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Abstract | In recent years, there has been growing evidence of live streaming technologies being used to facilitate child sexual abuse (CSA). This study examined a sample of financial transactions made by a cohort of Australians who provided funds to known facilitators of CSA live streaming in the Philippines.

The results showed that these individuals were likely to be aged in their 50s or 60s and the majority (55%) had no criminal record. Ten percent had a sexual offence recorded in their criminal history.

Most CSA live streaming transactions involved a small proportion of individuals. Just three percent accounted for half of all transactions. In contrast, 25 percent of individuals made just three percent of transactions.

As individuals purchased more CSA live streaming transactions, the median amounts they paid increased and the transactions became more frequent. These two variables were significantly correlated. This may reflect an escalation in the frequency and severity of offending.

Australians who view live streaming of child sexual abuse: An analysis of financial transactions

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Introduction

In 2016, officers from Queensland Police Service's Taskforce Argos conducted a raid at the home of a 58-year-old man. The Campbelltown District Court later found that the man had been paying a woman in the Philippines to engage her two young daughters in sexual abuse, which he watched and directed live via the video communication platform Skype. The children were just two and seven years old when the abuse began, and it continued for almost five years (Cormack 2019b). The Australian man pleaded guilty to a number of offences including procuring a child for sex and engaging in sexual activity with a child under 16 outside Australia (Cormack 2019a).

Since the offender's sentencing in May 2019 the Australian Federal Police (AFP) revealed they have seen several other cases where Australians allegedly paid for and directed the sexual abuse of children abroad as they watched from their homes using popular live streaming platforms (Cormack 2019b). According to Europol and the Australian Transaction Reports and Analysis Centre (AUSTRAC), live streaming of child sexual abuse (CSA) is largely financially driven (AUSTRAC 2019; Europol 2019). However, little is known about the patterns in payments for CSA live streaming.

Background

What we know about live streaming of child sexual abuse

Live streaming of CSA is also known as 'webcam child sex tourism/abuse' (Masri 2015; Puffer et al. 2014; Terre des Hommes 2014), 'cybersex trafficking' (International Justice Mission 2019) and 'live distance child abuse' (AUSTRAC 2019; EFC 2015). Media articles reported live streaming of CSA occurring in the Philippines as early as 2008 (de Leon 2013). Given live video streaming platforms (and adult webcam sex shows) have been available to the public since the early 2000s, it was likely occurring even earlier than this.

Yet empirical research on the characteristics of CSA live streaming and those who engage in it is scarce. Law enforcement reports and research by non-government organisations (NGOs), investigative journalists and academics have shed some light on the issue (see the annotated bibliography of Maxim et al. 2016). The Internet Watch Foundation (IWF) conducted an international analysis of over 2,000 image and video captures from live streamed sexual abuse of children from August to October 2017 (IWF 2018). It used a snowball sampling technique that began with seed URLs for investigation. The IWF retrieved the seed URLs from its historic dataset and via search engines, entering keywords identified via the IWF Hotline to identify child sexual abuse material (CSAM). The IWF reviewed seed URLs manually to identify material that matched the study criteria. Analysis revealed that 98 percent of victims in the sample were aged 13 years or younger, and 28 percent were aged 10 years or younger. Of all the captures, 40 percent were classified by the IWF as containing serious sexual abuse, including the rape and torture of children (IWF 2018).

CSA live streaming is distinct from other child sexual abuse material shared on the internet due to the 'real time' element. Offenders often request how they want the child to be sexually abused either before or during the live streaming session (Açar 2017; ECPAT International 2017; Europol 2019; GACSAO 2016). According to Puffer et al. (2014), the impact on the victim is similar to childhood sexual trauma which includes traumatic sexualisation, betrayal and powerlessness. A study involving interviews with investigators of CSAM cases cited the challenges this crime poses for law enforcement, as live streaming leaves no visual evidence of the abuse apart from session logs and data usage trails. Police often rely on money transfers and call logs for evidence in an investigation (ECPAT International 2018). The legal and technological barriers to monitoring CSA live streaming in real time have also been noted (Açar 2017). In cases where the live streaming session is recorded and shared online, it contributes to the growth of child sexual abuse material available on the internet (Europol 2019).

While this crime occurs in multiple countries (Europol 2019), the Philippines has been identified by global law enforcement agencies, NGOs and academics as the 'hub' from which CSA live streaming emanates (AUSTRAC 2019; ECPAT International 2017; EFC 2015; Europol 2019; Puffer et al. 2014). NGOs attribute this to the poverty, English language proficiency, well-established remittance services and strong internet coverage in the Philippines (Batha 2016; ECPAT International 2017; Puffer et al. 2014).

Transactions for live streaming of child sexual abuse

In November 2019, CSA live streaming gained heightened attention in Australia when the financial intelligence agency AUSTRAC took legal action against Westpac Bank in respect of over 23 million alleged breaches of the *Anti-Money Laundering and Counter-Terrorism Financing Act 2006* (Cth). Westpac was accused of failing to monitor $11b worth of suspicious transactions, including those to the Philippines suspected to be for child sexual exploitation (Butler 2019).

A recent AUSTRAC intelligence report identified indicators of transactions involving CSA, including CSA live streaming. The indicators came from an intelligence-based analysis of investigations into Australians who made payments to known facilitators of CSA abroad (usually an adult who had access to the child victim). Indicators identified were: small transactions between $15 and $500, no identifiable pattern in transactions, no work or family links to countries to which a suspect was sending funds, travel to high-risk destinations, use of innocent payment descriptions (including 'accommodation', 'school', 'uniform', 'medical bills') and payments for access to a virtual private network (VPN), other encryption software and live streaming software (AUSTRAC 2019). It is important to note these are intelligence-based indicators flagged for law enforcement agencies to conduct further investigation.

Unlike the majority of offenders who share CSAM on the internet (Europol 2019), 'facilitators' of CSA live streaming almost always receive payment (AUSTRAC 2019; EFC 2015; Europol 2019; Masri 2015). Research suggests the cost of viewing CSA live streaming in the Philippines is often low (Masri 2015), due to the poverty of those who provide the services (see also Maxim et al. 2016, citing Wight 2016, who reported parents allowing access to young girls for €2 per day). The European Financial Coalition against Commercial Sexual Exploitation of Children Online (EFC) consulted with key NGOs on the issue. One NGO suggested payment amounts for a CSA live streaming session usually ranged from 500 to 2,000 Philippine pesos (approximately $14–$57 Australian; EFC 2015). This low cost of CSA live streaming appeals to sexual predators in developed countries wishing to avoid the risk of physically sexually abusing children. On the other hand, Europol flagged CSA live streaming as a potential risk factor for travelling to sexually offend (Europol 2016), as some consumers seek to abuse a child viewed in a live streaming session in person. However, no empirical research has investigated this.

How prevalent is live streaming of child sexual abuse and is it increasing?

While there are no available data on the prevalence of CSA live streaming, anecdotal evidence suggests global demand is high and that the crime is growing. In 2013, four researchers from Terre des Hommes Netherlands posed as pre-pubescent Filipino girls on 19 different online chat forums. Over a 10-week period, 20,172 people from 71 different countries asked the researchers posing as children to perform a webcam sex show. In the majority of interactions, only text communications occurred, but for a small proportion the researchers used a custom-designed and programmed computer model named 'Sweetie' to retrieve identifying information from predators (Terre des Hommes 2014).

In 2016, the Global Alliance against Child Sexual Abuse Online (GACSAO) administered a questionnaire to 33 member countries asking about online child exploitation. Respondents from 16 out of 19 countries who had investigated CSA live streaming stated that the number of cases had increased over the last five years (GACSAO 2016).

Similarly, in 2019 the Virtual Global Taskforce (VGT) undertook a global survey of its members and partner agencies, which include law enforcement, NGOs and industry partners. Three out of nine law enforcement members and two out of three other members noted that CSA live streaming had increased in the last three years (VGT 2019). The spread of CSA live streaming has been attributed largely to the increase in high-speed internet and availability of affordable phones and other devices in developing countries (ECPAT International 2017; VGT 2019; WeProtect Global Alliance 2019).

Escalation of offending

While CSA live streaming is always harmful to victims, no research has explored whether the offending of consumers escalates over time in terms of the seriousness of the abuse (eg from viewing the children nude to requesting penetration/rape) or the age or number of victims. Some studies have focused on escalation of offending among consumers of other CSAM online. Quayle and Taylor (2002) conducted interviews with 13 males convicted of child sexual abuse material offences, finding the majority reported escalating from less extreme to more extreme forms of CSAM. Respondents' perceptions of this escalation included viewing images of younger children, viewing more serious forms of abuse and moving from 'legal' to 'illegal' material. One respondent described it as a 'downward trend' (Quayle & Taylor 2002: 343).

Davis, Lennings and Green (2018) analysed the categories of child sexual abuse material found in possession of a sample of convicted CSAM offenders. Although it was not possible to determine the order in which the images were accessed, they found that some offenders possessed material from both the lower and higher levels of the Combatting Paedophile Information Networks in Europe (COPINE) Scale (in which higher levels include rape and torture; Quayle 2008), suggesting a possible progression to more harmful material.

Given the reported growth in CSA live streaming cases, it is appropriate to study this phenomenon more closely. One promising methodology involves analysing the payments consumers make for CSA live streaming sessions. Understanding of transaction patterns can then be used to deter and disrupt sessions and, potentially, to assist in law enforcement action.

Research questions

Given that little systematic research has examined the nature and extent of CSA live stream offending, and none has examined Australian offenders, this research used existing Australian law enforcement intelligence datasets to examine two primary research questions:

- What is the profile of Australian CSA live streaming offenders, including demographic characteristics and criminal history?
- What is the pattern of financial transactions by Australian offenders who view CSA live streaming? Specifically, what is the frequency and average value of transactions, what is the relationship between criminal history and number of transactions made, and do these transactions change over time in a way that indicates escalation of offending?

To answer these questions, the research drew on the resources of three government agencies: the Australian Federal Police, the Australian Criminal Intelligence Commission and AUSTRAC.
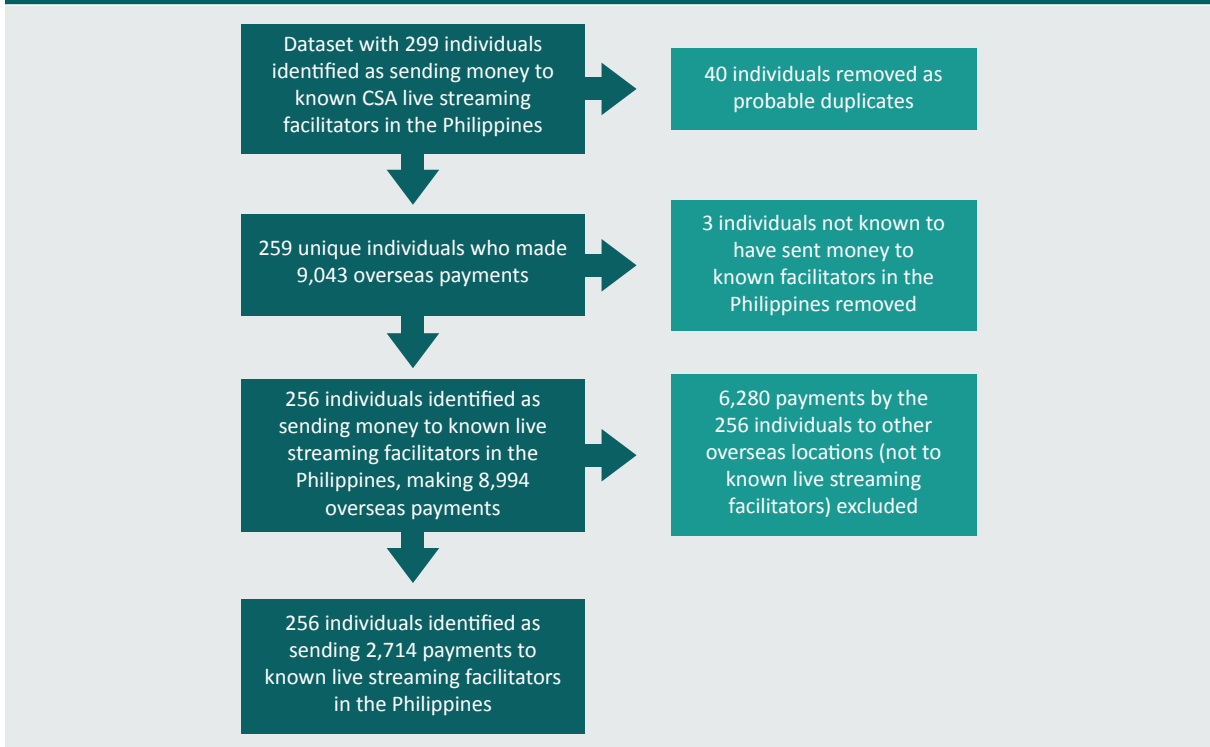
Method

Data sources

AUSTRAC collects and stores financial transaction data on individuals and businesses in Australia to identify financial crime. This includes transaction amounts and dates, receiver details (including country), payment type, payment provider details and demographic data of the payer and risk-related information on suspicious transactions. The Australian Criminal Intelligence Commission (ACIC) collects and stores criminal history information on individuals in Australia via the National Police Reference System (NPRS), among other types of data used by law enforcement. Information stored in the NPRS includes all prior charges and convictions, including the precise dates of offending, as well as demographic data on suspects and offenders (ACIC 2019). These data sources have been compiled for intelligence purposes and are subject to limitations as to the accuracy and verifiability of the data they contain.

In 2018, the Philippine National Police and the Philippine National Bureau of Investigation provided the AFP with a list of 118 persons arrested in the Philippines for facilitating the sexual exploitation of children. This sample is not representative of all individuals in this country or elsewhere who might have links to CSA. The AFP provided the names of these facilitators to AUSTRAC, who analysed AUSTRAC holdings. AUSTRAC identified 299 Australian-based persons who had sent funds to the 118 known facilitators of child sexual exploitation in the Philippines. At the time of identification, some of the 299 Australians had already been arrested for child sexual offences including paying to watch children sexually abused via live stream from the Philippines. Others are currently under investigation. As such, not all individuals in the study were convicted of or charged with CSA live streaming offences, although all were under investigation at the time of analysis.

Data extraction and matching

AUSTRAC provided selected transaction data on the 299 Australian-based individuals to the Australian Institute of Criminology for the purpose of the current study. AUSTRAC first sent the transaction data to the ACIC, which linked the data with criminal history data in the NPRS using a names and dates of birth algorithm. Any 'weak' matches were reviewed manually and a match decision was made. Once linked, the ACIC removed all identifying information (such as names/addresses and other potentially identifying information) of all suspects from the AUSTRAC and NPRS data before sending it to the Australian Institute of Criminology for analysis. A number of data cleaning routines were performed, and the final number of individuals included was reduced to 256 after removing duplicates or missing information. The remaining 256 individuals sent 2,714 payments to CSA live streaming facilitators in the Philippines (see Figure 1).

Figure 1: Sample development

Dataset with 299 individuals identified as sending money to known CSA live streaming facilitators in the Philippines

40 individuals removed as probable duplicates

259 unique individuals who made 9,043 overseas payments

3 individuals not known to have sent money to known facilitators in the Philippines removed

256 individuals identified as sending money to known live streaming facilitators in the Philippines, making 8,994 overseas payments

6,280 payments by the 256 individuals to other overseas locations (not to known live streaming facilitators) excluded

256 individuals identified as sending 2,714 payments to known live streaming facilitators in the Philippines

Source: Philippines CSA live stream financial transaction dataset

Limitations

There are a number of limitations with this methodology that need to be considered. First, and most fundamentally, we cannot be sure every transaction was for CSA live streaming. For example, it is possible that some transactions were for contact sexual offending against children (if offenders travelled to the Philippines) or for live adult webcam shows not involving children. Payments may also have been made for other non-sexual purposes. However, consultations with the AFP suggest it is unlikely the transactions were for contact sexual offending given such purchases are usually made with cash in the destination country. Also, adult live webcam show workers would not normally require a facilitator to receive payments, as they can do this on their own. Further, the offences the facilitators in the Philippines were arrested for on other occasions suggest they were making money from the sexual exploitation of children, sometimes their own children. Therefore, it is unlikely that the Australian-based individuals in the current study were sending money to the Philippines-based individuals for reasons other than child exploitation.

Thus, most of the payments the facilitators received from the 256 Australian-based persons were likely for CSA live streaming. Even if a small number of the 2,714 transactions were not for CSA live streaming, we can be confident that overall patterns in the data reflect actual CSA live streaming transactions.

A second limitation of this study is that the transactions analysed here relate to the outcomes from one law enforcement operation in the Philippines that identified a cohort of Australians sending money to known CSA live streaming facilitators. It is unclear to what extent this group is representative of all those in Australia who purchase CSA live streaming services, or whether they are particular to this police operation.

Despite these limitations, this study provides some preliminary insight into an under-researched group and reveals new information about the profile of suspected CSA live streaming viewers, their patterns of transactions and live streaming behaviours.

Results

The matching process identified 256 individuals resident in Australia who had made at least one transaction to a CSA live streaming facilitator in the Philippines. This section examines the demographic profile and transaction history associated with these individuals.

Demographic profile

Given the anonymous nature of the dataset, relatively little demographic information was available on these individuals, which limits the ability to construct a detailed profile. The analysis therefore focused on age, occupation and offending history. Other demographic information, such as gender, was not available.

Age

The ages of the CSA live stream purchasers were initially calculated at the point of data matching (late 2019). The average age of the 210 individuals for whom information was available was 59 years (SD=11 years). The youngest CSA live streaming purchaser was 27 years and the oldest 82 years. Sixty-three percent (n=132) of CSA live streaming purchasers were aged between 50 and 69 years, compared with 23 percent of the Australian population (Australian Bureau of Statistics 2019). However, this analysis took no account of when the transactions were made and, as will be shown later, many of the transactions were historical (from 2006 to 2018).

Further analysis examined the ages of CSA live streaming purchasers at the time of the transactions. It should be noted that, as the year of transaction and current age were used for this analysis, there is a degree of error (up to two years) in these calculations. The number of transactions made by individuals also influences the results—those making more transactions will be represented more frequently.

Across the 2,557 (94%) transactions for which information was available (age was not available for 157 transactions), the average age at the time of the transaction was 54 years (SD=9 years). The youngest age at which an individual made a CSA live stream transaction was 20 years and the oldest was 76 years. Two-thirds (67%, n=1,703) of transactions were made by those aged between 50 and 69 years, while 41 percent (n=1,038) were made by those aged between 50 and 59 years. In contrast, just 12 percent of the Australian population were aged 50 to 59 years, highlighting the concentrated nature of transactions in this age range. A meta-analysis of 27 studies on (mostly) detected sex offenders found the average ages of online sex offenders (CSAM and grooming offenders) and contact sex offenders were 38.6 years and 43.6 years respectively (Babchishin, Hanson & Hermann 2011). A later examination of 22 studies similarly found the average age of CSAM offenders was 35 to 45 years (Brown and Bricknell 2018).

The average age of purchasers at the time of their first payment to the known CSA live streaming facilitator was 52 years. Sixty percent (*n*=126) made their first payment to the facilitators when they were aged between 40 and 59 years, while 59 percent (*n*=123) made their first transaction between 50 and 69. While for some purchasers this may represent the age of their first CSA live stream viewing, it is possible the purchasers had already paid other facilitators not known to police prior to these transactions.

Occupation

Information on occupation was available for only 39 (15%) of the 256 individuals. While this information cannot be considered representative of the group as a whole, it highlights the wide range of backgrounds from which CSA live stream purchasers came. Stated occupations included, among others, aged care worker, boilermaker, carpenter, chef, computer technician, driller, driver, gardener, mower, rigger, road freight transporter, sales assistant and tradesperson. Others described their occupation as accountant, architect, clerk, general manager, quality technician and self-employed. One described her occupation as housewife.

Offence history

Because the data were matched against the NPRS, it was possible to examine the entire officially recorded offence history of the suspected CSA live stream purchasers. More detailed analysis of offending histories will be provided in subsequent papers, with only a summary provided here.

Overall, 10 percent (*n*=26) of CSA live stream purchasers had at least one sexual offence (defined as aggravated sexual assault, non-aggravated sexual assault, non-assaultive sexual offences against a child, child sexual abuse material offences, sexual servitude offences, non-assaultive sexual offences, or sexual assault not defined) recorded in their criminal history. Seven percent (*n*=17) had a sexual offence against a child in their criminal history, while a further six percent (*n*=14) had a sexual offence against an adult (or a sex offence where victim information was not available) in their history (see Table 1). Five individuals (2%) had records of sexual offences against both children and adults.

Over half (55%) had no recorded criminal history, indicating that many of those engaged in purchasing CSA live streaming services were unknown to law enforcement authorities in Australia.

Table 1: Offence history of suspected CSA live stream purchasers (*n*=256)		
	Number	**Percent**
Sexual offence against a child	17	6.6
Sexual offence against an adult/unspecified victim[a]	14	5.5
Other offence	114	44.5
No offence history	141	55.1

a: Includes sexual offences where victim information (adult or child) was unknown

Note: Percentages total more than 100% as individuals can appear in more than one category

Source: Philippines CSA live stream financial transaction dataset

Financial transactions for live streaming of child sexual abuse

Data provided by AUSTRAC were examined for patterns in the financial transactions made by CSA live streaming purchasers. The AUSTRAC data reveal the 256 individuals who sent money to CSA live streaming facilitators in the Philippines had made a total of 8,994 overseas financial transactions (for any purpose). Of these, 2,714 (30%) involved sending money to known CSA live streaming facilitators in the Philippines and form the focus of this paper. As indicated in Figure 2, many of these transactions were made by a small number of individuals. Just eight individual CSA live streaming purchasers (3%) made 50 percent (*n*=1,365) of all transactions to known CSA live stream facilitators in the Philippines. Even within this group there was a skewed distribution, with a small proportion making a large number of transactions. Among these eight individuals, the number of transactions per person ranged from 77 to 479.

At the other end of the spectrum, 25 percent (*n*=64) of purchasers accounted for less than three percent of transactions. Indeed, almost half (48%, *n*=122) of CSA live stream purchasers made only one transaction involving the known facilitators.

Figure 2: Cumulative frequency of transactions per CSA live stream purchaser
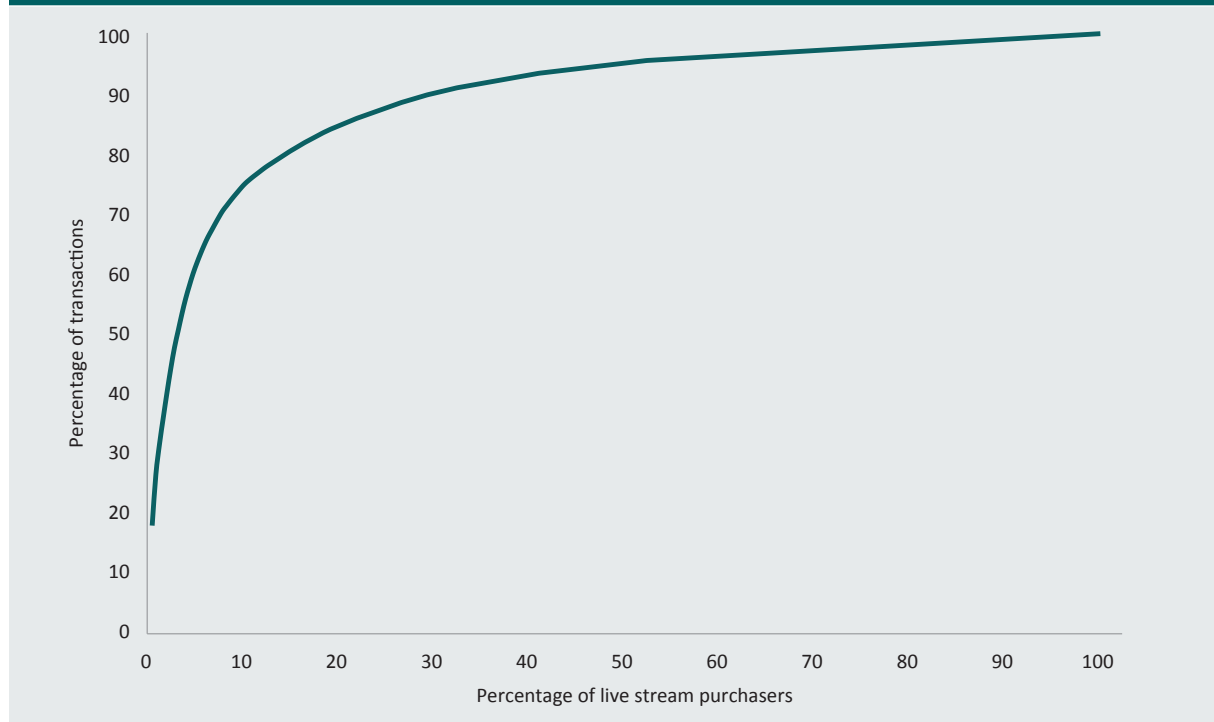
Source: Philippines CSA live stream financial transaction dataset

There was a moderate, statistically significant relationship between offending history and the number of transactions made. CSA live streaming purchasers with a history of sex offending (against either children or adults) were significantly more likely to have made more than one financial transaction (69%, *n*=18), compared with either those with a history of other types of offending (62%, *n*=55), or those with no criminal history (43%, *n*=61) (χ^2=10.82 (2), *p*<0.01, *V*=0.21). Other associations between variables were not statistically significant.

Value of transactions

The total value of the 2,714 payments made to live streaming facilitators was $1.32m, averaging $488 per transaction (noting that all values are expressed in Australian dollars). However, the average was skewed by a small number of very large transactions, with 193 (7%) valued at $1,000 or more each. The median value of all transactions was $78. Indeed, a quarter (25%, *n*=679) of transactions were valued at $36 or less, while three-quarters (*n*=2,036) were worth $170 or less.

When analysed by individual rather than by transaction, the median value each person sent in total (for all transactions they made) was $100. Twenty-five percent of individuals (*n*=64) sent $49 or less, while a further 25 percent (*n*=65) sent $390 or more. There was no significant difference in the average amounts sent by sex offenders, other offenders and non-offenders (*F*=0.66 (2), *p*>0.05).

Change over time

The payments examined in this study were made to the known CSA live streaming facilitators over 13 years, from 2006 to 2018. Four transactions were recorded in 2019, but were excluded from this analysis as enforcement action against the known facilitators in the Philippines occurred in 2018, thus affecting the availability of CSA live streaming transactions in 2019.

There were large variations in the number and value of payments made over time. As shown in Figure 3, the number of transactions per year peaked in 2011, when 490 payments were made by 70 individuals to the CSA live streaming facilitators. There was a general upward trend in the total value of amounts being sent to the facilitators, peaking in 2017, when over $323,000 was sent by 20 individuals. However, this is skewed by one individual who sent over $292,000. The average value per transaction for the remaining 19 individuals was $106.

Figure 3: Number of transactions and total value of transactions (A$) per year

Source: Philippines CSA live stream financial transaction dataset

Escalation of offending

There is clear evidence of escalation in the frequency and potential severity of offending in the financial transactions made to CSA live stream facilitators. Further analysis examined the number of days between subsequent transactions among those who made more than one transaction. Of the 256 individuals making a financial transaction, 134 made a second transaction, declining to just 12 who made over 50 transactions. These 12 individuals made between 55 and 479 separate transactions each. Only their first 50 transactions are included in this analysis.

Figure 4 shows that the average time between transactions decreased as the number of transactions increased. While the average number of days between the first and tenth transactions was 44 days, the average number of days between transactions 41 and 50 was 17 days. This suggests escalation in the frequency with which individuals purchased CSA live streaming services as they viewed more content.

Figure 4 also shows the trend in the value of transactions made, by the number of transactions. As individuals purchased more CSA live streaming services, the median amount they paid for those services increased. The median was used for this calculation due to outliers in the amounts of money sent that heavily skewed the average. The median cost of the first 10 transactions made was $60. This rose to $120 for transactions 41 to 50. This suggests an escalation in the cost of the typical CSA live streaming event as individuals made more transactions. It was beyond the scope of this paper to determine what the escalation in purchase price reflected. However, it is possible offenders were paying for live streaming sessions that involved more serious sexual abuse (eg penetration as opposed to viewing a child nude) or younger or more victims.

There was a moderate, statistically significant correlation between the value of transactions and the number of days between transactions (r=-0.43, p<0.01), suggesting that the cost of a CSA live streaming event increased as the time between events declined. It should be noted that this analysis was conducted on the entire sample, which had widely varying transaction histories. For example, while the majority (70%) of transaction histories were under one year, one extended to 12 years. To account for the impact of these differences, the analysis was repeated for the first 365 days of transaction histories for each individual, in order to provide comparable measurement. Broadly similar results were found, although the strength of the relationship between the value of transactions and the time between transactions was slightly weaker (r=-0.39, p<0.01).

Figure 4: Mean number of days between CSA live stream transactions and median value of first 50 financial transactions

Source: Philippines CSA live stream financial transaction dataset

Discussion

To our knowledge, this is the first study of CSA live streaming to combine financial transactions data and criminal history information to produce a detailed picture of the Australians purchasing such services and their patterns in doing so.

Regarding the demographic profile of those suspected of purchasing CSA live streaming services, only limited information was available in the records provided. However, the analysis revealed some insights not previously available. Where age was concerned, two-thirds of these individuals were found to be in their 50s or 60s. This is older than the ages of those found to view online child sexual abuse material and commit sexual offences generally. An examination of 22 studies found the average age of CSAM offenders was 35 to 45 years (Brown & Bricknell 2018) and a meta-analysis of 27 studies found the average ages of online sex offenders and contact sex offenders were 38.6 and 43.6 years respectively (Babchishin, Hanson & Hermann 2011). While this may be a function of the source of data for the current study, it may also indicate that CSA live streaming offenders are older than other CSAM offenders. This could have implications for preventive interventions (such as messaging campaigns), which may require different approaches to those targeted towards younger cohorts.

Where offending history is concerned, just 10 percent of these individuals had a history of sexual offending, with seven percent having previously committed a sexual offence against a child. However, these findings are within the range of what might be expected for online CSAM offenders in general. For example, a meta-analysis examining the results from multiple criminal record based studies found that one in eight (12%) CSAM offenders had committed a previous contact sexual offence (Seto, Hanson & Babchishin 2011). The prevalence of previous child sexual offending found in this study (including both contact and online offending) would be an under-estimate of the actual level of sexual offending, due to reliance on criminal justice measures. Indeed, self-reported prior contact sexual offending by CSAM offenders has been estimated to range from 51 percent to 60 percent (Seto, Hanson & Babchishin 2011). That may partly explain the high proportion of CSA live stream offenders with no criminal history, but it may also be a function of the difficulty of prosecuting such offences (ECPAT International 2018).

Analysis revealed that the majority of transactions were made by a very small number of individuals. This suggests that law enforcement activity concentrated on these individuals could have a major impact on access to CSA live streaming.

The fact that a large number of individuals made only one transaction is important, although the reason is unclear. Potential explanations might include that CSA live streaming facilitators were scamming individuals into sending money without providing any service in return, that purchasers moved to other facilitators not detected in the Philippines police operation, or that viewing CSA live stream content was not repeated by these offenders. Reasons for the last point may be that individuals were not satisfied with what they saw, either because it was too extreme or not extreme enough. This aspect deserves further research to understand what prevents a first-time offender from becoming a repeat offender, and to determine what individuals seek from CSA live streaming services. The preponderance of one-time suspects also limits the specific deterrent effects of law enforcement action, as a proportion of these individuals might not present a risk of reoffending anyway.

The present study did, however, provide some evidence of escalation in the frequency of and amounts paid for live CSA streaming. For those who made more than one transaction, as more transactions were made, the time between transactions declined and the value of the transactions increased. This could indicate both the increasing frequency of offending and, if monetary value is equated with seriousness, the increasing severity of offending. Escalation in online child sexual abuse has been identified by other researchers. For example, in their sample of child sexual abuse material offenders, Quayle and Taylor (2002) found that the majority escalated to viewing increasingly extreme forms of CSAM. However, to our knowledge, this is the first attempt to quantify escalation over time among CSA live streaming offenders in Australia.

Conclusion

This preliminary study provides some insight into the nature and extent of CSA live streaming behaviour among a cohort of Australians procuring such services from known CSA live streaming facilitators in the Philippines. While there are important caveats to the findings, they provide useful insights for responding to the problem. Many of those who purchase CSA live streaming sessions do so only once (unlike the small cohort of prolific offenders) and the majority have no recorded sexual offending history (similar to other sex offenders and CSAM offenders). With this in mind, and given that CSA live streaming escalates in frequency and severity over time, it is important to apply policies that are appropriate to the specific groups of individuals involved. Approaches that target specific offender traits and behaviours are likely to be more effective in reducing offending than general responses that target all those who participate in CSA live streaming in the same way. Law enforcement and policy bodies could make use of this information to allocate scarce resources more effectively to respond to those individuals most at risk of engaging in CSA live streaming.

References

URLs correct as at February 2020

Açar KV 2017. Webcam child prostitution: An exploration of current and futuristic methods of detection. *International Journal of Cyber Criminology* 11(1): 98–109

Australian Bureau of Statistics (ABS) 2019. *Australian Demographic Statistics, Jun 2019*. ABS cat. no. 3101.0. Canberra: ABS. https://www.abs.gov.au/ausstats/abs@.nsf/mf/3101.0

Australian Criminal Intelligence Commission 2019. National Police Reference System. https://www.acic.gov.au/our-services/national-police-reference-system

Australian Transaction Reports and Analysis Centre (AUSTRAC) 2019. *Combatting the sexual exploitation of children for financial gain: Activity indicators*. Canberra: AUSTRAC. https://www.austrac.gov.au/about-us/fintel-alliance/financial-indicators-reports

Babchishin KM, Hanson K & Hermann CA 2011. The characteristics of online sex offenders: A meta-analysis. *Sexual Abuse: a Journal of Research and Treatment* 21(1): 92–123

Batha E 2016. Internet providers urged to tackle live-streaming of child sex in the Philippines. Thomas Reuters Foundation, 7 June. https://www.reuters.com/article/us-philippines-internet-child-sexcrimes/internet-providers-urged-to-tackle-live-streaming-of-child-sex-in-the-philippines-idUSKCN0YT04W

Brown R & Bricknell S 2018. What is the profile of child exploitation material offenders? *Trends & issues in crime and criminal justice* no. 564. Canberra: Australian Institute of Criminology. https://aic.gov.au/publications/tandi/tandi564

Butler B 2019. Westpac's CEO Brian Hartzer resigns over money-laundering scandal. *The Guardian*, Australia edition, 26 November. https://www.theguardian.com/australia-news/2019/nov/26/westpac-chief-executive-brian-hartzer-resigns-over-money-laundering-scandal

Cormack L 2019a. Convicted child sex offender behind bars again for illicit Skype relationship with Filipino children under the age of 12. *Sydney Morning Herald*, 16 June. https://www.smh.com.au/national/nsw/convicted-child-sex-offender-behind-bars-again-for-illicit-skype-relationship-with-filipino-children-under-the-age-of-12-20190614-p51xpj.html

Cormack L 2019b. 'Someday I will get found and locked up': Inside the global fight against online child sexual abuse. *Sydney Morning Herald*, 16 June. https://www.smh.com.au/national/nsw/someday-i-will-get-found-and-locked-up-inside-the-global-fight-against-online-child-sex-abuse-20190613-p51xkt.html

Davis N, Lennings C & Green T 2018. Improving practice in child sexual abuse image investigations through identification of offender characteristics. *Sexual Abuse in Australia and New Zealand* Jan: 1–12

de Leon S 2013. Cyber-sex trafficking: A 21st century scourge. *CNN,* 18 July. https://edition.cnn.com/2013/07/17/world/asia/philippines-cybersex-trafficking/index.html

ECPAT International 2018. *Trends in online child sexual abuse material*. Bangkok: ECPAT International

ECPAT International 2017. Online child sexual exploitation: An analysis of emerging and selected issues. *ECPAT International Journal* 12: 1–63

European Financial Coalition against Commercial Sexual Exploitation of Children Online (EFC) 2015. *Strategic assessment 2014.* Europe: EFC

Europol 2019. *Internet organised crime threat assessment 2019*. The Hague: Europol

Europol 2016. *Internet organised crime threat assessment 2016.* The Hague: Europol

Global Alliance against Child Sexual Abuse Online (GACSAO) 2016. *2015 Threat assessment report.* Global Alliance against Child Sexual Abuse Online

International Justice Mission (IJM) 2019. Cybersex trafficking. https://www.ijm.ca/our-work/sex-trafficking/cybersex-trafficking

Internet Watch Foundation (IWF) 2018. *Trends in child sexual exploitation: Examining the distribution of captures of live-streamed child sexual abuse.* Cambridge, UK: Internet Watch Foundation

Masri L 2015. *Webcam child sex abuse.* CUNY Academic Works. https://academicworks.cuny.edu/gj_etds/64

Maxim D, Orlando S, Skinner K & Broadhurst R 2016. *Online child exploitation material: Trends and emerging issues: Research report of the Australian National University Cybercrime Observatory with the input of the Office of the Children's eSafety Commissioner.* Canberra: Australian National University. https://ssrn.com/abstract=2861644

Puffer E, McDonald K, Pross M & Hudson D 2014. *Webcam child sex tourism: An emerging global issue*. http://digitalcommons.cedarville.edu/research_scholarship_symposium/2014/ podium_presentations/15

Quayle E 2008. The COPINE Project. *Irish Probation Journal* 5: 65–83

Quayle E & Taylor M 2002. Child pornography and the internet: Perpetuating a cycle of abuse. *Deviant Behavior* 23(4): 331–62

Seto MC, Hanson KR & Babchishin KM 2011. Contact sexual offending by men with online sexual offenses. *Sexual Abuse: A Journal of Research and Treatment* 23(1): 124–45

Terre des Hommes 2014. *Webcam child sex tourism: Becoming Sweetie: A novel approach to stopping the global rise of webcam child sex tourism*. The Hague: Terre des Hommes

Virtual Global Taskforce (VGT) 2019. *Environmental scan 2019*. VGT

WeProtect Global Alliance 2019. *Global threat assessment 2019.* London: WeProtect Global Alliance. https://www.weprotect.org/

Wight E 2016. 'She sat there with an eight-year-old girl on her lap and asked me "what do you want me to do with her?"' Inside a Filipino cybersex den where pot bellied paedophiles pick girls to be abused on webcam. *Daily Mail Australia*, 12 January. http://www.dailymail.co.uk/news/article-3393713/She-sat-eight-year-old-girl-lap-asked-want-Inside-Filipino-cybersex-den-pot-bellied-paedophiles-pick-girls-abused-webcam.html

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