiatives help to bridge gaps at a global scale, and are pivotal to building and sustaining the whole system response required to tackle child sexual exploitation and abuse online.

Public health approach to tackling abuse online

A public health approach, and the related learnings from successful responses to other urgent global issues, offer a pathway to prevent countless children around the world from experiencing the trauma of online-facilitated child sexual exploitation and abuse.

Adopted from the field of public health, the 'prevention pyramid' contends that effective prevention requires the development and implementation of primary, secondary, and tertiary level interventions (see Figure 3). These interventions target those at risk of perpetration or victimisation, and those who have already been abused or perpetrated abuse.

Research in the US has shown that 95% of sexual contact offences against children are committed by first-time offenders without prior convictions.[386] Data also shows that men in Canada who have committed a sex offence may struggle with their sexual thoughts and urges for an average of 5-10 years before committing the sexual offence,[387] which suggests there is often time and opportunity to intervene before abuse occurs.

A public health approach provides an evidence-based framework for understanding and preventing violence. The World Health Organisation (WHO) summarises the four key steps to a public health approach as:

1   **Defining and monitoring the problem**

2   **Identifying causes of the problem, including risk and protective factors**

3   **Designing, implementing, and evaluating interventions to test effectiveness**

4   **Scaling up effective interventions while continuing monitoring and evaluation to ensure continued efficacy.[388]**
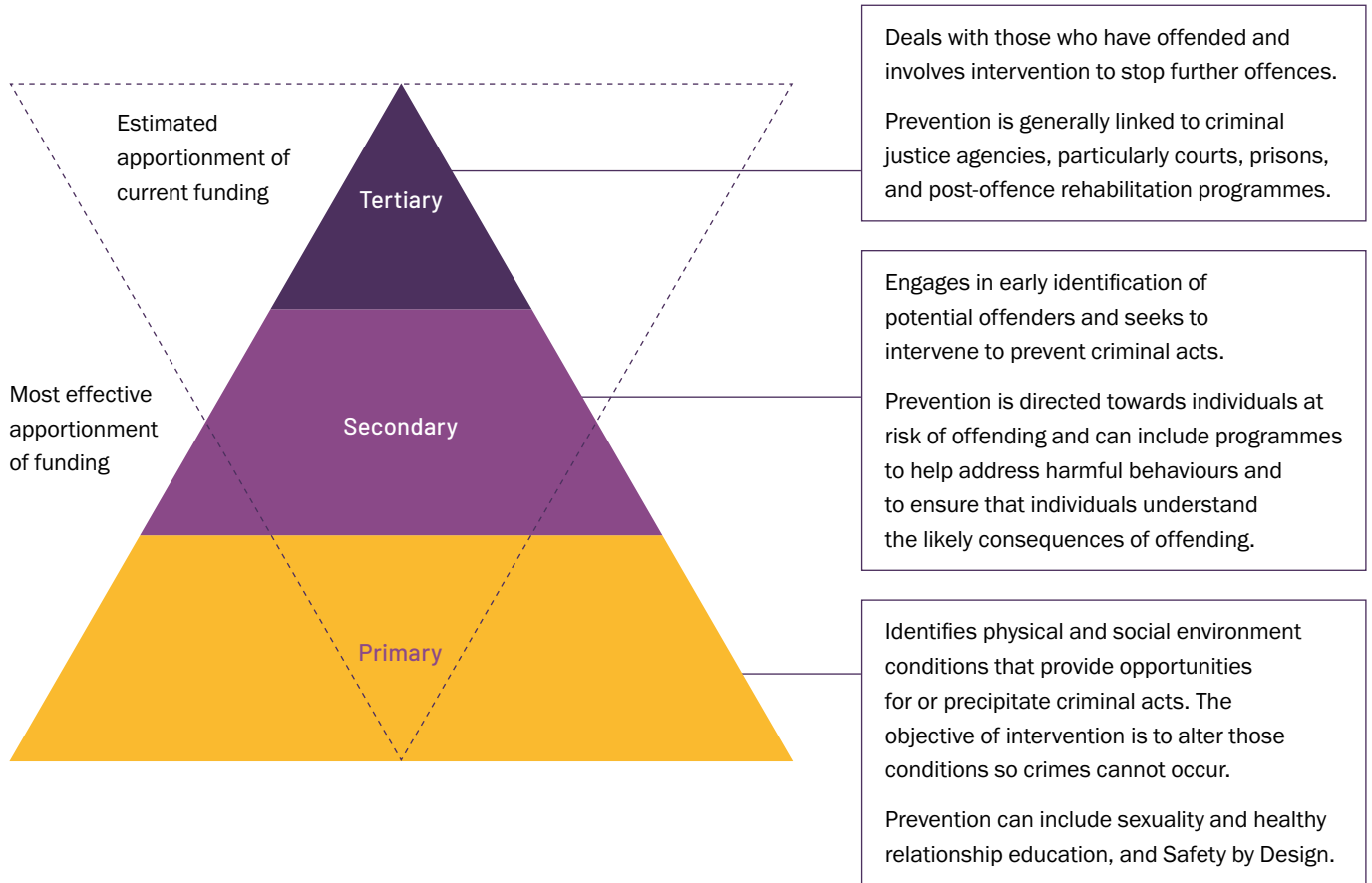
Social, police, and private sector entities work together to prevent people from inflicting or experiencing sexual exploitation and abuse through early intervention, and to address both the short- and long-term consequences.[389]

Child sexual abuse experts have argued that attention and resources have been focused so far on tertiary prevention, often at the expense of primary and secondary initiatives.[390] Most interventions are focused on responding to the issue and reducing reoffending (for example, investigating abuse and prosecuting offenders), rather than preventing abuse from happening. For example, Safeguarding Childhood found that prevention of child sexual abuse compared to prosecution remains generally under-prioritised and underfunded.[391] Even when responding to the issue, the majority of known interventions are aimed at individuals aged over 18 who have already offended,[392] despite evidence of a rise in peer abuse.[393]

Figure 3. Inverting the prevention pyramid

Detailing the activities associated with each strand of prevention, the triangle provides an indicative view of how funding is currently apportioned, compared to how it would ideally be distributed to prioritise primary prevention.[394]

Estimated apportionment of current funding

Most effective apportionment of funding

Tertiary

Deals with those who have offended and involves intervention to stop further offences.

Prevention is generally linked to criminal justice agencies, particularly courts, prisons, and post-offence rehabilitation programmes.

Secondary

Engages in early identification of potential offenders and seeks to intervene to prevent criminal acts.

Prevention is directed towards individuals at risk of offending and can include programmes to help address harmful behaviours and to ensure that individuals understand the likely consequences of offending.

Primary

Identifies physical and social environment conditions that provide opportunities for or precipitate criminal acts. The objective of intervention is to alter those conditions so crimes cannot occur.

Prevention can include sexuality and healthy relationship education, and Safety by Design.

Primary prevention

Primary prevention initiatives can be focused on:

- Changing social norms, behaviours, and attitudes at a societal level

- Addressing structural conditions such as poverty that fuel offending

- Reducing children's exposure risk to victimisation, e.g. through Safety by Design approaches to platform and tool development or through sexuality and healthy relationship education.

The focus of these programmes is on teaching children and caregivers about sexual health, consent, healthy boundaries, and recognising signs of abuse and how to respond and seek help. There is evidence to suggest that school-based child sexual abuse programmes have been successful in building primary school-aged children's self-protective skills and knowledge about child sexual abuse.[395] While it is not children's responsibility to protect themselves from abuse, early intervention (and therefore early years education) is an essential component of a long-term primary prevention strategy.

Prevention education experts have highlighted scope for improvement with a focus on normal, inappropriate, and harmful behaviours; inclusion of a gendered response targeted at engaging boys; and by consulting children and adults who have carried out sexual abuse to understand what could have disrupted their pathway to abuse.[396] Prevention programmes must also recognise that participants may include victim-survivors of child sexual abuse, and provide a survivor-centred response with referrals to support services.

Another critical feature of prevention programmes is to strengthen protective factors identified as significant in reducing the risk of child sexual abuse, such as the unique role that parents can play. A systematic review of research on parental protective strategies identified a range of tactics, including educating children about the dangers of child sexual abuse, creating a safe environment by monitoring and supervising their children, and focusing on positive parent-child relationships.[397] The review also found that child sexual abuse prevention education by parents predominantly reinforced the 'stranger danger' message. This is at odds with the evidence in the Harm chapter, which highlights the risks presented by adults and children known to the victim-survivor, and reveals an opportunity to inform parents to help them support children.

Secondary prevention

Secondary prevention initiatives are typically focused on individuals at higher risk of violence perpetration. For example, the Strength at Home programme in the US is a trauma-informed group intervention found to have reduced physical and psychological partner violence among male military veterans.[398] Other approaches include the US-based Family Bereavement Program, an intervention designed to reduce suicide ideation and attempts in children who have lost a parent. A randomised control trial identified a significant effect in six and 15-year follow-up evaluations.[399]

Calls for mainstreaming secondary prevention initiatives are not without significant challenges. Factors such as a public stigma, the challenges of measuring and evaluating these programmes, and underfunding from governments have stymied further development of evidence-based secondary initiatives.

> ## "Surveys of the offender community and data from anonymous support services evidence demand for deterrence programmes"

Despite successful examples such as Stop It Now! (the Netherlands, UK and Ireland, and the US), Prevention Project Dunkelfeld (Germany), the Preventell Helpline (Sweden), and Don't Offend (India), the availability and accessibility of such programmes at a global scale is limited. A study assessing the contribution of Stop it Now! Helplines in the UK and the Netherlands shows they "can provide cost effective, quality advice and support [...] to prompt behaviour change in adults and strengthen protective factors which can reduce the risk of offending".[400] Results from Prevention Project Dunkelfeld are helpful when developing campaigns targeted at people with a sexual interest in children. They indicate that the key to success for such initiatives is showing empathy and understanding, avoiding discrimination, reducing fear of legal consequences, and ensuring confidentiality and anonymity.[401]

Surveys of the offender community and data from anonymous support services evidence demand for deterrence programmes.[402] According to the Lucy Faithfull Foundation, a UK charity dedicated to preventing child sexual abuse, the number of people seeking advice or support via online self-help or their confidential helpline has trebled since 2020.[403] A distinct barrier to investment in deterrence programmes is the public perception that, in doing so, society supports those that are harming children[404] or are intent on doing so. This perception extends to therapists too. Research indicates that when people in the US who are concerned about their sexual interest in children seek help, they are often met with mental health providers who are ill-informed or prejudiced against them, which deters them from engaging in preventive therapy.[405] From a public health perspective, it is crucial that people at risk of offending have access to stigma-free, competent, and empathic treatment.

Behavioural therapy is another example of early intervention, providing ongoing support and challenging cognitive distortions, such as the rationalisation of abusive sexual actions, which are prevalent in the offender population.[406] Examples of countries that have adopted elements of a public health approach are Canada and Germany. The former is channelling funding to initiatives like 'Talking for Change' through its Crime Prevention and Health department.

Talking for Change

Talking for Change is a Canadian programme providing cognitive-behavioural therapy and anonymous support to individuals who are concerned about their sexual interest in children, their risk of sexually abusing a child, or their use of child sexual abuse material. Since 2019, the Government of Canada has committed over 3 million CAD (approx. £1.8 million) through Public Safety Canada to support the program's development and growth as part of its comprehensive approach to combatting online child sexual exploitation, which includes prevention measures.[407]

Another barrier preventing the effective development and implementation of secondary prevention programmes is the presence of mandatory reporting laws in several jurisdictions across the world.[408] These may discourage people at risk of engaging in child sexual abuse from seeking treatment. Prevention Project Dunkelfeld has proven successful in part because the treatment is confidential; Germany has not implemented mandatory reporting laws requiring professionals to report people at risk of harming to the authorities.[409]

Political support is also critical.[410] Awareness campaigns can help the public to understand why deterrence programmes are necessary. In developing effective secondary prevention initiatives, factors such as specific needs of targeted populations, availability of a range of voluntary treatment options, and employment of multidisciplinary staff – including those who can make referrals to housing and employment assistance – should be considered. 'One size fits all' treatment options are unlikely to be successful.

While public health approaches do not negate the need for policing and criminal justice measures, which remain critical for the identification and safeguarding of victim-survivors, they have significant potential to drive a step-change in the response to child sexual exploitation and abuse online by addressing systemic drivers of the issue, including the multiple causal pathways to offending.[411]

Another important component of a public health approach is the generation of an evidence base that drives the design, development, and implementation of interventions. While research has grown considerably over the past couple of years, significant data gaps remain.

Data collection and sharing

An increase in the funding apportioned to tackle child sexual exploitation and abuse online, including towards preventative interventions, will only be impactful if informed by an assessment of available data and evidence. Data on the prevalence and type of offending, experiences of children, effectiveness of solutions, and the maturity of the response are all required to build a shared understanding of the ecosystem.

There are positive signs that data collection has improved in recent years. The 2022 Out of the Shadows Index revealed that almost half of all countries assessed were collecting prevalence data on cases of sexual violence against children[412] – an increase of 23% since 2019. However, the Index addresses only limited aspects pertaining to online abuse. Only a small number of countries are known to collect quality data on the prevalence

of sexual abuse online, and prevalence is just one example of the type of data that informs our understanding of the issue. Although known cases of child sexual exploitation and abuse online are captured in the child protection system or in police records, administrative data can underestimate the scale of the crime. Other types of data include that which is collated by victim support services and online service providers. Alone, these sources provide at best a partial understanding of the scale and changing nature of child sexual exploitation and abuse online.

> **"Almost half of all the countries assessed in the 2022 Out of the Shadows Index were collecting prevalence data on cases of sexual violence against children – an increase of 23% since 2019"**
>
> – Economist Impact

As laid out in WeProtect Global Alliance's Model National Response, mature data collection that enables rapid, clear communication of information and policies across the child protection ecosystem requires: nationally coordinated approaches, policies and programmes based on ongoing research with measurable outcomes and regular evaluation; secure and reliable data storage and controlled access; and universally agreed terminology.[413]

In June 2022, the Alliance and UNICEF published a joint review of the implementation of the Alliance's Model National Response Framework across 42 Alliance countries, representing all regions and income groupings. The review found that:

- 83% conduct some form of national research, analysis, and monitoring of online-facilitated child sexual exploitation and abuse

- 50% have discussed or adopted universally agreed terminology.[414]

Alongside the Model National Response, the International Centre for Missing & Exploited Children's (ICMEC) Multisectoral Response and Capacity Assessment supports governments to strengthen national data collection and usage and develop monitoring capabilities.[415] In some countries, improvements in public sector information management systems are also required.[416]

Data from online service providers, for example through hotline reports detailing actionable information for law enforcement, is also critical because it offers the only window into platform activity. However, currently, only limited information of varying quality is made available either via mandatory disclosures to law enforcement or through voluntary reporting.[417] The limitations of the latter are evidenced in the findings of the OECD study of transparency reporting. In the medium term, regulation should result in platforms making more information available about their actions to tackle online harms.

OECD transparency reporting study reveals limited information about platform measures to tackle child sexual exploitation and abuse online

A baseline study of policies, procedures, and practices deployed by the top 50 global online content sharing services found transparency reporting was uneven and inconsistent. Only 20 companies provide transparency reports. Of these, only three include details on how child sexual exploitation and abuse violations are classified or categorised. There is also limited information on content moderation. Just 29 companies stated that they deploy a combination of automated tools and community user reporting to detect exploitation or abuse content on their platforms. A further 21 services provide limited or no information about their approach to monitoring compliance.

Involvement in voluntary initiatives is and will remain another route for platforms to share information, such as labelled classifications of abuse, but may be more difficult as a result of recent layoffs in Trust and Safety teams.[418] As discussed in the Technology and regulation chapter, access to platform data is also a critical enabler of online safety tech innovation.

The Digital Trust & Safety Partnership, an entity committed to developing best practice, measures the progress of its industry membership against its best practice framework. According to its latest evaluation, the creation of processes that support academics and researchers working on relevant subject matter is the least mature practice among members.[419] A need to improve legal frameworks regarding data security, privacy, and other business considerations was flagged as a key enabler of voluntary collaboration with researchers. Multi-stakeholder members of the European Digital Media Observatory's Working Group on Platform-to-Researcher Data Access are currently tackling this challenge by developing a Code of Conduct.[420] This will provide guidance on how platform-to-researcher data access can be achieved legally. It will also examine barriers to research participation

for tech companies, including ethical, privacy, and commercial concerns, exploring how they can be navigated effectively.

Data collection and sharing is the first step towards building an evidence base for the response. The next step is the extraction of meaningful insight to inform tailored interventions. The quality of the data is a key determinant of whether and to what extent this is possible, and is impacted by a number of factors including:

- **Terminology.** Clarity across the ecosystem on the descriptions and labels applied by different stakeholders will help to ensure comparability of terminology, and therefore data. The Luxembourg Guidelines, introduced in 2016 to provide precise terminology and conceptual clarity on child protection, are currently being revised to respond to the evolving nature of harms. Additional efforts to achieve homogeneity of language include INHOPE's Universal Classification Schema (see case study below).

- **Research methodologies.** The Disrupting Harm project and IJM's Scale of Harm research are examples of best practice research methodologies which use a combination of primary and secondary data sources to generate country-level insight. Such methods should be replicated as far as possible for consistency (which makes it easier to compare prevalence rates and establish estimates) and to enhance the quality of threat insights overall.[421]

INHOPE's Universal Classification Schema

Launched in March 2023, this project seeks to overcome barriers to international cooperation and promote comparability of classifications by establishing a common classification schema for child sexual abuse material. It aims to boost collaboration, create annotated training datasets for child sexual abuse material detectors, and improve reporting relevancy. This will improve victim identification and effective processing of child sexual abuse material by hotline analysts, law enforcement officers, and technology industry professionals.[422]

Based on the findings of a joint event co-organised with the European Parliament and WeProtect Global Alliance,[423] Safe Online (End Violence Global Partnership) recently commissioned a data landscape analysis.[424] Among other outputs, this will produce a map detailing critical parts of the data ecosystem, including key actors and infrastructure for data collection and use, as well as key gaps and needs. Government and private sector actors must also invest to improve the collection and sharing of data to build a better global picture of the threat.

Responders

A resilient workforce is critical to an effective and sustainable response to child sexual exploitation and abuse online. Law enforcement, content moderators, hotline analysts, social workers, carers, teachers, and health workers are just some professions involved in tackling the threat. As it is not possible to provide a detailed examination in this report of the challenges faced by all these groups, this section focuses on content moderators and law enforcement; two professions with common challenges which, although not new, are likely to worsen in light of recent technology developments and the sustained increase in child sexual exploitation and abuse online.

Content moderators are not generally perceived as 'digital first responders', despite the fact that they are often the first to view online abuse, and their vital role in reporting incidents and assisting police investigations.[425] More than 100,000 people are employed in relevant roles worldwide, with the majority in low-income nations.[426] Content moderators employed by tech platforms can include a mix of full-time employees, contractors, and partner companies. Turnover for contractors is high as they face a variety of challenges. Recent reports have exposed accuracy and productivity targets, mounting workloads, poor pay and conditions, and the effects of repeated exposure to traumatic content:

- Content moderators for ChatGPT based in Kenya reported that they were expected to read and label between 150 and 250 passages of text per nine-hour shift, which could range from 100 words to well over 1,000.[427] Given the average person reads 300 words per minute,[428] this could mean squeezing 14 hours' worth of work into a nine-hour shift.

- Kenya-based former content moderators employed by Sama – a San Francisco-based firm that employs workers in India, Kenya, and Uganda to label data for big tech platforms – reported being traumatised by exposure to graphic posts and are taking legal action against the firm.[429] From January 2024, Sama will no longer take on work that includes moderating harmful content.

- A Middlesex University study of content moderators found that organisational factors such as budget cuts, inadequate leadership and support, and low staffing levels significantly contribute to chronic work-related stress. Study participants reported that an empathetic work environment and appreciation from leadership would improve their job satisfaction.[430]

The use of third-party content moderation services can blur lines of accountability for staff wellbeing, something that is crucial given the risk of vicarious traumatisation – the accruing effect of being exposed to someone else's trauma.[431] Impacts include desensitisation, intrusive thoughts, increased hypervigilance, suspiciousness, and overprotectiveness of children.[432] Improving content moderation practices is key to preventing further loss of the insights of moderators who leave the profession, so that they can be channelled to improve the response. In the first instance, this can be achieved by fostering a supportive environment, improving remuneration, and investing in the professional development of employees to retain and build skills.

OnlyFans content moderation practices and procedures

OnlyFans is an online platform restricted to persons 18 or older where verified creators share and monetise their content with verified users in a safe environment. The platform adopts a number of good practices to protect moderators' wellbeing:

- Moderators are contracted directly– not through a third-party vendor.

- Each moderator has a mentor and begins by shadowing an experienced moderator. Once fully proficient, a new moderator can begin independently moderating content, with regular testing and training on new and emerging risks to users.

- The quality control process rewards moderators' accuracy, not the volume of content reviewed.

- Guidance manuals provide support for moderators in enforcing the OnlyFans terms of service.

- Moderators can escalate questions directly to the Safety Advocacy Team, which includes senior legal personnel and members of the C-Suite. This provides moderators with additional help and emphasises the 'tone from the top' when it comes to online safety. The Safety Advocacy Team and moderators communicate via group chat and live Q&A document, ensuring a collaborative culture.

- Where a moderator makes an error that allows prohibited content on the site, the Safety Advocacy Team performs root cause analysis to identify learning points for process-level improvement.[433]

When content moderators identify suspected child sexual exploitation and abuse online, they generally refer the case to law enforcement for investigation. The primary challenge faced by this profession at a global scale relates to the significant and increasing volume of such reports.

In 2022, 68% (399,739) of suspected child sexual abuse material cases reported to INHOPE were referred to law enforcement – a 20% increase from 2021.[439] The same year, NCMEC escalated more than 49,000 urgent reports to law enforcement that involved a child in imminent danger.[440] The five countries to which NCMEC makes most referrals have remained consistent since 2019, and the number of referrals received per country has increased each year.

Table 4. Countries receiving highest number of NCMEC CyberTipline Reports

Country	Number of reports from NCMEC (2022)	(Number of reports per 1,000 citizens)	2021	2020
India	5,675,324	4[434]	4,699,515	2,725,518
Philippines	2,576,182	22[435]	3,188,793	1,339,597
Bangladesh	2,145,098	12[436]	1,743,240	817,687
Pakistan	2,059,884	9[437]	2,030,801	1,288,513
Indonesia	1,878,011	7[438]	1,861,135	986,648

The figures in Table 4 do not necessarily mean that the highest proportion of child sexual exploitation and abuse happens in these countries, as perpetrators often use proxies or anonymisers to disguise their location.[441] Additionally, not all reports lead to investigation. Challenges surrounding capacity, capability, and continuity of approach are impacting the ability of police to deliver effective action. For example, of the countries listed in Table 4:

- The Indonesian Digital Forensic Unit has very few staff to triage and investigate cases originating in-country, without factoring the additional need to triage and assess NCMEC referrals[442]

- Law enforcement in the Philippines experience high staff turnover and rotation, which makes skills and knowledge retention difficult[443]

- In Pakistan, law enforcement are advocating for more stringent sentencing and the removal of bail for these crimes, as they currently struggle to arraign offenders into court.[444]

Emerging issues, such as increasing volumes of 'self-generated' sexual imagery, are exacerbating the difficulties for a range of responders by making it difficult to determine the context in which material has been produced upon visual inspection. This means that further investigation is usually required, even for imagery which may turn out to have been consensually produced (which is illegal in some countries). In the long-term, tackling the complex factors driving the rise in 'self-generated' sexual material is key to workforce resilience. In the meantime, technology solutions like Thorn's 'self-generated' imagery classifiers have the potential to help streamline the assessment of material, reducing the burden on police, analysts, and moderators.

Thorn 'self-generated' imagery classifiers

Thorn's classifier takes an image as an input and generates a prediction as to whether the image was 'self-generated' (e.g. taken as a traditional 'selfie') or not. The classifier only predicts if an image is 'self-generated' – not whether it is 'self-generated' child sexual abuse material. It is designed to be used in conjunction with a child sexual abuse material classifier, or on known child sexual abuse material, to identify 'self-generated' material.

Thorn anticipates that this classifier will be useful across the child safety ecosystem, as prioritisation and triage tasks occur within law enforcement workflows, NGO workflows, and industry platform content moderation workflows. This classifier could also be used (in addition to other signals) to detect where financial sexual extortion of children may be occurring.[445]

Automated tools can play an important role in reducing the burden on responders because they enable rapid assessment of content at scale. In 2023 Open AI invited trust and safety professionals to use Chat GPT-4 for platform-specific online moderation, which it said has the potential to pick up on nuance in long policy documents, easily adapt to policy changes, and label content consistently.[446] Platforms such as TikTok are already using automated tools at scale. In its 2022 Q3 transparency report, TikTok reported that of the 111 million videos removed from the platform in 2022, 48% were removed by automated systems.[447] Tools also reduce the volume of child sexual abuse material which moderators, analysts, and police are exposed to.

In recent years, efforts have focused on improving classifiers to detect 'new' child sexual abuse imagery. Video classifiers are the least mature and have lower accuracy rates, making automated triage difficult.[448] Without innovation to develop new solutions, this could significantly increase pressure on moderators and analysts given the greater proportion of video imagery that is being reported. Of the Cyber Tipline reports received by NCMEC in 2022, 88 million contained media files, of which 37 million were videos.[449]

Many existing classifiers are underpinned by powerful machine learning and AI capabilities, which are improving at pace. Initiatives such as the AI for Safer Children Global Hub for law enforcement will help stakeholders to examine AI's potential.

The AI for Safer Children Global Hub

The AI for Safer Children Global Hub is a joint initiative between the United Nations Interregional Crime and Justice Research Institute and the Ministry of Interior of the United Arab Emirates. It aims to foster AI-powered prevention, detection, and prosecution of child sexual exploitation and abuse online, achieved by:

- Providing information on current AI tools

- Supporting law enforcement to identify potential new tools

- Giving guidance on leveraging AI for investigation and improved workflows

- Building a law enforcement community to strengthen communication and networking.[450]

As of July 2023, there are currently 89 UN Member States and 344 investigators registered to the Hub. Some of these tools are free to use for law enforcement agencies in developing countries, and where a country cannot afford an AI tool, the Ministry of Interior for the UAE seeks to develop a solution.[451]

The vital role of technology solutions in streamlining the assessment of child sexual abuse material is undeniable. However, it is important to remember that unlike moderators, analysts, and police, automated tools cannot currently factor broader societal or linguistic context into their assessment. Given the complexity of the trends associated with online child sexual exploitation and abuse, humans will continue to play an important role in moderation and assessment processes. Protecting their wellbeing must therefore be a top priority.

In some lower- and middle-income countries, more fundamental gaps persist which are impacting responders across a broad range of professions. Of the 13 countries not connected to INTERPOL's International Child Sexual Exploitation (ICSE) database, 12 are low- and middle-income countries.[452] Connection to national and international databases is a crucial enabler for effective law enforcement investigations. In 2020, the WHO highlighted a lack of funding combined with "inadequate professional capacity" as inhibiting progress on preventing violence against children.[453] Similarly, a UNICEF report from 2022 highlighted under-spending on education, health, and social protection equivalent to a shortfall of USD $860 on average per child.[454] Adequately funding child protection and justice systems, and investing in the professionalisation of police, social workers, and other experts must be a first priority for governments. These key steps will build the resilience of the vital, diverse workforce committed to tackling child sexual exploitation and abuse online.

Voluntary action and collaboration

Multi-sector collaboration is particularly crucial for the incorporation of successful child and victim-survivor-centred approaches. When cases of exploitation and abuse are taken to court, children and caregivers cite complex, unfamiliar processes and intimidating situations such as facing offenders in-person in courtrooms.[455] Lack of inter-institutional coordination and continuity gaps leave survivors feeling inadequately supported, or not supported at all. Closer collaboration within national policing and justice systems, informed by consultation with survivor experts, is needed to achieve a child-centred approach. Inspired by Children's Advocacy Centres in the US,[456] the Icelandic Barnahus model demonstrates how multi-disciplinary and inter-agency interventions can be organised in a child-friendly way under one roof.[457]

At an international level, a positive development for 2023 is the UNICEF-INTERPOL agreement. Aimed at promoting greater investment and coordinating action to ensure victims and survivors receive the support they require, the cooperation commitment should boost government efforts to achieve better alignment across and within institutions involved in responding to child sexual exploitation and abuse online.

UNICEF–INTERPOL agreement

Under the new agreement, the two international organisations will:

- Support the establishment of specialist teams to investigate child sexual exploitation and abuse online, and strengthen the effectiveness of existing teams

- Advance training and systematic professional development to ensure law enforcement has up-to-date knowledge and skills in victim and offender identification, digital forensics, child-friendly and survivor-centred interviewing, and use of the INTERPOL ICSE database

- Promote and facilitate better connections between law enforcement, social services, and other victim service providers to ensure victims and survivors receive coordinated and multi-disciplinary support as they move through the criminal justice process and beyond.[458]

Multi-stakeholder initiatives that assemble different response groups provide a critical forum. Currently, it's a missed opportunity to incorporate, amplify, and action the voices of survivors to build a stronger and child-centred response across the entire ecosystem. There are many organisations and new initiatives focused on ensuring that survivors are leading advocacy efforts and have their voices heard:

- **The Brave Movement** is a survivor-centred, global movement fighting to end childhood sexual violence and emphasise the importance of healing, prevention, and justice. Brave has increased survivor participation at national and regional levels through continuous advocacy for their inclusion in decision-making regarding legislative and system-wide changes relating to child sexual abuse.[459]

- **Marie Collins Foundation** has collaborated with their Lived Experience Group (survivors) for individuals who have experienced technology-assisted abuse, to co-developed guidance on how to promote meaningful participation practices when working with survivors and victims, how to support children who have been harmed, and how to have conversations about online harm with children.[460]

- **Chayn** is a global, online, survivor-led gender and tech project empowering women and marginalised genders against violence and oppression. Promoting safer online practices is a priority. In collaboration with survivors and using trauma-informed approaches, Chayn develops guides and campaigns that tackle technology-assisted abuse against women.[461]

In addition to keeping the voices of children and survivors core to the response, broader voluntary action and collaboration remains necessary to help all stakeholders involved share insights and align approaches.

Table 5. Examples of global voluntary collaboration to tackle child sexual exploitation and abuse online

The Digital Trust and Safety Partnership	Formed in 2021, the Digital Trust and Safety Partnership develops industry best practice on issues related to trust and safety. Informed by industry experience and multi-sector engagement, the Partnership has released a best practices framework to address content and conduct-related online risks,[462] followed by an evaluation in 2022 which examined members' implementation of the practices.[463]
The Tech Coalition	The Tech Coalition is formed of global tech companies working together to combat child sexual exploitation and abuse online. In addition to insights provided through their annual members' survey, in June 2022 the Coalition launched a Voluntary Framework for Industry Transparency.[464] This provides guidance to tech companies seeking to build trust and demonstrate accountability by providing transparency reporting around their efforts to combat child sexual exploitation and abuse online.
Voluntary Principles to Counter Online Child Sexual Exploitation and Abuse	Developed by the Five Country Ministerial group in consultation with six leading tech companies, the voluntary principles provide a common framework for industry approaches to tackle child sexual exploitation and abuse, and cover issues from online grooming and livestreaming through to industry transparency and reporting.[465]
WeProtect Global Alliance	WeProtect Global Alliance brings together experts from over 250 members across government, the private sector, civil society, and intergovernmental organisations. Together, they develop policies and solutions to protect children from sexual exploitation and abuse online. The Alliance generates political commitment and practical approaches to make the digital world safe and positive for children, preventing sexual abuse and long-term harm.

Asymmetries and gaps in legal frameworks continue to inhibit cross-border investigations and broader efforts to address child sexual exploitation and abuse online. Examples include:

- Differences in cooperation requirements for online service providers, which can delay and complicate law enforcement investigations. In some countries, cooperation is not a legal requirement. Even in regions where it is mandated, investigations can be delayed by companies' lack of understanding of jurisdictional legal requirements. United Arab Emirates law enforcement report that it is often easier to go through US law enforcement agencies to secure the cooperation of major platforms, rather than via the regional offices of social media companies.[466]

- Insufficient content retention rules, which prevent access to vital evidence. In the US, companies are required to retain content reported to NCMEC's CyberTipline for 90 days.[467] Given high referral volumes and the complexity of investigations, content is often needed well beyond the retention period. Global inconsistencies present further problems for cross-border investigations.

- Differences in how child sexual abuse material is classified, a major barrier to expanding the reach of INTERPOL's International Child Sexual Exploitation database, which is currently accessed by law enforcement in just 68 countries worldwide.[468]

The above examples attest to the need for more global legislative alignment to unlock enhanced collaboration, which will also be key to the success of new regulatory regimes. However, establishing and implementing legislation will take significant time and resource.

> **"As the global legislative response matures, turning the tide on current abuse trends will only be possible with continued voluntary commitment from all stakeholders"**

As the global legislative response matures, turning the tide on current abuse trends will only be possible with continued voluntary commitment from all stakeholders to collaborate, share information, undertake research, and centre the voices of children and survivors. It is especially critical to encourage positive action in jurisdictions and sectors not covered by internet regulation, and involve service providers in initiatives, such as research and collaboration, which go beyond their legal duties.

Conclusion

The surge in child sexual exploitation and abuse online – and new methods and mediums used to conduct it – demand a swift, innovative response. The onus is on governments, online service providers, civil society, and intergovernmental organisations to fund, develop, embed, and importantly align child-centred approaches to ensure consistency.

As demonstrated throughout this report, proactive and practical measures can address the increasing volume and complexity of child sexual exploitation and abuse online. Urgent calls to action include investing in preventative public health approaches, centring children's rights and perspectives when creating initiatives, and aligning global legislation and regulations. Allowing space for innovation and flexibility will enable the response to evolve at pace with, and ahead of, shifting threats. When combined with Safety by Design, these strategies will strengthen and consolidate the response and reduce the risk on a global scale, ultimately protecting children from sexual abuse and long-term harm.

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Steering Committee

Dr Albert Antwi-Boasiako	Ministry of Communications and Digitalisation, Ghanaian Government
Annie Mullins OBE	TWELVE APP SAS (Yubo)
Danielle Lilly	ChildFund International
Dr Deborah Fry	Global Data Institute for Child Safety
John Shehan	National Center for Missing & Exploited Children
John Tanagho	IJM Center to End Online Sexual Exploitation of Children
Julia Fossi	Amazon Web Services
Julie Dawson	Yoti
Juliet Ohahuru-Obiora	Action Against Child Sexual Abuse Initiative (ACSAI)
Napol Woraprateep	Thai Law Enforcement
Liz Thomas	Microsoft
Maria Oliveria Tamellini	GamerSafer
Paul Schmite	French Government
Dr Rebecca Fix	John Hopkins Bloomberg of Public Health
Rhiannon McDonald	Marie Collins Foundation

Authors

WeProtect Global Alliance

WeProtect Global Alliance brings together experts from over 250 member governments, private sector companies and civil society organisations. Together, they break down complex problems and develop policies and solutions to protect children from sexual abuse online. www.weprotect.org

PA Consulting

PA Consulting believes in the power of ingenuity to build a positive human future. This idea unites and inspires us as we partner with passionate, forward-thinking leaders. We combine innovative thinking and breakthrough technologies, delivering end-to-end innovation. Our clients adapt and transform, and together we achieve enduring results. www.paconsulting.com

Partners

Crisp, a Kroll business

Crisp is a leading provider of online safety technologies and risk intelligence services. Crisp contributes to the safe, daily online experiences of over two billion users, including an estimated 450 million children. www.crispthinking.com

Crisp's insight pieces include data collated from January 2023 to June 2023, and draws from a diverse range of sources – dark web, deep web, surface web, social media, and gaming. The data insights are featured in call-out boxes throughout the report.

Contributors

In addition to our Steering Committee, WeProtect Global Alliance would like to thank all of the organisations and individuals who supported the development of the Global Threat Assessment.

The following organisations provided primary data to inform our research:

Economist Impact

Economist Impact combines the rigour of a think tank with the creativity of a media brand to engage an influential global audience, partnering with corporations, foundations, NGOs, and governments across major themes including sustainability, health, and the changing shape of globalisation to catalyse change and enable progress. www.impact.economist.com

In-depth detail on the methodology and research findings of Economist Impact's parents' survey can be found in a separate report.

#MyVoiceMySafety – United Nations Office of the Special Representative of the Secretary General on Violence Against Children (in partnership with the Alliance)

The UN Office of the Special Representative of the Secretary General on Violence Against Children is an independent local advocate of the prevention and elimination of all forms of violence against children mobilising action and political support.

Conducted by WeProtect Global Alliance in collaboration with the UN Secretary General on Violence Against Children, #MyVoiceMySafety seeks to improve the understanding of the complexities of online safety from the perspectives of young people. Findings in this report pertain to the experiences of 650 children and young adolescents aged between 7-18 from Africa, Asia, Europe, the Middle East, North America, and South America.

Further detail on the study can be found here.

'Help us to help you' – Suojellaan Lapsia, Protect Children ry

Suojellaan Lapsia, Protect Children ry is a non-profit, non-governmental (NGO), Finland-based organisation which brings together child safety specialists to conduct scientific research, inform, and develop evidence-based methods of prevention and support, and advocate for greater protections for children. www.suojellaanlapsia.fi

Suojellaan Lapsia provided primary data from their anonymous dark web survey 'Help us to help you'. The survey was published in December 2020 and is available in 21 languages. Respondents were recruited to voluntarily answer after having searched for child sexual abuse material. At the time of receiving the data on the 27 June 2023, the survey has been opened 345,387 times and answered by 12,720 respondents. The findings from Suojellaan Lapsia's dark web survey are referenced throughout the report.

Child Rescue Coalition

The Child Rescue Coalition (CRC) is a non-profit, US-based organisation that builds technology and provides support for law enforcement to track, arrest, and prosecute individuals who sexually abuse and exploit children. www.childrescuecoalition.org

The CRC provided primary data from one undercover agent operating on an "app based" end-to-end encrypted network to inform this assessment. The findings are included in the Harm chapter.

The Tech Coalition

The Tech Coalition is an alliance of global tech companies who are working together to combat child sexual exploitation and abuse online by pooling knowledge, upskilling members, and strengthening all links in the chain.

The Tech Coalition survey was administered by WeProtect Global Alliance and the Tech Coalition, providing direct insight into the strategies employed by the 31 Tech Coalition member companies in their efforts to detect and report child sexual abuse material.

Further information on the Tech Coalition can be found here.

Disrupting Harm – UNICEF, ECPAT, INTERPOL, and Safe Online at End Violence Global Partnerships

Disrupting Harm is a large-scale research project generating unique insights on how child sexual exploitation and abuse online is manifesting in 13 countries and providing tailored roadmaps for countries to strengthen their prevention and response systems. This project was funded by End Violence Global Partnership and the research was undertaken by ECPAT International, INTERPOL, and the UNICEF Global Office of Research and Foresight – Innocenti. www.end-violence.org/disrupting-harm.

Unique region-specific insights from ECPAT's 'Conversations with Survivors' section of Disrupting Harm were provided for this report. This assesses children creating, sharing, and pressuring others for sexual pictures or videos across East Asia and the Pacific, and Eastern and Southern Africa. The findings are included in the Child chapter.

The below organisations and individuals offered their insights to guide this research:

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Dr Elena Martellozzo	OnlyFans
Dr Michael Seto	Policía Federal de Argentina
Dr Saeed Aldhaheri	Policing Institute for the Eastern Region
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End Violence Global Partnership	Thorn
eSafety Commissioner	UK Government Department for Science, Innovation and Technology
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This report was researched and written by Shailey Hingorani, Maddi Gore, and Natalia Greene.

Glossary of terms

Term	Definition
Age assurance	Age assurance is a collective term for the range of techniques used to provide age estimation, age verification or age assessment.[469]
Category A Child Sexual Abuse Material	Images involving penetrative sexual activity; images involving sexual activity with an animal, or sadism.[470]
Category B Child Sexual Abuse Material	Images involving non-penetrative sexual activity.[471]
Category C Child Sexual Abuse Material	Other indecent images not falling within Category A or B.[472]
Cisgender	Of, relating to, or being a person whose gender identity corresponds with the sex the person had or was identified as having at birth.[473]
Dark web	The term dark web refers to encrypted online content that is not indexed by conventional search engines. Accessing the dark web can only be done using specific browsers, such as TOR Browser.[474]
Deep web	This is the is the portion of the web that is not indexed or searchable by ordinary search engines. Users must log in or have the specific URL or IP address to find and access a particular website or service.[475]
Fetish content consumer	Consumers with a specific fetish who watch or collect content to sexually gratify their fetish (e.g. feet, shoes, haircuts), and this content depicts children within it. This is a sub-category of content of interest to predators (COITP) because it does not sexualise the child in the content, however it is consumed for sexual gratification.
Hash lists	A hash list contains a special catalogue of hashes which act as a digital fingerprint or label that identifies a confirmed child sexual abuse image.[476]
Hash-matching	An algorithm known as a hash function is used to compute a fingerprint, known as a hash, from a file. Comparing such a hash with another hash stored in a database is called hash matching. In the context of online safety, hash matching can be a primary means for the detection of known illegal or otherwise harmful images and videos.[477]

Image-based sexual exploitation and abuse	Categories of image-based sexual exploitation and abuse of children include: adult-produced child sexual abuse images, non-consensual taken/made images by other youth, non-consensually shared images by adults or other youth, and voluntary illegal sharing with adults (e.g. grooming, livestreaming, commercial sexual exploitation).[478]
Image-hosting services	An image hosting service lets users upload images which are then available through a unique URL. This URL can be used to make online links, or be embedded in other websites, forums, and social networking sites.[479]
Incel	Incels (a term for those who identify as involuntarily celibate) are most commonly heterosexual men who believe that they are sexually rejected by women because of their genetics and the advent of feminism. The incel worldview is centred around entitlement, the inferiority of women, and fatalism.[480]
Intersectionality	The concept of intersectionality describes the ways in which systems of inequality based on gender, race, ethnicity, sexual orientation, gender identity, disability, class, and other forms of discrimination intersect to create unique dynamics and effects.[481]
Peer-to-peer networks	Peer-to-peer networks are free and publicly accessible to individuals who download software that connects their computer to other users (or peers) in the network, and they contains millions of users globally who use these networks to share and gain free access to popular music, films, and other media.[482]
Phishing attacks	Phishing attacks occur when attackers attempt to trick users into doing 'the wrong thing', such as clicking a bad link that will download malware, or direct them to a dodgy website. Phishing can be conducted via a text message, social media, or by phone, but the term phishing is mainly used to describe attacks that arrive by email.[483]
(Financial) Sexual extortion and coercion of children	As set out in the Luxembourg guidelines, sexual extortion is the blackmailing of a person with the help of 'self-generated' images of that person in order to extort sexual favours, money, or other benefits from her/him under the threat of sharing the material beyond the consent of the depicted person[484] (e.g. posting images on social media).
Surface web	This is what internet users access in their regular day-to-day activity. It is available to the general public using standard search engines and can be accessed using standard web browsers that do not require any special configuration.[485]
Viral imagery	If a video, image, or story goes viral, it spreads quickly and widely on the internet through social media and email.[486]
Watermarking	A watermark is a logo, piece of text, or signature superimposed onto a photograph.[487]

References

1   CyberTipline 2022 Report (National Center for Missing and Exploited Children, 2023) Accessed from: https://www.missingkids.org/cybertiplinedata 16/08/2023

2   Data received from the National Center for Missing and Exploited Children 31/07/2023

3   Disrupting Harm Data Insight 2 (ECPAT International and UNICEF Office of Research – Innocenti, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-05/DH-data-insight-2_FinalB%282%29.pdf 16/08/2023

4   Disrupting Harm (ECPAT, INTERPOL UNICEF, and End Violence Against Children, 2022) Accessed from: https://www.end-violence.org/disrupting-harm 15/08/2023

5   Estimates of childhood exposure to online sexual harms and their risk factors (WeProtect Global Alliance and Economist Impact, 2021) Accessed from: https://www.weprotect.org/economist-impact-global-survey/ 15/08/2023

6   Extended Reality technologies and child sexual exploitation and abuse (WeProtect Global Alliance, 2023) Accessed from: https://www.weprotect.org/library/extended-reality-technologies-and-child-sexual-exploitation-and-abuse/ 18/08/2023

7   20,000 reports of coerced 'self-generated' sexual abuse imagery seen in first half of 2022 show 7- to 10-year-olds (IWF, 2022) Accessed from: https://www.iwf.org.uk/news-media/news/20-000-reports-of-coerced-self-generated-sexual-abuse-imagery-seen-in-first-half-of-2022-show-7-to-10-year-olds/ 15/08/2023

8   Analysis by age, Annual Report 2022 (IWF, 2023) Accessed from: https://annualreport2022.iwf.org.uk/trends-and-data/analysis-by-age/ 15/08/2023

9   Sexually Coerced Extortion or 'Sextortion' Help & Support (Internet Watch Foundation, n.d.) Accessed from: https://www.iwf.org.uk/resources/sextortion/ 17/08/2023

10   Online Grooming: Examining risky encounters amid everyday digital socialization (Thorn, 2022) Accessed from: https://info.thorn.org/hubfs/Research/2022_Online_Grooming_Report.pdf 16/08/2023

11   #MyVoiceMySafety: Children and young people's perspectives on online safety and online sexual harms (WeProtect Global Alliance and the UN Secretary General on Violence Against Children, 2023) Accessed from: https://www.weprotect.org/youth-consultation-survey/ 21/08/2023

12   Child sexual abuse prevention – the strategies of protective mothers and fathers: a systematic review (Guggisberg, M. et al., 2021) Accessed from: https://www.tandfonline.com/doi/abs/10.1080/13229400.2021.2009366 21/08/2023

13   Disrupting Harm in Uganda: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2021) Accessed from: https://www.end-violence.org/sites/default/files/2021-11/DH_Uganda_ONLINE_final%20Report.pdf 02/08/2023

Disrupting Harm in Kenya: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-12/DH%20Kenya%20Report_Revised30Nov2022.pdf 02/08/2023

Disrupting Harm in Ethiopia: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-12/DH_Ethiopia_ONLINE_final%20251122.pdf 02/08/2023

Disrupting Harm in Vietnam: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-08/DH_Viet%20Nam_ENG_ONLINE.pdf 02/08/2023

Disrupting Harm in Namibia: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-09/DH_Namibia_2_1.pdf 02/08/2023

Disrupting Harm in Indonesia: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-11/DH_Indonesia_ONLINE_final%20rev%20071022_11.pdf 02/08/2023

Disrupting Harm in Malaysia: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from https://www.end-violence.org/sites/default/files/2022-09/DH_Malaysia_ONLINE_FINAL.pdf 02/08/2023

Disrupting Harm in the Phillippines: Evidence on online child sexual exploitation and abuse. (ECPAT, INTERPOL and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-12/DH_Philippines_ONLINE_FINAL%20251122.pdf 16/08/2023

Disrupting Harm in Thailand: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-12/DH_Thailand_ONLINE_final%20251122.pdf 16/08/2023

Disrupting Harm in Mozambique [SNAPSHOT]: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-10/2027%20DH%20MOZAMBIQUE%20REPORT%20ENGLISH%20VERSION.pdf 02/08/2023

Disrupting Harm in South Africa: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-11/2028%20DH%20SOUTH%20AFRICA%20REPORT%20%281%29.pdf 21/08/2023

14   An Analysis of Financial Sextortion Victim Posts Published on r/Sextortion (Canadian Centre for Child Protection, 2022) Accessed from: https://protectchildren.ca/en/resources-research/an-analysis-of-financial-sextortion-victim-posts-published-on-sextortion/ 15/08/2023

15   Global Boys Initiative Case Study: Bolivia (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/gbi-case-study-bolivia/ 02/08/2023

Global Boys Initiative Case Study: Colombia (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/gbi-case-study-colombia/ 02/08/2023

Global Boys Initiative Case Study: United Kingdom (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/gbi-case-study-uk/ 02/08/2023

Global Boys Initiative Case Study: Namibia (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/gbi-case-study-namibia/ 02/08/2023

Global Boys Initiative Case Study: Morocco (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/gbi-case-study-morocco/ 02/08/2023

Global Boys Initiative Case Study: Thailand (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/global-boys-initiative-case-study-thailand/ 02/08/2023

Global Boys Initiative Case Study: South Korea (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/global-boys-initiative-case-study-south-korea/ 02/08/2023

Global Boys Initiative Case Study: Cambodia (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/global-boys-initiative-case-study-cambodia/ 02/08/2023

16   The United Nations Convention on the Rights of the Child (n.d.) Accessed from: https://www.savethechildren.net/united-nations-convention-rights-child#:~:text=THE%20UNCRC%20IS%20AT%20THE,United%20States%2C%20has%20ratified%20it 16/08/2023

17   New Online Safety Act commences (Australian Government Department of Infrastructure, Transport, Regional Development, Communisations and the Arts, 2022) Accessed from: https://www.infrastructure.gov.au/department/media/news/new-online-safety-act-commences

18   Online Safety and Media Regulation Act 2022 (Irish Government Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media, 2023) Accessed from: https://www.gov.ie/en/publication/d8e4c-online-safety-and-media-regulation-bill/ 21/08/2023

19   Nigeria: Regulation Of Online Platforms In Nigeria: Draft Code Of Practice For Interactive Computer Service Platforms/Internet Intermediaries (Mondaq, 2022) Accessed from: https://www.mondaq.com/nigeria/social-media/1206074/regulation-of-online-platforms-in-nigeria-draft-code-of-practice-for-interactive-computer-service-platformsinternet-intermediaries#:~:text=On%20J-une%2013%2C%202022%2C%20the%20National%20Information%20Te 21/08/2023

20   Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market For Digital Services and amending Directive 2000/31/EC (Digital Services Act) (Official Journal of the European Union, 2022) Accessed from: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L:2022:277:FULL 21/08/2023

21   New law puts pressure on private stakeholders to protect children vs online sexual abuse (CNN Philippines, 2022) Accessed from: https://www.cnnphilippines.com/news/2022/8/3/Online-sexual-abuse-children-protection-law-Hontiveros.html 21/08/2023

22   Singapore Introduces New Law for Online Safety (Bird&Bird, 2022) Accessed from: https://www.twobirds.com/en/insights/2022/singapore/singapore-introduces-new-law-for-online-safety 21/08/2023

23   Governor Newsom Signs First-in-Nation Bill Protecting Children's Online Data and Privacy (Office of Governor Gavin Newsom, 2022) Accessed from: https://www.gov.ca.gov/2022/09/15/governor-newsom-signs-first-in-nation-bill-protecting-childrens-online-data-and-privacy/#:~:text=AB%202273%20by%20Assemblymember%20Buffy%20Wicks%20%28D-Oakland%29%20and,protect%20children%E2%80%99s%20mental%20and%20physi 21/08/2023

24   Online Safety Act 2018 (The Laws of Fiji, 2019) Accessed from: https://laws.gov.fj/Acts/DisplayAct/2462 21/08/2023

25   Online Harms: A comparative analysis (Linklaters, 2021) Accessed from: https://lpscdn.linklaters.com/-/media/digital-marketing-image-library/files/01_insights/thought-leadership/2021/april/online-harms---a-comparative-analysis.ashx?rev=1c44d739-086d-400a-8f94-508a23148e5e&extension=pdf&hash=63F3E4D64476F056E124CD70774B33A8 21/08/2023

26   Harmful Digital Communications Act 2015 (Parliamentary Counsel Office, 2022) Accessed from: https://www.legislation.govt.nz/act/public/2015/0063/latest/whole.html 21/08/2023

27   Highlights of the proposed Digital India Act, 2023 (The Hindu, 2023) Accessed from: https://www.thehindu.com/news/national/explained-highlights-of-the-proposed-digital-india-act-2023/article66613508.ece 21/08/2023

28   Obligations under the proposed child sexual abuse material (CSAM) regulation and its effect on online security and privacy risks (European Parliament, 2023) Accessed from: https://www.europarl.europa.eu/doceo/document/P-9-2023-000946_EN.html 21/08/2023

29   Online Safety Bill (UK Government Department for Digital, Culture, Media and Sport, 2022) Accessed from: https://publications.parliament.uk/pa/bills/cbill/58-03/0004/220004.pdf 21/08/2023

30   Email received from Ernie Allen OBE, 28/07/2023

31   Senate panel advances bills to boost children's safety online (The Washington Post, 2022) Accessed from: https://www.washingtonpost.com/technology/2022/07/27/senate-child-safety-bill/ 21/08/2023

32   Legislating for the digital age (Unicef, 2022) Accessed from: https://www.unicef.org/reports/legislating-digital-age

33   INTERPOL and UNICEF sign cooperation agreement to address child sexual exploitation and abuse (UNICEF, 2023) Accessed from: https://www.unicef.org/press-releases/interpol-and-unicef-sign-cooperation-agreement-address-child-sexual-exploitation-and 21/08/2023

34   Safeguarding Childhood: An Assessment of Funding to Prevent and End Child Sexual Abuse, FP Analytics in collaboration with World Vision International (September 2023) [Embargoed copy]

35   Generative AI: Now is the Time for Safety By Design (Thorn, 2023) Accessed from: https://www.thorn.org/blog/now-is-the-time-for-safety-by-design/ 17/08/2023

36   The VPA Approach (World Health Organization, n.d.) Accessed from: https://www.who.int/groups/violence-prevention-alliance/approach 14/08/2023

37   Using a Public Health Approach to Prevent Child Sexual Abuse by Targeting Those at Risk of Harming Children (Cant, R. et al., 2022) Accessed from: https://link.springer.com/article/10.1007/s42448-022-00128-7 16/08/2023

38   Legislating for the digital age (Unicef, 2022) Accessed from: https://www.unicef.org/reports/legislating-digital-age 17/08/2023

39   Safeguarding freedom of expression and access to information: guidelines for a multistakeholder approach in the context of regulating digital platforms (Unesco, 2023) Accessed from: https://unesdoc.unesco.org/ark:/48223/pf0000384031.locale=en 17/08/2023

40   Guidelines for Medico-Legal Care for Victims of Sexual Violence: Child Sexual Abuse (World Health Organisation, 2003) Accessed from: https://www.who.int/violence_injury_prevention/publications/violence/med_leg_guidelines/en/ 19/04/2021

41   Terminology Guidelines for the Protection of Children from Sexual Exploitation and Sexual Abuse (ECPAT, 2016) Accessed from: https://www.ohchr.org/Documents/Issues/Children/SR/TerminologyGuidelines_en.pdf 25/05/2021

42   Terminology Guidelines for the Protection of Children from Sexual Exploitation and Sexual Abuse (Interagency Working Group on Sexual Exploitation of Children, 2016) Accessed from: https://www.ecpat.org/wp-content/uploads/2016/12/Terminology-guidelines_ENG.pdf 23/07/2021

43   Number of internet and social media users worldwide as of April 2023 (Statista, 2023) Accessed from: https://www.statista.com/statistics/617136/digital-population-worldwide/ 15/08/2023

44   Youth Internet use (International Telecommunication Union, 2022) Accessed from: https://www.itu.int/itu-d/reports/statistics/2022/11/24/ff22-youth-internet-use/ 15/08/2023

45   Children and Parents: Media Use and Attitudes (Ofcom, 2023) Accessed from: https://www.ofcom.org.uk/__data/assets/pdf_file/0027/255852/childrens-media-use-and-attitudes-report-2023.pdf 15/08/2023

46   Estimates of childhood exposure to online sexual harms and their risk factors (WeProtect Global Alliance and Economist Impact, 2023) Accessed from: https://www.weprotect.org/economist-impact-global-survey/ 15/08/2023

47   Disrupting Harm (ECPAT, INTERPOL UNICEF, and End Violence Against Children, 2022) Accessed from: https://www.end-violence.org/disrupting-harm 15/08/2023

48   Child sexual abuse images and youth produced images: The varieties of Image-based Sexual Exploitation and Abuse of Children (Finkelhor D. et al., 2023) Accessed from: https://www.sciencedirect.com/science/article/abs/pii/S0145213423002508

49   "All of Me Is Completely Different": Experiences and Consequences Among Victims of Technology-Assisted Child Sexual Abuse (Joleby M. et al., 2020) Accessed from: https://www.frontiersin.org/articles/10.3389/fpsyg.2020.606218

50   Annual research review: Harms experienced by child users of online and mobile technologies: the nature, prevalence and management of sexual and aggressive risks in the digital age (Livingstone S. and Smith P., 2014) Accessed from: https://pubmed.ncbi.nlm.nih.gov/24438579/ 06/08/2023

51   Technology assisted child sexual abuse in the UK: Young people's views on the impact of online sexual abuse (Hamilton-Giachritsis, C. et al., 2020) Accessed from: https://www.sciencedirect.com/science/article/abs/pii/S0190740920306356 06/08/2023

      Online sexual abuse of adolescents by a perpetrator met online: a cross-sectional study (Jonsson, L. et al., 2019) Accessed from: https://capmh.biomedcentral.com/articles/10.1186/s13034-019-0292-1 06/08/2023

      Social Anxiety as a Consequence of Non-consensually Disseminated Sexually Explicit Media Victimization (Campbell, J. et al., 2022) Accessed from: https://pubmed.ncbi.nlm.nih.gov/33107385/ 06/08/2023

52   Everyone deserves to be happy and safe" A mixed methods study exploring how online and offline child sexual abuse impact young people and how professionals respond to it (Hamilton-Giachritsis, C. et al., 2017) Accessed from: https://www.researchgate.net/publication/326827010_Everyone_deserves_to_be_happy_and_safe_A_mixed_methods_study_exploring_how_online_and_offline_child_sexual_abuse_impact_young_people_and_how_professionals_respond_to_it 06/08/2023

53   The impacts of child sexual abuse: A rapid evidence (Independent Inquiry Into Child Sexual Abuse, 2017) Accessed from: https://www.iicsa.org.uk/reports-recommendations/publications/research/impacts-csa.html 06/08/2023

54   Reactions to the disclosure of intrafamilial childhood sexual abuse: Findings from the National Sexual Assault Online Hotline (Elliott, S. et al., 2022) Accessed from: https://pubmed.ncbi.nlm.nih.gov/35278820/ 17/08/2023

55   A cross-national study of direct and indirect effects of cyberbullying on cybergrooming victimization via self-esteem (Wachs S. et al., 2016) Accessed from: https://www.sciencedirect.com/science/article/pii/S1135755X1600004X 05/08/2023

56   20,000 reports of coerced 'self-generated' sexual abuse imagery seen in first half of 2022 show 7- to 10-year-olds (IWF, 2022) Accessed from: https://www.iwf.org.uk/news-media/news/20-000-reports-of-coerced-self-generated-sexual-abuse-imagery-seen-in-first-half-of-2022-show-7-to-10-year-olds/ 15/08/2023

57   Analysis by age, Annual Report 2022 (IWF, 2023) Accessed from: https://annualreport2022.iwf.org.uk/trends-and-data/analysis-by-age/ 15/08/2023

58   Analysis by age, Annual Report 2022 (IWF, 2023) Accessed from: https://annualreport2022.iwf.org.uk/trends-and-data/analysis-by-age/ 15/08/2023

59   Primary data provided by Suojellaan Lapsia from 'Help us to help you' dark web survey 27/06/2023

60   Parents' experiences of their children's exposure to online sexual harms: A study of parents/guardians in Latin America and Sub-Saharan Africa (Economist Impact, 2023) Accessed from: https://www.weprotect.org/economist-impact-parents-survey/ 21/08/2023

61   Mind the Gap: Parental awareness of children's exposure to risks online (eSafety Commissioner, 2022) Accessed from: https://www.esafety.gov.au/sites/default/files/2022-02/Mind%20the%20Gap%20%20-%20Parental%20awareness%20of%20children%27s%20exposure%20to%20risks%20online%20-%20FINAL.pdf 15/08/2023

62   #MyVoiceMySafety: Children and young people's perspectives on online safety and online sexual harms (WeProtect Global Alliance and the UN Secretary General on Violence Against Children, 2023) Accessed from: https://www.weprotect.org/youth-consultation-survey/ 21/08/2023

63   Jack Changes the Game (Australian Center to Counter Child Exploitation, n.d.) Accessed from: https://www.accce.gov.au/resources/parents-carers/jack-changes-game 15/08/2023

64   Disrupting Harm Data Insight 1 (UNICEF Office of Research – Innocenti, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-05/DH-data-insight-1_Final%281%29.pdf 15/08/2023

65   Estimates of childhood exposure to online sexual harms and their risk factors (WeProtect Global Alliance and Economist Impact, 2023) Accessed from: https://www.weprotect.org/economist-impact-global-survey/ 15/08/2023

      Enhancing police and industry practice (Middlesex University, 2022) Accessed from https://eprints.mdx.ac.uk/22038/ 05/08/2023

      Black Youth Beyond the Digital Divide: Age and Gender Differences in Internet Use, Communication Patterns, and Victimization Experiences (Tynes B. and Mitchell K., 2014) Accessed from: https://journals.sagepub.com/doi/abs/10.1177/0095798413487555?journalCode=jbpa 05/08/2023

      A crossnational study of direct and indirect effects of cyberbullying on cybergrooming victimization via self-esteem (Wachs, S. et al., 2016) Accessed from: https://www.sciencedirect.com/science/article/pii/S1135755X1600004X 05/08/2023

      Child sexual abuse revisited: a population-based cross-sectional study among Swiss adolescents (Mohler-Kuo, M. et al., 2014) Accessed from: https://pubmed.ncbi.nlm.nih.gov/24182941/ 05/08/2023

66   Predictors of unwanted exposure to online pornography and online sexual solicitation of youth (Chang F. et al., 2016) Accessed from: https://pubmed.ncbi.nlm.nih.gov/25179645/ 05/08/2023

67   Sextortion Among Adolescents: Results From a National Survey of U.S. Youth (Patchin, J. and Hinduja, S., 2020) Accessed from: https://pubmed.ncbi.nlm.nih.gov/30264657/ 06/08/2023

68   An Analysis of Financial Sextortion Victim Posts Published on r/Sextortion (Canadian Centre for Child Protection, 2022) Accessed from: https://protectchildren.ca/en/resources-research/an-analysis-of-financial-sextortion-victim-posts-published-on-sextortion/ 15/08/2023

69   Analysis by sex, Annual report 2022 (IWF, 2023) Accessed from: https://annualreport2022.iwf.org.uk/trends-and-data/analysis-by-sex/ 15/08/2023

70   Annual report 2022 (INHOPE, 2023) Accessed from: https://inhope.org/media/pages/articles/annual-reports/14832daa35-1687272590/inhope-annual-report-2022.pdf 15/08/2023

71   #MyVoiceMySafety: Children and young people's perspectives on online safety and online sexual harms (WeProtect Global Alliance and the UN Secretary General on Violence Against Children, 2023) Accessed from: https://www.weprotect.org/youth-consultation-survey/ 21/08/2023

72   Primary data provided by Suojellaan Lapsia from 'Help us to help you' dark web survey, 27/06/2023

73   Global Boys Initiative Case Study: Bolivia (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/gbi-case-study-bolivia/ 02/08/2023

     Global Boys Initiative Case Study: Colombia (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/gbi-case-study-colombia/ 02/08/2023

     Global Boys Initiative Case Study: United Kingdom (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/gbi-case-study-uk/ 02/08/2023

     Global Boys Initiative Case Study: Namibia (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/gbi-case-study-namibia/ 02/08/2023

     Global Boys Initiative Case Study: Morocco (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/gbi-case-study-morocco/ 02/08/2023

     Global Boys Initiative Case Study: Thailand (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/global-boys-initiative-case-study-thailand/ 02/08/2023

     Global Boys Initiative Case Study: South Korea (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/global-boys-initiative-case-study-south-korea/ 02/08/2023

     Global Boys Initiative Case Study: Cambodia (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/global-boys-initiative-case-study-cambodia/ 02/08/2023

74   Estimates of childhood exposure to online sexual harms and their risk factors (WeProtect Global Alliance and Economist Impact, 2023) Accessed from: https://www.weprotect.org/economist-impact-global-survey/ 15/08/2023

75   Global Threat Assessment 2021 (WeProtect Global Alliance, 2021) Accessed from: https://www.weprotect.org/global-threat-assessment-21/ 15/08/2023

76   Self-Generated Child Sexual Abuse Material: Youth Attitudes and Experiences in 2021 (Thorn, 2022) Accessed from: https://info.thorn.org/hubfs/Research/Thorn_SG-CSAM_Monitoring_2021.pdf 10/08/2023

77   Understanding Child Sexual Abuse in Black and Minoritised Communities (Gill, A., 2023) Accessed from: https://www.springernature.com/gp/researchers/the-source/blog/blogposts-communicating-research/understanding-child-sexual-abuse-in-black/24008838 15/08/2023

78   Institutional Responses to Child Sexual Abuse in Ethnic Minority Communities (Hurcombe, R. et al., 2023) Accessed from: https://link.springer.com/chapter/10.1007/978-3-031-06337-4_7 15/08/2023

79   Understanding Child Sexual Abuse in Black and Minoritised Communities (Gill, A., 2023) Accessed from: https://www.springernature.com/gp/researchers/the-source/blog/blogposts-communicating-research/understanding-child-sexual-abuse-in-black/24008838 15/08/2023

80   Sexual Victimization in the Digital Age: A Population-Based Study of Physical and Image-Based Sexual Abuse Among Adolescents (Pedersen W. et al., 2023) Accessed from: https://pubmed.ncbi.nlm.nih.gov/35059946/ 16/08/2023

     Estimates of childhood exposure to online sexual harms and their risk factors (WeProtect Global Alliance and Economist Impact, 2023) Accessed from: https://www.weprotect.org/economist-impact-global-survey/ 15/08/2023

81   Online Grooming: Examining risky encounters amid everyday digital socialization (Thorn, 2022) Accessed from: https://info.thorn.org/hubfs/Research/2022_Online_Grooming_Report.pdf 16/08/2023

     Staying safe online: Practical strategies to best support all children and young people online, including those who identify as LGBTQ+ (Stonewall and Childnet, 2022) Accessed from: https://www.stonewall.org.uk/system/files/stonewall_staying_safe_online_april2022.pdf 17/08/2023

82   Disrupting Harm in Uganda: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2021) Accessed from: https://www.end-violence.org/sites/default/files/2021-11/DH_Uganda_ONLINE_final%20Report.pdf 02/08/2023

     Disrupting Harm in Kenya: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-12/DH%20Kenya%20Report_Revised30Nov2022.pdf 02/08/2023

     Disrupting Harm in Ethiopia: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-12/DH_Ethiopia_ONLINE_final%20251122.pdf 02/08/2023

     Disrupting Harm in Vietnam: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-08/DH_Viet%20Nam_ENG_ONLINE.pdf

     Disrupting Harm in Namibia: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-09/DH_Namibia_2_1.pdf 02/08/2023

     Disrupting Harm in Indonesia: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-11/DH_Indonesia_ONLINE_final%20rev%20071022_11.pdf 02/08/2023

     Disrupting Harm in Malaysia: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from https://www.end-violence.org/sites/default/files/2022-09/DH_Malaysia_ONLINE_FINAL.pdf 02/08/2023

     Disrupting Harm in the Phillipines: Evidence on online child sexual exploitation and abuse. (ECPAT, INTERPOL and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-12/DH_Philippines_ONLINE_FINAL%20251122.pdf 02/08/2023

83   Disrupting Harm – Conversations with Young Survivors about Online Child Sexual Exploitation and Abuse (ECPAT International, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2023-01/Disrupting%20Harm-Conversations%20with%20young%20survivors%20about%20online%20child%20sexual%20exploitation%20and%20abuse.pdf 16/08/2023

84   Out of the Shadows Index 2022 (Economist Impact, 2022) Accessed from: https://cdn.outoftheshadows.global/uploads/documents/Out-of-the-Shadows-Index-2022-Global-Report.pdf 16/08/2023

85   UNICEF Fact Sheet – Children with Disabilities (UNICEF, 2022) Accessed from: https://www.unicef.org/media/128976/file/UNICEF%20Fact%20Sheet%20%20Children%20with%20Disabilities.pdf 16/08/2023

86   Sexual Victimization of Youth With a Physical Disability: An Examination of Prevalence Rates, and Risk and Protective Factors (Mueller-Johnson, K. et al., 2014) Accessed from: https://journals.sagepub.com/doi/abs/10.1177/0886260514534529 05/08/2023

87   Child sexual abuse revisited: a population-based cross-sectional study among Swiss adolescents (Mohler-Kuo, M. et al., 2014) Accessed from: https://pubmed.ncbi.nlm.nih.gov/24182941/ 05/08/2023

88   'How bad should it be before I tell someone?' – Online abuse experiences of adult Australians with intellectual disability – implications for resource development (eSafety Commissioner, 2022) Accessed from: https://www.esafety.gov.au/sites/default/files/2022-08/Adult%20Australians%20with%20Intellectual%20Disability%20-%20Online%20abuse%20report.pdf 16/08/2023

89   People with intellectual disabilities and harmful sexual behaviour: Professionals' views on the barriers to prevent harm (Brevik Svae, G. et al., 2022) Accessed from: https://onlinelibrary.wiley.com/doi/epdf/10.1111/jar.13048 16/08/2023

90   Evaluation of DeafKidz Defenders pilot – Key findings summary report (Thomas, E., 2022) Accessed from: https://deafkidzinternational.org/wp-content/uploads/2022/12/DeafKidz-Defenders-Summary-Report-2022.pdf 16/08/2023

91   The launch of DeafKidz Defenders: An innovative digital platform making the internet safer for children (End Violence Against Children, 2022) Accessed from: https://www.end-violence.org/articles/launch-deafkidz-defenders-innovative-digital-platform-making-internet-safer-children 16/08/2023

92   Multiple crises unleash one of the lowest global economic outputs in recent decades, says UN report (United Nations Conference on Trade and Development, 2023) Accessed from: https://unctad.org/news/multiple-crises-unleash-one-lowest-global-economic-outputs-recent-decades-says-un-report#:~:text=A%20series%20of%20severe%20and,the%20world%20economy%20in%202022 16/08/2023

93   The 17 goals (United Nations Department of Economic and Social Affairs, n.d.) Accessed from: https://sdgs.un.org/goals 16/08/2023

94   PA Consulting engagement with Federal Police Argentina, 15/03/2023

95   Child 'self-generated' sexual material online: Children and young people's perspectives (WeProtect Global Alliance and Praesidio Safeguarding, 2023) Accessed from: https://www.weprotect.org/child-self-generated-sexual-material-children-perspectives/ 16/08/2023

96   PA Consulting engagement with the US Department of Justice, 24/04/2023

97   Annual report of the Special Representative of the Secretary General on Violence against Children (United Nations General Assembly, 2023) Accessed from: https://violenceagainstchildren.un.org/sites/violenceagainstchildren.un.org/files/documents/reports_hrc/a_hrc_52_61_en_0.pdf 16/08/2023

98   The journey towards comprehensive sexuality education – Global status report (United Nations Educational, Scientific and Cultural Organization, 2021) Accessed from: https://www.unfpa.org/sites/default/files/pub-pdf/The%20journey%20towards%20comprehensive%20sexuality%20education%2C%20Global%20status%20report.pdf 16/08/2023

99   Children and young people's views on learning about relationships, sex, and sexuality – A narrative review of UK literature (Hollis V. et al., 2022) Accessed from: https://learning.nspcc.org.uk/media/3030/children-young-people-views-learning-about-relationships-sex-sexuality.pdf 02/08/2023

      Pornography use among adolescents and the role of primary care (Jhe G. et al., 2023) Accessed from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9853222/ 02/08/2023

      How young people are learning about relationships, sex and sexuality (National Society for the Prevention of Cruelty to Children, 2023) Accessed from: https://learning.nspcc.org.uk/research-resources/2023/how-young-people-are-learning-about-relationships-sex-sexuality 02/08/2023

100   Child 'self-generated' sexual material online: Children and young people's perspectives (WeProtect Global Alliance and Praesidio Safeguarding, 2023) Accessed from: https://www.weprotect.org/child-self-generated-sexual-material-children-perspectives/ 16/08/2023

101   'A lot of it is actually just abuse' – Young people and pornography (Children's Commissioner, 2023) Accessed from: https://assets.childrenscommissioner.gov.uk/wpuploads/2023/02/cc-a-lot-of-it-is-actually-just-abuse-young-people-and-pornography-updated.pdf 16/08/2023

102   Teens and pornography (Common Sense, 2022) Accessed from: https://www.commonsensemedia.org/sites/default/files/research/report/2022-teens-and-pornography-final-web.pdf 16/08/2023

103   Disrupting Harm in Indonesia: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-11/DH_Indonesia_ONLINE_final%20rev%20071022_11.pdf 02/08/2023

104   Disrupting Harm in the Phillippines: Evidence on online child sexual exploitation and abuse. (ECPAT, INTERPOL and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-12/DH_Philippines_ONLINE_FINAL%20251122.pdf 16/08/2023

      Disrupting Harm in Uganda: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2021) Accessed from: https://www.end-violence.org/sites/default/files/2021-11/DH_Uganda_ONLINE_final%20Report.pdf 02/08/2023

105   Evidence on pornography's influence on harmful sexual behaviour among children (Children's Commissioner, 2023) Accessed from: https://assets.childrenscommissioner.gov.uk/wpuploads/2023/05/Evidence-on-pornographys-influence-on-harmful-sexual-behaviour-among-children.pdf 16/08/2023

106   "…I wasn't sure it was normal to watch it…" A quantitative and qualitative examination of the impact of online pornography on the values, attitudes, beliefs and behaviours of children and young people (Martellozzo, E. et al., 2016) Accessed from: https://www.researchgate.net/publication/304490439_I_wasn%27t_sure_it_was_normal_to_watch_it_A_quantitative_and_qualitative_examination_of_the_impact_of_online_pornography_on_the_values_attitudes_beliefs_and_behaviours_of_children_and_young_people 05/08/2023

107   Contribution of pornographic exposure and addiction to risky sexual behavior in adolescents (Yunengsih W. and Setiawan, A., 2021) Accessed from: https://pubmed.ncbi.nlm.nih.gov/34060736/ 06/08/2023

108   Exposure to sexually explicit media in early adolescence is related to risky sexual behavior in emerging adulthood (Lin W-H. et al., 2020) Accessed from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7147756/ 06/08/2023

109   Pornography use and sexting amongst children and young people: a systematic overview of reviews (Raine, G. et al., 2020) Accessed from: https://www.researchgate.net/publication/346676980_Pornography_use_and_sexting_amongst_children_and_young_people_a_systematic_overview_of_reviews 06/08/2023

110 Children's experiences of legal but harmful content online (National Society for the Prevention of Cruelty to Children, 2022) Accessed from: https://learning.nspcc.org.uk/research-resources/2022/helplines-insight-briefing-legal-but-harmful-content 16/08/2023

111 Growing Up with Porn (Classification Office, 2020) Accessed from: https://www.classificationoffice.govt.nz/resources/research/growing-up-with-porn/ 16/08/2023

112 Suicide, Incels, and Drugs: How TikTok's deadly algorithm harms kids (Eko, 2023) Accessed from: https://s3.amazonaws.com/s3.sumofus.org/images/eko_Tiktok-Report_FINAL.pdf 02/08/2023

The impact of the use of social media on women and girls (Park K. et al., 2023) Accessed from: https://www.europarl.europa.eu/RegData/etudes/STUD/2023/743341/IPOL_STU(2023)743341_EN.pdf 02/08/2023

Systematic review: YouTube recommendations and problematic content (Yesilada M. and Lewandowsky, S., 2022) Accessed from: https://policyreview.info/articles/analysis/systematic-review-youtube-recommendations-and-problematic-content 02/08/2023

113 The impact of the use of social media on women and girls (Park K. et al., 2023) Accessed from: https://www.europarl.europa.eu/RegData/etudes/STUD/2023/743341/IPOL_STU(2023)743341_EN.pdf 02/08/2023

114 The impact of the use of social media on women and girls (Park K. et al., 2023) Accessed from: https://www.europarl.europa.eu/RegData/etudes/STUD/2023/743341/IPOL_STU(2023)743341_EN.pdf 02/08/2023

115 Patterns of love and sexting in teen dating relationships: The moderating role of conflicts (Bianchi, D. et al., 2021) Accessed from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9292559/ 16/08/2023

Sexting (National Center for Missing and Exploited Children, n.d.) Accessed from: https://www.missingkids.org/netsmartz/topics/sexting 05/07/2023

Sexting in Hong Kong: a complex interplay between young people, technology, and law (Crofts, T. and Burke, J., 2022) Accessed from: https://www.tandfonline.com/doi/full/10.1080/10192557.2021.1979801 05/07/2023

Sexting at an Early Age: Patterns and Poor Health Related Consequences of Pressured Sexting in Middle and High School (Patri, K. et al., 2023) Accessed from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10092123/ 05/07/2023

A Cross-Cultural Examination of the Sexting Motives and Attitudes: Bosnia and Herzegovina vs. Croatia (Dodaj, A. et al., 2022) Accessed from: https://www.hindawi.com/journals/hbet/2022/7606949/ 05/07/2023

116 Disrupting Harm in Thailand: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-12/DH_Thailand_ONLINE_final%20251122.pdf 16/08/2023

117 Child 'self-generated' sexual material online: Children and young people's perspectives (WeProtect Global Alliance and Praesidio Safeguarding, 2023) Accessed from: https://www.weprotect.org/child-self-generated-sexual-material-children-perspectives/ 16/08/2023

118 Disrupting Harm – Conversations with Young Survivors about Online Child Sexual Exploitation and Abuse (ECPAT International, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2023-01/Disrupting%20Harm-Conversations%20with%20young%20survivors%20about%20online%20child%20sexual%20exploitation%20and%20abuse.pdf 16/08/2023

Child sexual exploitation and abuse online: Survivors' Perspectives (ECPAT International and WeProtect Global Alliance, 2022) Accessed from: https://ecpat.org/wp-content/uploads/2022/01/05-01-2022_Project-Report_EN_FINAL.pdf 16/08/2023

119 Child 'self-generated' sexual material online: Children and young people's perspectives (WeProtect Global Alliance and Praesidio Safeguarding, 2023) Accessed from: https://www.weprotect.org/child-self-generated-sexual-material-children-perspectives/ 16/08/2023

120 Child sexual abuse images and youth produced images: The varieties of Image-based Sexual Exploitation and Abuse of Children (Finkelhor D. et al., 2023) Accessed from: https://www.sciencedirect.com/science/article/abs/pii/S0145213423002508

121 PA Consulting engagement with Ministry of Interior, United Arab Emirates, 13/04/2023

122 #MyVoiceMySafety: Children and young people's perspectives on online safety and online sexual harms (WeProtect Global Alliance and the UN Secretary General on Violence Against Children, 2023) Accessed from: https://www.weprotect.org/youth-consultation-survey/ 21/08/2023

123 Email received from Ministry of Interior, United Arab Emirates, 26/07/2023

124 Child sexual abuse images and youth produced images: The varieties of Image-based Sexual Exploitation and Abuse of Children (Finkelhor D. et al., 2023) Accessed from: https://www.sciencedirect.com/science/article/abs/pii/S0145213423002508

125 Longitudinal and reciprocal relationships between sexting, online sexual solicitations, and cyberbullying among minors (Gámez-Guadix, M and Mateos-Pérez, E., 2019) Accessed from: https://www.sciencedirect.com/science/article/pii/S074756321930007X 06/08/2023

126 The Relationship of Risky Online Behaviors and Adverse Childhood Experiences to Online Sexual Victimization Among Korean Female Adolescents (Choi, J. et al., 2023) Accessed from: https://pubmed.ncbi.nlm.nih.gov/35968731/ 06/08/2023

127 Associations between Family Support and Online Sexual Abuse in Chilean Adolescents: The Mediational Role of Online Risk Behaviors (Aljuboori, D. et al., 2021) Accessed from: https://www.tandfonline.com/doi/abs/10.1080/10538712.2021.1875280 06/08/2023

128 #MyVoiceMySafety: Children and young people's perspectives on online safety and online sexual harms (WeProtect Global Alliance and the UN Secretary General on Violence Against Children, 2023) Accessed from: https://www.weprotect.org/youth-consultation-survey/ 21/08/2023

129 PA Consulting engagement with survivor from Brave Movement, 03/08/2023

PA Consulting engagement with survivor from the International Justice Mission, 04/08/2023

130 PA Consulting engagement with survivor from Brave Movement, 03/08/2023

PA Consulting engagement with survivor from the International Justice Mission, 04/08/2023

131 Disrupting Harm Data Insight 2 (ECPAT International and UNICEF Office of Research – Innocenti, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-05/DH-data-insight-2_FinalB%282%29.pdf 16/08/2023

132 Parents' experiences of their children's exposure to online sexual harms: A study of parents/guardians in Latin America and Sub-Saharan Africa (Economist Impact, 2023) Accessed from: https://www.weprotect.org/economist-impact-parents-survey/ 21/08/2023

133 Responding to Online Threats: Minors' Perspectives on Disclosing, Reporting, and Blocking in 2021 (Thorn and Benenson Strategy Group, 2023) Accessed from: https://info.thorn.org/hubfs/Research/Thorn_ROT_Monitoring_2021.pdf 05/07/2023

Mind the Gap: Parental awareness of children's exposure to risks online (eSafety Commissioner, 2022) Accessed from: https://www.esafety.gov.au/sites/default/files/2022-02/Mind%20the%20Gap%20%20-%20Parental%20awareness%20of%20children%27s%20exposure%20to%20risks%20online%20-%20FINAL.pdf 15/08/2023

134 Child sexual exploitation and abuse online: Survivors' Perspectives (ECPAT International and WeProtect Global Alliance, 2022) Accessed from: https://ecpat.org/wp-content/uploads/2022/01/05-01-2022_Project-Report_EN_FINAL.pdf 16/08/2023

135 #MyVoiceMySafety: Children and young people's perspectives on online safety and online sexual harms (WeProtect Global Alliance and the UN Secretary General on Violence Against Children, 2023) Accessed from: https://www.weprotect.org/youth-consultation-survey/ 21/08/2023

136 Strategies and cues adolescents use to assess the age of an online stranger (Groenestein, E. et al., 2018) Accessed from: https://www.tandfonline.com/doi/full/10.1080/1369118X.2017.1309443 16/08/2023

137 CyberTipline 2022 Report (National Center for Missing and Exploited Children, 2023) Accessed from: https://www.missingkids.org/cybertiplinedata 16/08/2023

138 Reports analysis, Annual report 2022 (IWF, 2023) Accessed from: https://annualreport2022.iwf.org.uk/trends-and-data/reports-analysis/ 16/08/2023

139 The United Nations Convention on the Rights of the Child (n.d.) Accessed from: https://www.savethechildren.net/united-nations-convention-rights-child#:~:text=THE%20UNCRC%20IS%20AT%20THE,United%20States%2C%20has%20ratified%20it 16/08/2023

140 Young people call on Big Tech to put their wellbeing before profits (Mirage News, 2023) Accessed from: https://www.miragenews.com/young-people-call-on-big-tech-to-put-their-941246/#:~:text=The%20eSafety%20Commissioner%27s%20Youth%20Council%20has%20written%20an,harass%20others%2C%20breaching%20platforms%27%20own%20terms%20of%20service 16/08/2023

141 Philippine Survivors Urge EU Parliament and Council for Stronger Legislation (International Justice Mission, 2023) Accessed from: https://www.ijm.org.ph/articles/philippine-survivors-urge-eu-parliament-and-council-for-stronger-legislation 16/08/2023

142 Consultations with young people to inform the eSafety Commissioner's Engagement Strategy for Young People (Moody, L. et al., 2021) Accessed from: https://www.esafety.gov.au/sites/default/files/2022-01/YRRC%20Research%20Report%20eSafety%202021_web%20V06%20-%20publishing_1.pdf 15/06/2023

Young People's Charter: Safer Internet Day 2021 (UK Safer Internet Centre, 2021) Accessed from: https://saferinternet.org.uk/safer-internet-day/safer-internet-day-2021/young-peoples-charter#:~:text=Young%20People%27s%20Charter%3A%20Safer%20Internet%20Day%202021&text=We%20produced%20this%20Charter%20from,findings%20from%20our%20latest%20research. 15/06/2023

Child sexual exploitation and abuse online: Survivors' Perspectives (ECPAT International and WeProtect Global Alliance, 2022) Accessed from: https://ecpat.org/wp-content/uploads/2022/01/05-01-2022_Project-Report_EN_FINAL.pdf 16/08/2023

Disrupting Harm – Conversations with Young Survivors about Online Child Sexual Exploitation and Abuse (ECPAT International, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2023-01/Disrupting%20Harm-Conversations%20with%20young%20survivors%20about%20online%20child%20sexual%20exploitation%20and%20abuse.pdf 16/08/2023

143 Child 'self-generated' sexual material online: Children and young people's perspectives (WeProtect Global Alliance and Praesidio Safeguarding, 2023) Accessed from: https://www.weprotect.org/child-self-generated-sexual-material-children-perspectives/ 16/08/2023

144 Disrupting Harm Data Insight 1 (UNICEF Office of Research – Innocenti, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-05/DH-data-insight-1_Final%281%29.pdf 15/08/2023

145 Full UN Youth Poll citation to be included once updated. https://www.weprotect.org/youth-consultation-survey/

Child 'self-generated' sexual material online: Children and young people's perspectives (WeProtect Global Alliance and Praesidio Safeguarding, 2023) Accessed from: https://www.weprotect.org/child-self-generated-sexual-material-children-perspectives/ 16/08/2023

Child sexual exploitation and abuse online: Survivors' Perspectives (ECPAT International and WeProtect Global Alliance, 2022) Accessed from: https://ecpat.org/wp-content/uploads/2022/01/05-01-2022_Project-Report_EN_FINAL.pdf 16/08/2023

146 The Role of Caregivers: Safeguarding & Enhancing Youth Resilience Against Harmful Sexual Encounters Online (Thorn and Benenson Strategy Group, 2022) Accessed from: https://info.thorn.org/hubfs/Research/Thorn-RoleOfCaregivers-2022-FullReport.pdf 16/08/2023

147 CyberTipline 2022 Report (National Center for Missing and Exploited Children, 2023) Accessed from: https://www.missingkids.org/cybertiplinedata 16/08/2023

148 FBI and Partners Issue National Public Safety Alert on Financial Sextortion Schemes (Federal Bureau of Investigation, 2022) Accessed from: https://www.fbi.gov/news/press-releases/press-releases/fbi-and-partners-issue-national-public-safety-alert-on-financial-sextortion-schemes 17/08/2023

149 Sextortion of Minors: Characteristics and Dynamics (Wolak, J. et al., 2017) Accessed from: https://www.unh.edu/ccrc/sites/default/files/media/2022-02/sextortion-of-minors-characteristics-and-dynamics.pdf 06/08/2023

150 Father of teen sextortion victim issues blunt warning: 'We had zero chance to stop it' (Independent, 2023) Accessed from: https://www.independent.co.uk/news/world/americas/crime/jordan-demay-marquette-michigan-sextortion-b2357649.html 17/08/2023

151 Online harms: Sextortion (Cybertip CA, n.d.) Accessed from: https://www.cybertip.ca/en/online-harms/sextortion/ 17/08/2023

152 Sexually Coerced Extortion or 'Sextortion' Help & Support (Internet Watch Foundation, n.d.) Accessed from: https://www.iwf.org.uk/resources/sextortion/ 17/08/2023

153 An Analysis of Financial Sextortion Victim Posts Published on r/Sextortion (Canadian Centre for Child Protection, 2022) Accessed from: https://protectchildren.ca/en/resources-research/an-analysis-of-financial-sextortion-victim-posts-published-on-sextortion/ 15/08/2023

154 Borderless: A Series on the Global Battle to Protect Children Online (National Center for Missing and Exploited Children, 2023) Accessed from: https://www.missingkids.org/content/ncmec/en/blog/2023/ncmec-leads-global-fight-to-protect-kids.html 17/08/2023

155 Cyber Sextortion: An Exploratory Analysis of Different Perpetrators Engaging in a Similar Crime (Liggett O'Malley, R. and Holt, K., 2020) Accessed from: https://journals.sagepub.com/doi/full/10.1177/0886260520909186 18/08/2023

156 Self-Generated Child Sexual Abuse Material: Youth Attitudes and Experiences in 2021 (Thorn, 2022) Accessed from: https://info.thorn.org/hubfs/Research/Thorn_SG-CSAM_Monitoring_2021.pdf 10/08/2023

157   Global Boys Initiative Case Study: Bolivia (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/gbi-case-study-bolivia/ 02/08/2023

Global Boys Initiative Case Study: Colombia (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/gbi-case-study-colombia/ 02/08/2023

Global Boys Initiative Case Study: United Kingdom (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/gbi-case-study-uk/ 02/08/2023

Global Boys Initiative Case Study: Namibia (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/gbi-case-study-namibia/ 02/08/2023

Global Boys Initiative Case Study: Morocco (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/gbi-case-study-morocco/ 02/08/2023

Global Boys Initiative Case Study: Thailand (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/global-boys-initiative-case-study-thailand/ 02/08/2023

Global Boys Initiative Case Study: South Korea (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/global-boys-initiative-case-study-south-korea/ 02/08/2023

Global Boys Initiative Case Study: Cambodia (ECPAT International, 2023) Accessed from: https://ecpat.org/resource/global-boys-initiative-case-study-cambodia/ 02/08/2023

158   What does Generative AI mean for CSE? (International Centre for Missing & Exploited Children Australia, 2023) Accessed from: https://icmec.org.au/blog/what-does-generative-ai-mean-for-cse/ 17/08/2023

159   What is generative AI? An AI explains (World Economic Forum, 2023) Accessed from: https://www.weforum.org/agenda/2023/02/generative-ai-explain-algorithms-work/ 17/08/2023

160   ChatGPT Statistics 2023 (Tooltester, 2023) Accessed from: https://www.tooltester.com/en/blog/chatgpt-statistics/#:~:text=ChatGPT%20gained%20one%20million%20users%20in%20its%20first,exact%20number%20of%20active%20users%20is%20currently%20unknown 17/08/2023

161   AI-generated child sex images spawn new nightmare for the web (The Washington Post, 2023) Accessed from: https://www.washingtonpost.com/technology/2023/06/19/artificial-intelligence-child-sex-abuse-images/ 17/08/2023

162   Generative ML and CSAM: Implications and Mitigations (Thiel, D. et al., 2023) Accessed from: https://stacks.stanford.edu/file/druid:jv206yg3793/20230624-sio-cg-csam-report.pdf 17/08/2023

163   Prime Minister must act on threat of AI as IWF 'sounds alarm' on first confirmed AI-generated images of child sexual abuse (Internet Watch Foundation, 2023) Accessed from: https://www.iwf.org.uk/news-media/news/prime-minister-must-act-on-threat-of-ai-as-iwf-sounds-alarm-on-first-confirmed-ai-generated-images-of-child-sexual-abuse/ 17/08/2023

164   Prime Minister must act on threat of AI as IWF 'sounds alarm' on first confirmed AI-generated images of child sexual abuse (Internet Watch Foundation, 2023) Accessed from: https://www.iwf.org.uk/news-media/news/prime-minister-must-act-on-threat-of-ai-as-iwf-sounds-alarm-on-first-confirmed-ai-generated-images-of-child-sexual-abuse/ 17/08/2023

165   Illegal trade in AI child sex abuse images exposed (BBC, 2023) Accessed from: https://www.bbc.co.uk/news/uk-65932372 17/08/2023

166   Generative ML and CSAM: Implications and Mitigations (Thiel, D. et al., 2023) Accessed from: https://stacks.stanford.edu/file/druid:jv206yg3793/20230624-sio-cg-csam-report.pdf 17/08/2023

PA Consulting engagement with Google, 17/04/2023

167   ChatGPT – The impact of Large Language Models on Law Enforcement (Europol, 2023) Accessed from: https://www.europol.europa.eu/cms/sites/default/files/documents/Tech%20Watch%20Flash%20-%20The%20Impact%20of%20Large%20Language%20Models%20on%20Law%20Enforcement.pdf 17/08/2023

168   PA Consulting engagement with Google, 17/04/2023

169   J.3: Technological developments, The Report of the Independent Inquiry into Child Sexual Abuse (Independent Inquiry Child Sexual Abuse, 2023) Accessed from: https://www.iicsa.org.uk/reports-recommendations/publications/inquiry/final-report/ii-inquirys-conclusions-and-recommendations-change/part-j-evolving-challenges/j3-technological-developments.html 17/08/2023

Psychological Perspectives of Virtual Child Sexual Abuse Material (Christensen, L. et al., 2021) Accessed from: https://link.springer.com/article/10.1007/s12119-021-09820-1 17/08/2023

170   Generative AI: Now is the Time for Safety By Design (Thorn, 2023) Accessed from: https://www.thorn.org/blog/now-is-the-time-for-safety-by-design/ 17/08/2023

171   Illegal trade in AI child sex abuse images exposed (BBC, 2023) Accessed from: https://www.bbc.co.uk/news/uk-65932372 17/08/2023

172   PA Consulting engagement with Google, 17/04/2023

173   Generative ML and CSAM: Implications and Mitigations (Thiel, D. et al., 2023) Accessed from: https://stacks.stanford.edu/file/druid:jv206yg3793/20230624-sio-cg-csam-report.pdf 17/08/2023

174   Online grooming: an analysis of the phenomenon (Gandolfi C., et al., 2021) Accessed from: https://pubmed.ncbi.nlm.nih.gov/32241103/ 17/08/2023

175   Online grooming crimes have risen by more than 80% in four years (National Society for the Protection of Children to Cruelty, 2022) Accessed from: https://www.nspcc.org.uk/about-us/news-opinion/2022/online-grooming-crimes-rise/ 17/08/2023

176   Sexual offenders contacting children online: an examination of transcripts of sexual grooming (Winters, G. et al., 2017) Accessed from: https://www.researchgate.net/publication/312478997_Sexual_offenders_contacting_children_online_an_examination_of_transcripts_of_sexual_grooming 17/08/2023

Are crimes by online predators different from crimes by sex offenders who know youth in-person? (Wolak, J. and Finkelhor, D., 2013) Accessed from: https://pubmed.ncbi.nlm.nih.gov/23890773/ 17/08/2023

Children's Online Safety: Predictive Factors of Cyberbullying and Online Grooming Involvement (Tintori, A. et al., 2023) Accessed from: https://www.mdpi.com/2075-4698/13/2/47 17/08/2023

177   Social Media and Online Grooming (Social Media Victims Law Center, n.d.) Accessed from: https://socialmediavictims.org/sexual-violence/online-grooming/ 17/08/2023

Child sexual abuse material and end-to-end encryption on social media platforms: An overview (Teunissen, C. and Napier, S., 2022) Accessed from: https://www.aic.gov.au/sites/default/files/2022-07/ti653_csam_and_end-to-end_encryption_on_social_media_platforms.pdf 17/08/2023

Disrupting Harm in Malaysia: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from https://www.end-violence.org/sites/default/files/2022-09/DH_Malaysia_ONLINE_FINAL.pdf 02/08/2023

Disrupting Harm in Mozambique [SNAPSHOT]: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-10/2027%20DH%20MOZAMBIQUE%20REPORT%20ENGLISH%20VERSION.pdf 02/08/2023

Disrupting Harm in Namibia: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-09/DH_Namibia_2_1.pdf 02/08/2023

Disrupting Harm in Indonesia: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-11/DH_Indonesia_ONLINE_final%20rev%20071022_11.pdf 02/08/2023

Disrupting Harm in Vietnam: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-08/DH_Viet%20Nam_ENG_ONLINE.pdf 02/08/2023

178   Disrupting Harm in Malaysia: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from https://www.end-violence.org/sites/default/files/2022-09/DH_Malaysia_ONLINE_FINAL.pdf 02/08/2023

Disrupting Harm in Indonesia: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-11/DH_Indonesia_ONLINE_final%20rev%20071022_11.pdf 02/08/2023

Online Grooming: Examining risky encounters amid everyday digital socialization (Thorn, 2022) Accessed from: https://info.thorn.org/hubfs/Research/2022_Online_Grooming_Report.pdf 16/08/2023

179   Estimates of childhood exposure to online sexual harms and their risk factors (WeProtect Global Alliance and Economist Impact, 2021) Accessed from: https://www.weprotect.org/economist-impact-global-survey/ 15/08/2023

180   Children's Online Safety: Predictive Factors of Cyberbullying and Online Grooming Involvement (Tintori, A. et al., 2023) Accessed from: https://www.mdpi.com/2075-4698/13/2/47 17/08/2023

181   Parental guardianship and online sexual grooming of teenagers: A honeypot experiment (Kamar, E. et al., 2022) Accessed from: https://www.sciencedirect.com/science/article/pii/S0747563222002084 06/08/2023

182   Exposing patterns of adult solicitor behaviour: towards a theory of control within the cybersexual abuse of youth (Barber, C. and Bettez, S., 2021) Accessed from: https://www.tandfonline.com/doi/abs/10.1080/0960085X.2020.1816146 07/08/2023

183   A scoping review of child grooming strategies; pre- and post-internet (Ringenberg, T. et al., 2022) Accessed from: https://www.sciencedirect.com/science/article/pii/S0145213421004610 17/08/2023

184   Gaming and the Metaverse: The Alarming Rise of Online Sexual Exploitation and Abuse of Children Within the New Digital Frontier (Bracket Foundation, 2022) Accessed from: https://www.weprotect.org/wp-content/uploads/Gaming_and_the_Metaverse_Report_final.pdf 17/08/2023

185   Digital Safety Risk Assessment in Action: A Framework and Bank of Case Studies (World Economic Forum, 2023) Accessed from: https://www.weforum.org/reports/digital-safety-risk-assessment-in-action-a-framework-and-bank-of-case-studies 17/08/2023

186   PA Consulting engagement with Crisp, 14/03/2023

187   20,000 reports of coerced 'self-generated' sexual abuse imagery seen in first half of 2022 show 7- to 10-year-olds (IWF, 2022) Accessed from: https://www.iwf.org.uk/news-media/news/20-000-reports-of-coerced-self-generated-sexual-abuse-imagery-seen-in-first-half-of-2022-show-7-to-10-year-olds/ 15/08/2023

188   Disrupting Harm Data Insight 4 (ECPAT International, 2022) Accessed from: https://www.end-violence.org/sites/default/files/paragraphs/download/Disrupting%20Harm%20-%20Data-Insight%204%20-%20Legislation%20addressing%20OCSEA.pdf

189   Basic Online Safety Expectations: Summary of industry responses to the first mandatory transparency notices (eSafety Commissioner, 2022) Accessed from: https://www.esafety.gov.au/sites/default/files/2022-12/BOSE%20transparency%20report%20Dec%202022.pdf 17/08/2023

190   Sexual abuse imagery of primary school children 1,000 per cent worse since lockdown (Internet Watch Foundation, 2023) Accessed from: https://www.iwf.org.uk/news-media/news/sexual-abuse-imagery-of-primary-school-children-1-000-per-cent-worse-since-lockdown/ 17/08/2023

191   Twitch has safety upgrades "in development" following report on alleged grooming (NME, 2022) Accessed from: https://www.nme.com/news/gaming-news/twitch-has-safety-upgrades-in-development-following-report-on-alleged-grooming-3315270 17/08/2023

192   Primary data provided by Suojellaan Lapsia from 'Help us to help you' dark web survey, 27/06/2023

193   Livestreaming Technology and Online Child Sexual Exploitation and Abuse: A Scoping Review (Drejer, C. et al., 2023) Accessed from: https://pubmed.ncbi.nlm.nih.gov/36727734/ 03/08/2023

The overlap between child sexual abuse live streaming, contact abuse and other forms of child exploitation (Teunissen, C. and Napier, S., 2023) Accessed from: https://www.aic.gov.au/publications/tandi/tandi671

194   The overlap between child sexual abuse live streaming, contact abuse and other forms of child exploitation (Teunissen, C. and Napier, S., 2023) Accessed from: https://www.aic.gov.au/publications/tandi/tandi671

195   Livestreaming Technology and Online Child Sexual Exploitation and Abuse: A Scoping Review (Drejer, C. et al., 2023) Accessed from: https://pubmed.ncbi.nlm.nih.gov/36727734/ 03/08/2023

Combating the sexual exploitation of children for financial gain (AUSTRAC for the Commonwealth of Australia, 2022) Accessed from: https://www.austrac.gov.au/sites/default/files/2023-05/AUSTRAC_2022_FCG_Combating_the_sexual_exploitation_of_children_web_0.pdf 03/08/2023

Online Sexual Exploitation of Children in the Philippines: Analysis and Recommendations for Governments, Industry, and Civil Society (International Justice Mission, 2020) Accessed from: https://ijmstoragelive.blob.core.windows.net/ijmna/documents/studies/Final_OSEC-Public-Summary_05_20_2020.pdf 03/08/2023

196   E4J University Module Series: Cybercrime (United Nations Office on Drugs and Crime, n.d.) Accessed from: https://www.unodc.org/e4j/zh/cybercrime/module-12/key-issues/online-child-sexual-exploitation-and-abuse.html 26/072023

A global review of existing literature on the sexual exploitation of boys (ECPAT International, 2021) Accessed from: https://respect.international/wp-content/uploads/2021/09/Global-Review-of-Existing-Literature-on-the-Sexual-Exploitation-of-Boys.pdf 26/07/2023

The overlap between child sexual abuse live streaming, contact abuse and other forms of child exploitation (Teunissen, C. and Napier, S., 2023) Accessed from: <https://www.aic.gov.au/publications/tandi/tandi671 03/08/2023>

197   Livestreaming Technology and Online Child Sexual Exploitation and Abuse: A Scoping Review (Drejer, C. et al., 2023) Accessed from: https://pubmed.ncbi.nlm.nih.gov/36727734/ 03/08/2023

198   Livestreaming Technology and Online Child Sexual Exploitation and Abuse: A Scoping Review (Drejer, C. et al., 2023) Accessed from: https://pubmed.ncbi.nlm.nih.gov/36727734/ 03/08/2023

199   Online Sexual Abuse and Exploitation of Children in the Philippines: Towards an understanding of "supply-side" facilitation offending (The Association for the Treatment of Sexual Abusers, 2023) Accessed from: https://blog.atsa.com/2023/07/online-sexual-abuse-and-exploitation-of.html 17/08/2023

200   Child Sexual Abuse and Exploitation through Livestreaming in Indonesia:

Unequal Power Relations at the Root of Child Victimization (Prathisthita Tanaya, L.T. and Puteri, M.M., 2023) Accessed from: https://vc.bridgew.edu/cgi/viewcontent.cgi?article=3086&context=jiws#:~:text=The%20analysis%20shows%20that%20unequal,the%20children%20in%20vulnerable%20positions. 17/08/2023

201 The Annual Report 2022 (Internet Watch Foundation, 2023) Accessed from: https://annualreport2022.iwf.org.uk/wp-content/uploads/2023/04/IWF-Annual-Report-2022_FINAL.pdf 17/08/2023

202 Turning the tide against online child sexual abuse (The Police Foundation, 2022) Accessed from: https://www.police-foundation.org.uk/wp-content/uploads/2022/07/turning_the_tide_FINAL-.pdf 17/08/2023

203 The Annual Report 2022 (Internet Watch Foundation, 2023) Accessed from: https://annualreport2022.iwf.org.uk/wp-content/uploads/2023/04/IWF-Annual-Report-2022_FINAL.pdf 17/08/2023

204 Annual Report 2019 (INHOPE, 2020) Accessed from: <https://www.inhope.org/media/pages/the-facts/download-our-whitepapers/e09e3a0238-1603115653/2020.10.19_ih_annualreport_digital.pdf 03/07/2023>

Annual Report 2022 (INHOPE, 2023) Accessed from: https://inhope.org/media/pages/articles/annual-reports/14832daa35-1687272590/inhope-annual-report-2022.pdf 03/07/2023

205 Detecting child sexual abuse images: Traits of child sexual exploitation hosting and displaying websites (Guerra, E. and Westlake, B., 2021) Accessed from: https://brycewestlake.com/wp-content/uploads/2022/02/Detecting-child-sexual-abuse-images-Traits-of-child-sexual-exploitation-hosting-and-displaying-websites-Guerra-Westlake-2021.pdf 17/08/2023

206 Link-sharing and child sexual abuse: understanding the threat (WeProtect Global Alliance, 2023) Accessed from: https://www.weprotect.org/library/link-sharing-and-child-sexual-abuse-understanding-the-threat/ 08/08/2023

207 Disrupting Harm in Vietnam: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-08/DH_Viet%20Nam_ENG_ONLINE.pdf 02/08/2023

Disrupting Harm in Thailand: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-12/DH_Thailand_ONLINE_final%20251122.pdf 16/08/2023

Safety Tech Challenge: link sharing of Child Sexual Abuse Material (Innovate UK, 2023) Accessed from: https://iuk.ktn-uk.org/opportunities/safety-tech-challenge-link-sharing-of-child-sexual-abuse-material/ 02/08/2023

Link-sharing and child sexual abuse: understanding the threat (WeProtect Global Alliance, 2023) Accessed from: https://www.weprotect.org/library/link-sharing-and-child-sexual-abuse-understanding-the-threat/ 08/08/2023

208 Typologies and Psychological Profiles of Child Sexual Abusers: An Extensive Review (Yeon Lim, Y. et al., 2021) Accessed from: <https://cdn.icmec.org/wp-content/uploads/2021/12/Typologies-and-Psychological-Profiles-of-Child-Sexual-Abusers-Lim-2021.pdf 28/06/2023>

Cyber strategies used to combat child sexual abuse material (Edwards, G. et al., 2021) Accessed from: https://www.aic.gov.au/sites/default/files/2021-09/ti636_cyber_strategies_used_to_combat_csam.pdf 28/06/2023

209 Steganography in Contemporary Cyberattacks and the Link to Child Pornography (Aguirre, B., 2020) Accessed from: https://www.proquest.com/openview/75f886c0f7075565d2967cf7e121c771/1?pq-origsite=gscholar&cbl=18750&diss=y 17/08/2023

210 UK leads the world in providing tech to keep us safe online (Department for Science, Innovation and Technology, 2023) Accessed from: https://www.gov.uk/government/news/uk-leads-the-world-in-providing-tech-to-keep-us-safe-online 17/08/2023

211 These TikTok Accounts Are Hiding Child Sexual Abuse Material In Plain Sight (Forbes, 2022) Accessed from: https://www.forbes.com/sites/alexandralevine/2022/11/11/tiktok-private-csam-child-sexual-abuse-material/ 17/08/2023

212 Sex Trafficking and Social Media (Watts Guerra, 2023) Accessed from: https://wattsguerra.com/sex-trafficking-and-social-media/#:~:text=Traffickers%20use%20online%20applications%20for,describe%20the%20victim%20(8). 17/08/2023

213 These TikTok Accounts Are Hiding Child Sexual Abuse Material In Plain Sight (Forbes, 2022) Accessed from: https://www.forbes.com/sites/alexandralevine/2022/11/11/tiktok-private-csam-child-sexual-abuse-material/ 17/08/2023

214 Instagram Connects Vast Pedophile Network (The Wall Street Journal, 2023) Accessed from: https://www.wsj.com/articles/instagram-vast-pedophile-network-4ab7189?mod=djemalertNEWS 17/08/2023

215 Disrupting Harm in Indonesia: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-11/DH_Indonesia_ONLINE_final%20rev%20071022_11.pdf 02/08/2023

Disrupting Harm in Mozambique [SNAPSHOT]: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-10/2027%20DH%20MOZAMBIQUE%20REPORT%20ENGLISH%20VERSION.pdf 02/08/2023

Technical behaviours of child sexual exploitation material offenders (Steel, C., et al., 2022) Accessed from: http://www.chadsteel.com/pubs/Tech_Behaviours.pdf 02/08/2023

216 Child sexual abuse material on the darknet (Gannon, C. et al., 2023) Accessed from: https://link.springer.com/article/10.1007/s11757-023-00790-8#Sec4 17/08/2023

217 Disrupting Harm in Malaysia: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from https://www.end-violence.org/sites/default/files/2022-09/DH_Malaysia_ONLINE_FINAL.pdf 02/08/2023

Disrupting Harm in Indonesia: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-11/DH_Indonesia_ONLINE_final%20rev%20071022_11.pdf 02/08/2023

Disrupting Harm in the Phillippines: Evidence on online child sexual exploitation and abuse. (ECPAT, INTERPOL and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-12/DH_Philippines_ONLINE_FINAL%20251122.pdf 16/08/2023

Disrupting Harm in Thailand: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-12/DH_Thailand_ONLINE_final%20251122.pdf 16/08/2023

218 Wickr, Amazon's encrypted chat app, has a child sex abuse problem – and little is being done to stop it (NBC News, 2022) Accessed from: https://www.nbcnews.com/tech/tech-news/wickr-amazon-aws-child-messaging-app-sex-abuse-problem-rcna20674 17/08/2023

219 Primary data provided by the Child Rescue Coalition, 24/04/2023

220 Technical behaviours of child sexual exploitation material offenders (Steel, C., et al., 2022) Accessed from: http://www.chadsteel.com/pubs/Tech_Behaviours.pdf 02/08/2023

221 Child sexual abuse material networks on the darkweb: a multi-method approach (Bruggen, M. van der, 2023) Accessed from: <https://scholarlypublications.universiteitleiden.nl/access/item%3A3564737/view 17/08/2023>

222 Typologies and Psychological Profiles of Child Sexual Abusers: An Extensive Review (Yeon Lim, Y. et al., 2021) Accessed from: <https://cdn.icmec.org/wp-content/uploads/2021/12/Typologies-and-Psychological-Profiles-of-Child-Sexual-Abusers-Lim-2021.pdf 28/06/2023>

Technical behaviours of child sexual exploitation material offenders (Steel, C., et al., 2022) Accessed from: http://www.chadsteel.com/pubs/Tech_Behaviours.pdf 02/08/2023

The Trend of Online Child Sexual Abuse and Exploitations: A Profile of Online Sexual Offenders and Criminal Justice Response (Choi, K-S., and Lee, H., 2023) Accessed from: https://pubmed.ncbi.nlm.nih.gov/37194135/ 05/07/2023

223 Primary data provided by the US Department of Justice, 24/04/2023

224 Evolution of Dark Web Threat Analysis and Detection: A Systematic Approach (Nazah, S. et al., 2020) Accessed from: https://ieeexplore.ieee.org/document/9197590 17/08/2023

225 Primary data provided by Suojellaan Lapsia from 'Help us to help you' dark web survey, 27/06/2023

226 Characteristics and Behaviors of Anonymous Users of Dark Web Platforms Suspected of Child Sexual Offenses (Woodham, J. et al., 2021) Accessed from: https://pubmed.ncbi.nlm.nih.gov/33897532/ 08/08/2023

227 Insights report: The state of child sexual abuse material and the IT industry (NetClean, 2023) Accessed from: https://www.datocms-assets.com/74356/1679409231-netclean_insights2023.pdf#msdynttrid=xHwbyuCtMedKwyclpjkPKDpsRvEJumSUR8a4HDEzPtI 17/08/2023

228 Child sexual abuse material on the darknet (Gannon, C. et al., 2023) Accessed from: https://link.springer.com/article/10.1007/s11757-023-00790-8#Sec4 17/08/2023

Child sexual abuse material networks on the darkweb: a multi-method approach (Bruggen, M. van der, 2023) Accessed from: https://scholarlypublications.universiteitleiden.nl/access/item%3A3564737/view 17/08/2023

229 Child sexual abuse material networks on the darkweb: a multi-method approach (Bruggen, M. van der, 2023) Accessed from: <https://scholarlypublications.universiteitleiden.nl/access/item%3A3564737/view 17/08/2023>

230 Even "lurkers" download: The behavior and illegal activities of members on a child sexual exploitation TOR hidden service (Bruggen, M. van der, et al., 2022) Accessed from: https://www.sciencedirect.com/science/article/pii/S135917892200074X?via%3Dihub 24/05/2023

231 Even "lurkers" download: The behavior and illegal activities of members on a child sexual exploitation TOR hidden service (Bruggen, M. van der, et al., 2022) Accessed from: https://www.sciencedirect.com/science/article/pii/S135917892200074X?via%3Dihub 24/05/2023

Child sexual abuse material networks on the darkweb: a multi-method approach (Bruggen, M. van der, 2023) Accessed from: https://scholarlypublications.universiteitleiden.nl/access/item%3A3564737/view 17/08/2023

232 How child pornography spreads across the dark web (and perpetrators find each other) (Mare, 2023) Accessed from: https://www.mareonline.nl/en/background/how-child-pornography-spreads-across-the-dark-web-and-perpetrators-find-each-other/ 17/08/2023

233 Primary data provided by Suojellaan Lapsia from 'Help us to help you' dark web survey, 27/06/2023

234 Borderless: A Series on the Global Battle to Protect Children Online (National Center for Missing and Exploited Children, 2023) Accessed from: <https://www.missingkids.org/content/ncmec/en/blog/2023/ncmec-leads-global-fight-to-protect-kids.html 17/08/2023>

235 Internet-Facilitated Sexual Offending (Seto, M., 2015) Accessed from: https://smart.ojp.gov/sites/g/files/xyckuh231/files/media/document/internetfacilitatedsexualoffending.pdf 12/06/2023

Primary and Secondary Prevention of Child Sexual Abuse (Knack, N. et al., 2019) Accessed from: https://pubmed.ncbi.nlm.nih.gov/30917709/ 12/06/2023

"It was in Control of Me": Notions of Addiction and Online Child Sexual Exploitation Material Offending (Rimer, J. and Holt, K., 2022) Accessed from: https://journals.sagepub.com/doi/10.1177/10790632211070797?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub++0pubmed 12/06/2023

Pathways and Prevention for Indecent Images of Children Offending: A Qualitative Study (Bailey, A. et al., 2022) Accessed from: <https://sotrap.psychopen.eu/index.php/sotrap/article/view/6657 12/06/2023>

Primary data provided by Suojellaan Lapsia from 'Help us to help you' dark web survey, 27/06/2023

Child sexual abuse material networks on the darkweb: a multi-method approach (Bruggen, M. van der, 2023) Accessed from: https://scholarlypublications.universiteitleiden.nl/access/item%3A3564737/view 17/08/2023

236 Internet-Facilitated Sexual Offending (Seto, M., 2015) Accessed from: https://smart.ojp.gov/sites/g/files/xyckuh231/files/media/document/internetfacilitatedsexualoffending.pdf 12/06/2023

A global review of existing literature on the sexual exploitation of boys (ECPAT International, 2021) Accessed from: https://respect.international/wp-content/uploads/2021/09/Global-Review-of-Existing-Literature-on-the-Sexual-Exploitation-of-Boys.pdf 26/07/2023

The overlap between child sexual abuse live streaming, contact abuse and other forms of child exploitation (Teunissen, C. and Napier, S., 2023) Accessed from: <https://www.aic.gov.au/publications/tandi/tandi671 03/08/2023>

237 Livestreaming child sexual exploitation and abuse (WeProtect Global Alliance, n.d.) Accessed from: https://www.weprotect.org/issue/livestreaming/ 26/07/2023

Livestreaming Technology and Online Child Sexual Exploitation and Abuse: A Scoping Review (Drejer, C. et al., 2023) Accessed from: https://pubmed.ncbi.nlm.nih.gov/36727734/ 03/08/2023

238 Child sexual abuse material networks on the darkweb: a multi-method approach (Bruggen, M. van der, 2023) Accessed from: <https://scholarlypublications.universiteitleiden.nl/access/item%3A3564737/view 17/08/2023>

PA Consulting engagement with the US Department of Justice, 24/04/2023

Child sexual abuse material on the darknet (Gannon, C. et al., 2023) Accessed from: https://link.springer.com/article/10.1007/s11757-023-00790-8#Sec4 17/08/2023

Disclosed: The Children in the Pictures (LiSTNR, 2023) Accessed from: <https://open.spotify.com/show/3i2O9TGtjI7SoO3SjDwG1C 17/08/2023>

239 Commercial Child Sexual Abuse Markets on the Dark Web (Liggett, R., 2018) Accessed from: <https://cj.msu.edu/_assets/pdfs/cina/CINA-White_Papers-Liggett_Commercial_Child_Sexual_Abuse_Markets_Dark_Web.pdf 17/08/2023>

240 Public warned as 'disturbing' new trend risks exposure to child sexual abuse material online (Internet Watch Foundation, 2022) Accessed from: https://www.iwf.org.uk/news-media/news/public-warned-as-disturbing-new-trend-risks-exposure-to-child-sexual-abuse-material-online/ 17/08/2023

241 Public warned as 'disturbing' new trend risks exposure to child sexual abuse material online (Internet Watch Foundation, 2022) Accessed from: https://www.iwf.org.uk/news-media/news/public-warned-as-disturbing-new-trend-risks-exposure-to-child-sexual-abuse-material-online/ 17/08/2023

242 Disclosed: The Children in the Pictures (LiSTNR, 2023) Accessed from: <https://open.spotify.com/show/3i2O9TGtjI7SoO3SjDwG1C 17/08/2023>

243 Child sexual abuse material networks on the darkweb: a multi-method approach (Bruggen, M. van der, 2023) Accessed from: https://scholarlypublications.universiteitleiden.nl/access/item%3A3564737/view 17/08/2023

Child sexual abuse material on the darknet (Gannon, C. et al., 2023) Accessed from: https://link.springer.com/article/10.1007/s11757-023-00790-8#Sec4 17/08/2023

244 Primary and Secondary Prevention of Child Sexual Abuse (Knack, N. et al., 2019) Accessed from: https://pubmed.ncbi.nlm.nih.gov/30917709/ 12/06/2023

245 Primary and Secondary Prevention of Child Sexual Abuse (Knack, N. et al., 2019) Accessed from: https://pubmed.ncbi.nlm.nih.gov/30917709/ 12/06/2023

246 Enhancing evidence-based treatment of child sexual abuse material offenders: The development of the CEM-COPE Program (Henshaw, M. et al., 2020) Accessed from: https://www.aic.gov.au/sites/default/files/2020-10/ti607_enhancing_evidence-based_treatment_of_CSAM_offenders.pdf 17/08/2023

Primary and Secondary Prevention of Child Sexual Abuse (Knack, N. et al., 2019) Accessed from: https://pubmed.ncbi.nlm.nih.gov/30917709/ 12/06/2023

247 The Trend of Online Child Sexual Abuse and Exploitations: A Profile of Online Sexual Offenders and Criminal Justice Response (Choi, K-S., and Lee, H., 2023) Accessed from: https://pubmed.ncbi.nlm.nih.gov/37194135/ 05/07/2023

Turning the tide against online child sexual abuse (The Police Foundation, 2022) Accessed from: https://www.police-foundation.org.uk/wp-content/uploads/2022/07/turning_the_tide_FINAL-.pdf 17/08/2023

PA Consulting engagement with Dr Michael Seto, 09/05/2023

248 Child sexual exploitation and abuse online: Survivors' Perspectives (ECPAT International and WeProtect Global Alliance, 2022) Accessed from: https://ecpat.org/wp-content/uploads/2022/01/05-01-2022_Project-Report_EN_FINAL.pdf 16/08/2023

249 Primary and Secondary Prevention of Child Sexual Abuse (Knack, N. et al., 2019) Accessed from: https://pubmed.ncbi.nlm.nih.gov/30917709/ 12/06/2023

250 "It was in Control of Me": Notions of Addiction and Online Child Sexual Exploitation Material Offending (Rimer, J. and Holt, K., 2022) Accessed from: https://journals.sagepub.com/doi/10.1177/10790632211070797?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub++0pubmed 12/06/2023

251 "It was in Control of Me": Notions of Addiction and Online Child Sexual Exploitation Material Offending (Rimer, J. and Holt, K., 2022) Accessed from: https://journals.sagepub.com/doi/10.1177/10790632211070797?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub++0pubmed 12/06/2023

Primary data provided by Suojellaan Lapsia from 'Help us to help you' dark web survey, 27/06/2023

252 Prevalence and risk factors for child sexual offending online and offline in Australia, the United States and the United Kingdom (Salter, M. et al., 2023) Findings presented at the PIER23 Conference.

253 Russian Speaking CSAM Users in the Dark Web: Findings from Russian Language Respondents to ReDirection Surveys of CSAM Users on Dark Web Search Engines (Suojellaan Lapsia, Protect Children ry., 2023) Accessed from: <https://www.suojellaanlapsia.fi/en/post/redirection-russian-language-report-6 17/08/2023>

"It was in Control of Me": Notions of Addiction and Online Child Sexual Exploitation Material Offending (Rimer, J. and Holt, K., 2022) Accessed from: https://journals.sagepub.com/doi/10.1177/10790632211070797?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub++0pubmed 12/06/2023

Pathways and Prevention for Indecent Images of Children Offending: A Qualitative Study (Bailey, A. et al., 2022) Accessed from: <https://sotrap.psychopen.eu/index.php/sotrap/article/view/6657 12/06/2023>

Number of people seeking support from confidential helpline about online child sexual abuse triples since the first lockdown (The Scotsman, 2023) Accessed from: https://www.scotsman.com/read-this/number-of-people-seeking-support-from-confidential-helpline-about-online-child-sexual-abuse-triples-since-the-first-lockdown-4063065 17/08/2023

254 Primary data provided by Suojellaan Lapsia from 'Help us to help you' dark web survey, 27/06/2023

255 "It was in Control of Me": Notions of Addiction and Online Child Sexual Exploitation Material Offending (Rimer, J. and Holt, K., 2022) Accessed from: https://journals.sagepub.com/doi/10.1177/10790632211070797?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub++0pubmed 12/06/2023

Pathways and Prevention for Indecent Images of Children Offending: A Qualitative Study (Bailey, A. et al., 2022) Accessed from: <https://sotrap.psychopen.eu/index.php/sotrap/article/view/6657 12/06/2023>

Typologies and Psychological Profiles of Child Sexual Abusers: An Extensive Review (Yeon Lim, Y. et al., 2021) Accessed from: https://cdn.icmec.org/wp-content/uploads/2021/12/Typologies-and-Psychological-Profiles-of-Child-Sexual-Abusers-Lim-2021.pdf 28/06/2023

256 Pathways and Prevention for Indecent Images of Children Offending: A Qualitative Study (Bailey, A. et al., 2022) Accessed from: <https://sotrap.psychopen.eu/index.php/sotrap/article/view/6657 12/06/2023>

257 France to introduce new system to restrict porn access by minors (The Straits Times, 2023) Accessed from: <https://www.straitstimes.com/world/europe/france-to-introduce-new-system-to-restrict-porn-access-by-minors 17/08/2023>

Porn sites will be legally required to verify users' age (BBC, 2022) Accessed from: https://www.bbc.co.uk/news/technology-60293057 17/08/2023

258 "It was in Control of Me": Notions of Addiction and Online Child Sexual Exploitation Material Offending (Rimer, J. and Holt, K., 2022) Accessed from: https://journals.sagepub.com/doi/10.1177/10790632211070797?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub++0pubmed 12/06/2023

Pathways and Prevention for Indecent Images of Children Offending: A Qualitative Study (Bailey, A. et al., 2022) Accessed from: <https://sotrap.psychopen.eu/index.php/sotrap/article/view/6657 12/06/2023>

Typologies and Psychological Profiles of Child Sexual Abusers: An Extensive Review (Yeon Lim, Y. et al., 2021) Accessed from: https://cdn.icmec.org/wp-content/uploads/2021/12/Typologies-and-Psychological-Profiles-of-Child-Sexual-Abusers-Lim-2021.pdf 28/06/2023

259 Generative AI: Now is the time for Safety by Design (Thorn, 2023) Accessed from: https://www.thorn.org/blog/now-is-the-time-for-safety-by-design/ 17/08/2023

260 Whatever happened to the metaverse? (Financial Times, 2023). Accessed from: https://www.ft.com/content/bddec314-3f4c-4296-ae6f-eb2a5328c109 17/08/2023

261 Generative AI is exploding: These are the most important trends you need to know (Forbes, 2023). Accessed from: https://www.forbes.com/sites/konstantinebuhler/2023/04/11/ai-50-2023-generative-ai-trends/?sh=d5e1d1a7c0ea 17/08/2023

262 GPT-4 (OpenAi, 2023). Accessed from: <https://openai.com/research/gpt-4 17/08/23>

263 First reports of children using AI to bully their peers using sexually explicit generated images, eSafety commissioner says (News, 2023) Accessed from: https://www.abc.net.au/news/2023-08-16-esafety-commisioner-warns-ai-safety-must-improve/102733628 17/08/2023

264 'Prime Minister must act on threat of AI as IWF 'sounds alarm' on first confirmed AI-generated images of child sexual abuse (IWF, 2023). Accessed from: https://www.iwf.org.uk/news-media/news/prime-minister-must-act-on-threat-of-ai-as-iwf-sounds-alarm-on-first-confirmed-ai-generated-images-of-child-sexual-abuse/ 17/08/2023

265 Gaming is booming and is expected to keep growing. This chart tells you all you need to know (World Economic Forum, 2022). Accessed from: https://www.weforum.org/agenda/2022/07/gaming-pandemic-lockdowns-pwc-growth/ 17/08/2023

266 Distribution of Roblox audiences worldwide as of December 2022 by age group (Statista, 2022). Accessed from: https://www.statista.com/statistics/1190869/roblox-games-users-global-distribution-age/ 17/08/2023

267 El 60% de los ninos juegan a Fortnite por debajo de la edad recomendada (elPeriodico.com, 2019). Accessed from: https://www.elperiodico.com/es/sociedad/20190827/estudio-uoc-udl-fortnite-usuarios-debajo-edad-recomendada-7608303 17/08/2023

268 Paedophiles are starting to use VR headsets to view child abuse images (Metro, 2023). Accessed from: https://metro.co.uk/2023/02/22/paedophiles-are-starting-to-use-vr-headsets-to-view-child-abuse-images-18323598/ 17/08/2023

269 Safeguarding the metaverse: a guide to existing and future harms in virtual reality (VR) and the metaverse to support UK immersive technology policymaking (The Institution of Engineering and Technology, 2022. Accessed from: <https://www.theiet.org/media/9836/safeguarding-the-metaverse.pdf 17/08/2023>

270 Haptics in gaming: how haptic feedback makes gaming more immersive (Xeeltech, 2023). Accessed from: https://www.xeeltech.com/haptics-in-gaming/ 17/08/2023

271 What is the 'metaverse'? A real world for a virtual world (Merriam-Webster, 2023). Accessed from: <https://www.merriam-webster.com/wordplay/meaning-of-metaverse 17/08/2023>

272 Moderating the fediverse: Content moderation on distributed social media (Journal of Free Speech, 2023). Accessed from: https://www.journaloffreespeechlaw.org/rozenshtein2.pdf 17/08/2023

273 Whatever happened to the metaverse? (Financial Times, 2023). Accessed from: https://www.ft.com/content/bddec314-3f4c-4296-ae6f-eb2a5328c109 17/08/2023

274 Extended Reality [XR] Market (Transparency Market Research, 2020). Accessed from: https://www.transparencymarketresearch.com/extended-reality-xr-market.html#:~:text=The%20global%20extended%20reality%20%28XR%29%20market%20is%20projected,are%20major%20industries%20adopting%20technologically%20advanced%20virtual%20platforms. 17/08/2023

275 What is blockchain technology? (IBM, 2023) Accessed from: https://www.ibm.com/topics/blockchain 17/08/2023

276 How Blockchain Could Transform Virtual Reality (Lifewire, 2021) Accessed from: <https://www.lifewire.com/how-blockchain-could-transform-virtual-reality-5179912 17/08/2023>

277 Bitcoin's blockchain contains child abuse images, meaning the cryptocurrency's possession could be 'illegal' (News, 2018) Accessed from: <https://www.abc.net.au/news/2018-03-21/bitcoins-blockchain-has-been-linked-to-child-pornography/9571384 17/08/2023>

278 From Bittorent to Tron: the History of Peer-to-Peer Networks (BeinCrypto, 2019) Accessed from: https://beincrypto.com/from-napster-to-bitcoin-the-evolution-of-peer-to-peer-networks/ 17/08/2023

279 Mastodon (Mastodon, 2023) Accessed from: https://joinmastodon.org/ 17/08/2023

280 Mastodon: number of registered users 2022-2023 (Statista, 2023) Accessed from: https://www.statista.com/statistics/1376022/global-registered-mastodon-users/#:~:text=As%20of%20March%202023%2C%20decentralized%20social%20media%20platform,increase%20of%20around%20300%20percent%20within%20five%20months. 17/08/2023

281 Moderating the fediverse: Content moderation on distributed social media (Journal of Free Speech, 2023). Accessed from: https://www.journaloffreespeechlaw.org/rozenshtein2.pdf 17/08/2023

282 Why you should be worried about Facebook's metaverse (Berkman Klein Center, 2021) Accessed from: <https://cyber.harvard.edu/story/2021-12/why-you-should-be-worried-about-facebooks-metaverse 17/08/2023>

     Opportunities and Risks in Online Gaming Environments (Sanders, Benjamin George, 2016) Accessed from: https://pearl.plymouth.ac.uk/bitstream/handle/10026.1/8083/2016Sanders284579PhD.pdf?sequence=1 17/08/2023

283 Social Media Users in 2023 (DemandSage, 2023) Accessed from: https://www.demandsage.com/social-media-users/#:~:text=Here%20is%20a%20table%20showing%20the%20number%20of,%204.26%20billion%20%207%20more%20rows%20 17/08/2023

284 Number of social media users worldwide from 2017 to 2027 (Statista, 2023) Accessed from: https://www.statista.com/statistics/278414/number-of-worldwide-social-network-users/ 17/08/2023

285 'Who owns the future'? Jaron Lanier (2013)

286 United States Senate Committee on the Judiciary "Protecting our Children Online" (National Centre for Missing and Exploited Children, 2023) Accessed from: https://www.missingkids.org/content/dam/missingkids/pdfs/Senate%20Judiciary%20Hearing%20-%20NCMEC%20Written%20Testimony%20(2-14-23)%20(final).pdf 17/08/2023

     Project Arachnid: Online availability of child sexual abuse material (Canadian Centre for Child Protection, 2021) Accessed from: https://protectchildren.ca/pdfs/C3P_ProjectArachnidReport_Summary_en.pdf 17/08/2023

287 Shaping the Future of Regulators: The Impact of Emerging Technologies on Economic Regulators (OECD Library, 2020) Accessed from: <https://www.oecd-ilibrary.org/sites/db481aa3-en/index.html?itemId=/content/publication/db481aa3-en 17/08/2023>

288 71 countries call to remove online child sexual abuse materials (GOV.UK, 2023) Accessed from: https://www.gov.uk/government/news/71-countries-call-to-remove-online-child-sexual-abuse-materials 17/08/2023

289 New Online Safety Act commences (Australian Government, 2022) Accessed from: <https://www.infrastructure.gov.au/department/media/news/new-online-safety-act-commences 17/08/2023>

290 Official Journal of the European Union (European Union, 2022) Accessed from: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L:2022:277:FULL 17/08/2023

291 Online Safety and Media Regulation Act (Gov.ie, 2022) Accessed from: https://www.gov.ie/en/publication/d8e4c-online-safety-and-media-regulation-bill/ 17/08/2023

292 Nigeria: Regulation of Online Platforms in Nigeria: Draft Code of Practice for Interactive Computer Service Platforms/Internet intermediaries (Pavestones, 2022) Accessed from: https://pavestoneslegal.com/regulation-of-online-platforms-in-nigeria-draft-code-of-practice-for-interactive-computer-service-platforms-internet-intermediaries/?utm_source=mondaq&utm_medium=syndication&utm_term=Media-Telecoms-IT-Entertainment&utm_content 17/08/2023

293 New law puts pressure on private stakeholders to protect children vs online sexual abuse (CNN Philippines, 2022) Accessed from: <https://www.cnnphilippines.com/news/2022/8/3/Online-sexual-abuse-children-protection-law-Hontiveros.html 17/08/2023>

294 Singapore introduces new law for online safety (Bird&Bird, 2022) Accessed from: https://www.twobirds.com/en/insights/2022/singapore/singapore-introduces-new-law-for-online-safety 17/08/2023

295 Governor Newsom Signs First-in-Nation Bill Protecting Children's Online Data and Privacy (CA.GOV, 2022) Accessed from: https://www.gov.ca.gov/2022/09/15/governor-newsom-signs-first-in-nation-bill-protecting-childrens-online-data-and-privacy/#:~:text=AB%202273%20by%20Assemblymember%20Buffy%20Wicks%20%28D-Oakland%29%20and,protect%20children%E2%80%99s%20mental%20and%20physi. 17/08/2023

296 The Laws of Fiji, Online Safety Act 2018 (Office of the Attorney General, 2018) Accessed from: https://laws.gov.fj/Acts/DisplayAct/2462 17/08/2023

297 Online Harms: A comparative Analysis (Linklaters, 2021) Accessed from: https://lpscdn.linklaters.com/-/media/digital-marketing-image-library/files/01_insights/thought-leadership/2021/april/online-harms---a-comparative-analysis.ashx?rev=1c44d739-086d-400a-8f94-508a23148e5e&extension=pdf&hash=63F3E4D64476F056E124CD70774B33A8 17/08/2023

298 Explained: Highlights of the proposed Digital India Act, 2023 (The Hindu, 2023) Accessed from: <https://www.thehindu.com/news/national/explained-highlights-of-the-proposed-digital-india-act-2023/article66613508.ece 17/08/2023>

299 Online Safety Bill (House of Commons, 2022) Accessed from: <https://publications.parliament.uk/pa/bills/cbill/58-03/0004/220004.pdf 17/08/2023>

300 Email received from Ernie Allen, Chair of WeProtect Global Alliance, 28/07/23

301 Senate panel advances bills to boost children's safety online (The Washington Post, 2022) Accessed from: https://www.washingtonpost.com/technology/2022/07/27/senate-child-safety-bill/ 17/08/2023

302 Internet content governance and human rights (Vanderbilt Journal, 2020) Accessed from: https://scholarship.law.vanderbilt.edu/jetlaw/vol16/iss4/3/ 17/08/2023

303 Technology neutrality in internet, telecoms, and data protection regulation (Maxwell and Bourreau, 2014) Accessed from: <https://www.hoganlovells.com/~/media/hogan-lovells/pdf/publication/201521ctlrissue1maxwell_pdf.pdf 17/08/2023>

304 The copyright pentalogy: how the supreme court of Canada shook the foundations of Canadian copyright law (Geist, 2013) Accessed from: https://books.openedition.org/uop/977?lang=en 17/08/2023

305 The benefits and challenges of technology neutral regulation – a scoping review (ResearchGate, 2021) Accessed from: <https://www.researchgate.net/publication/353143124_The_Benefits_and_Challenges_of_Technology_Neutral_Regulation_-A_Scoping_Review 17/08/2023>

306 Regulation (EU) 2016/679 of the European Parliament and of the Council (Official Journal of the European Union, 2016) Accessed from: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679&qid=1691657682349 17/08/2023

307 Proposal for a Regulation of the European Parliament and of the Council (European Commission, 2021) Accessed from: https://eur-lex.europa.eu/resource.html?uri=cellar:e0649735-a372-11eb-9585-01aa75ed71a1.0001.02/DOC_1&format=PDF 17/08/2023

308 Digital Financial Services Policy (Government of Ghana, 2020) Accessed from: https://mofep.gov.gh/sites/default/files/acts/Ghana_DFS_Policy.pdf 17/08/2023

309 The Personal Data (Privacy) Ordinance (Office of the Privacy Commissioner for Personal Data, 2021) Accessed from: <https://www.pcpd.org.hk/english/data_privacy_law/ordinance_at_a_Glance/ordinance.html 17/08/2023>

310 Kenya National Digital Master Plan 2022-2032 (Ministry of ICT, Innovation and Youth Affairs, 2022) Accessed from: https://cms.icta.go.ke/sites/default/files/2022-04/Kenya%20Digital%20Masterplan%202022-2032%20Online%20Version.pdf 17/08/2023

311 Committee of Experts on Public Administration (United Nations) Accessed from: https://publicadministration.un.org/en/Intergovernmental-Support/Committee-of-Experts-on-Public-Administration/Governance-principles/Addressing-common-governance-challenges/Transparency 17/08/2023

312 Principles of effective regulation (National Audit Office, 2021) Accessed from: https://www.nao.org.uk/wp-content/uploads/2021/05/Principles-of-effective-regulation-SOff-interactive-accessible.pdf 17/08/2023

313 Basic Online Safety Expectations: Summary of industry responses to the first mandatory transparency notices (eSafety Commissioner, 2022) Accessed from: https://www.esafety.gov.au/sites/default/files/2022-12/BOSE%20transparency%20report%20Dec%202022.pdf 17/08/2023

314 Online Safety Bill (House of Commons, 2022) Accessed from: <https://publications.parliament.uk/pa/bills/cbill/58-03/0004/220004.pdf 17/08/2023>

315 Online Safety and Media Regulation Act (Gov.ie, 2022) Accessed from: https://www.gov.ie/en/publication/d8e4c-online-safety-and-media-regulation-bill/ 17/08/2023

316 Official Journal of the European Union (European Union, 2022) Accessed from: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L:2022:277:FULL 17/08/2023

317 Safeguarding freedom of expression and access to information: guidelines for a multistakeholder approach in the context of regulating digital platforms (Unesco, 2023) Accessed from: https://unesdoc.unesco.org/ark:/48223/pf0000384031.locale=en 17/08/2023

318 Legislating for the digital age (Unicef, 2022) Accessed from: https://www.unicef.org/reports/legislating-digital-age 17/08/2023

319 The Global Online Safety Regulators Network (eSafety Commissioner, 2022) Accessed from: https://www.esafety.gov.au/about-us/who-we-are/international-engagement/the-global-online-safety-regulators-network 17/08/2023

320 2022 CyberTipline Reports by Country (NCMEC, 2022) Accessed from: <https://www.missingkids.org/content/dam/missingkids/pdfs/2022-reports-by-country.pdf 17/08/2023>

321 IWF Annual Report 2020: Trends & Data, International Data (IWF, 2020) Accessed from: https://annualreport2020.iwf.org.uk/trends/international/geographic 17/08/2023

IWF Annual Report 2022: Geographical Hosting (IWF, 2022) Accessed from: https://annualreport2021.iwf.org.uk/trends/geographicalhosting 17/08/2023

322 Child Rights Impact Assessment: a tool to realise children's rights in the digital environment (Digital Futures Commission, 2021) Accessed from: https://digitalfuturescommission.org.uk/wp-content/uploads/2021/03/CRIA-Report.pdf#:~:text=Encouraged%20by%20the%20adoption%20in%202021%20of%20the,to%20children%E2%80%99s%20rights%20early%20in%20the%20innovation%20process. 17/08/2023

323 General comment No.25 on children's rights in relation to the digital environment (United Nations, 2021) Accessed from: https://www.ohchr.org/en/documents/general-comments-and-recommendations/general-comment-no-25-2021-childrens-rights-relation#:~:text=In%20this%20general%20comment%2C%20the%20Committee%20explains%20how,fulfilling%20all%20children%E2%80%99s%20rights%20in%20the%20digital%20environment.

324 New Online Safety Act commences (Australian Government, 2022) Accessed from: <https://www.infrastructure.gov.au/department/media/news/new-online-safety-act-commences 17/08/2023>

325 Online Safety and Media Regulation Act (Gov.ie, 2022) Accessed from: https://www.gov.ie/en/publication/d8e4c-online-safety-and-media-regulation-bill/ 17/08/2023

326 SaferKidsPH statement on the enactment of Republic Act No. 11930 on the protection of children against online sexual abuse and exploitation and child sexual abuse materials (Unicef, 2022) Accessed from: https://www.unicef.org/philippines/press-releases/saferkidsph-statement-enactment-republic-act-no-11930-protection-children-against 17/08/2023

327 Newsroom on Children's Rights: Tunisia accedes to the Lanzarote Convention (Council of Europe portal, 2019) Accessed from: https://www.coe.int/en/web/children/-/tunisia-accedes-to-the-lanzarote-convention 17/08/2023

328 Malaysia takes pivotal steps towards a safer internet for children following data from disrupting harm (End Violence Against Children, 2023) Accessed from: https://www.end-violence.org/articles/malaysia-takes-pivotal-steps-towards-safer-internet-children-following-data-disrupting 17/08/2023

329 African Union Convention on Cyber Security and Personal Data Protection (African Union, 2014) Accessed from: https://au.int/sites/default/files/treaties/29560-treaty-0048_-_african_union_convention_on_cyber_security_and_personal_data_protection_e.pdf 17/08/2023

330 Regional Plan of Action for the Protection of Children from All Forms of Online Exploitation and Abuse in ASEAN (Association of Southeast Asian Nations, 2019) Accessed from: https://asean.org/wp-content/uploads/2021/11/4.-ASEAN-RPA-on-COEA_Final.pdf 17/08/2023

Declaration on the Protection of Children from all Forms of Online Exploitation and Abuse in ASEAN (Association of Southeast Asian Nations, 2019) Accessed from: https://asean.org/wp-content/uploads/2019/11/3-Declaration-on-the-Protection-of-Children-from-all-Forms-of-Online-Exploitation-and-Abuse-in-ASEAN.pdf 17/08/2023

331 What is RegTech and what does it mean for policymakers? (World Economic Forum, 2022) Accessed from: https://www.weforum.org/agenda/2022/06/what-is-regtech-and-what-does-it-mean-for-policymakers/ 18/08/2023

332 UK Safety Tech Sector: 2023 analysis (UK Government, 2023) Accessed from: https://www.gov.uk/government/publications/safer-technology-safer-users-the-uk-as-a-world-leader-in-safety-tech/uk-safety-tech-sector-2023-analysis 18/08/2023

333 International State of Safety Tech (Publitas, 2022, p.8-9) Accessed from: https://view.publitas.com/public-1/international-state-of-safety-tech/page/8-9 18/08/2023

334 International State of Safety Tech (Publitas, 2022, p.10-11) Accessed from: https://view.publitas.com/public-1/international-state-of-safety-tech/page/10-11 18/08/2023

335 Online Safety Tech: 2022 Recap (Safety Tech Innovation Network, 2023) Accessed from: https://www.safetytechnetwork.org.uk/online-safety-tech-2022-recap/ 18/08/2023

336 Yubo scales real-time audio moderation technology across four major international markets (Insider, 2022) Accessed from: https://markets.businessinsider.com/news/stocks/yubo-scales-real-time-audio-moderation-technology-across-four-major-international-markets-1031918901 18/08/2023

337 Apple Expands Its On-Device Nudity Detection to Combat CSAM (Wired, 2023) Accessed from: https://www.wired.com/story/apple-communication-safety-nude-detection/ 18/08/2023

338 App to block child abuse images gets £1.8m EU funding (BBC, 2023) Accessed from: https://www.bbc.co.uk/news/technology-64718850 18/08/2023

339 Estimates of childhood exposure to online sexual harms and their risk factors (WeProtect Global Alliance and Economist Impact, 2023) Accessed from: https://www.weprotect.org/economist-impact-global-survey/ 15/08/2023

340 Parents' experiences of their children's exposure to online sexual harms: A study of parents/guardians in Latin America and Sub-Saharan Africa (Economist Impact, 2023) Accessed from: https://www.weprotect.org/economist-impact-parents-survey/ 21/08/2023

341 Email received from the International Justice Mission, 14/04/2023

342 PA Consulting engagement with Crisp, 14/03/2023

343 Estimates of childhood exposure to online sexual harms and their risk factors (WeProtect Global Alliance and Economist Impact, 2023) Accessed from: https://www.weprotect.org/economist-impact-global-survey/ 15/08/2023

344 International State of Safety Tech (Publitas, 2022, p.20-21) Accessed from: https://view.publitas.com/public-1/international-state-of-safety-tech/page/20-2118/08/2023

345 'Online Safety Data Initiative' launches to transform data access for online harms (Public, 2021) Accessed from: https://www.public.io/press-post/online-safety-data-initiative-launches-to-transform-data-access-for-online-harms 18/08/2023

346 PA Consulting engagement with Yoti, 24/03/2023

347 ISO Working Draft Age Assurance Systems Standard (EU Consent, 2021) Accessed from: https://euconsent.eu/download/iso-working-draft-age-assurance-systems-standard/ 18/08/2023

348 Despite the Pandemic, Tech Innovation is Thriving in France (Consumer Technology Association, 2021) Accessed from: https://www.ces.tech/articles/2021/october/despite-the-pandemic,-tech-innovation-is-thriving.aspx 18/08/2023

349 Unlocking the potential of open-source technologies for a more equitable world. (Digital Public Goods Alliance, n.d.) Accessed from: https://digitalpublicgoods.net/ 18/08/2023

350 Transparency Reporting on Child Sexual Exploitation and Abuse Material Online by the Global Top-50 Content Sharing Services (OECD 2023). Accessed from: Transparency reporting on child sexual exploitation and abuse online | OECD Digital Economy Papers | OECD iLibrary (oecd-ilibrary.org) 04/09/2023

351 2022 Annual Report (Tech Coalition, 2023) Accessed from: https://paragonn-cdn.nyc3.cdn.digitaloceanspaces.com/technologycoalition.org/uploads/Tech-Coalition_Annual-Report-2022.pdf 18/08/2023

352 UK Safety Tech Sector: 2022 analysis (UK Government, 2023) Accessed from: https://www.gov.uk/government/publications/safer-technology-safer-users-the-uk-as-a-world-leader-in-safety-tech/uk-safety-tech-sector-2022-analysis 18/08/2023

353 Is It Possible to Reconcile Encryption and Child Safety? (Levy, I. and Robinson, C., 2022) Accessed from: <https://www.lawfaremedia.org/article/it-possible-reconcile-encryption-and-child-safety 18/08/2023>

Meta Backs New Platform To Help Minors Wipe Naked, Sexual Images Off Internet (Forbes, 2023) Accessed from: https://www.forbes.com/sites/alexandralevine/2023/02/27/meta-ncmec-minors-take-it-down-ncii/?sh=5c533fc12356 18/08/2023

354 End-to-end encryption protects children, says UK information watchdog (The Guardian, 2022) Accessed from: https://www.theguardian.com/technology/2022/jan/21/end-to-end-encryption-protects-children-says-uk-information-watchdog 18/08/2023

355 Encryption: Essential for the LGBTQ+ Community (Internet Society, 2019) Accessed from: https://www.internetsociety.org/resources/doc/2019/encryption-factsheet-essential-for-lgbtq-community/ 18/08/2023

356 United States Senate Committee on the Judiciary "Protecting our Children Online" (National Centre for Missing and Exploited Children, 2023) Accessed from: https://www.missingkids.org/content/dam/missingkids/pdfs/Senate%20Judiciary%20Hearing%20-%20NCMEC%20Written%20Testimony%20(2-14-23)%20(final).pdf 17/08/2023

357   Activists respond to Apple choosing encryption over invasive image scanning plans (The Verge, 2022) Accessed from: https://www.theverge.com/2022/12/9/23500838/apple-csam-plans-dropped-eff-ncmec-cdt-reactions 18/08/2023

358   Fact Sheet: Client-Side Scanning – What It Is and Why It Threatens Trustworthy, Private Communications (Internet Society, 2020) Accessed from: https://www.internetsociety.org/resources/doc/2020/fact-sheet-client-side-scanning/#:~:text=What%20is%20Client%2DSide%20Scanning,sent%20to%20the%20intended%20recipient. 18/08/2023

359   Meta's Expansion of End-to-End Encryption (Business for Social Responsibility, 2022) Accessed from: https://www.bsr.org/reports/bsr-meta-human-rights-impact-assessment-e2ee-report.pdf 18/08/2023

      Is encryption a fundamental right? A case study on CSAM regulation in the EU (Chousou, S. et al., 2023) Accessed from: https://www.sciencespo.fr/public/chaire-numerique/wp-content/uploads/2023/07/Encryption.pdf 18/08/2023

360   Homomorphic Encryption: What Is It, and Why Does It Matter? (Internet Society, 2023) Accessed from: https://www.internetsociety.org/resources/doc/2023/homomorphic-encryption/ 18/08/2023

361   Eurobarometer: Protection of children against online sexual abuse (European Union, 2023) Accessed from: https://europa.eu/eurobarometer/surveys/detail/2656 18/08/2023

362   Generative AI: Now is the Time for Safety By Design (Thorn, 2023) Accessed from: https://www.thorn.org/blog/now-is-the-time-for-safety-by-design/ 17/08/2023

363   Cybersecurity Market, By Component (Hardware, Solution, Service), By Security Type, By Solution, By Application (IT & Telecom, Retail, BFSI, Healthcare, Defense & Government, Manufacturing, Energy, Others), By Region Forecast to 2032 (Emergen Research, 2023) Accessed from: https://www.emergenresearch.com/industry-report/cyber-security-market 21/06/2023

      Cybersecurity - Worldwide (Statista, 2023) Accessed from: https://www.statista.com/outlook/tmo/cybersecurity/worldwide#analyst-opinion 21/08/2023

364   Framing the future: How the Model National Response framework is supporting national efforts to end child sexual exploitation and abuse online (WeProtect Global Alliance and UNICEF, 2022). Accessed from: https://www.weprotect.org/wp-content/plugins/pdfjs-viewer-shortcode/pdfjs/web/viewer.php?file=https://www.weprotect.org/wp-content/uploads/Framing-the-Future-Executive-Summary_FINAL.pdf&attachmentid=304061&dButton=true&pButton=false&oButton=false&sButto 18/08/2023

365   PA Consulting engagement with End Violence, 22/03/2023

366   PA Consulting engagement with the US Department of Justice, 24/04/2023

367   Out of the Shadows Index 2022 (Economist Impact, 2022) Accessed from: https://cdn.outoftheshadows.global/uploads/documents/Out-of-the-Shadows-Index-2022-Global-Report.pdf 16/08/2023

368   PA Consulting engagement with End Violence, 22/03/2023

369   Safeguarding Childhood: An Assessment of Funding to Prevent and End Child Sexual Abuse, FP Analytics in collaboration with World Vision International (September, 2023) [Embargoed copy]

370   Our funding (INTERPOL, n.d.) Accessed from: https://www.interpol.int/en/Who-we-are/Our-funding 18/08/2023

371   Partnerships key to boosting online safety (UN News, 2023) Accessed from: https://news.un.org/en/story/2023/02/1133242 18/08/2023

372   Online Harms White Paper Response (Internet Watch Foundation, n.d.) Accessed from: https://www.iwf.org.uk/media/idrdhazi/iwf-response-to-the-online-harms-white-paper.pdf 18/08/2023

373   NCMEC Launches New Service That Can Help You "Take It Down" (National Canter for Missing and Exploited Children, 2023) Accessed from: <https://www.missingkids.org/blog/2023/ncmec-launches-new-service-that-can-help-you-take-it-down 18/08/2023>

374   2021 Tech Coalition Safe Online research fund (n.d.) Accessed from: https://www.end-violence.org/2021-tech-coalition-safe-online-research-fund#:~:text=The%20Tech%20Coalition%20Safe%20Online%20Research%20Fund%20aims,allocated%20to%20each%20of%20the%20five%20awarded%20grantees. 18/08/2023

375   2022 Tech Coalition Safe Online research fund (End Violence, n.d.) Accessed from: https://www.end-violence.org/tech-coalition-safe-online-research-fund-2022 18/08/2023

376   Priority Flagging Partnerships in Practice: A EuroISPA survey into best practices from the Internet industry (EuroISPA, 2019) Accessed from: https://www.euroispa.org/wp-content/uploads/Hutty_Schubert_Sanna_Deadman-Priority-Flagging-Partnerships-in-Practice-EuroISPA-2019.pdf#:~:text=Following%20the%20European%20Commission%E2%80%99s%20Recommendation%20on%20tackling%20illegal,higher%20on%20the%2. 18/08/2023

377   The trusted flaggers in the Digital Services Act (Lexology, 2022) Accessed from: https://www.lexology.com/library/detail.aspx?g=0045b1bf-165b-4ee9-93a9-011cf8b796d4 18/08/2023

378   Facebook: The Leading Social Platform of Our Times (Investing, 2023) Accessed from: https://www.investing.com/academy/statistics/facebook-meta-facts/#:~:text=This%20ranks%20Facebook%20as%20the,use%20other%20social%20media%20channels. 18/08/2023

379   Meta Reports Fourth Quarter and Full Year 2022 Results (Meta, 2023) Accessed from: https://investor.fb.com/investor-news/press-release-details/2023/Meta-Reports-Fourth-Quarter-and-Full-Year-2022-Results/default.aspx 18/08/2023

380   GDP by Country (Worldometer, n.d.) Accessed from: https://www.worldometers.info/gdp/gdp-by-country/#top 18/08/2023

381   Platforms "doing shockingly little" to detect abuse material says eSafety Commissioner (ItNews, 2023) Accessed from: https://www.itnews.com.au/news/platforms-doing-shockingly-little-to-detect-abuse-material-says-esafety-commissioner-590907 18/08/2023

382   Tech layoffs shrink 'trust and safety' teams, raising fears of backsliding efforts to curb online abuse (NBC News, 2022) Accessed from: https://www.nbcnews.com/tech/tech-news/tech-layoffs-hit-trust-safety-teams-raising-fears-backsliding-efforts-rcna69111 18/08/2023

383   Meta Shareholders to Vote on Child Safety Impacts Proposal (Investor Alliance for Human Rights, 2023) Accessed from: <https://investorsforhumanrights.org/news/meta-shareholders-vote-child-safety-impacts-proposal 18/08/2023>

      Collaborative engagement with the social media companies (Principles for Responsible Investment, 2021) Accessed from: https://www.unpri.org/showcasing-leadership/collaborative-engagement-with-the-social-media-companies/8869.article 18/08/202

384   PA Consulting engagement with End Violence, 22/03/2023

385   2023 Funding Round: USD 10 million Global open Call for Proposals (Safe Online, 2023) Accessed from: https://safeonline.global/2023-funding/ 18/08/2023

386   Does a watched pot boil? Time-series analysis of New York State's sex offender registration and notification law. (Sandler, J. et al., 2008) Accessed from: https://psycnet.apa.org/record/2008-18509-003 15/08/2023

387   Motivations to Offend: Hands-On vs. Hands-Off Sex Offenders (Knack, N. et al., 2017) Accessed from: https://www.aafs.org/research/motivations-offend-hands-vs-hands-sex-offenders 13/08/2023

Preventative services for sexual offenders. (Piché, L. et al., 2018) Accessed from: https://psycnet.apa.org/record/2018-00158-004 13/08/2023

388 The VPA Approach (World Health Organization, n.d.) Accessed from: https://www.who.int/groups/violence-prevention-alliance/approach 14/08/2023

389 The VPA Approach (World Health Organization, n.d.) Accessed from: https://www.who.int/groups/violence-prevention-alliance/approach 14/08/2023

390 Primary and Secondary Prevention of Child Sexual Abuse (Knack, N. et al., 2019) Accessed from: https://pubmed.ncbi.nlm.nih.gov/30917709/ 12/06/2023

Using a Public Health Approach to Prevent Child Sexual Abuse by Targeting Those at Risk of Harming Children (Cant, R. et al., 2022) Accessed from: https://link.springer.com/article/10.1007/s42448-022-00128-7 16/08/2023

Stopping Child Sexual Abuse Requires a Shift in Funding Priorities (Hopkins Bloomberg Public Health, 2022) Accessed from: https://magazine.jhsph.edu/2022/stopping-child-sexual-abuse-requires-shift-funding-priorities

391 Safeguarding Childhood: An Assessment of Funding to Prevent and End Child Sexual Abuse, FP Analytics in collaboration with World Vision International (September, 2023) [Embargoed copy]

392 Using a Public Health Approach to Prevent Child Sexual Abuse by Targeting Those at Risk of Harming Children (Cant, R. et al., 2022) Accessed from: https://link.springer.com/article/10.1007/s42448-022-00128-7 16/08/2023

It Is Time to Focus on Prevention: a Scoping Review of Practices Associated with Prevention of Child Sexual Abuse and Australian Policy Implications (Vosz, M. et al., 2022) Accessed from: https://link.springer.com/article/10.1007/s42448-022-00143-8 16/06/2023

The Risk of Online Sexual Abuse (ROSA) Project (The Lucy Faithfull Foundation, 2022) Accessed from: https://www.stopitnow.org.uk/wp-content/uploads/2022/06/ROSA_Faithfull_Paper_June2022.pdf 16/06/2023

393 Our flagship conference shines a spotlight on peer-on-peer sexual abuse as reports increase significantly (National Society for the Prevention of Cruelty to Children, 2022) Accessed from: https://www.nspcc.org.uk/about-us/news-opinion/2022/how-safe/ 21/08/2023

Sexual Violence in the Digital Age: Replicating and Augmenting Harm, Victimhood, and Blame (Killean, R. et al., 2022) Accessed from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4015839 21/08/2023

National Plan of Action to Tackle Online Child Sexual Exploitation and Abuse in Kenya 2022-2026 (Kenyan Government, 2022) Accessed from: https://www.socialprotection.go.ke/wp-content/uploads/2022/06/National-Plan-of-Action-to-Tackle-Online-Child-Sexual-Exploitation-and-Abuse-in-Kenya-2022-2026.pdf

394 Email received from Dr Michael Seto, 12/07/2023

Module 2: Crime Prevention, E4J University Module Series: Crime Prevention and Criminal Justice (United Nations Office on drugs and Crime, 2019) Accessed from: https://www.unodc.org/e4j/en/crime-prevention-criminal-justice/module-2/exercises.html#:~:text=%22%20Tertiary%20crime%20prevention%20deals%20with,prisons%20and%20community%20correctional%20agencies. 21/08/2023

395 School-Based Education Programs for the Prevention of Child Sexual Abuse: A Cochrane Systematic Review and Meta-Analysis (Walsh, K. et al., 2015) Accessed from: https://journals.sagepub.com/doi/10.1177/1049731515619705 15/08/2023

Effectiveness of school-based child sexual abuse intervention among school children in the new millennium era: Systematic review and meta-analyses (Che Yusof, R. et al., 2022) Accessed from: https://pubmed.ncbi.nlm.nih.gov/35937243/#:~:text=Conclusion%3A%20The%20programs%20were%20found,the%20intervention%20and%20control%20groups. 15/08/2023

Action to end child sexual abuse and exploitation: A review of the evidence (United Nations Children's Fund, 2020) Accessed from: https://www.unicef.org/media/89096/file/CSAE-Report-v2.pdf 21/08/2023

396 Action to end child sexual abuse and exploitation: A review of the evidence (United Nations Children's Fund, 2020) Accessed from: https://www.unicef.org/media/89096/file/CSAE-Report-v2.pdf 21/08/2023

Future directions in child sexual abuse prevention: An Australian perspective (McKibbin G. and Humphreys, C., 2020) Accessed from: https://www.sciencedirect.com/science/article/pii/S0145213420300776 21/08/2023

397 Child sexual abuse prevention – the strategies of protective mothers and fathers: a systematic review (Guggisberg, M. et al., 2021) Accessed from: https://www.tandfonline.com/doi/abs/10.1080/13229400.2021.2009366 21/08/2023

398 A Randomized Controlled Clinical Trial of the Strength at Home Men's Program for Partner Violence in Military Veterans (Taft, C. et al., 2016) Accessed from: https://pubmed.ncbi.nlm.nih.gov/26613288/ 21/08/2023

399 The Effects of the Family Bereavement Program to Reduce Suicide Ideation and/or Attempts of Parentally Bereaved Children Six and Fifteen Years Later (Sandler, I. et al., 2016) accessed from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6108320/#:~:text=For%20every%20100%20parentally%20bereaved,included%20both%20ideation%20and%20attempts. 21/08/2023

400 A public health approach to tackling child sexual abuse: Research on Stop it Now! UK and Ireland and Stop it Now! Netherlands (Stop it Now!, 2014) Accessed from: https://www.stopitnow.org.uk/wp-content/uploads/2022/02/stop_it_now_evaluation_summary.pdf 21/08/2023

401 Can pedophiles be reached for primary prevention of child sexual abuse? First results of the Berlin Prevention Project Dunkelfeld (PPD) (Beier, K. et al., 2009) Accessed from: https://www.tandfonline.com/doi/abs/10.1080/14789940903174188 21/08/2023

402 It Is Time to Focus on Prevention: a Scoping Review of Practices Associated with Prevention of Child Sexual Abuse and Australian Policy Implications (Vosz, M. et al., 2022) Accessed from: <https://link.springer.com/article/10.1007/s42448-022-00143-8 16/06/2023>

The Risk of Online Sexual Abuse (ROSA) Project (The Lucy Faithfull Foundation, 2022) Accessed from: https://www.stopitnow.org.uk/wp-content/uploads/2022/06/ROSA_Faithfull_Paper_June2022.pdf 16/06/2023

Using a Public Health Approach to Prevent Child Sexual Abuse by Targeting Those at Risk of Harming Children (Cant, R. et al., 2022) Accessed from: https://link.springer.com/article/10.1007/s42448-022-00128-7 16/08/2023

403 Number of people seeking support about online child sexual abuse triples since the first lockdown (The Lucy Faithfull Foundation, 2023) Accessed from: https://www.lucyfaithfull.org.uk/featured-news/number-of-people-seeking-support-about-online-child-sexual-abuse-triples-since-the-first-lockdown.htm 21/08/2023

404 https://www.sciencedirect.com/science/article/pii/S2666353820300321

405 Obstacles to Help-Seeking for Sexual Offenders: Implications for Prevention of Sexual Abuse (Levenson, J. et al., 2017) Accessed from: https://pubmed.ncbi.nlm.nih.gov/28350259/ 15/08/2023

Understanding Men's Self-Reported Sexual Interest in Children (Wurtele, S. et al., 2018) Accessed from: https://pubmed.ncbi.nlm.nih.gov/29667036/ 15/08/2023

406 Online Child Pornography Offenders are Different: A Meta-analysis of the Characteristics of Online and Offline Sex Offenders Against Children (Babchishin, K. et al., 2014) Accessed from: https://link.springer.com/article/10.1007/s10508-014-0270-x 16/06/2023

Assessment and Treatment of Distorted Schemas in Sexual Offenders (Beech, A. et al., 2012) Accessed from: https://journals.sagepub.com/doi/10.1177/1524838012463970 16/06/2023

Pathways and Prevention for Indecent Images of Children Offending: A Qualitative Study (Bailey, A. et al., 2022) Accessed from: https://sotrap.psychopen.eu/index.php/sotrap/article/view/6657 12/06/2023

Early maladaptive schemas in convicted sexual offenders: preliminary findings (Carvalho, J. and Nobre, P., 2014) Accessed from: https://pubmed.ncbi.nlm.nih.gov/24268826/ 16/08/2023

407   PA Consulting engagement with Talking For Change, 06/03/2023

408   Preventing Sexual Abuse: Perspectives of Minor-Attracted Persons About Seeking Help (Levenson, J. and Grady, M., 2019) Accessed from: https://pubmed.ncbi.nlm.nih.gov/30183557/ 15/08/2023

The German Dunkelfeld project: a pilot study to prevent child sexual abuse and the use of child abusive images (Beier, K. et al., 2015) Accessed from: https://pubmed.ncbi.nlm.nih.gov/25471337/ 15/08/2023

409   Preventing Child Sexual Abuse-The Prevention Project Dunkelfeld (Beier, K., 2018) Accessed from: https://pubmed.ncbi.nlm.nih.gov/29861360/ 15/08/2023

410   Child sexual abuse as a global challenge (Beier, M. et al., 2021) Accessed from: https://psychology.org.au/for-members/publications/inpsych/2021/august-special-issue-3/child-sexual-abuse-as-a-global-challenge 13/08/2023

411   Using a Public Health Approach to Prevent Child Sexual Abuse by Targeting Those at Risk of Harming Children (Cant, R. et al., 2022) Accessed from: <https://link.springer.com/article/10.1007/s42448-022-00128-7 16/08/2023>

412   Out of the Shadows Index 2022 (Economist Impact, 2022) Accessed from: https://cdn.outoftheshadows.global/uploads/documents/Out-of-the-Shadows-Index-2022-Global-Report.pdf 16/08/2023

413   Preventing and tackling child sexual exploitation and abuse – A Model National Response: Maturity Model (WeProtect Global Alliance, 2023) Accessed from: https://www.weprotect.org/wp-content/plugins/pdfjs-viewer-shortcode/pdfjs/web/viewer.php?file=https://www.weprotect.org/wp-content/uploads/MNR-Maturity-Model-Final_ENG.pdf&attachment_id=374366&dButton=true&pButton=true&oButton=false&sButton=true#zoom=aut 21/08/2023

414   Framing the future: How the Model National Response framework is supporting national efforts to end child sexual exploitation and abuse online (WeProtect Global Alliance and UNICEF, 2022). Accessed from: https://www.weprotect.org/wp-content/plugins/pdfjs-viewer-shortcode/pdfjs/web/viewer.php?file=https://www.weprotect.org/wp-content/uploads/Framing-the-Future-Executive-Summary_FINAL.pdf&attachment_id=304061&dButton=true&pButton=false&oButton=false&sButto 18/08/2023

415   Multisectoral Response and Capacity Assessments (International Centre for Missing and Exploited Children, n.d.) Accessed from: https://www.icmec.org/assessments/ 21/08/2023

416   Framing the future: How the Model National Response framework is supporting national efforts to end child sexual exploitation and abuse online (WeProtect Global Alliance and UNICEF, 2022). Accessed from: https://www.weprotect.org/wp-content/plugins/pdfjs-viewer-shortcode/pdfjs/web/viewer.php?file=https://www.weprotect.org/wp-content/uploads/Framing-the-Future-Executive-Summary_FINAL.pdf&attachment_id=304061&dButton=true&pButton=false&oButton=false&sButto 18/08/2023

417   United States Senate Committee on the Judiciary "Protecting our Children Online" (National Centre for Missing and Exploited Children, 2023) Accessed from: https://www.missingkids.org/content/dam/missingkids/pdfs/Senate%20Judiciary%20Hearing%20-%20NCMEC%20Written%20Testimony%20(2-14-23)%20(final).pdf 17/08/2023

418   Tech layoffs ravage the teams that fight online misinformation and hate speech (CNBC, 2023) Accessed from: https://www.cnbc.com/2023/05/26/tech-companies-are-laying-off-their-ethics-and-safety-teams-.html 21/08/2023

419   The Safe Assessments: An Inaugural Evaluation of Trust & Safety Best Practices (Digital Trust & Safety Partnership, 2022) Accessed from: https://dtsp.wpengine.com/wp-content/uploads/2022/07/DTSP_Report_Safe_Assessments.pdf 21/08/2023

420   Report of the European Digital Media Observatory's Working Group on Platform-to-researcher data Access (European Digital Media Observatory, 2022) Accessed from: https://edmo.eu/wp-content/uploads/2022/02/Report-of-the-European-Digital-Media-Observatorys-Working-Group-on-Platform-to-Researcher-Data-Access-2022.pdf 21/08/2023

421   Measuring technology-facilitated gender-based violence: A discussion paper (Vaughan, C. et al., 2023) Accessed from: https://rest.neptune-prod.its.unimelb.edu.au/server/api/core/bitstreams/6e389a30-7187-414a-97d7-c748a4e5cfba/content 21/08/2023

422   Global Standard Project - Schema Launch (INHOPE, 2023) Accessed from: https://inhope.org/EN/articles/global-standard-project-ontology-launch 21/08/2023

423   Safe digital futures for children: Data for Change (End Violence, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2023-04/Data%20for%20Change%20Workshop%20Briefing%20Note.pdf 21/08/2023

424   New opportunity to secure digital futures for children - Apply to conduct data landscape analysis (End Violence, 2023) Accessed from: https://www.end-violence.org/articles/new-opportunity-secure-digital-futures-children-apply-conduct-data-landscape-analysis 21/08/2023

425   Unsung heroes: Moderators on the front lines of internet safety (Teleperformance, 2022) Accessed from: https://www.technologyreview.com/2022/09/12/1059168/unsung-heroes-moderators-on-the-front-lines-of-internet-safety/#:~:text=While%20the%20content%20moderator's%20role,are%20more%20vulnerable%2C%20like%20children. 21/08/2023

426   The Psychological Well-Being of Content Moderators: The Emotional Labor of Commercial Moderation and Avenues for Improving Support (Steiger, M. et al., 2021) Accessed from: https://crowd.cs.vt.edu/wp-content/uploads/2021/02/CHI21_final__The_Psychological_Well_Being_of_Content_Moderators-2.pdf 21/08/2023

427   Exclusive: OpenAI Used Kenyan Workers on Less Than $2 Per Hour to Make ChatGPT Less Toxic (Time, 2023) Accessed from: https://time.com/6247678/openai-chatgpt-kenya-workers/ 21/08/2023

428   Average reading speed by pages (Speechify, 2022) Accessed from: https://speechify.com/blog/average-reading-speed-pages/?landing_url=https%3A%2F%2Fspeechify.com%2Fblog%2Faverage-reading-speed-pages%2F 21/08/2023

429   Firm regrets taking Facebook moderation work (BBC, 2023) Accessed from: https://www.bbc.co.uk/news/technology-66465231 21/08/2023

430   Invisible risks: Combatting secondary trauma to safeguard children. An investigation into the impact of working with child sexual abuse material in content moderators (Martellozzo, E. et al., 2023) Findings presented at INHOPE 'Invisible Risks: Exploring the work of content moderation' webinar on 28/03/2023

431   What Is Vicarious Trauma? (PsychCentral, 2022) accessed from: https://psychcentral.com/health/vicarious-trauma 21/08/2023

432   How we can protect the protectors: learning from police officers and staff involved in child sexual exploitation and abuse investigations (Redmond, T. et al., 2023) Accessed from: <https://www.frontiersin.org/articles/10.3389/fpsyg.2023.1152446/full 05/06/2023>

Invisible Risks: content moderators and the trauma of child sexual abuse materials (End Violence, 2022) Accessed from: https://www.end-violence.org/articles/invisible-risks-content-moderators-and-trauma-child-sexual-abuse-materials#:~:text=Content%20moderation%20is%20not%20an,well%2Dbeing%20of%20human%20moderators. 05/06/2023

Invisible risks: Combatting secondary trauma to safeguard children. An investigation into the impact of working with child sexual abuse material in content moderators (Martellozzo, E. et al., 2023) Findings presented at INHOPE 'Invisible Risks: Exploring the work of content moderation' webinar on 28/03/2023

433   Email received from OnlyFans, 11/07/2023

434   ndia Population (LIVE) (Worldometer, 2023) Accessed from: https://www.worldometers.info/world-population/india-population/#:~:text=India%202023%20population%20is%20estimated,1%2C244%20people%20per%20mi2). 26/07/2023

435   Philippines Population (LIVE) (Worldometer, 2023) Accessed from:https://www.worldometers.info/world-population/philippines-population/#:~:text=the%20Philippines%202023%20population%20is,(and%20dependencies)%20by%20population. 26/07/2023

436   Bangladesh Population (LIVE) (Worldometer, 2023) Accessed from:https://www.worldometers.info/world-population/bangladesh-population/#:~:text=Bangladesh%202023%20population%20is%20estimated,3%2C441%20people%20per%20mi2). 26/07/2023

437   Pakistan Population (LIVE) (Worldometer, 2023) Accessed from: https://www.worldometers.info/world-population/pakistan-population/#:~:text=Pakistan%202023%20population%20is%20estimated,808%20people%20per%20mi2). 26/07/2023

438   Indonesia Population (LIVE) (Worldometer, 2023) Accessed from: https://www.worldometers.info/world-population/indonesia-population/#:~:text=Indonesia%202023%20population%20is%20estimated,397%20people%20per%20mi2). 26/07/2023

439   Annual report 2022 (INHOPE, 2023) Accessed from: https://inhope.org/media/pages/articles/annual-reports/14832daa35-1687272590/inhope-annual-report-2022.pdf 15/08/2023

440   CyberTipline 2022 Report (National Center for Missing and Exploited Children, 2023) Accessed from: https://www.missingkids.org/cybertiplinedata 16/08/2023

441   2022 CyberTipline Reports by Country (National Center for Missing and Exploited Children, 2023) Accessed from: https://www.missingkids.org/content/dam/missingkids/pdfs/2022-reports-by-country.pdf 21/08/2023

442   Disrupting Harm in Indonesia: Evidence on online child sexual exploitation and abuse (ECPAT, INTERPOL, and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-11/DH_Indonesia_ONLINE_final%20rev%2007 1022_11.pdf 02/08/2023

443   Disrupting Harm in the Phillipines: Evidence on online child sexual exploitation and abuse. (ECPAT, INTERPOL and UNICEF, 2022) Accessed from: https://www.end-violence.org/sites/default/files/2022-12/DH_Philippines_ONLINE_FINAL%20251122.pdf 16/08/2023

        Online child sexual exploitation and abuse (OCSEA) (CivilsDaily, 2023) Accessed from: https://www.civilsdaily.com/news/tackling-online-child-sexual-abuse/#:~:text=Definition%3A%20Online%20child%20sexual%20abuse,meeting%20the%20abuser%20in%2Dperson. 21/08/2023

444   Is Pakistan failing to tackle online child sexual abuse? (TheNews, 2023) Accessed from: https://www.thenews.com.pk/tns/detail/1037128-is-pakistan-failing-to-tackle-online 21/08/2023

445   PA Consulting engagement with Thorn, 05/07/2023

446   Using GPT-4 for content moderation (OpenAI, 2023) Accessed from: https://openai.com/blog/using-gpt-4-for-content-moderation 21/08/2023

447   TikTok removed 113 million videos in three months (The Verge, 2022) Accessed from: https://www.theverge.com/2022/9/28/23376640/tiktok-transparency-report-moderation-113-million-videos 21/08/2023

448   Digital key workers: Whose job is it to support them? Challenges faced by content moderators during the COVID-19 pandemic (Martellozzo, E. et al., 2023) [Manuscript submitted for publication]

        Hash Matching Will Save Content Moderation, Faster Than AI Currently Can On Its Own (Videntifier, 2023) Accessed from: https://www.videntifier.com/post/ai-and-hash-matching#:~:text=These%20ideas%20in%20mind%2C%20this,handle%20unknown%2Fnewly%20reported%20content. 21/08/2023

449   Our 2022 Impact (National Center for Missing and Exploited Children, n.d.) Accessed from: https://www.missingkids.org/ourwork/impact 21/08/2023

450   The AI for Safer Children Global Hub (United Nations Interregional Crime and Justice Research Institute, n.d.) Accessed from: https://unicri.it/topic/AI-for-Safer-Children-Global-Hub 21/08/2023

451   Email received from Ministry of Interior, United Arab Emirates, 26/07/2023

452   Framing the future: How the Model National Response framework is supporting national efforts to end child sexual exploitation and abuse online (WeProtect Global Alliance and UNICEF, 2022). Accessed from: https://www.weprotect.org/wp-content/plugins/pdfjs-viewer-shortcode/pdfjs/web/viewer.php?file=https://www.weprotect.org/wp-content/uploads/Framing-the-Future-Executive-Summary_FINAL.pdf&attachment_id=304061&dButton=true&pButton=false&oButton=false&sButto 18/08/2023

453   Countries failing to prevent violence against children, agencies warn (World Health Organization, 2020) Accessed from: https://www.who.int/news/item/18-06-2020-countries-failing-to-prevent-violence-against-children-agencies-warn 21/08/2023

454   Shortfalls in Social Spending in Low- and Middle-income Countries: COVID-19 and Shrinking Finance for Social Spending (UNICEF Office of Research – Innocenti, 2022) Accessed from: https://www.unicef-irc.org/publications/pdf/COVID-19-and-Shrinking-Finance-for-Social-Spending.pdf 21/08/2023

455   Child sexual exploitation and abuse online: Survivors' Perspectives (ECPAT International and WeProtect Global Alliance, 2022) Accessed from: https://ecpat.org/wp-content/uploads/2022/01/05-01-2022_Project-Report_EN_FINAL.pdf 16/08/2023

456   About Child Abuse (National Children's Advocacy Center, n.d.) Accessed from: https://www.nationalcac.org/about-child-abuse/ 21/08/2023

457   Barnahaus: A Scandinavian word for "children's house" (Barnahuas, n.d.) Accessed from: https://www.barnahus.eu/en/about-barnahus/#:~:text=The%20Icelandic%20Barnahus%20innovated%20on%20the%20US%20approach.,audio-visual%20recordings%20of%20forensic%20interviews%20may%20be%20used. 21/08/2023

458   INTERPOL and UNICEF sign cooperation agreement to address child sexual exploitation and abuse (UNICEF, 2023) Accessed from: https://www.unicef.org/press-releases/interpol-and-unicef-sign-cooperation-agreement-address-child-sexual-exploitation-and 21/08/2023

459   Brave Movement (Brave Movement, n.d.) Accessed from: https://www.bravemovement.org/ 21/08/2023

460   Welcome to the Marie Collins Foundation (Marie Collins Foundation, n.d.) Accessed from: https://www.mariecollinsfoundation.org.uk/ 21/08/2023

461   About us. (Chayn, n.d.) Accessed from: https://www.chayn.co/about 21/08/2023

462   Digital Trust & Safety Partnership Best Practices Framework (Digital Trust & Safety Partnership, n.d.) Accessed from: https://dtspartnership.org/best-practices/ 21/08/2023

463   DTSP Safe Assessments Report (Digital Trust & Safety Partnership, 2022) Accessed from: https://dtspartnership.org/dtsp-safe-assessments-report/ 21/08/2023

464   TRUST: Voluntary Framework for Industry Transparency (Tech Coalition, 2022) Accessed from: https://www.technologycoalition.org/knowledge-hub/trust-voluntary-framework-for-industry-transparency 21/08/2023

465   Voluntary Principles to Counter Online Child Sexual Exploitation and Abuse (WeProtect Global Alliance, 2020) Accessed from: https://www.weprotect.org/library/voluntary-principles-to-counter-online-child-sexual-exploitation-and-abuse/ 21/08/2023

466   PA Consulting engagement with Ministry of Interior, United Arab Emirates, 13/04/2023

467   18 U.S. Code § 2258A - Reporting requirements of providers (Cornell Law School, 2018) Accessed from: https://www.law.cornell.edu/uscode/text/18/2258A 21/08/2023

468   International Child Sexual Exploitation database (INTERPOL, n.d.) Accessed from: https://www.interpol.int/en/Crimes/Crimes-against-children/International-Child-Sexual-Exploitation-database 21/08/2023

469   Measurement of Age Assurance Technologies: A research report for the information commissioner's office (Information Commissioner's Office, 2022) Accessed from: https://ico.org.uk/media/about-the-ico/documents/4021822/measurement-of-age-assurance-technologies.pdf 21/08/2023

470   Category A child sexual abuse material of a 'self-generated' nature – an IWF snapshot study (Internet Watch Foundation, 2022) Accessed from: https://www.iwf.org.uk/about-us/why-we-exist/our-research/category-a-child-sexual-abuse-material-of-a-self-generated-nature-an-iwf-snapshot-study/#:~:text=Category%20A%20is%20defined%20as,within%20categories%20A%20or%20B. 21/08/2023

471   Category A child sexual abuse material of a 'self-generated' nature – an IWF snapshot study (Internet Watch Foundation, 2022) Accessed from: https://www.iwf.org.uk/about-us/why-we-exist/our-research/category-a-child-sexual-abuse-material-of-a-self-generated-nature-an-iwf-snapshot-study/#:~:text=Category%20A%20is%20defined%20as,within%20categories%20A%20or%20B. 21/08/2023

472   Category A child sexual abuse material of a 'self-generated' nature – an IWF snapshot study (Internet Watch Foundation, 2022) Accessed from: https://www.iwf.org.uk/about-us/why-we-exist/our-research/category-a-child-sexual-abuse-material-of-a-self-generated-nature-an-iwf-snapshot-study/#:~:text=Category%20A%20is%20defined%20as,within%20categories%20A%20or%20B. 21/08/2023

473   Cisgender (Merriam-Webster, n.d.) Accessed from: https://www.merriam-webster.com/dictionary/cisgender 21/08/2023

474   What Is the Dark Web and Should You Access It? (Investopedia, 2022) Accessed from: https://www.investopedia.com/terms/d/dark-web.asp 21/08/2023

475   Election Security Spotlight – The Surface Web, Dark Web, and Deep Web (Center for Internet Security, n.d.) Accessed from: https://www.cisecurity.org/insights/spotlight/cybersecurity-spotlight-the-surface-web-dark-web-and-deep-web 21/08/2023

476   Image Hash List (Internet Watch Foundation, n.d.) Accessed from: https://www.iwf.org.uk/our-technology/our-services/image-hash-list/#:~:text=The%20IWF%20Hash%20List%20contains,has%20its%20own%20individual%20hash. 21/08/2023

477   Overview of Perceptual Hashing Technology (Ofcom, 2022) Accessed from: <https://www.ofcom.org.uk/__data/assets/pdf_file/0036/247977/Perceptual-hashing-technology.pdf 21/08/2023>

478   Child sexual abuse images and youth produced images: The varieties of Image-based Sexual Exploitation and Abuse of Children (Finkelhor D. et al., 2023) Accessed from: https://www.sciencedirect.com/science/article/abs/pii/S0145213423002508 21/08/2023

479   The Annual Report 2022 (Internet Watch Foundation, 2023) Accessed from: https://annualreport2022.iwf.org.uk/wp-content/uploads/2023/04/IWF-Annual-Report-2022_FINAL.pdf 17/08/2023

480   Involuntary Celibates and Forensic Psychiatry (Tastenhoye, C. et al., 2022) Accessed from: https://jaapl.org/content/early/2022/07/26/JAAPL.210136-21 21/08/2023

481   What is intersectionality (Center for Intersectional Justice, n.d.) Accessed from: https://www.intersectionaljustice.org/what-is-intersectionality 21/08/2023

482   Turning the tide against online child sexual abuse (The Police Foundation, 2022) Accessed from: https://www.police-foundation.org.uk/wp-content/uploads/2022/07/turning_the_tide_FINAL-.pdf 17/08/2023

483   Phishing attacks: defending your organisation (National Cyber Security Centre, n.d.) Accessed from: https://www.ncsc.gov.uk/guidance/phishing 21/08/2023

484   Terminology Guidelines for the Protection of Children from Sexual Exploitation and Sexual Abuse (ECPAT, 2016) Accessed from: https://www.ohchr.org/Documents/Issues/Children/SR/TerminologyGuidelines_en.pdf 25/05/2021

485   Election Security Spotlight – The Surface Web, Dark Web, and Deep Web (Center for Internet Security, n.d.) Accessed from: <https://www.cisecurity.org/insights/spotlight/cybersecurity-spotlight-the-surface-web-dark-web-and-deep-web 21/08/2023>

486   Go viral (Collins Dictionary, n.d.) Accessed from: https://www.collinsdictionary.com/dictionary/english/go-viral#:~:text=If%20a%20video%2C%20image%2C%20or,full%20dictionary%20entry%20for%20viral 21/08/2023

487   Watermarking photography: how to protect your photos. (Adobe, n.d.) accessed from: https://www.adobe.com/uk/creativecloud/photography/discover/watermarking-photography.html 21/08/2023

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