

Which?

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RESEARCH REPORT NOVEMBER 2021

Scams and subjective wellbeing

**Evidence from the Crime Survey
for England and Wales**

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About

Which?

Which? is the UK's consumer champion. As an organisation we're not for profit – a powerful force for good, here to make life simpler, fairer and safer for everyone. We're the independent consumer voice that provides impartial advice, investigates, holds businesses to account and works with policymakers to make change happen. We fund our work mainly through member subscriptions, we're not influenced by third parties and we buy all the products that we test.

Simetrica-Jacobs

Simetrica-Jacobs are globally-renowned leaders in social value and community benefit measurement and quality of life. We have co-authored and contributed to over 15 best-practice guidance manuals across the world on wellbeing and social value measurement including the HM Treasury Green Book and Magenta Book, the OECD (2018) valuation guidelines and the Royal Institution of Chartered Surveyors (RICS) guidelines on social value measurement. In 2019 Simetrica was part-acquired by Jacobs Engineering Group Inc leading to Simetrica-Jacobs.

In total, the team at Simetrica-Jacobs has experience in conducting over 200 business cases, wellbeing assessments and planning enquiries for the UK Government, the Government of Canada, the Government of New Zealand and major corporations, including Siemens, Danone, Lendlease, Morgan Sindall, AECOM, and Thames Water. We have led social value and wellbeing assessments for some of the most high-profile UK projects including Heathrow Airport expansion; M60 Motorway redevelopment (Manchester); HS2; and Euston Station.

Disclaimer

This work was produced using statistical data from the Office for National Statistics (ONS). The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data.

This work uses research datasets which may not exactly reproduce National Statistics aggregates.

Executive summary

In the year ending March 2021 there were an estimated 4.6 million incidents of fraud in England and Wales, making it the most common type of crime recorded by the Office for National Statistics (ONS). Since the onset of the Covid-19 pandemic, the number of incidents has increased by around a quarter, with some fraudsters taking advantage of consumers' changing habits. Most of these offences take place online, and many have noted the growing use of online platforms as a tool for fraudsters to hook unsuspecting victims through messages, fake websites and fraudulent advertising.

Which? is concerned that the impacts of scams on victims have long been underestimated. When talking about the 'costs' of fraud or scams, the conversation is often dominated by the financial losses suffered by victims, with the psychological impacts considered as a separate issue.

From the existing evidence, it is clear that the majority of scam victims experience some kind of negative emotional reaction in the aftermath of a scam. People commonly report feelings of irritation, anger or sadness, and some victims also experience impacts on their mental or physical health. However, existing studies still leave us short of understanding the full scale of psychological harm that can be created in a way that can be contextualised alongside the financial harms.

To assess the scale of this detriment, in this report we analyse data from the ONS's Crime Survey for England and Wales (CSEW) to see how fraud victimisation is linked to measures of personal wellbeing. Measures of subjective wellbeing like 'life satisfaction' provide a broader assessment of how people feel about their lives and can be used to uncover the scale of non-financial impacts on people's lives. Our work also follows best-practice guidance from HM Treasury published earlier this year to translate these wellbeing impacts into monetary values.

To our knowledge, it is the first time anyone has used the CSEW to look at fraud and wellbeing together, despite it being by far the best available data covering both topics.

Key findings

Using more than 17,000 responses to the CSEW between 2017 and 2020, we find that **being a scam victim is associated with significantly lower levels of life satisfaction, lower levels of happiness and higher levels of anxiety**. It is also associated with people self-reporting worse general health, although to a much smaller degree.

We estimate that **this lower level of life satisfaction (-0.17 on a scale of 0-10) is equivalent to an average £2,509 per victim**, when valued using an approach in HM Treasury's guidance on wellbeing analysis. We find a similar wellbeing effect regardless of whether a scam takes place online or offline. Our estimate of the wellbeing impact of online fraud is higher at £3,684, but the difference between online and offline is not found to be statistically significant in our study.

Our work shows that these average wellbeing harms for victims far exceed the average financial loss. Victims who experience a financial loss, on average, lose around £600, significantly below our estimates of the wellbeing harms. In aggregate, too, the wellbeing effects exceed most

estimates of the total financial harms to consumers. **With 3.7 million incidents of fraud experienced in 2019-20, we estimate that the total losses in wellbeing associated with fraud victimisation amount to £9.3 billion per year.**

The wellbeing impacts we identified are also comparable to other crimes recorded in the CSEW data. **The losses in life satisfaction associated with being a fraud victim (or internet fraud victim) are comparable with those associated with being threatened or being a victim of theft.** These findings are particularly important given conclusions from a recent inspection of police responses to fraud that too often ‘...fraud continues to be treated as a low-priority crime, a victimless crime, or a crime that doesn’t cause the harm that is recognised in other types of crime.’¹ Our findings show categorically that **fraud is not a victimless offence, with those unfortunate enough to be targeted by fraudsters facing similar impacts to those who might more traditionally be thought of as victims of crime.**

With scams being perpetrated through a whole range of channels, businesses including online platforms, telecommunications providers, banks and others all have a role in preventing victimisation from occurring in the first place. Preventative and proactive approaches are fundamental to reducing the harm to consumers from scams. When scams do happen, victims need proper support in the aftermath of being victimised, including but not limited to fair reimbursement and redress from financial institutions.

1 Her Majesty’s Inspectorate of Constabulary and Fire & Rescue Services, *A review of fraud: time to choose*, August 2021

1. Introduction

Since the beginning of the pandemic, fraud offences have risen by around a quarter in Great Britain and are among the most prevalent crimes in England and Wales.² Most of these offences take place online, and many have noted the growing use of online platforms as a tool for fraudsters to hook unsuspecting victims through messages, fake websites and fraudulent advertising. The financial losses from these frauds are well-documented, with organisations like Action Fraud and UK Finance providing timely statistics on the losses reported to police and financial institutions.

However, the emotional harms suffered by scam victims are rarely mentioned in the same way as financial losses. Rather than looking at the totality of harm across victims, existing work has instead focused on surveys or case studies of victims asking about their emotional responses. Such studies helpfully show the range of emotional responses people can have to being scammed, but they are limited in what they can tell us about the true scale of emotional harm across the population. Without an understanding of this scale, there is too narrow a focus on financial harm, the importance of emotional impacts is underestimated, and public policy is likely to not reflect the full harm caused by consumer fraud.

This is what motivated our work with Simetrica-Jacobs to analyse data from the ONS's Crime Survey for England and Wales (CSEW) to see how fraud victimisation is linked to measures of personal wellbeing. Measures of subjective wellbeing like 'life satisfaction' provide a broader assessment of how people feel about their lives and have been applied widely to look at the impact of factors such as employment, health and family relations on how people feel about their lives. The use of wellbeing measures is a recognised method for appraisal and evaluation and HM Treasury provides guidance about using wellbeing valuation in its Green Book guidance for appraisal and evaluation (HMT, 2020 and 2021).

Our research uses three waves of the CSEW from 2017-18 to 2019-20, giving us a total sample of more than 1,000 victims of fraud and 16,000 non-victims. To our knowledge, it is the first time anyone has used the CSEW data to examine the association between fraud and wellbeing.

We estimate that being a victim of a scam is associated with a reduction in wellbeing of 0.17 points on a scale of 0-10. Evaluating this using standard wellbeing valuation techniques equates to around £2,500 per victim per year, much higher than the average financial loss suffered. With an estimated 3.7m fraud victims in the year ending March 2020, this gives an average estimate of the value of the damage to wellbeing of more than £9 billion per year, demonstrating that the harm from scams extends far beyond estimated financial losses.

We find a similar wellbeing effect regardless of whether a scam takes place online or offline. Online frauds are associated with a 0.24 point reduction in life satisfaction. The difference between this and offline frauds is not statistically significant, but the online estimate is equivalent to £3,684 per victim and £7.2bn per year in aggregate.

2 Crime Survey for England and Wales, Year Ending March 2021 and Recorded Crime in Scotland, 2020-21

Overall, our results provide vital insight into the total emotional harm associated with fraud against individuals. It is now increasingly clear that the non-financial impacts of these crimes need to be taken at least as seriously as the financial losses, and that harm may extend much further than previously assumed. Businesses, including online platforms and telecommunication companies, and the government need to take responsibility to prevent scams from occurring in the first place, and consumers need to be given fair redress and proper victim support when they do occur.

The remainder of this report is structured as follows:

In **Chapter 2** we examine what the existing research tells us about the emotional and other non-financial harms from scams. Then in **Chapter 3** we explain more about the subjective wellbeing approach, how this can add to the existing evidence and the research questions our study seeks to answer. **Chapter 4** gives an overview of the CSEW data and the analytical methods used to answer our research questions, before the breakdown of our results in **Chapter 5**. Finally, we conclude in **Chapter 6** with a discussion and summary of the results.

2. The non-financial impacts of scams

Many studies over recent years have examined the non-financial impacts from fraud on victims. Various researchers and organisations have found that victims suffer a range of harms beyond just the financial losses, from negative emotional responses like anger and sadness, to more serious effects on victims' mental and physical health.

It is clear from this existing research that **the vast majority of scam/fraud victims experience some emotional harm**. This is supported by large surveys in the UK and Europe as well as a multitude of qualitative studies. For example, the 2019–20 CSEW finds around three quarters of fraud victims are affected emotionally by the experience, while the European Commission (EC) (2020) finds similarly that around 8 in 10 consumers who experienced some kind of scam in the last two years felt emotional or physical harm as a result, rising to around 95% among those who had suffered a financial loss.

In some cases, the emotional reactions from consumers are relatively small, with some victims thinking of the scam as an 'inconvenience' or 'day-to-day risk' (Cross et al, 2016; Button and Kerr, 2013; Button et al, 2014). But many face much more significant negative feelings. Close to half (45%) of those in the CSEW who had experienced fraud said the emotional impact was 'just a little', but one in five (20%) said 'quite a lot' and 8% that they were 'very much' emotionally affected (ONS, 2020).

Mostly the feelings of emotional harm occur in the aftermath of being scammed, but sometimes can also begin during the scam itself. In particular this can take place in longer scams like investment fraud, which employ grooming techniques that can aim to socially isolate the victims (FCA, 2014) and scams which employ stress as a technique to pressure victims into making a payment (Button and Kerr, 2013).

Almost all the qualitative analyses noted **anger or frustration** as key emotional impacts (NSCL, 2018; Cross et al, 2016; Button and Kerr, 2013; FCA, 2014), directed towards the perpetrators but also with themselves for falling victim. The ONS and EC (2020) identified irritation/annoyance (72%; 68%) and anger (51%; 56%) as the most prevalent reactions to those who had encountered fraud, while Citizens Advice (2017) found 74% of scam victims reported feeling annoyed or angry. Similarly 68% of victims surveyed in Button et al (2014) rated feelings of anger as important.

Stress, worry and anxiety were also commonly identified in the qualitative analyses (Bailey et al, 2015; Button and Kerr, 2013; NSCL, 2018; Cross et al, 2016; FCA, 2014) and again this was reflected in the larger surveys, although at a lower prevalence than anger. Between 22% (Citizens Advice, 2017) and 44% (Button et al, 2014) reported feelings of stress/worry/anxiety after experiencing a scam. The ONS (2020) found a lower prevalence of anxiety but at a more severe level, with around 10% experiencing *anxiety or panic attacks*. Stress can be a very common reaction among more serious offences, for instance 77% of US victims of identity theft reported increased levels of stress (ITRC, 2018).

Shame, embarrassment and loss of confidence were also commonly reported as important emotions by victims of scams throughout the studies (Cross et al, 2016; Bailey et al, 2016; Button and Kerr, 2013;

FCA, 2014; Whitty et al, 2015) with this also acting as a barrier to discussing the scam with those around them and getting emotional support (FCA, 2014; Whitty et al, 2015). Victims also identified resulting self-doubt as one of the most damaging types of harm as it altered their self-perception and could remain with them indefinitely (Button and Kerr, 2013). The prevalence of these feelings is relatively lower than those above according to the larger surveys which found that between 16% (EC, 2020) and 28% (Citizens Advice, 2017) of those who experience scams are left with feelings of embarrassment while around 20% experience loss of confidence (ONS, 2020).

A minority of victims experience **mental health issues**. Feelings of depression and anxiety are most common, with around one in ten experiencing anxiety or panic attacks and one in twenty depression (ONS, 2020). These impacts are particularly strong for those who were victims of romance scams, investment fraud or identity theft (Whitty et al, 2015; FCA, 2014; ITRC, 2018), including signs of post traumatic stress disorder for some victims of romance scams (Whitty et al, 2015).

Mental health problems also feed through **into physical health problems** for some victims, with particularly nausea and sleep problems noted by several researchers (ITRC, 2018; Cross, 2016; Button and Kerr, 2013; ONS, 2020) although other physical issues like aches, pains and skin conditions were also mentioned. Larger surveys reveal that while physical health consequences are relatively uncommon still around 6%–10% of victims experience them (Citizens Advice, 2017: 7%; EC, 2020: 6%; Button et al, 2014: 10%; ONS, 2020: 5% experiencing difficulty sleeping).

The emotional impacts from scams can be felt more strongly than financial ones and vary by scam type.

Modic and Anderson (2015) find that victims of various online scams consistently rated the emotional impacts as more significant than the financial impacts across all fraud types. As would be expected, the level of emotional impact is related to the financial losses, but even controlling for the financial losses the emotional impact is an important part of the aftermath of a scam. In addition some scams like romance scams, advance fee fraud and accommodation scams carry a particularly high emotional impact above what could be expected from the financial losses.

The harms identified throughout the existing research are similar regardless of whether they were looking at scams perpetrated through online channels or not. NSCL (2018) specifically noted that consequences of online crime correspond to offline offences. Button et al (2013) also noted that the prevailing view among interviewees was that the online or offline nature of a fraud made no difference to the seriousness of the offence. This is supported by findings from the ONS (2020) that proportions who were affected emotionally did not vary significantly across cyber and non-cyber fraud (75% v 73%), including across the severity of responses and the types of emotional responses experienced.

3. Our research questions

The existing evidence examined in chapter 2 provides a comprehensive analysis of the specific emotions experienced in the aftermath of becoming a scam victim. It also clearly demonstrates that the consumer harm from scams extends beyond simple financial losses, with the majority of victims having some kind of negative emotional response.

However, it still leaves us short of understanding the full scale of psychological harm that can be created in a way that can be contextualised alongside the financial harms. This makes a subjective wellbeing analysis approach particularly appealing as a route to measuring the size of psychological harm across the population of victims.

3.1 Subjective wellbeing approaches

Wellbeing analysis takes a somewhat different approach to identifying the level of emotional harm, without necessarily exploring in detail the specific emotions that were experienced as has been done in most of the existing studies. The ONS measures subjective wellbeing through four standard questions:

- **Life satisfaction:** Overall, how satisfied are you with your life nowadays?
- **Happiness:** Overall, how happy did you feel yesterday?
- **Anxiety:** Overall, how anxious did you feel yesterday?
- **Worthwhileness:** Overall, to what extent do you feel the things you do in your life are worthwhile?

These questions are answered on a scale of 0–10 in which high values indicate greater wellbeing, except for anxiety for which lower values indicate less anxiety.

The goal therefore of this approach is to identify what changes might occur in the answers to these questions as a result of particular events, in our case, being scammed. This approach has benefits:

- As the questions are standardised and numbered on a 0 to 10 scale, an average effect size can be calculated across a whole population. These effect sizes can then be compared with findings from other studies.
- There are many personal characteristics which have well-established links with wellbeing measures. This means isolating associations between being a scam victim and wellbeing is easier as there is a clear set of other factors to control for.
- Changes in the levels of wellbeing should reflect the effects of multiple emotional responses. For instance, a survey might capture individual feelings of sadness or anger but either of these could lead to lower feelings of life satisfaction or happiness
- There is a large body of evidence supporting valuation of wellbeing, and the life satisfaction measure in particular. This makes it a powerful tool for use in cost benefit analysis. Examples of where this approach has been taken include indebtedness (Simetrica-Jacobs/FCA, 2020), loneliness (Simetrica-Jacobs/DCMS, 2020) and violent crime (Johnston et al, 2017).

There is little prior research exploring the relationship between scams and subjective wellbeing. Our search for literature found two studies which lend support to the hypothesis that scam victims may experience damage to their wellbeing. However both had limitations and neither had results directly applicable to scam victims in the UK.

Kaakinen et al (2017) found a negative association between wellbeing and cyber frauds among younger people aged 15–30, using a composite measure of both happiness and life satisfaction. However this study is limited in its application to scams generally, given its specific focus on *cyber* fraud and on young people. The study was also conducted using a small sample of 3,557 15–30 year olds of whom less than 3% had been victims of cyber fraud.

National Trading Standards and Bournemouth University (2020) looked at the wellbeing effects of having call blockers installed for around 180 people. These devices prevent home telephones from receiving nuisance and scam calls, and could be applied for by individuals who were vulnerable and/or who had received scam calls in the last 6 months. However, this study was focused on call blockers as a specific intervention to assist vulnerable adults rather than looking at the impact of scams themselves, meaning that the findings cannot be applied to look at harm from fraud more broadly.

3.2 Research questions

That leaves us with a notable gap in the research around scams and their association with measures of subjective wellbeing. Our research seeks to answer three main questions in order to bring us closer to evaluating the scale of harm from scams. In particular:

1. Is being a scam victim associated with lower levels of wellbeing and, if so, to what extent?
2. How does this relationship differ by type of scam and whether the scam involved the internet or not?
3. If there is a relationship between being scammed and wellbeing, how can this be valued in monetary terms and how does it compare to the financial losses suffered?

4. Data and methodology

4.1 The Crime Survey for England and Wales

The data for our research comes from the Office for National Statistics' Crime Survey for England and Wales (CSEW), which is used to provide annual estimates for a whole range of crimes. Each year around 35,000 people are interviewed about their experiences of crime in the past year, including fraud. Frauds are defined by the ONS as incidents that 'involve a person dishonestly and deliberately deceiving a victim for personal gain of property or money or causing loss or risk of loss to another.' An explanation of the types of fraud in the data is included in Box 1 below.

The CSEW generates high-quality data, used by the ONS for National Statistics. It provides the best available estimates for the number of frauds that take place in England and Wales because it captures offences which are both reported and not reported to authorities. Administrative data collected by Action Fraud or UK Finance on the other hand captures only offences which have been reported to the police or the victim's bank.

A random subset of around 6,000 CSEW participants are asked about their subjective wellbeing each year, including all four of the standard questions on life satisfaction, happiness, anxiety and sense of things they do in life being worthwhile. While we cannot be certain that the subset of respondents asked these questions is representative of the overall survey population, the random selection of participants and large overall sample when combined across years should provide good representativeness.

To achieve a sufficiently large sample size of victims, we combined three waves of data from the survey running from the year ending March 2018 to the year ending March 2020. In total this gives us a total sample of:

- 17,186 people of whom;
- 1,094 (6.4%) had been a victim of any fraud and;
- 533 (3.1%) had been scammed online.

A full breakdown of the sample is included in the Methodology Appendix

Box 1 - Types of fraud in the CSEW data

Bank and credit account fraud: this includes fraudulent access to bank, building society or credit card accounts or fraudulent use of plastic card details.

Consumer and retail fraud: when goods or services are made using fraudulent means, when goods or services were paid for, but failed to materialise, were misrepresented at point of sale, or are faulty or stolen. This includes bogus callers, ticketing fraud, phone scams and computer software service fraud.

Advance fee fraud: when a payment is made to fraudsters who claim to be in a position of authority, such as a foreign government official, to transfer money or for a promise of employment, wealth or gifts. This includes lottery scams, romance fraud and inheritance fraud.

Other fraud: those not covered by the above categories. This includes investment fraud and charity fraud.

Online fraud: frauds where the internet or any type of online activity was related to any aspect of the fraud.

Around two thirds (67%) of the victims in our sample had been subject to ‘bank and credit account fraud’, where the victims’ bank or credit accounts had been accessed fraudulently. The next highest incidence was of consumer and retail fraud followed by advance fee fraud and other frauds. Around half (49%) of the victims in our sample experienced a fraud which took place in some way over the internet.

Average levels of wellbeing for all four of the measures (life satisfaction, happiness, worthwhileness, anxiety) were lower among the fraud victims in our sample than for non-victims of crime, before controlling for any other factors. Among non-victims (victims), levels of life satisfaction were 7.8 (7.5), happiness 7.7 (7.5), worthwhileness 8.0 (7.9) and anxiety 3.1 (3.4).

4.2 Methodology

We use the CSEW data to answer the first two of our main research questions:

1. Is being a scam victim associated with lower levels of wellbeing and, if so, to what extent?
2. How does this relationship differ by type of scam and whether the scam involved the internet or not?

The full methodology is set out in the Appendix, but briefly, we use multivariate regression analysis to compare fraud victims with non-victims of crime to estimate the relationship between each wellbeing measure and being a victim of fraud, while controlling for the key determinants of subjective wellbeing identified in the existing literature. One positive feature of the CSEW data is that it contains many socio-economic variables which are recommended controls in the wellbeing literature, including age, ethnicity, education, and social grade.³ Among our controls is also whether the respondent has been a victim of any other crime, so that we compare the wellbeing of fraud victims to non-victims of crime.

Life satisfaction is our key measure of wellbeing in the analysis as it is an evaluative measure offering a broad assessment of wellbeing, and also has a large body of evidence supporting its validity and rigour (Waldron, 2010). Our estimate of how much lower life satisfaction is for fraud victims on the scale of 0–10 is also used to answer our third research question on the valuation of wellbeing. We do still however replicate our regression analysis with the other measures of subjective wellbeing (happiness, anxiety, worthwhileness) as the dependent variable to give us the estimates of the relationship between being a scam victim and these other wellbeing measures. Given the range of non-financial impacts identified in Chapter 2, it is plausible that all of these

³ A full list of control variables is presented in the Appendix

measures may be related to whether someone had been a victim of fraud, although it seems less likely that worthwhileness, the extent to which people feel the things they do in their life are worthwhile, would be lower as a result of fraud.

Ideally our estimate of the lower level of wellbeing associated with being a scam victim would be of the *causal* relationship i.e. becoming a scam victim leads to lower life satisfaction. However, since the CSEW is cross-sectional there are limits to what we can say about causality through modelling. It is possible that if people with lower life satisfaction behave in some way which increases their likelihood of being a scam victim then our findings could be picking up reverse causality. However, our comprehensive set of control variables in the regression analysis and the abundance of evidence (reviewed in Chapter 2) showing that there are negative emotional reactions as a direct consequence of being scammed give us confidence that the relationship identified is likely to be largely causal in the direction expected.

This brings us to our final research question on how these associations between scam victimisation and wellbeing can be valued financially, where the analysis of the CSEW data needs to be combined with previous research on wellbeing valuation.

3. If there is a relationship between being scammed and wellbeing, how can this be valued in monetary terms and how does it compare to the financial losses suffered?

Key to making this valuation is the relationship between income and life satisfaction. This allows us to make an estimate of how much extra income would be needed to ensure a level of life satisfaction that is equivalent to what would be expected if the person were not a scam victim (in economic terms, the compensating surplus). HM Treasury guidance, published in 2021, provides advice on which estimates should be used for this, coming from two approaches by Frijters and Krekel (2021) and Fujiwara and Dass (2021). Roughly, these values equate to £10,000 and £16,000 for a single point change in life satisfaction on the 1–10 scale respectively.

For our research we prefer the Fujiwara and Dass (2021) estimate, which was estimated using a discrete choice experiment. This provides a good causal estimate and also gives a non-linear relationship between life satisfaction and income, which Frijters and Krekel (2021) does not. The Frijters and Krekel (2021) approach also uses the Quality Adjusted Life Year (QALY) as its basis which we find less intuitive for our purpose.⁴ However, as the Treasury guidance suggests a hybrid approach using a value of a one point change in life satisfaction of £13,000 for central estimates, we have also included valuations using this approach should they be needed for appraisals following the Green Book methodology.

Box 2 – The three-step wellbeing valuation method

Step 1. Derivation of a causal estimate of the impact of income on life satisfaction. We use the income coefficient derived through a discrete choice experiment in Fujiwara and Dass (2021).

Step 2. Estimation of a multivariate regression, controlling for the key determinants of subjective wellbeing, to estimate the impact of being a scam victim on life satisfaction.

Step 3. Calculation of the compensating surplus - using estimates from steps 1 and 2 - as an estimate of the increase in household income needed to ensure a level of life satisfaction that is equivalent to what would be expected if the person were not a scam victim.

⁴ The QALY is a health metric that is used to evaluate the impact of diseases. As typically measured, QALYs capture both physical and mental health dimensions. The former has questionable relevance for an application to fraud victimisation, while the mental health dimension focuses only on the impact of anxiety and depression and as we have shown in Chapter 2 the emotional impacts of a scam are far wider than this.

5. Results

5.1 Relationship between scams and wellbeing

The results from our main model estimate that experiencing fraud is associated with a reduction in an individual's life satisfaction of 0.17 units, on average, on a scale of 0–10, relative to non-victims of crime. This is after controlling for a broad set of factors which we know are also related to wellbeing, giving us confidence that our core model is isolating the impact of fraud victimisation. This relationship is relatively consistent across each year of the CSEW data in our sample (see Table 2), though we report our core results using the pooled data for its larger sample and increased statistical power.

Looking at the other wellbeing measures included in the data we find that being a scam victim is also associated with, on average, lower happiness (-0.16) and higher anxiety (+0.21). We do not however find a statistically significant relationship between being a scam victim and a sense of worthwhileness, but this is as expected and the absence of an effect for this measure adds confidence to these being causal estimates in which scam victimisation lowers wellbeing. If it were instead the case that individuals with lower wellbeing are more likely to become fraud victims then we would expect to see a statistically significant relationship across all four measures.

Table 1 - Scam victimisation and subjective wellbeing

Measure of subjective wellbeing (scale of 0-10)	Central estimate (pooled sample)
Life satisfaction	-0.168**
Happiness	-0.164**
Worthwhileness	-0.024
Anxiety	+0.212*

Note: Central estimates of the regression analysis as described in the Appendix. All four measures of wellbeing are on a 0–10 scale where lower numbers indicate lower wellbeing, except for anxiety for which high values reflect greater levels of anxiety. Stars indicate statistical significance at the 1% (***) , 5% (**) and 10% (*) levels.

These relationships are relatively large in terms of what is usually found in the wellbeing literature. Comparing the life satisfaction measure with other crimes in the CSEW data, we find moderately higher coefficients associated with being threatened (-0.24) or experiencing theft (-0.26), both of which are relatively comparable with our estimates from fraud victims and within the 95% confidence interval estimated. Violent crime is associated with a much higher impact at -0.57, as would be expected.

Our estimates of the impact of being scammed are also higher than have been identified in other studies looking at the impact of common health ailments on life satisfaction. For example, suffering from high blood pressure (-0.07) and suffering from asthma (-0.15) (Fujiwara and Dolan, 2014).

Table 2 – Scam victimisation and life satisfaction

	Life satisfaction (0–10)		
	Central estimate	Upper bound (95% CI)	Lower bound (95% CI)
All fraud victims			
Pooled sample	-0.168**	-0.306	-0.030
2019–20	-0.244**	-0.478	-0.010
2018–19	-0.171*	-0.368	+0.026
2017–18	-0.193	-0.530	+0.144
Internet fraud			
Pooled sample	-0.242**	-0.429	-0.054
2019–20	-0.390**	-0.702	-0.078
2018–19	-0.164	-0.430	+0.102
2017–18	-0.349	-0.831	+0.133

Note: Stars indicate statistical significance at the 1% (***), 5% (**) and 10% (*) levels

Focusing on scams which involved an online element, we find these have a significant negative relationship with life satisfaction, with online victimisation associated with a 0.24 point reduction on the 0–10 scale in comparison to non-victims. While this coefficient is larger in comparison to our main model that includes all scams, further analysis shows that when victims of online fraud are compared against victims of offline fraud there is no statistically significant difference.

This finding may seem intuitively surprising, with the received wisdom often that online frauds might feel less personal or intrusive to victims and perhaps create less emotional harm than those which do not involve the internet. However, our findings that internet frauds are at least as harmful as offline frauds is consistent with the other literature on emotional responses to frauds, which finds that the online nature makes little or no difference to the harm created.

Furthermore, the coefficient estimate for online fraud victimisation is very close to that for being a victim of theft (point estimates -0.24 vs -0.26). This further shows that we should not be thinking about frauds taking place online as ‘not happening in the real world’ with the wellbeing impacts being roughly equivalent to similar crimes taking place offline.

The data also allows us to examine how reimbursement of victims may be related to the wellbeing impacts of being scammed by looking at the relationship with life satisfaction among those who did or did not suffer enduring financial losses. Unsurprisingly, the impact among those who did not get their money back was much higher, associated with 0.49 units of life satisfaction lower than being a victim who was reimbursed. This is a very large difference and shows that the wellbeing harms, like financial losses, are not distributed equally across victims. Indeed, when we compare victims who did not experience a financial loss against non-victims we do not find a statistically significant relationship (-0.086) with life satisfaction. These results suggest that the financial losses and the emotional harm associated with this financial loss are the key driver of the wellbeing impact of being scammed and that in large part this can be rectified if losses are reimbursed.

Finally, we identified earlier that previous studies have found that mental health problems can lead on to physical health problems for some victims. Our study finds some support for this as the relationship between being a scam victim and having lower self-reported physical health was statistically significant, but the magnitude was small at just -0.013** points on a scale of 1–5.

5.2 The value of wellbeing losses

Next we turn to the valuation of the changes in life satisfaction identified through our analysis of the CSEW data. As explained in Chapter 4, we do this by estimating by how much an average scam victim's income would need to increase to ensure a level of life satisfaction that is equivalent to what would be expected if the person were not a scam victim.

In our preferred approach to the valuation, following Fujiwara and Dass (2021), we calculate a central estimate of the wellbeing harm from an incident at £2,509. For completeness, we have also included estimates using the hybrid QALY wellbeing valuation approach from the HMT guidance, which returns slightly lower estimates for the wellbeing cost at around £2,000 per incident.

These values are particularly interesting in the context of the financial losses from frauds, which we calculated in our sample to be around £600 when a loss occurred.⁵ This suggests that wellbeing harms are a highly significant element of the total harm experienced by victims and demonstrates the importance of our estimates.

Table 3 – Wellbeing valuation of fraud victimisation

	Difference in life satisfaction	Valuation	Incidents in 2019–20	Total wellbeing loss
Preferred valuation method				
Central estimate	-0.168	£2,509	3.7 million	£9.3bn
Upper bound (95% CI)	-0.306	£4,732		£17.5bn
Lower bound (95% CI)	-0.030	£438		£1.6bn
Hybrid WV/QALY valuation method				
Central estimate	-0.168	£1,997	3.7 million	£7.4bn
Upper bound (95% CI)	-0.306	£3,632		£13.4bn
Lower bound (95% CI)	-0.030	£361		£1.3bn

Note: coefficient estimates significant at the 5% level, £ values are presented in 2021 prices

We also use the ONS estimates of the number of fraud incidents in 2019-20 to calculate the level of wellbeing losses in a year. Scaling the average wellbeing impact across the estimated 3.7 million fraud incidents in the year ending March 2020 we find the mid-point estimate of the total wellbeing loss suffered by consumers is £9.3bn in a single year.

We acknowledge that there is some uncertainty in the values produced through this exercise as shown through the 95% confidence intervals in Tables 3 and 4. This is likely driven by having a relatively small number of victims in the data, which increases the variance of our estimators. While the central estimates are nonetheless our best estimate of the wellbeing losses experienced by victims, even the lower bound estimates suggest significant wellbeing harms suffered by victims which would not be taken into account if the focus is only on financial losses. For context, our lower bound estimate of £1.6bn is close to annual fraud losses reported to Action Fraud in the 12 months ending September 2021 at £1.8bn,⁶ some of which would have been subsequently reimbursed.

⁵ This estimate of the average financial loss is imperfect as financial losses are included in the CSEW data only within ranges. The average loss assuming losses at the midpoint of each range were: in 2017–18: £599, 2018–19: £631 and 2019/20: £609

⁶ Taken from the [Action Fraud dashboard](#) on 21 October 2021, by applying the 'individual' filter to victim type

Similarly, we can also value our estimate of the link between being a victim of an *online* fraud and life satisfaction. The higher point estimate of -0.24 is valued at £3,684, and with 53% of fraud incidents having an online element, sums to a central estimate of total wellbeing losses of £7.2bn in 2019–20.

Table 4 – Wellbeing valuation of online fraud victimisation

	Coefficient estimate	Valuation	Incidents in 2019-20	Total wellbeing loss
Preferred valuation method				
Central estimate	-0.242	£3,684	1.96 million	£7.2bn
Upper bound (95% CI)	-0.429	£6,860		£13.4bn
Lower bound (95% CI)	-0.054	£786		£1.5bn
Hybrid WV/QALY valuation method				
Central estimate	-0.242	£2,875	1.96 million	£5.6bn
Upper bound (95% CI)	-0.429	£5,098		£10.0bn
Lower bound (95% CI)	-0.054	£644		£1.3bn

Note: coefficient estimates significant at the 5% level, £ values are presented in 2021 prices

6. Discussion and summary

The wellbeing costs from scams are significant and when valued in monetary terms likely far outweigh the estimated financial losses of victims. With our central estimate of wellbeing losses at £9.3bn in a year, policymakers risk seriously underestimating the scale of harm if they do not focus on the psychological as well as financial consequences for victims.

Our findings also hold for victims of online fraud specifically, rejecting any notions that online frauds have less serious impacts on victims. This is consistent with the previous research we reviewed in Chapter 2 which found that the emotional impacts of scams are similar regardless of whether they take place online or offline. Furthermore, our estimate of the impact of online fraud on life satisfaction is very close to that of being a victim of theft (point estimates -0.24 vs -0.26). This underlines that frauds taking place online should not be thought of as ‘not happening in the real world’, with the wellbeing impacts being roughly equivalent to similar crimes taking place offline.

These findings are particularly important given conclusions from a recent inspection of police responses to fraud from HMICFRS (2021) that too often ‘...fraud continues to be treated as a low-priority crime, a victimless crime, or a crime that doesn’t cause the harm that is recognised in other types of crime.’ Our findings show categorically that fraud is not a victimless crime, with those unfortunate enough to be targeted by fraudsters facing similar impacts to those who might more traditionally be thought of as victims.

Our findings also reveal that victims who do not receive any reimbursement are likely to suffer much larger effects on their wellbeing. While this is to some extent unsurprising it highlights that some consumers face even more serious emotional impacts extending far beyond the average financial losses. It also shows the importance of ensuring that adequate support, including appropriate redress, is given to victims.

Overall, our results provide vital insight into the total emotional harm associated with fraud against individuals. It is now increasingly clear that the non-financial impacts of these crimes need to be taken at least as seriously as the financial losses, and that harm may extend much further than previously assumed. There is a role for many to play in reducing these harms going forward, not only for the police. With scams being perpetrated through a whole range of channels, businesses including online platforms, telecommunications providers, banks and others all have a role in preventing victimisation from occurring in the first place. Preventative and proactive approaches are key to reducing the harm to consumers from scams. But when scams do happen, victims need proper support in the aftermath, including but not limited to fair redress and reimbursement from financial institutions.

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Appendix: Methodology

CSEW sample composition

The data for our research is a pooled sample of three annual waves of the Crime Survey for England and Wales (CSEW). Each year around 35,000 people are interviewed about their experiences of crime in the past year, including fraud. However, only a random subset of around one in five respondents are asked about their subjective wellbeing each year, giving a sample of around 6,000 respondents in each wave who answered questions both on fraud victimisation and subjective wellbeing. Table A1 below summarises the composition of this sample across each of the three waves and our pooled sample.

Table A1 - sample composition

	2017-18	2018-19	2019-20	Combined
Number of non-victims	5,687	5,277	5,128	16,092
Number of fraud victims	205	475	414	1,094
Bank or credit account fraud victims	140	320	275	735
Other fraud victims	70	167	147	384
Victims of online fraud	99	234	200	533
Victims reimbursed or not suffering financial loss	171	399	337	907
Victims with losses and not reimbursed	34	76	77	187
Average loss when suffered	£599	£631	£609	£617
Average life satisfaction	7.5	7.5	7.4	7.5
Average worthwhileness	7.9	8.0	7.8	7.9
Average happiness	7.5	7.6	7.3	7.5
Average anxiety	3.4	3.4	3.3	3.4

Note: categories may not sum to the total as victims can experience more than one type of fraud

Main model

Our main model uses linear regression comparing fraud victims with non-victims of crime to estimate the relationship between being a victim of fraud and measures of wellbeing, while controlling for the key determinants of subjective wellbeing identified in the literature. Our core model takes the following functional form, with *fraud victim* a binary variable taking value 1 or 0, and β therefore an estimate of how many points of life satisfaction on the scale of 0-10 scam victims differ from non-victims of crime:

$$\text{Life satisfaction} = \alpha + \beta(\text{fraud victim}) + \gamma(\text{controls}) + \epsilon$$

The control variables included in this regression are: age, age squared, sex, marital status, ethnicity, whether respondent has a degree, employment status, whether respondent is religious,

number of children, self-reported health, social grade, Index of Multiple Deprivation, whether respondent is a victim of a non-fraud crime, region, month of interview.

One deficiency in the CSEW data is that household income, which is usually a recommended variable to control for when analysing wellbeing, is only available in the CSEW data for the 2019–20 wave and not in the prior waves. However, proxy variables like social grade and index of multiple deprivation were included in all waves of the data, still allowing us to formulate a well-specified model. This was confirmed by running the analysis on the 2019–20 wave separately with and without the income variable, which led to highly similar estimates of β .

This model is also replicated for the other measures of wellbeing, substituting the dependent variable for: happiness, anxiety and worthwhileness. We also ran this model for victims of internet fraud, non-internet fraud, bank and credit account fraud, and non-bank fraud separately, as well as those who suffered an enduring financial loss (i.e. suffered an initial loss and were not reimbursed). Comparisons were also made between types of fraud victims by estimating the coefficient of e.g. internet fraud while controlling for the impact of non-internet fraud within the same regression.

Table A2 - coefficient estimates for relationship between frauds and life satisfaction

Relationship with life satisfaction, scale of 0–10 (β)	
Control group: non-victims of crime	
Fraud victim	-0.168**
Internet fraud victim	-0.242**
Fraud victim not involving the internet	-0.101
Bank and credit account fraud victim	-0.212**
Non-banking fraud victim	-0.107
Fraud involving enduring financial loss	-0.609***
Fraud without enduring financial loss	-0.086
Control group: fraud victim not involving the internet	
Fraud victim involving the internet	-0.176
Control group: non-bank and credit account fraud victim	
Bank and credit account fraud victim	+0.027
Control group: fraud not involving enduring financial loss	
Fraud involving enduring financial loss	-0.489***

Note: Stars indicate statistical significance at the 1% (***), 5% (**) and 10% (*) levels

Valuation

To quantify and monetise the wellbeing effects of being scammed, we draw on the following best-practice guidance on measuring wellbeing, published by HM Treasury in 2021.

Wellbeing Valuation (WV) approach

This is valued using the three-stage wellbeing valuation methodology (Fujiwara and Dass, 2021). Using an unbiased estimate of the impact of income on life satisfaction and the average household income in the UK, we estimate the amount of money needed to ensure a level of life satisfaction that is equivalent to what would be expected if the person were not a scam victim.

This is derived from a coefficient on $\ln(\text{income})$ of 1.96 from Fujiwara and Dass (2021), to calculate the marginal rate of substitution between life satisfaction and income, shown in the equation below, where M is annual household income and β_Y is the coefficient on $\ln(\text{income})$.

$$\text{MRS} = \left[\frac{f'(\ln(M))}{M} \right]^{-1} = \frac{M}{\beta_Y}$$

This works out at, roughly, £16,000 per unit of life satisfaction on a scale of 0–10.

Hybrid wellbeing valuation and Quality-Adjusted-Life-Years approach

This is valued by multiplying the value of one wellbeing-adjusted life year (£13,000) by the estimated coefficient. This figure is derived as a midpoint estimate from the following sources:

- Impact of income on life satisfaction from Fujiwara and Dass (2021)
- A Quality-Adjusted Life Year (QALY) value from Frijters and Krekel (2021)

Our core recommended value for use here is the WV estimate. The Frijters and Krekel (2021) monetisation approach assumes a linear relationship between income and wellbeing and this may not be the case for larger impacts on wellbeing since the marginal rate of utility of income will change. Effect sizes of 0.2 are reasonably large and so we take the WV approach based on Fujiwara and Dass (2021) which uses a non-linear assumption. In order to provide a range for sensitivity analysis, we also provide values based on the hybrid approach outlined above.

The valuation exercise was completed for fraud victimisation overall and also for victims of internet fraud. These values are summarised in tables 3 and 4 in Chapter 5 of the main body of the report.

Limitations of the CSEW data

The data from the CSEW is the best available data about frauds taking place in the UK and wellbeing. By combining three waves of the data, we have been able to get a good sample of victims for our analysis, while controlling for a wide range of other factors. However, there are still some limitations of the data and associated caveats of our analysis, which are useful to explore. Many of these are referred to throughout the main body of the report, however we provide a short summary of the key points below.

Firstly, as the wellbeing questions were asked of a random subset of participants we cannot guarantee that they are representative of the entire population of data. However, the random selection of participants and large overall sample when combined across years should provide good representativeness.

Ideally our estimates of the lower wellbeing associated with being a scam victim would be of the *causal* relationship i.e. becoming a scam victim leads to lower life satisfaction. However since the CSEW is cross-sectional there are limits to what we can say about causality through modelling. We are controlling for the main determinants of subjective wellbeing but it remains possible that our findings could be picking up reverse causality e.g. people with lower life satisfaction behave in some way which increases their likelihood of being a scam victim. However, with our comprehensive set of controls and the abundance of evidence (reviewed in Chapter 2) showing that there are negative emotional reactions as a direct consequence of being scammed, this bolsters the case that the relationship identified is likely to be largely causal in the direction expected.

Our sample size of victims and non-victims is large enough to make statistically significant findings of interest, and indeed exceeds the sample sizes of other studies identified in our

literature review. However, having only 1,094 fraud victims in the sample, many of whom were reimbursed, has also meant that there is greater variance around our estimates of the relationship between life satisfaction and victimisation. While all our core estimates are statistically significant at the 5% level, this does also lead to more uncertainty around the wellbeing valuations that we produced. However, even our most conservative estimates of the wellbeing losses run into the billions of pounds and are still highly significant when compared against estimates of the financial losses from fraud.

The sample size also limits our ability to analyse sub-populations of victims e.g. by type of fraud or the personal characteristics of victims. This is exacerbated by the large proportion of banking and credit frauds among the victims in the sample. We also note that the wellbeing questions were asked of victims at a single point in time, so we cannot estimate any enduring effects of fraud on wellbeing. Our estimate of wellbeing impacts is an average across those who experienced the fraud relatively recently and those who experienced the fraud less recently (though always within a year).

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