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Tracking the victims of Boiler-room Fraud – Citizens at risk!

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Abstract

The scale, nature and threat of boiler-room fraud is growing, spreading across the UK targeting citizens who can ill afford to lose hard earned money to ruthless criminals. Policing is behind the curve and has no evidence based approach to protecting citizens at risk!

There are a number of criminological theories that may suggest why citizens become susceptible or vulnerable to this crime type in particular but the practical relevance of these theories haven't been tested in respect to victims of this crime type. Literature on previous research studies of fraud victims are sparse and those that exist have generally been limited in value by the lack of a National data set availability or by the poor design of the study, whilst specific boiler-room victimology studies have been almost entirely lacking.

This research study holds the key in transforming the Policing strategy and approach to boiler-room victim prevention. The research techniques and instruments are discussed in the context of this paper and put to practice, guiding the research study in producing the evidence base so badly needed.

The research study utilised national victim data records, held by the National Fraud Intelligence Bureau never available before, conduct demographic profiling analysis, and then utilise those records to conduct victim interviews; profile over-represented groups and map where citizens are most at risk across the UK; then finally conduct statistical analysis on victim variables. The research results hold the potential to prevent citizens becoming victims of boiler-room fraud, and victims becoming repeat victims, by using the research outcomes to

better profile citizens at risk and pro-actively target them by nationally coordinated, but locally delivered prevention campaigns.

The distinctive findings of this study are that white Caucasian males constitute the majority of boiler-room victims. They are principally duped by false share, gold, metal and wine investments and the effects on them cause serious financial and emotional harm, since they involve very large sums of money running typically between £10,000 and £50,000 pounds. Although women are defrauded, particularly in connection with holiday homes and they lose slightly less money, the emotional effect on them are even more serious. Fewer minorities are duped by boiler-room fraudsters, and all groups are under-represented compared with national census figures, except for Indians, who are heavily over-represented. Women from ethnic minority backgrounds tend to be younger than other victims. White Caucasians are defrauded in proportion to their UK population numbers, but males are markedly over-represented and women notably under-represented.

Introduction

The crime area focus of this thesis is ‘Boiler-room fraud’ perpetrated against UK citizens.

What is Boiler-room fraud

It is imperative to understand what boiler-room fraud is, review the scale and nature of the growing problem and contextualise the UK counter-fraud law enforcement response to illustrate the importance of this research project.

Boiler-room fraud is a fraudulent act defined by HMG Home Office counting rules for recorded crime (HOCR) as; *“where victims are cold called by fake stockbroker and encouraged or persuaded to buy shares or bonds in worthless, non-existent or near bankrupt companies or other commodities that are either over-inflated or non-existent”* (HOCR, 2014) and is defined a criminal offence by the UK Fraud Act 2006, section 2; (Fraud by false representation) where the offender *“Dishonestly makes a false representation, and intends, by making the representation to make a gain for himself or another, or to cause loss to another or to expose another to risk of loss”*.

Aim of the study

The research study aim is to utilise secondary data of population level from UK boiler-room victim crime reports and primary data from structured victim interviews, to profile those victims through demographic analysis and other indicators. This study will enable Police Chiefs and Policing and Crime Commissioners (PCC’s) at both National and Local levels to pro-actively **target** citizens who are at disproportionately high risk of becoming boiler-room victims, with prevention campaigns that are evidence based for the very first time. Knowing

where victims and potential victims are within communities is imperative to effective and legitimate policing policies.

Understanding victims of fraud to enable targeted prevention and suggest what works, what doesn't and what's promising (Sherman, 1998a) with evidence based confidence (Sherman, 1998b; Sherman et al, 2002), has historically been difficult to achieve, not least due to disparate reporting and recording of fraud crime across the UK's Law Enforcement Agencies (LEA). This research aims to answer what could work in targeting citizens of boiler-room fraud by conducting a descriptive analysis of UK victim population secondary data. This will establish who and where those victims are, whilst further analysis of a primary data sub-set obtained from structured telephone interviews of those victims in order to enrich the secondary data, will provide information about the criminal event and financial and emotional impact of the crimes. The power of knowledge for UK Policing to identify and protect those in communities who are not visible in every day crime matters cannot be underestimated.

It is intended that the policy implications of this study will re-shape Chief Police Officer prioritization of this crime type against others more traditionally viewed as higher priority in their policing areas particularly in jurisdictions with disproportionately high numbers of citizens sharing known boiler-room victim's demographics.

The rising threat of fraud

The Annual Fraud Indicator 2013 estimated that the possible cost of fraud to the UK was £52 billion (NFA, 2013). Fraud has a harmful effect on the quality of life, in different sectors of every country. Harmful effects include reduced public services, charities unable to use funds

for charitable purposes, less financially secure and thriving companies as well as less job security (Button & Gee 2013; National Fraud Authority 2013). Fraudsters use a range of methods to achieve their ambition of parting their victims from their money and assets.

As a sub-category of all fraud, boiler-room fraud has been prevalent for many years and has been previously dramatised in box office hit films such as ‘Boiler Room’ in 2000 and ‘The Wolf of Wall Street’ in 2014. In 2012 the City of London Police’s Economic Crime Directorate made a documentary series called ‘Fraud squad’ focusing on an international boiler-room investigation to raise awareness across UK citizens, in response to the rising threat.

The scale and nature of boiler-room fraud is growing. In 2013-14, The National Fraud Intelligence Bureau (NFIB) recorded loss to individual citizens from boiler-room fraud at £103,956,432. This represents a mean loss of £73,950 per victim.

Recent years of UK economic instability are likely to have played an important role in the buoyancy of this crime. The persistent continuance of boiler-room fraud operations is detrimental to the wider UK economy as tens of millions of pounds are being siphoned on a yearly basis from UK victims to fraud offenders (NFIB, 2014).

Following the 2008 recession, there is a perception that investors are more open to non traditional investments and this is an area that boiler-room fraud offenders have thrived in, adapting their sales methodology and growing in commodity expertise accordingly. Prior to the recession, investors were used to getting high investment returns. As the recession hit, they searched for alternative investments and turned without much due diligence, to

companies offering the greatest return. Boiler-room fraud operations can thrive in this climate as they can offer a higher than market return which is believable to investors, but without ever having to honour their hollow promise.

Traditional crime detection methodology is difficult in this type of crime as criminal proceeds are often laundered through numerous off-shore, multi-jurisdictional accounts with celerity. The money trail during the money laundering process becomes increasingly difficult for Law enforcement to track and Proceeds of Crime Act 2000 opportunities are sometimes limited due to the 'spend now and worry later' attitude the boiler-room offenders exhibit. This enforcement problem further emphasises the need for evidence based targeted prevention campaigns that work to stop citizens becoming victims of fraudulent boiler-rooms in the first instance.

Importance of this study

The research study holds the potential to prevent citizens becoming future victims or repeat victims of boiler-room fraud by using the research results to establish: Who the victims of boiler-room crime are; their distinct characteristics; where they are located in the UK; and identify the places where boiler-room victims are disproportionately at risk. Thereby providing ability set local policing priority places where prevention measures and advice should be directed. The historical absence of any UK central crime recording/reporting system has been a significant weakness when trying to fully understand the victims of boiler-room fraud and thus hindered the development of previous research. Furthermore, there has been a fragmented approach to victims from LEA in recording of boiler-room crime through lack of understanding.

There have however been some instrumental developments in the counter fraud landscape that provide for opportunity to improve the UK victim response. In 2005 the Attorney General commissioned a Fraud review across England and Wales owing to the significant lack of knowledge around the local, regional and national fraud threat (SFO, 2014). The review recognised that many gallant attempts to tackle fraud were being undermined by the lack of a joined-up approach to the reporting, recording and analysis of fraud (SFO, 2014).

Thereafter, two key developments launched in 2010 as a result of the Fraud review recommendations, was the creation of 'Action Fraud' which has become the national fraud crime reporting centre for the UK, receiving fraud reports from the public, small businesses and the police services (Action Fraud, 2014) and the establishment of the NFIB which collects and analyses millions of previously unconnected reports of fraud from Action Fraud. Their purpose being to help police forces tackle fraud and improve the understanding of the trends and patterns of fraud offending in the UK (NFIB, 2014a). This development has brought standardisation of fraud reporting.

Since the inception in 2010 of the joint UK central reporting and analysis centres of Action Fraud and NFIB, UK reports of Fraud offences have been increasingly captured centrally through incremental piloting and subsequent service roll-out across all UK Police forces.

Financial year 2013/14 is the first year that all Police forces across England and Wales have been compelled to direct their fraud crime reports to this central repository, therefore offering the first ever opportunity to capture all UK victims boiler-room fraud reporting and the data variables that are recorded within reports. A development fully utilised by this study.

Despite the increase in citizen awareness through generic Government agencies intelligence alerts, increased police executive action and centralised volume of reporting, there still remains a growing threat in boiler-room fraud and Law Enforcement do not have an evidence based strategy of what works effectively to prevent citizens being defrauded (Sherman, 1998a). It is for all these reasons that this research proposal is so important in protecting UK citizens from boiler-room fraud and finding a cost effective way to target harden against threat. Both national LEA co-ordination and local policing services stand to benefit by this study, in knowing who is being targeted by fraudsters in their communities and offering the opportunity to reach out to them pro-actively.

It seems likely that boiler-room victims in other countries will possess similar characteristics to those in the UK, so the study findings here may well be informative for police agencies in foreign jurisdictions.

This is the first time in the UK there has been the opportunity to conduct scientific research with a national data set of victim reports to fully understand the victims of boiler-room crime and facilitate targeted prevention to stop UK citizens becoming further victims.

Boiler-room Victim harm

Both the financial and emotional harm of boiler-room fraud should not be underestimated. Some victims have lost their life savings and their homes and as a result they can suffer depression, marital problems, and there have been reports of suicide as a direct result of losing their life savings to a boiler-room operation. This study will examine if those targeted by boiler-room fraudsters are often the elderly and most vulnerable in society, whether there are any gender or ethnicity differences and the extent to which victims are harmed. Issues about which there has been little if any research.

The reputation of law enforcement agencies and financial institutions could be impeded should boiler-room fraud continue to exploit UK citizens. Victims may not report the crime as they feel the crime will not be investigated, there may be a decrease in new entrants investing on the financial markets and banks may be held accountable by the victim should a UK bank account be used for receiving the funds. In addition, victims may begin to mistrust law enforcement and become confused due to their experiences with boiler-room fraudsters and not knowing who to trust.

Study data and methods

The study uses 2013-14 secondary data for the UK population of 1770 UK boiler-room fraud victim crime reports. As a result of missing data across variables in the secondary data, a telephone interview survey was also conducted to provide missing primary data on victim characteristics and additional data on victim behaviour to make it possible to reliably answer the research questions. The telephone interviews achieved a response from 402 victims (22.7% of the population), and analysis was based on this to produce a file of 402 victims that covers demographic status, crime details and victim behaviour with respect to the criminal event.

Boiler-room victimology research

Literature on previous research studies of fraud victims is sparse. Those that exist have generally been limited in value by the lack of a National data set availability or by the poor design of the study, whilst specific boiler-room victimology studies have been almost entirely lacking. The characteristics of boiler-room victims and their demographics have not been well studied although some do suggest old age, loneliness or believability of the fraudster are key traits of susceptibility in falling foul to boiler-room fraud (Reiboldt and Vogel, 2003;

Alves and Wilson, 2008). Further objectives of this study are to address the shortcomings and deficiencies of previous studies and produce original insights into the characteristics of people who have fallen prey to boiler-room fraudsters.

Policy implications

The findings of the study lead to discussion and conclusion detailing: Who the victims of boiler-room crime are; where they are located in the UK; which places are likely to contain disproportionately high numbers of potential victims when census data are examined in the light of distinctive victim characteristics.

It is intended that the findings of this study will inform prevent campaigns targeted at demographic groups in places where citizen characteristics indicate vulnerability to boiler-room fraud.

Literature review

Fraud against citizens and the development of a co-ordinated UK Law enforcement response

Early literature by Southerland in 1940 shaped the phrase “white collar crime”; a phrase that would become popular over the following decades and in his further research of fraud offending. As well as coining the phrase, Southerland focussed on social class differences being a critical variable between offender and victim, majoring on the weakness of the victim in contrast to the power of the white collar criminal. He described victims as unorganized, lacking technical knowledge and being unable to protect themselves. However, later research on ‘white collar crime’ by Braithwaite (1985), identified problems with the Southerland “white collar crime” definition and explanation, concluding that he may have been right in principle but not in practice. In his conclusion, Braithwaite (p3: 1985) questioned Sutherlands “requirement that a crime cannot be a white-collar crime unless perpetrated by a person of high social status”, sighting Southerland’s use of his own definition to refute class-based criminological theories. Furthermore, Sutherlands generalization of white collar crime flourishing due to “permissive community attitudes” is brought into question by Braithwaite in light of later studies with empirical evidence such as Meier and Short (1984) who reported that citizens have punitive attitudes towards white-collar crime and view it as both serious and causes more serious harm to people than other common crimes.

Fraud is a crime that has attracted only modest attention in comparison to other volume crimes (Button, Tapley and Lewis 2012). Moreover, as fraud offences have a low community visibility, it has lower priority setting and is not seen as a ‘frontline policing’ matter by many Chief Officers (Winsor, 2011). This literature review focuses on a type of fraud that is

prevalent amongst individual UK citizens - investment fraud, and in particular a sub-category of investment fraud; so called boiler-room fraud (HOCR, 2014) perpetrated against individual UK citizens.

Legislation against the offence of Fraud is found under the Fraud Act 2006 which establishes the three ways to commit fraud: Fraud by false representation; Fraud by failing to disclose information; and Fraud by abuse of position.

Bentham (cited by Parekh, 1991) believes the government collects statistics to indicate the health of the nation; therefore fraud information is collected to act upon in a “collective and rational context”. Supporting Bentham, Levi & Burrows (2008) consider the private sector should take responsibility to act against fraud, by investing in technology and training staff. The police service’s role is to assist in reducing fraud by working with victims to bring proceedings against suspects (Levi & Burrows, 2008).

Measuring fraud began in the early 1990’s when the Government department of Work and Pensions (DWP) and the National Health Service (NHS) started to correctly measure fraud which subsequently led to reviews on the accuracy of the fraud figures. For example in 2005 when the Attorney General and the Chief Secretary to the Treasury commissioned the ‘Fraud Review’ across England and Wales in light of lack of knowledge of the threat posed to both businesses and individual citizens (HM Treasury, 2006). The final report published in 2006 states the importance of accurate reporting to feed into effective strategic response and management of fraud risks. The report findings instigated a three-pronged approach in response to the fraud threat identified and the lack of co-ordinated approach highlighted across the counter fraud community:

1. The formation of a National Fraud Authority (NFA) – to coordinate and provide overarching strategy for fighting fraud across England and Wales.
2. Identifying a National Lead Force for Fraud, which became the City of London Police (COLP), providing additional responsibility for undertaking additional counter-fraud operations across England and Wales in cases where local or regional capacity and capability were unable to operate effectively against the threat or manage mass victims.
3. The creation of a National fraud reporting centre, known as Action Fraud and the National Fraud Intelligence Bureau (NFIB).

Thus, established in 2007 but since closed in 2014, the NFA was a government body set up to add knowledge and improve the response to fraud, with the key aspect being the development of a national fraud crime reporting centre named Action Fraud. The Action Fraud service was launched in 2010 and currently has the capacity to handle 270,000 telephone and web contacts annually (Action Fraud, 2014). Action Fraud receives reports by the general public, businesses and the police services.

NFA also had oversight of the development of the NFIB launched by the COLP to coincide with Action Fraud launch in 2010, designed to collect, analyse and develop those previously unconnected reports from the Action Fraud service and distribute them across UK Law Enforcement agencies for investigation on a viability basis. As such, the NFIB has become the UK hub and source of all knowledge for fraud offences perpetrated against individual citizens' subject of a crime report in the UK.

Between 2010-13, the NFA were charged with producing the Annual Fraud Indicator (AFI) which sought to put a pound sterling value to fraud loss in the UK and raise awareness against fraud for businesses and individuals. The AFI categorised fraud by victim type: fraud against individuals, the private and public sector and against charities.

The AFI 2013 found that fraud against individuals in the UK equated to a loss of £9.1 billion per annum, the loss to the private sector was estimated to be £15.9 billion per annum, against the public sector was £20.6 billion per annum and the cost to the charity sector being £147.3 million (NFA 2013). In relation to fraud affecting individuals; mass-marketing fraud and identity fraud was the most common (costing £3.5 billion and £3.3 billion respectively). The report deemed average household income lost to fraud was 1.03 per cent. The work of the NFA demonstrated a significant rise in the threat from fraud when compared against previously published figures by KPMG of £1.37bn in 2010 and £3.55bn in 2011.

A study by Whitty (2013) concluded that in 2012 approximately 800,000 UK adults were defrauded by mass-marketing fraud but didn't place a value of loss to these findings. This is typical of much research in fraud and no different in boiler-room fraud where there has been no placement of value lost to individuals as a population and the significance of that loss in terms of harm caused. The secondary data used in this research aims to rectify this by analysing financial loss with harm caused to individual victims.

As the above statistics demonstrate, the financial implications of fraud are serious. The financial consequence are not just to victims, but also include the impact costs to law enforcement, as well as those to social and health support services. There is however a knowledge gap that has remained in understanding the financial, emotional and harm caused

to individual citizens when they become victims of fraud that this research will aim to close. What is now known is that the National Fraud Intelligence Bureau (NFIB) recorded loss from boiler-room fraud reports in 2013-14 at £103,956,432. This was across 1770 reports (NFIB, 2014). Additionally, almost 5,000 calls are received annually by the FCA (2013) from citizens requesting boiler-room fraud advice.

The UK's coordinated LEA response is still developing, with clarity of remit and accountability being major elements of agencies efforts to avoid further duplication of their outputs across prevention, enforcement and education to make better use of Government funding. The launch of the National Crime Agency (NCA) in October 2013, underpinned by the Home Secretary's launch of the Organised Crime Strategy (2013) now plays a key role in that development, delivered through its Economic Crime Command constituent arm, to coordinate effective action across UK crime fighting agencies in protection of individual citizens subjected to fraud.

Fraud theories

A number of Criminological theories add interesting perspective as to why boiler-room victims are targeted.

Routine Activity Theory (Cohen and Felson 1979) was introduced in the late 1970s to explain how individual situations and societal routines create acts of crime. This theory outlines that crime occurrence is deemed as the normality that just needs the opportunity to occur, focussing on the tripartite relationship between the motivated offender, a suitable target and where no capable guardian is present.

Additionally, Prospect Theory (Kahneman and Tversky 1979) suggests people make decisions based on potential value of losses and gains, but not necessarily the final outcome, evaluating their potential end position heuristically through processes of edit and evaluations.

The aforementioned theories interestingly, may when combined and examined more closely against the data available for collection in this research study, offer some of the ingredient parts that lead to the tipping point (Gladwell, 2000) of citizens inadvertently putting themselves at risk of becoming victims to boiler room crime. On the other hand, the process of being victimized may be more complex than described in the previous paragraphs.

Psychological factors cannot however be overlooked in understanding the victim, and self-control theory (Gottfredson and Hirschi, 1990) highlights factors evident in personality such as impulsive decision making and display of risk-seeking traits without action consideration. Taking this further, Langenderfer and Shimp (2001) explore the theory of visceral influences on persuasion of the victim in investing in scam offers, hypothesising moderating factors such as self-control, gullibility, susceptibility and scam knowledge. The data collected in this research depicting the previous experience of commodity investment by victims will be examined closely in this respect.

Low self-control increases the likelihood of fraud victimization (Holtfreter et al, 2010; Shreck, 1999). Fraudsters are able to exploit this vulnerability to heighten victims emotional state (Shadel 2012) suggesting that decisions are made on emotions rather than facts. To this point, it will be interesting to note of what research to establish fact, the victims in this study undertook before making the fraudulent investments, as this may be a key factor to the design of a targeted prevention.

Somewhat conversely the Fraud Triangle Theory, created by Dr Donald Cressey (cited in Wolfe & Hermanson 2004; Biegelman 2013), makes attempts to understand the motives of the fraudsters and concludes that there is an elevated risk of fraud when the elements of *motive, opportunity and rationalisation (justification in the offenders mind)* are present. The elements are deemed critical as the absence of one prevents an individual from committing fraud. To this end, the objective of this research study is therefore key if the national data set allows for effective targeted prevention campaigns that provide the ability to remove the opportunity element.

Further contributions to the Fraud Triangle Theory have led to the introduction of the Fraud Diamond theory; whereby there is a fourth critical element, *capability*. The fourth element notes that fraud perpetrators must have the intelligence to exploit vulnerabilities, therefore differing from *opportunity* (Wolfe & Hermanson 2004). This theory both suggests/states that while opportunity and capability overlap, a fraudster cannot operate without the other. Successful boiler-room operators must possess the charm as well as knowledge to entice investors into purchasing shares. Although the focus of this study is to find effective means of preventing the citizen becoming a victim, the above theory could be very relevant in further complimentary research in understanding the boiler-room fraud offender and therefore should not be dismissed from mention here.

Evolution of Investment Fraud

There are two main types of investment fraud which are also a form of market manipulation: the cyber-smear scheme and pump and dump investment scheme. A ‘pump and dump’ scheme is one where misleading information is posted on the internet by the fraudster,

suggesting the company is on the rise; thereby attracting potential investors to buy the shares at inflated prices. A cyber-smear scheme works in contrast to the pump and dump scheme where negative information is posted online, with the intention of allowing share prices to plummet (Siegal 2010). In both schemes, shares are sold to interested investors at manipulated prices, often over the telephone. Thus, the operators of these schemes attempt to increase or lower the prices of commodities by circulating false rumours about it (Maras 2014).

Two common types of investment fraud are Ponzi and pyramid schemes. Ponzi schemes are named after Charles Ponzi who defrauded many in the 1920s losing \$20 million (Tamar 2012). An operator of this scheme pays the returns to investors using capital paid by newer investors (Robb, 2012). A pyramid scheme requires investors to recruit new investors with fees paid by newer investors to pay early investors (Maras 2014). A slight variation of this methodology is not uncommon in today's boiler-room fraud offending by paying small dividends in order to keep the investor attracted to releasing more funds and diversifying their investment commodity portfolio, providing false re-assurance that the investment is genuine (NFIB, 2011).

As well as the notorious 'Ponzi' case, investment fraud increased in attention in the early 1950s due to a scandal involving the investment company Hozenkeizaikai. This company offered fraudulent high dividend guarantees and collected large sums from investors. When the business failed, 4.5 billion yen (approximately US\$12.5 million) was lost and remained unrecovered (Kawasaki 2010). A more recent example of a Ponzi scheme involved Bernard Madoff who defrauded investors of \$65 billion in 2008. Furthermore, in the immediate aftermath of Madoff's arrest, US Securities and Exchange Commission filed four cases

linked to Ponzi schemes and has finalised more than 100 cases since 2010 (Wutkowski, 2009; Devaney, 2012). Devaney notes the higher identification of Ponzi schemes since the arrest of Madoff could be a result of better detection ability rather than growth of schemes; as such schemes do not thrive in bad economies (Devaney, 2012).

Boiler-room

As previously detailed, boiler-room fraud is defined by HMG Home Office counting rules for recorded crime (HOCR) as; *“where victims are cold called by fake stockbroker and encouraged or persuaded to buy shares or bonds in worthless, non-existent or near bankrupt companies or other commodities that are either over-inflated or non-existent”* (HOCR, 2014)

Biegelman (2013) notes the term boiler-room (in fraudulent terms) was coined as a result of fraudsters historically renting and operating from basements of buildings, near ‘boiler-rooms’. Nowadays ‘boiler room’ is so-called, due to operators using high sales pressure techniques to get the victims to invest (FCA 2013). Most boiler-rooms are operated from overseas call centres and the investors are typically provided with bogus UK addresses. Depending on the degree of fraud, boiler-rooms provide the investors with the valueless investment or nothing at all (Biegelman 2013).

According to the NFIB Share-purchase fraud problem profile (2011), there are three main types of boiler-rooms targeting citizens; companies who are completely fictitious and has no known registration; a shell company that is registered with companies house, but has no trade or business provenance behind it; a boiler-room which has cloned the identity of a legitimate Financial Conduct Authority regulated company, citing the same address and on some occasions assuming the identity of registered brokers.

Boiler-room fraud has been prevalent for many years; first originating in the United States in the early 1920s, when the telephone was being utilised as an affordable means of marketing (McMahon, 2013). Salespeople used the telephone to sell non-existent and poor quality land in Florida to potential investors.

Cold calling is the sales process of approaching prospective customers or clients typically via telephone, by email or through making a connection on a social network who were not expecting such an interaction.

Within the United Kingdom, the Privacy and Electronic Communications (EC Directive) Regulations 2003 make it unlawful to transmit an automated recorded message for direct marketing purposes via a telephone, without prior consent of the subscriber.

Regulation of cold calling so far has drawn much criticism for its ineffectiveness. Many boiler-rooms, the places where investment fraudsters work from, are rather temporary and difficult to track in order to bring offenders to justice as they are often rented offices in fictitious names, paid for cash and regularly vacated. Moreover, it has historically not been considered a serious or particularly threatening crime, and therefore police attention has been deemed as better spent on other serious crimes (Windsor 2011). It remains difficult to distinguish between legitimate marketing companies and those that are fraudulent in this arena.

Share-sale fraud is also a form of telemarketing fraud. It occurs when salespeople cold-call their investors from 'boiler-rooms' offering them genuine shares or other commodities at a

vastly inflated price / or worthless or non-existent shares or commodities (Financial Conduct Authority 2013). Contact details of the investors are usually harvested by fraudsters from publicly available shareholder lists or legitimate companies specialising in production of such lists for specific marketing purposes. The salespeople are not registered brokers and are rather, telemarketers (McMahon, 2013).

Victim typologies

Historically fraud victimology has not been perceived as a law enforcement priority by either government or UK policing, with other objectives gaining ascendancy in line with governmental priorities relating to public order, property crime and in particular during recent years, the emphasis on tackling serious acquisitive crime (Doig et al., 2001). Today in a time of austerity and significant budget cuts, policing resources allocated to this issue will in all likelihood remain low unless influenced significantly by research evidence such as this study, as other locally determined priorities are established and pursued by PCCs.

James Willoughby (2013) suggests those targeted by boiler-rooms in the UK are investors who previously invested in the housing market during the 1980s. During this period of time many bought in the open market or purchased their council houses. Further, according to Moore (2013), the profile of the investors targeted by boiler-rooms are men aged 65 and over who are experienced investors, whilst McMahon (2013) found that suitable investors chosen by boiler-room operators are those with large amount of savings.

Age is purportedly related to financial fraud victimization. In 2006, the NASD Investor Education Foundation released a report which investigated fraud targeting older American citizens. The investigation looked at how victims of investment and lottery fraud differed

from non-victims of fraud. This involved listening to 600 undercover audiotapes where officers posed as victims, twenty-one in-depth interviews and 315 surveys conducted. The study found the following demographic differences between the investment fraud victims and non-victims in that they are more likely to be men, married, educated as well as had a higher income. A key finding from the study was Investment fraud victims are more financially literate than non-victims, and made decisions to invest based on their knowledge (NASD 2006; Pension Benefits 2006). Over half of telemarketing fraud victims are aged over fifty according to the Elder Fraud Project (2006). Nearly half of all investor fraud cases involve seniors, and thirty per cent of law enforcement cases brought to them by regulators involve senior investment fraud (Struck, 2006; Van Nevel, 2006).

An investment study at Stanford University by Gregory et al (2009) indicates ageing can cloud financial judgement. The study showed that older adults made more suboptimal choices than their younger counterparts when choosing risky assets. The study's key finding revealed a neural mechanism by which ageing may disrupt or impair rational financial choice.

However, according to NFIB (2011), there are substantially more young people reporting share purchase fraud than previously due to share-purchase fraud nominal's developing in sophistication and widening their victim portfolio. Share-purchase fraud victims are predominantly male and only 15% of victims female (NFIB, 2011). Interestingly, female victims were reported to have an older age profile than male victims. The report suggests that it is feasible this may be due to the taking over of household funds, once their partner is deceased or after divorce. Another finding was that brokers attempt to actively deter male investors from speaking to their female partners, possibly because they view females as risk averse and more questioning. Although this research is useful, it must be remembered that it

was limited to descriptive analysis using NFIB data from financial year 2010-11 when the NFIB had only undertaken partial reporting roll out across England and Wales and therefore only collected data from six pilot Police forces.

In addition to the victim's financial costs, the emotional harm of this fraud should not be underestimated. Some victims have lost their life savings and their homes and as a result they can suffer depression, marital problems, and there have been reports of suicide as a direct result of losing their life savings to a boiler-room operation (NFIB, 2014). Victims of Advance-Fee fraud can feel disbelief and shame as well as a loss of status (Ojomo, 2001).

These findings are strengthened by Button et al (2014) who found the impact of being a victim included stress, anger, physical and mental health problems, as well as suicidal feelings and attempted suicide (Button, Lewis & Tapley, 2014).

For the purpose of this research, the victimology findings of previous research are extremely interesting, but must be placed in the context that none of them have been on the scale offered by this research project in representing national populations.

A paper reviewing literature on psychiatric sequelae of crime victimization (Ganzini et al, p62; 1990) helpfully suggests that "Primary prevention could well be important" and further details that; "specific at risk groups, if educated of the dangers of speculative investments, could be a cost effective and valuable approach to the prevention of fraudulent victimization". This suggestion however is not evidence based but rather more speculative of what might work. Whilst the claim is endorsed in principle by this research project, the

purpose now is to place evidence behind that endorsement by analysis of the national data set available to this study.

Many other papers, (although generally focusing on victim support and consequences rather than primary prevention) support the call for further research in the area of fraud victimization. Examples of these papers are; Moore and Mills (1990) in their paper examining the effects on neglected victims and unexamined costs of 'White collar crime' in the USA; Titus et al (1995), who suggested that there isn't a typical fraud victim profile; and Schichor et al (1996) examining the reactions of victims in one particular boiler-room fraud by randomly surveying a sample size (n=281) of 12000 victims, receiving approximately 54% (n=152) completed questionnaires for analysis. Unfortunately, this study stopped short of 'understanding the victim' but rather just illustrated 'who was the victim' and thus should be treated with caution regarding potential bias from non-response to survey. The study appears quite presumptuous in claiming that victims 'knowledge of tactics used against them', would satisfactorily protect from further victimization. The study bore no statistically significant results. The research concluded that the overwhelming reason (66%) for victims investing in the fraudulent scheme was 'the persuasiveness of the fraudster'.

The Schichor (1996) study was further examined by Titus and Gover (2001) as part of a wider review of fraud victimization studies. Titus and Gover (2001) comment that many of these studies suffered methodological issues such as utilization of small samples and samples of convenience. Titus and Gover (p147; 2001) conclude that the evidence from the limited victimization research surveys was "unanimous that greater education is not a protective factor; in fact the evidence points to the reverse". They go onto state that fraud attempts are less likely to succeed if; "the offender is a stranger; initial contact is by telephone or mail; the

potential victim has heard of this type of fraud before; or the potential victim tries to investigate the person or proposition before responding”. These findings will be particularly interesting in comparison against the findings in this study.

Titus and Gover (2001) helpfully strengthen the rationale behind this study by suggesting there is “a roll for further research in the prevention of fraud victimization, such as enhanced and routine data collection on a national level”.

More recently, Trahan, Marquart and Mullins (2005) utilised multiple data sources in their research to understand the victims of a Ponzi scheme fraud perpetrated in USA, and although researching a different fraud type and offender methodology, the variables and research techniques utilised are interesting for consideration of examining the victim’s motives for investment. The research used surveys with open ended questions to achieve a richness of data and despite the victim characteristics being perhaps unique to the fraud type examined, the effort placed by the study in careful categorization of victim variables assisted accuracy of statistical correlation tests. The study found that employment situations were positively correlated to investment loss ($p < 0.05$). Furthermore, using the median value of age, served to discount previous studies that suggest fraud disproportionately targets the elderly. In this study, age targeting was varied (Titus et al, 1995).

A further study of relevance (and more scientifically reliable) to fraud victims but yet again non-specific to boiler-room’s nor representative of a general population, was that of Reiboldt and Vogel (2003) who conducted a critical analysis of telemarketing fraud. Reiboldt and Vogel collected survey data from a large ($n=8,197$) community, by random probability sample of 374 residents. This study had sound research design and rigorous follow up

methods with monetary incentivisation for respondents, which achieved a 64% response rate. The study used a logistical regression model and the results showed one significant variable below ($p < .05$) which was believability of the fraudster ($p = .029$). Similar to the findings previously mentioned in Schichor et al (1996) where persuasiveness of the fraudster was the key finding influencing those surveyed.

Alternatively, Alves and Wilson (2008) chose to research the “effects on loneliness on telemarketing fraud vulnerability among older adults”. They chose a descriptive research design based on suggestions of previous research of similar nature, using purposive sampling to survey 28 adults meeting the research criteria. The administration of the survey questionnaire may be criticised for consistency as some were self-administered whilst others were by structured interview. Interestingly, the dependent variable of loneliness was compared to all other collected variables of risk factors in telemarketing fraud, but no significant results were found. This study had a number of limitations; some examples of which include time lapse between the offence and the measurement of loneliness, and the small sample size, rendering it impossible for generalizability. The research is nonetheless extremely helpful as a first step and thought provoking for avoidance of particular research designs.

Literature review findings

In summary, there have been a number of studies of fraud victims with differing focus across demographics, behaviours and psychological factors with mixed results. More often those studies have been qualitative, completed with surveys in the absence of any national reporting data sets. It is evident in the literature review, that boiler-room fraud victimology in particular, has not been extensively researched by criminologists to date, nor has it been

offered the opportunity to take a national victim data set like this study for further research in understanding the victims of boiler-room fraud.

The literature reviewed illustrates the gap in evidence that exists in research undertaken to date in respect to boiler-room fraud victims. The literature review, has helped shaped the research study objectives here; using the UK's national crime reporting data to provide groundbreaking victimology evidence to enable Chief Officers and PCC's to deliver evidence based targeted prevention at those disproportionately targeted members of communities at risk of becoming a boiler-room victim.

Research questions

Prevention policies in UK policing have historically lacked an evidence based approach and are intuitive. In respect to boiler-room fraud, there has never been an evidence based approach. This research study aims to change this and asks;

- Who are the victims of boiler-room crime;
- Where do they live;

Are their characteristics disproportionately targeted compared to UK population census data (2011).

Methods

This research uses secondary data for the population of 1770 UK boiler-room fraud victims, a telephone interview survey response from 402 of these victims (22.7% of the population) and Census data for England and Wales 2011. The research methods and the research instruments chosen for this study are critical to achieving reliability of evidence based results.

The population level secondary data was collected from Action Fraud/NFIB, the UK's national repository for reporting fraud crime. Utilising this approach to the research provides key victim demographics and characteristics that with the additional primary data from victim telephone interviews makes it possible to meet the research thesis objectives and is complimentary to the aim (Neuman & Weigand 2000).

The design used was categorised by the initial collection and analysis of the secondary data, followed by the collection of primary data, informed by the subsequent analysis across the data and against Census data. Secondary data variables were combined with primary data from interviews to produce a file of 402 victims that covered demographic status, crime details and victim behaviour with respect to the criminal event (Cresswell, 2003 cited in Robson, 2011).

UK Fraud Crime Reporting

To provide a comprehensive understanding of how the data set for this study was captured, it is important to provide an overview of the UK fraud recording and reporting process including:

- The changes to national fraud reporting;

- Detail on the current process that under pins fraud reporting/recording;

General Principles

In January 2007 the Fraud Act 2006 became law and repealed much of the previous fraud legislation. The Home Office require UK Police forces, private sector and individual victims to record fraud crime to the Action Fraud/NFIB. Since the implementation of NFIB and Action Fraud in 2010, the Home Office obtain the levels for UK recorded Fraud from them.

The NFIB reporting codes used to record fraud crime are used by Action Fraud to enable them to record specific fraud types reported that are then passed to the NFIB in an automated process between operating systems. These codes are also used to count fraud types passed to the NFIB in bulk data transfers from other NFIB partners. All confirmed fraud held within the NFIB database named as KNOWFRAUD use the NFIB codes.

Reporting/Recording (Crimes/Information into NFIB)

The Office of National Statistic (ONS) categorises recorded fraud crime in two ways:

- Police Recorded Fraud; and
- Industry Recorded Fraud

Both of the above are recorded in accordance with National Crime Recording Standards (HOCR 2014) which states: *“An incident will be recorded as a crime if on the balance of probability, the circumstances amount to a crime defined by law, and, there is no credible evidence to the contrary.”*

These frauds are inputted to Action Fraud by victims, police or business using the online reporting tool either directly, or by telephoning the Action Fraud contact centre where trained staff input on their behalf.

The on-line web tool is an intelligent reporting tool given input data. It decides if a notable offence of fraud has taken place and which Home Office Counting Rules (HOCR) fraud category it should be recorded in depending on how each victim responds to a predetermined intuitive question set.

Each fraud report in this category is logged by its NFRC, a 12 digit unique reference number, e.g. NFRC190100123456. Each fraud is also assigned a HOCR Fraud category, e.g. NFIB2A– Share sales or boiler-room fraud.

Industry Recorded Fraud is fraud fed directly into KNOWFRAUD by a number of data service providers under an agreed Information Sharing Agreement (ISA), such as CIFAS (CIFAS, 2013a) and Financial Fraud Action UK (FFA UK, 2013). This is the industry fraud that prior to inception of Action Fraud/NFIB was collected by the industry and included in the Annual Data Return to the Home Office.

Recorded information

Much of what is reported online, either directly or via the contact centre, falls short of the threshold for being recorded as a crime according to National Crime Recording Standards (i.e. on the balance of probabilities a crime in law has taken place and there is no credible evidence to the contrary). This remains in the system as an information report. Each information report also has a NFRC reference and NFIB fraud category in the same way as

crime does. For the purpose of this research study, the information reports categorised for Share sales or boiler-room fraud have been removed from the data set used as it cannot be certain that these reports are actual victims, they may be attempted crimes at best.

Action Fraud reporting processes

At the initial reporting point of alleged victim contact with Action Fraud (Telephone or web tool contact), using a number of triage questions, an initial assessment is carried out to ascertain if a fraud has been perpetrated. If this is false, using the responses given, details of the most appropriate organisation are provided to assist the customer and they are re-directed. If fraud is suspected, further questions enable the incident to be categorised by report and fraud type and recorded by Action Fraud for forward dissemination to the NFIB.

The questions posed can vary and are determined by the sequence of events that have taken place and thus the balance of probability test to assign against it. Once the situation has been categorised, specific information is captured; when a report is made, enough information is taken to understand the situation and provide the data needed to assess if viable lines of enquiry are available for law enforcement, such as a police force, to take further action. This stage of the reporting process captures, amongst others, various data entities covering the victim, suspects, amount and method of transfer of money and fraud enablers used in the crime; which can be contact by telephones or via internet enabled devices. It also represents one of the biggest challenges as a high level of data is desired to inform viability, however the volume of questions posed or level of understanding of the fraud required to answer them can be viewed as a barrier to reporting and potentially confuse or aggravate a victim of fraud. The data capture variables are set out in full at Appendix A.

Once the reports are captured they are automatically transferred in tranches every 24hrs to the KNOWFRAUD system at the NFIB.

National Fraud Intelligence Bureau (NFIB) KNOWFRAUD system

KNOWFRAUD is the name of the information technology system containing the Police Recorded Fraud (i.e. Action Fraud) and Industry Recorded Fraud (e.g. CIFAS) datasets housed in the central hub for all UK fraud reports, the NFIB.

The KNOWFRAUD database is primarily used to enhance and link individual fraud reports that would otherwise be held in silo around the UK. These linked crimes, referred to in policing terms as criminal networks are sent out for investigation across LEA under a set of rules that determine the most appropriate agency for investigation, thus driving scale of economy efficiencies to investigating fraud.

In practical terms, KNOWFRAUD Fraud is formed of two distinct parts: NetReveal and Analyzer.

The primary function of NetReveal is to assess the viability of a crime for investigation, by linking entities (e.g. a suspect phone number) across the datasets and highlighting these cases for manual assessment by an NFIB Crime Reviewer through its Workbench.

Analyzer is a query-builder tool that allows the NFIB staff to interrogate the datasets by constructing an enquiry based on specific criteria (e.g. looking for only Action Fraud reports where the word 'London' is used, within a particular month on the year).

Research design

To provide the most accurate and detailed victim profiling, the research design was critical to ensure that the data was used correctly and that analysis results were reliable. The research analysis was conducted over distinct phases, designed to extract the most accurate and fullest detail to assist future predictive targeting of potential victims and provide policing with the best information for standardised prevention policy delivery.

Phase 1 - Secondary data extraction from NFIB and first level analysis

Victim report data specified as boiler-room crime, captured by AF/NFIB systems (at Appendix A) was exported from the KNOWFRAUD database into excel spreadsheets according to variables captured at the point of reporting the crime to enable demographic analysis. The secondary data consisted of 1770 victim crime reports for financial year 2013-14. The analysis at this stage aimed to answer the research questions; who are the victims of boiler-room crime by providing an understanding of the victim demographics across single variables.

By way of example, using the top individual variables by volume, (which illustrates the normal extent to which policing currently operates – exploring the dataset) the average boiler-room victim profile is a male, aged 64, of a white British ethnicity and living in London. This somewhat illustrates the general issues of UK policing, when crime prevention targeted activity is based at this level – basic descriptive analysis. It is clearly limited and isn't particularly helpful on his own merits to police forces in targeting prevention effectively.

Phase 2 – Geographical mapping of the victim locations across Police force areas.

Further to the initial analysis, geographic mapping was then undertaken to answer the research question: Where are the victims of boiler-room crime located across the UK? In addition to using the secondary dataset, UK Census data was used to show more accurate victim demographics against population density, ethnicity, age and gender. This helped to start identifying disproportionately targeted victim groups across the UK population.

The secondary population data did however have some limitations in providing full demographic analysis of the victims against UK census data due to some victim records missing key data between variables. An example of this was in ethnicity, which has 29% of missing data.

Phase 3 – Obtaining Primary data and enhancing Secondary data with telephone interviews;

To collect missing data and collect primary data for individual victims on the criminal event not captured by UK crime reporting systems, but essential to answer the research questions including the financial and emotional affects of the crimes, a structured telephone interview survey was undertaken of the population of 1770 victims by highly trained Action Fraud call handlers.

The interview schedule (attached at Appendix B) was developed based on what the Secondary data indicated was important details to capture in answer to the research questions. This schedule was developed utilising a focus group of specialist staff from the NFIB Investment Fraud Team.

The question formation was important to ascertaining additional victim information relevant to profiling the victim characteristics and their experience. This could only be defined once the initial demographic analysis stage of NFIB reporting data had been completed. Questions were focussed around emotional and financial impact, loneliness, openness to marketing information, % loss versus % wealth, and previous investment experience (Van Wyk and Benson, 1997; Schoepfer and Piquero, 2009; Langenderfer and Shimp, 200; Alves and Wilson 2008). Successful interviews were carried out with 402 victims (22% of the population).

The primary data gained from the interviews provided for enhanced opportunity of targeted prevention products. This qualitative data gave the context of victim situational behaviour, was additional, personal and useful in compliment to the secondary data.

Collection of Interview data

The data provided to the telephone interviewers at Action Fraud contact centre was redacted to what was required for the task to ensure interviews were conducted in a timely manner. Extracting non-relevant information for the purpose of the task also protected the interviewer from further questions from the victim about the progress of their crime.

All telephone interviewers were fully briefed on what the research study was and the idea behind it before the interviews commenced. Post briefing a cross-check with Action Fraud supervisors was made to ensure all interviewers were happy in partaking and comfortable in knowledge of the task. The telephone interviewer brief is attached as Appendix C. The pre-question call script provided to the telephone interviewers is at Appendix D.

All other Action Fraud staff not partaking in the interviews were also advised of the basic detail of the study to ensure that if a victim telephoned the helpline asking to validate the study there was no confusion.

The team also utilised a call back log on a daily basis should a victim be unavailable on first call and later returned the call to the helpline to participate in the study. Further, as part of the victim journey requirements, the telephone interviewers were instructed, if the victim asked and wanted an update on their report or had inadvertently become a repeat victim of another fraud, they should advise the victim to separately telephone the contact centre to be dealt with in the usual manner.

For contact centre staff cover and service level reasons, telephone interviewers were staggered across shifts. This also meant that the times of contacting victims was more flexible between the hours of 1000-2100hrs and helped to maximize opportunity of contact across the 1770 victims.

Interview response rates were reduced by international victims with language barriers and time zone differences. Unfortunately 12% (n=217) of boiler-room reports had no contact number entered for the victim and thus telephone contact was not viable. It seems possible that these factors are likely to have resulted in random non-responses and are not highly likely to have resulted in response bias.

Some general feedback from the telephone interviewers was;

- Some interviewers felt that a trend in the retired/semi-retired victims was that they wanted to talk longer than was necessary for the interview.

- Questions –Are you Housebound/lonely question were the only question that advisors felt uncomfortable asking and so these questions were asked last of all. The percentage of victims preferring not to answer these questions was low – 1.3% and 1% respectively, indicating this was a good choice of positioning.

Two free text boxes were also provided for telephone interviewers to record non-responses/non-participation to contact.

As illustrated by Figure 1 below, Over 70% of the victims could not be contacted because they did not answer or the call was forwarded to voicemail. The Action Fraud call centre note that attempts to call the victims were made between the hours of 10:00 and 21:00 and adjusted for staffing levels (in order to maintain a service). The success rate of the calls could potentially have been affected by the time of day the attempt was made.

Figure 1. Reasons interviewers were unable to contact victims

Unable to contact victim - why?	Count	%
No answer	480	40.5
Went to Voicemail	371	31.3
No Contact Number	202	17.0
Number Incorrect, Not recognised or not working	94	7.9
3rd party advised Victim not available	34	2.9
Victim Deceased	3	0.3
Bank	1	0.1
Grand Total	1185	100.0

As Figure 2 below illustrates, where contact is made with the victim and they are unwilling to complete the interview, most were not specific about why this was the case although the Action Fraud call centre did include ‘*not a convenient time*’ within this category.

Only three people decided not to complete the interview after starting it, so the attrition rate was low.

Figure 2. Reasons victims were unwilling to complete the interview.

Made contact but victim not willing - why?	Count	%
The caller was unwilling, unavailable or it wasn't a convenient time.	124	66.3
Not available at present but would be interested in a callback at a later date	34	18.2
The Victim cannot remember making the report.	11	5.9
The caller will call the helpline to verify my Identity.	8	4.3
Started survey but decided to stop midway through	3	1.6
A 3rd pty answered and advised that as the victim is 90, she would not be able to take part.	1	0.5
Victim was extremely confused about a report and started to question who I was.	1	0.5
Was not willing to take part via telephone and would prefer e-mail.	1	0.5
The caller doesn't want to go through the survey because he is 90 years old and cannot remember.	1	0.5
Refused to complete as No Update on report	1	0.5
The victim was very confused and said the police are dealing with the case before hanging up.	1	0.5
[Victim] his eighties and would rather not do the research.	1	0.5
Grand Total	187	100.0

Phase 4 - Analysis of Survey group.

Exploratory analysis was conducted between variable groups to establish any interesting relationships such as type of commodity invested in, against value of loss, and victim estimated wealth against financial impact categorization. Variables cross tabulation and significance relationships being important to establish what collective factors might determine specific victim characteristics targeted. Without this essential information detailed profiles of the most likely victims disproportionately targeted by boiler-room fraudsters wouldn't be possible and therefore targeted prevention is likely to be of little value.

Phase 5 - Equivalence of the Interview dataset to the population data.

Acknowledging that the Interview survey dataset was not a true random sample of the victim population, equivalence tests were necessary to examine potential bias of the primary dataset prior to using it in any statistical analysis using Statistical Package for the Social Sciences

(SPSS) software and drawing any conclusions against the research questions, later in the study.

Figure 3 below shows the number of victims across three variables (Net Payment / amount lost, Ethnicity and Age) split into two groups – interviewed and not interviewed. Each is then expressed as a percentage of the subtotal for that variable. The column on the extreme right of the Figure then shows the difference between the percentages of the ‘interviewed’ and ‘not interviewed’ victims, for each subtotal of the three variables (e.g. ‘0’ indicates that there is no percentage difference between the two victim groups). Further, the rows in Figure 3 marked as ‘N/A’ represent missing data where the victim has not provided that information (as distinct from not knowing). For the purposes of calculating the percentage of the variable for each subgroup, the missing data was excluded. The percentage of subtotal values exclude not applicable (i.e. N/A rows) responses.

Figure 3. The number of victims across three variables, split into two groups – interviewed and not interviewed

Variable	NOT Interviewed Victims	% of subtotal	Interviewed Victims	% of subtotal	Difference
Net Payment Total	1368	100.0	402	100.0	0.0
1 to 1,000	20	1.9	6	1.9	0.1
1,001 to 5,000	244	22.8	87	28.2	5.4
5,001 to 10,000	204	19.1	55	17.9	1.2
10,001 to 50,000	407	38.1	105	34.1	4.0
50,001 to 100,000	103	9.6	30	9.7	0.1
100,001 to 500,000	88	8.2	25	8.1	0.1
500,001 +	2	0.2	0	0.0	0.2
N/A	300	N/A	94	N/A	N/A
Ethnicity Total	1368	100.0	402	100.0	0.0
White - English, Welsh, Scottish, Northern Irish, British	797	81.7	249	89.9	8.2
White - Other	56	5.7	4	1.4	4.3
Asian/Asian British - Indian	38	3.9	6	2.2	1.7
Black/African/Caribbean/Black British - African	16	1.6	3	1.1	0.6
Asian/Asian British - Pakistani	14	1.4	2	0.7	0.7
Asian/Asian British - Other	9	0.9	4	1.4	0.5
Other ethnic group	10	1.0	2	0.7	0.3
White - Irish	8	0.8	1	0.4	0.5
Asian/Asian British - Chinese	7	0.7	1	0.4	0.4
Black/African/Caribbean/Black British - Caribbean	6	0.6	2	0.7	0.1
Mixed - Other	6	0.6	1	0.4	0.3
Arab	4	0.4	0	0.0	0.4
Black/African/Caribbean/Black British - Other	2	0.2	2	0.7	0.5
Mixed - White and Asian	2	0.2	0	0.0	0.2
Asian/Asian British - Bangladeshi	1	0.1	0	0.0	0.1
N/A	392	N/A	125	N/A	N/A
Age Group Total	1368	100.0	402	100.0	0.0
5 to 7	1	0.1	0	0.0	0.1
15	0	0.0	1	0.3	0.3
20 to 24	10	0.8	1	0.3	0.5
25 to 29	12	0.9	1	0.3	0.6
30 to 44	152	11.4	27	6.8	4.6
45 to 59	335	25.2	76	19.2	6.0
60 to 64	146	11.0	43	10.9	0.1
65 to 74	351	26.4	119	30.1	3.7
75 to 84	221	16.6	92	23.2	6.6
85 to 89	82	6.2	30	7.6	1.4
90 and over	22	1.7	6	1.5	0.1
N/A	36	N/A	6	N/A	N/A

To further test the equivalence of the victim interview dataset, the key variables of commonality between datasets (n=402 and n=1368); age, gender, financial loss, and ethnicity was tested using SPSS.

SPSS results;

- ***Gender:*** ($\chi^2=0.308$, $df=1$, $p=0.579$) illustrating no significant difference between groups.

It is also useful to see the gender distribution between interviewed and non-interviewed victims on Figure 4 below;

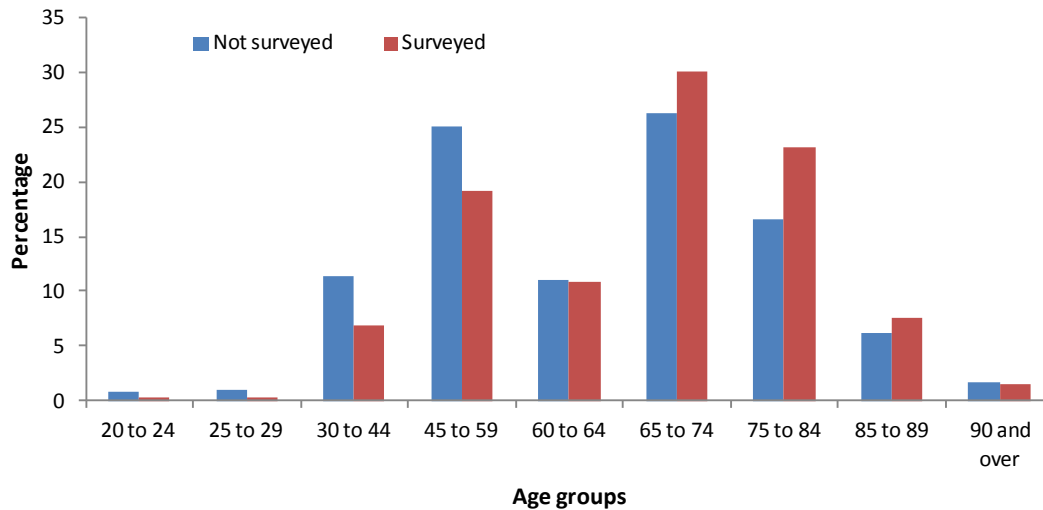
Figure 4. Gender distribution between interviewed and non-interviewed victims.



- ***Net victim loss:*** ($t=0.626$, $df=1662$, $p=0.532$) illustrating no significant difference between groups.

- **Ethnicity:** ($\chi^2=3.23$, $df=1$, $p=0.07$) indicating no significant difference between groups. By comparison, minority groups constituted 8.7% ($n=277$) of the primary dataset against that of 12.6% ($n=976$) of the secondary dataset.
- **Age:** ($t=-4.237$, $df=1726$, $p=.000$) this shows a significant difference between groups however this could be the result of the large dataset making the test more powerful, as the absolute average ages are 66.6 (for the survey group) and 63 (for the population). Although the results show significant difference between groups, the ages when plotted side by side in Figure 5 below, only differ in average age by 3.6 years which is very persuasive. Furthermore, the modal groups are still within the same counts as illustrated by Figure 5.

Figure 5. Age groups surveyed and not surveyed.



The percentage missing data between groups was 3% ($n=39$) for the non-interviewed victims and 1% ($n=3$) for the interviewed victims. This could relate to a small bias as a result of the times the interviewers made their phone calls to the victims, i.e. a day-time bias where retired victims at home were captured more in the sample group.

Of the 4 demographic variables tested, three showed no statistical difference between the interview sample data (n=402) and the population dataset (n=1368), in particular the Net loss which tells of the criminal event. The age test result was not unexpected due to the large sample size boosting the power of that test, suggesting that caution be exercised when drawing conclusions relating to age against other variables comparisons. For this reason, it was decided that where analytical tests are made between age and other variables, where population data is available for the independent variable it will be used, and in all other cases the interview survey data will prevail based on the equivalence tests observed.

This methodology shows the rigour in the approach of this study to avoid over-interpretation of the results or drawing statistically incorrect conclusions.

Findings

The research objectives were set to achieve answers to; who the victims of boiler-room crime are; their distinct characteristics; where they are located in the UK; and identify the places where boiler-room victims and potential victims are disproportionately at risk.

The study could only begin to achieve these objectives by using secondary data of the population of UK boiler-room victim crime reports and primary data from structured victim interviews, and profiling those victims through demographic analysis, census data and SPSS analysis. This study will enable Police Chiefs and PCC's at both National and Local levels to pro-actively target citizens who are at disproportionately high risk of becoming boiler-room victims, or repeat victims with prevention campaigns that are evidence based for the very first time.

The results from this research study begin to answer what could work in targeting citizens most at risk from boiler-room fraud. The power of knowledge for UK policing to identify and protect those in communities who are not visible in every day crime matters cannot be underestimated.

Geo-mapping victim locations across UK Police forces.

By geo-mapping the secondary population data, 89% (n=1575) of the victim addresses had a postcode that could be converted to geo-code and mapped. The population of victim data was matched to 2011 census data for the 43 forces in England and Wales.

The spatial join is aligned to police force boundaries. This allows visualisation of the victim's location (Figure 6 below is an example of this) and for normalisation of the figures to control for population levels derived from the census figures illustrated below by Figure 7.

The process worked by joining layers of the mapping file on commonality derived from location, so that points (i.e. the victim location) falling within an area (i.e. the police force boundary) are counted as part of that polygon. In raw format, this gave a total number of victims located in that Police force's jurisdiction. However, to normalise the results so that a Metropolitan Police force (with a large population) can be compared to a rural Police force (with a relatively small population), Middle Super Output Areas (MSOA) Census data was matched to Police force areas – where the boundaries were coterminous or wholly within.

The Police force with the highest number of victims was the Metropolitan Police Service (London excluding the City of London force area), which had 14.6% (n=216) of England and Wales victims. Whilst both maps demonstrate how widespread the victims are, Figure 7 shows that the forces with the highest number of victims per head of population are Surrey Police and the Isle of Man, while south / central England and Wales are also high.

The Crime Analyst tool within ArcGIS was also used to produce hotspot maps. These assign bandwidths to each location (point showing the victim's postcode) that means clusters of victims can be identified. Figure 8 shows how a hotspot map can help determine where the victims may be more clustered / concentrated in a force area. Information of this nature in the Metropolitan Police force area for example, could be useful for consideration in prioritising borough level policing plans and policy implementation.

Figure 6. Victims location by postcode by Force Area.

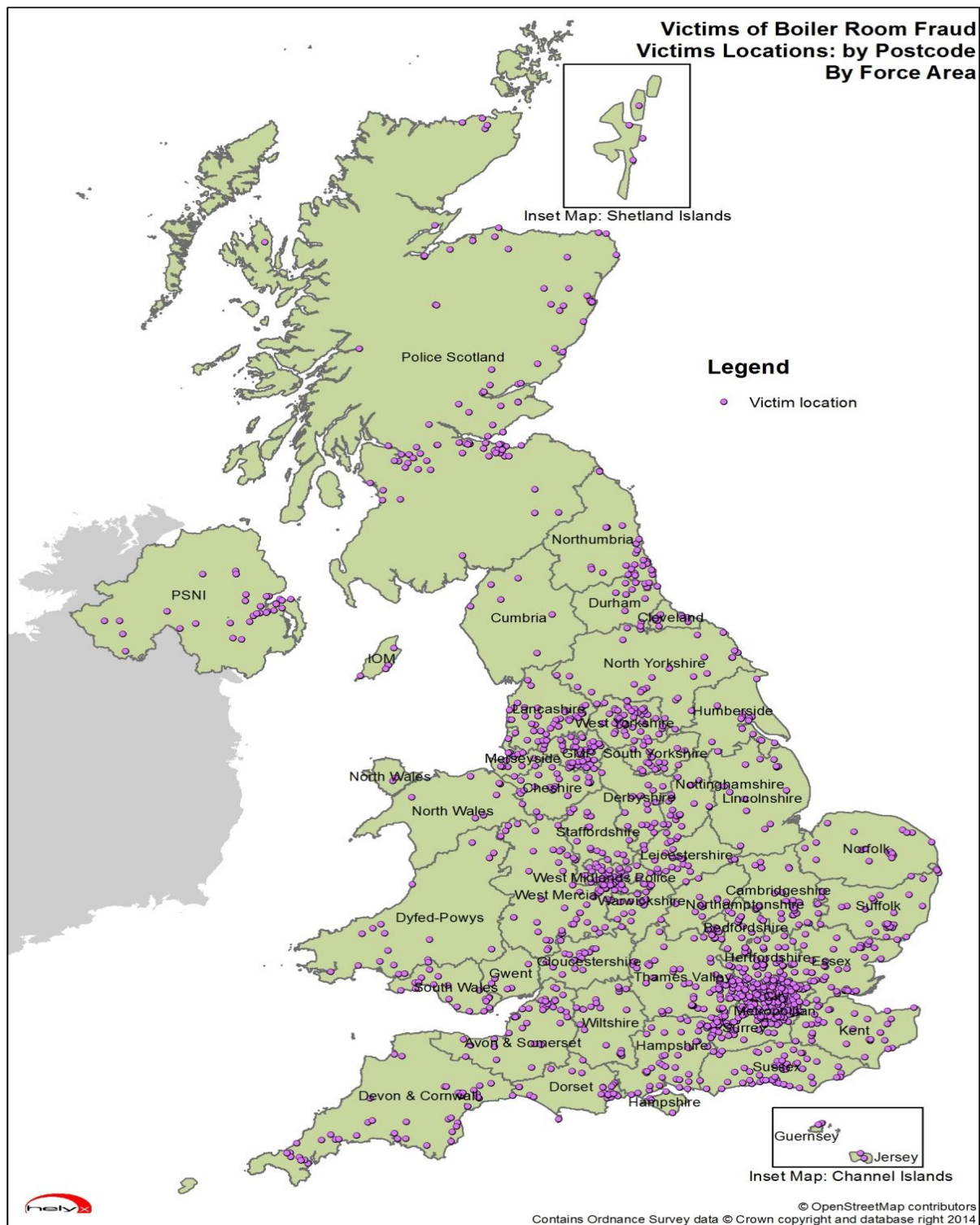


Figure 7. Victim density mapping by Force Area.

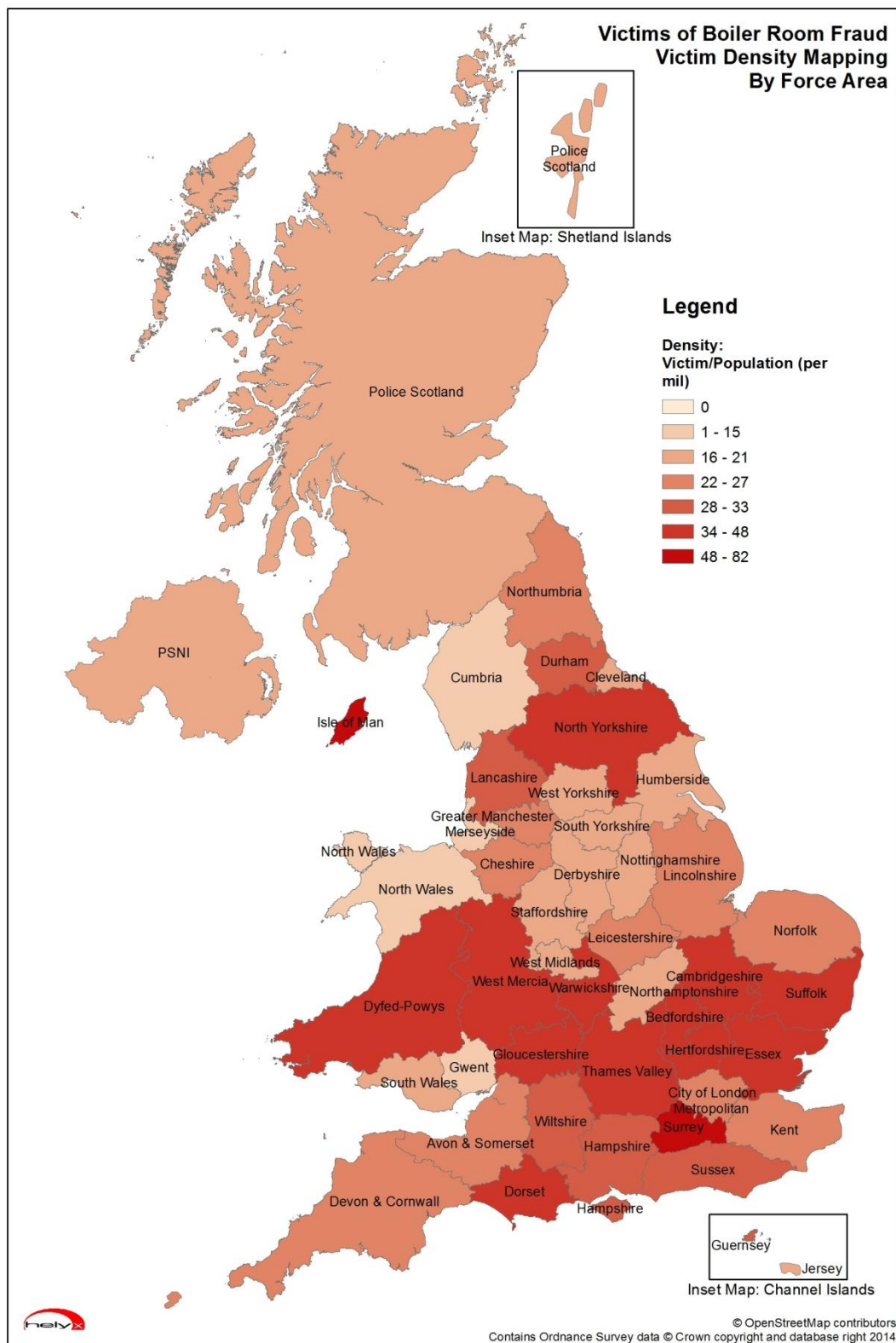
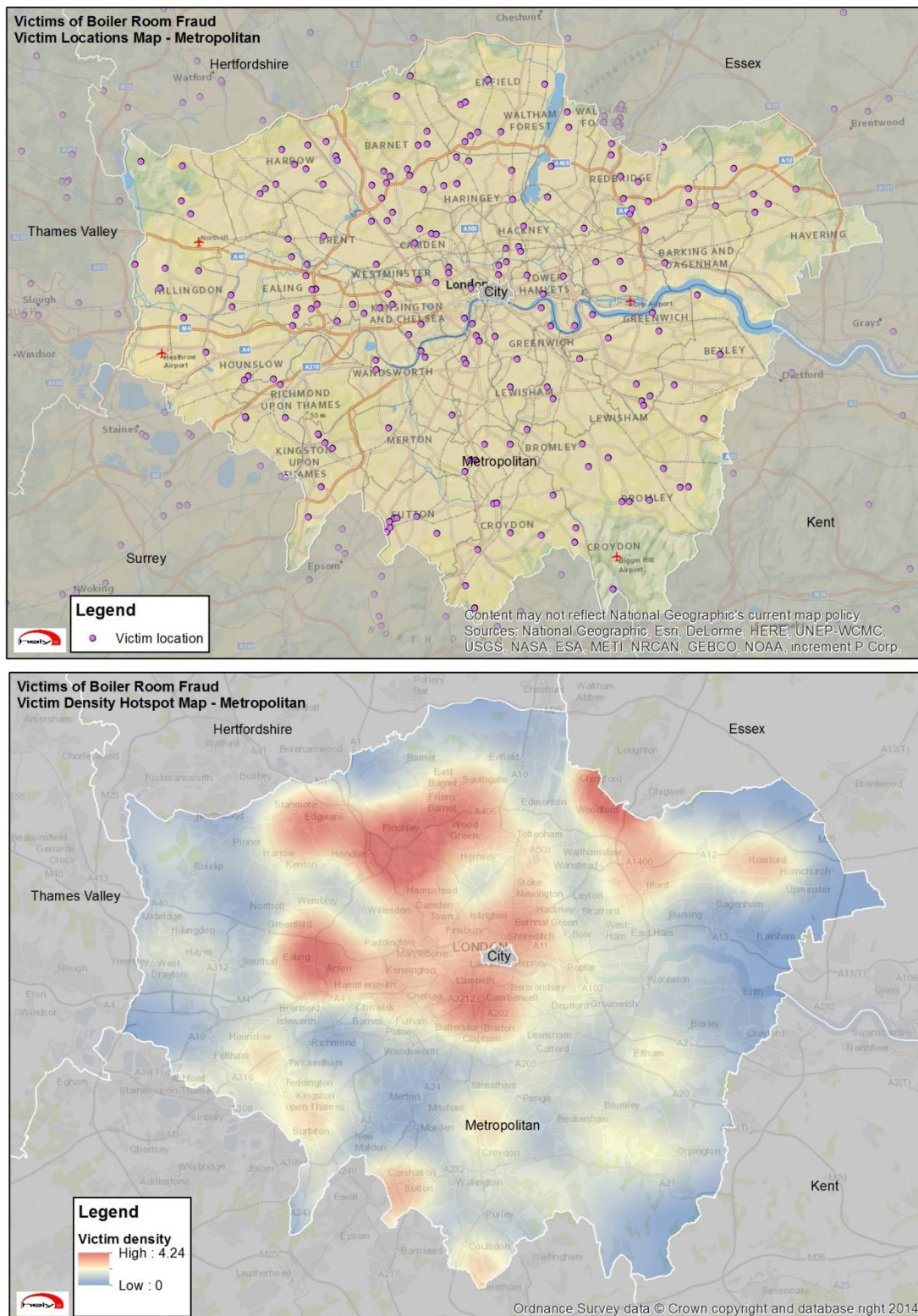


Figure 8. Maps demonstrating alternative visualisation of victim location data in the Metropolitan Police area.



At this level, the mapping of the boiler-room victims is helpful to provide a guide to offender targeting and success hotspots / UK distribution across Police Force areas and where required, within sub-commands against their citizen volumes and density. Conversely, they also provide for a more strategic picture in terms of disproportion of targeted citizens by age, ethnicity, wealth, and gender by virtue of the demographics alone. The geo-mapping at this stage is however, still limited by the poor knowledge about behaviours and characteristics – which are essential tools for prevention campaign messaging and advice. Henceforth, further analysis was conducted.

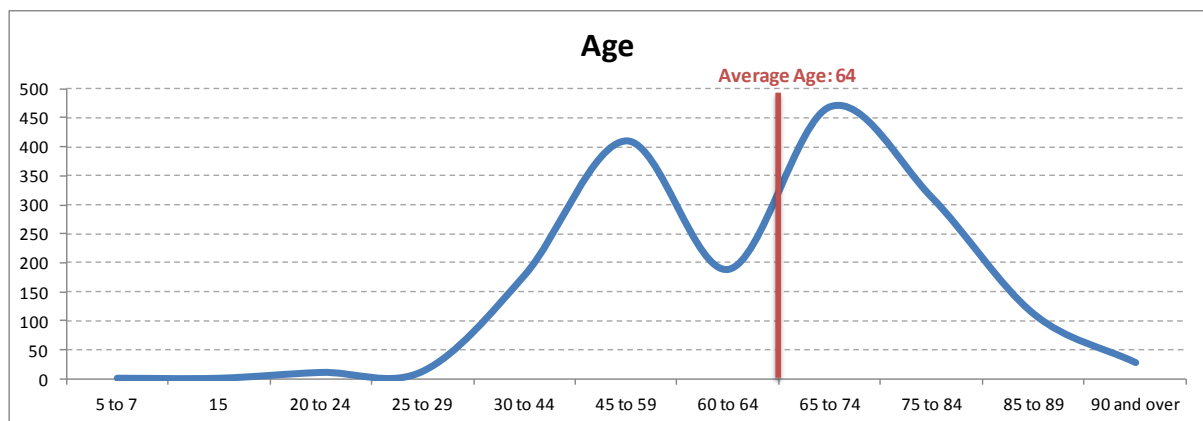
Exploring the secondary population dataset by demographic analysis

The population data extracted from the Action Fraud reports, record demographic data concerning the victims, including: Date of Birth - which has been used to determine victim age; Ethnic Origin – across 17 ethnic origin descriptors (or not stated); Gender – declared by the victim (or not stated); and Net loss to the victim.

Using only these variables, a top level demographic profile (of the volumes and percentages) was created by descriptive analysis to commence answering the research question: Who are boiler-room victims?

Figure 9 shows the distribution of victims by age range. This data illustrates two peaks at 45 to 59 and 65 to 74 age ranges, with an average mean victim age of 64.

Figure 9. Distribution of victims by age range.



The majority, 79% (n=1402) of victims in the population data are male. However, the gender of 3% (n=48) of victims was not recorded and could not be determined by the person's title (e.g. Mrs = female). This is illustrated by Figure 10 below;

Figure 10. Gender of victims.

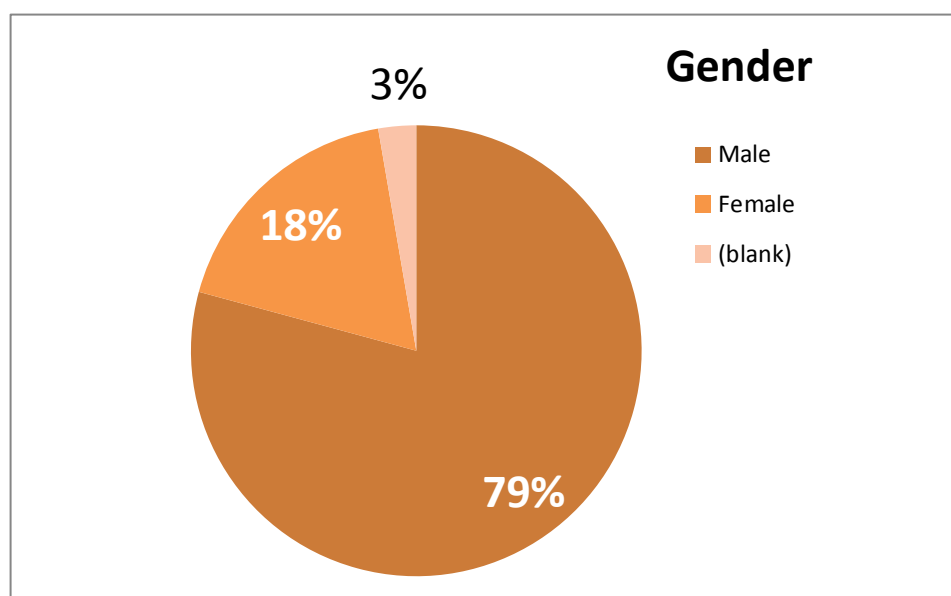


Figure 11 below illustrates the recorded ethnicity of the population data. White ethnicity groups (including Irish) dominate the victim population dataset, with 89% (n=1115) of

victims being white Caucasians. The largest other group accounted for 6.5% (n=82) of victims and consisted of Asians (including Indian, Pakistani, Bangladeshi and Chinese). Black ethnicity victims (including African and Caribbean) are even less represented, with 2.5% (n=31) of the reports. It is possible that more of one ethnic group or other was particularly represented among the 29% (n=517) that did not state their ethnic origin which limits some of the opportunities of the data reliability in respect of this variable.

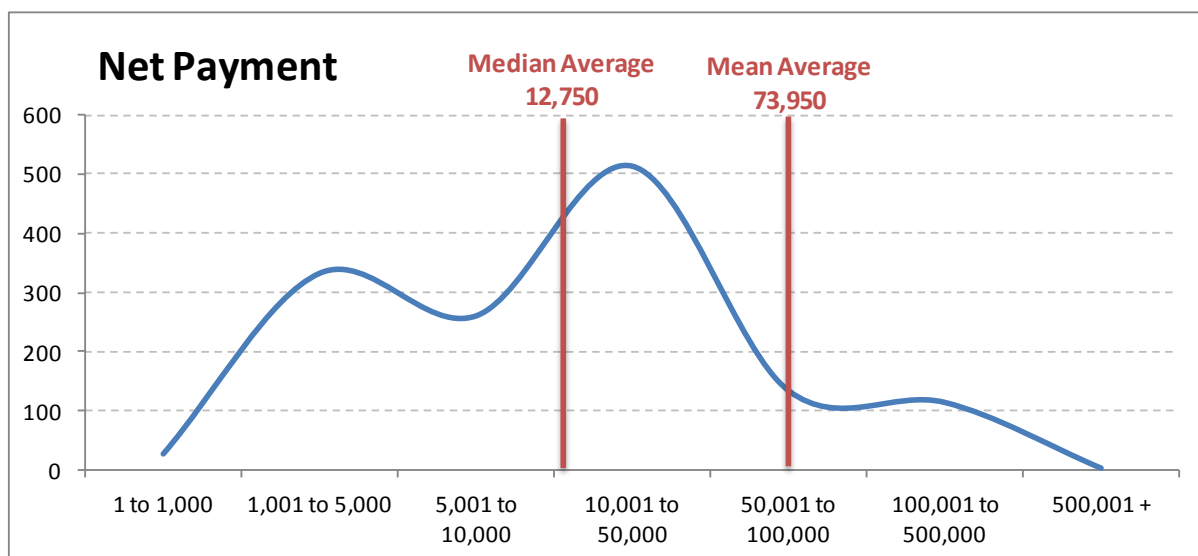
Figure 11. Ethnicity of population data.

Ethnic Origin Description	Count	%
White	1115	89.0
Asian	82	6.5
Black	31	2.5
Other ethnic group	12	1.0
Mixed - Other	7	0.6
Arab	4	0.3
Mixed - White and Asian	2	0.2
Grand Total	1253	100.0

Geographically, 94.6% (n=1676) of the victims live in the United Kingdom, predominantly in England (n=1584), but also in Scotland (n=58), Wales (n=22) and Northern Ireland (n=12). The top non-UK country for volume of victims reporting to Action Fraud is Australia (n=13).

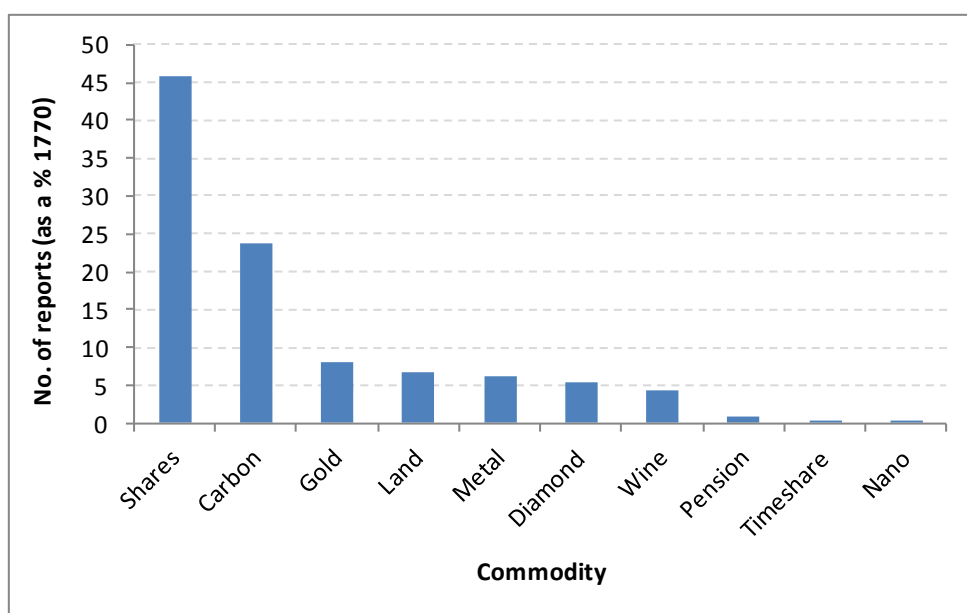
Analysis of net payment by the victim is illustrated in Figure 12. This shows that of the net payment groups used, most victims reported a loss of between £10,001 and £50,000. The £61,200 difference between the median average net payment (£12,750) and the arithmetic mean average (£73,950) suggests statistical outliers in the higher net payment data values. There is one case of a victim losing £41,177,418 which potentially skews the net payment figures, hence the median average is reported here and it is also noted that the specific case referred to is not an interview respondent.

Figure 12. Net payment of victims.



As illustrated below by Figure 13, the most common commodity investment by boiler-room victims is shares, which counts for 45.9% of all victims in the population dataset (excludes non-responses/unknowns). Surprisingly perhaps, Carbon accounts for almost a quarter, whilst another quarter involved gold, other metals, land and diamonds. Carbon popularity may reflect recent media exposure.

Figure 13. The most common commodity investment by boiler-room victims.



Thus far, by building a picture of the average boiler-room victim using the top variables by volume it results in the profile of a male, aged 64, of a white British ethnicity and living in London with an average median net loss of £12,750 or mean average loss of £73,950 and invests in shares.

Overrepresented groups

Making further use of descriptive analysis results, combined with the census 2011 England & Wales data, it is possible to begin to identify where there is overrepresentation of a characteristic in the victim dataset.

Figure 14 shows males are 66% over represented in the victim data, compared to the 2011 census data. Figure 15 meanwhile, demonstrates how boiler-room fraud victims tend to be older (increasingly from 60 to 89 years). People older than 60 years and especially those aged 85-89 years are heavily over-represented (264%) among boiler-room victims, whereas those younger than 44 years are markedly under-represented. Therefore, boiler-room victimization concerns men over 60 years (both in absolute numbers and in terms of proportions of those affected).

Figure 14. Percentage over/under representation by men and women of 2011 Census.

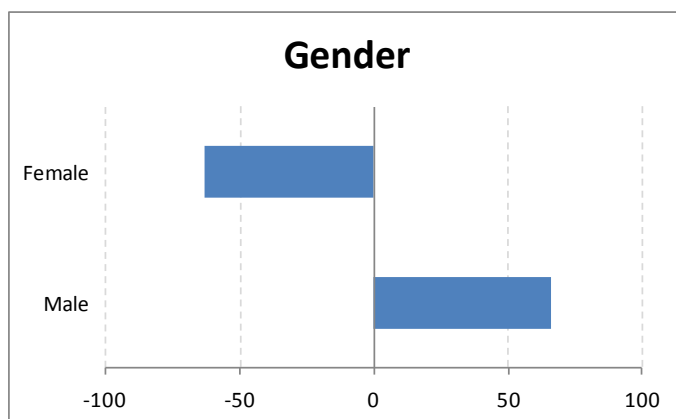


Figure 15. Percentage over/under representation victims by age of 2011 Census.

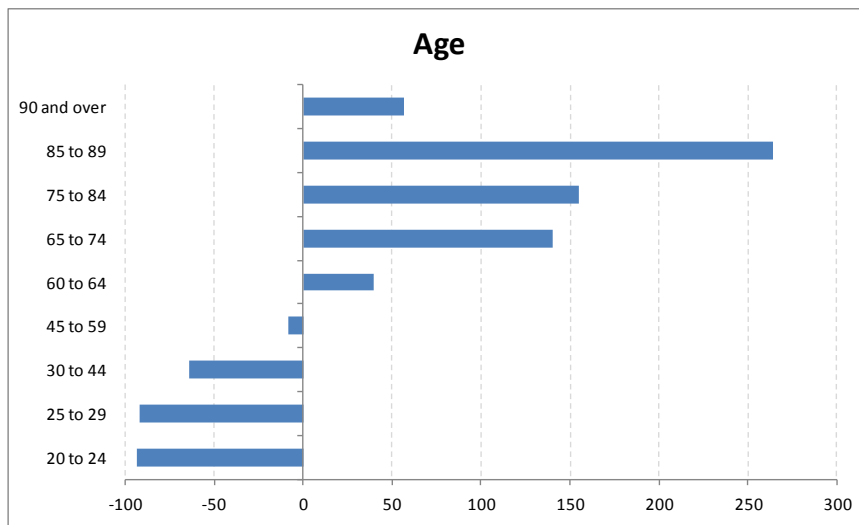
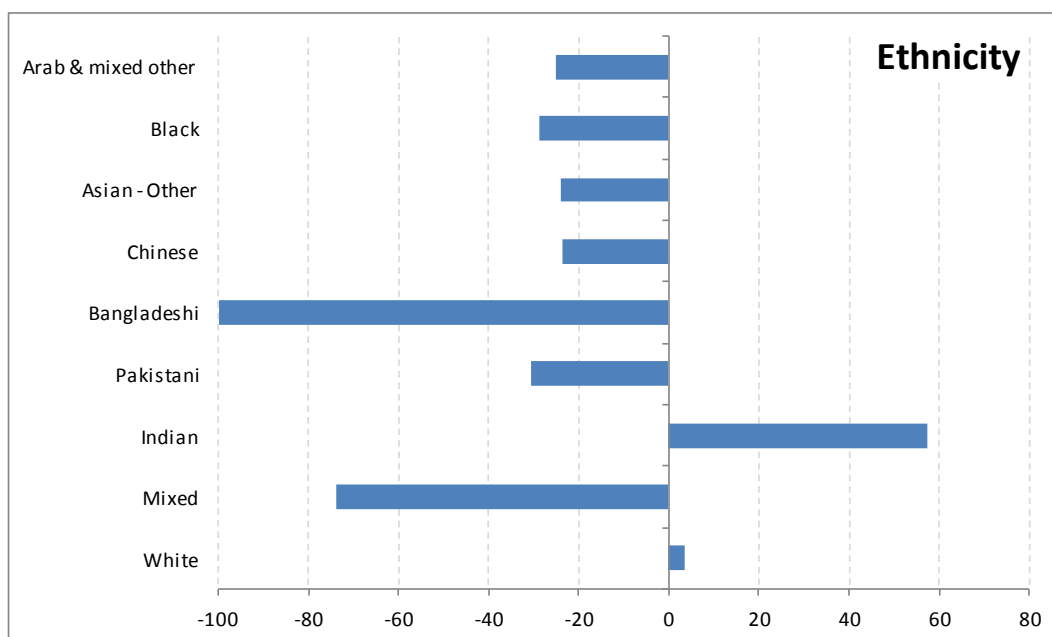


Figure 16 shows that victim of Indian ethnicity (i.e. Asian/Asian British – Indian category) are 58% overrepresented in the data whilst Pakistani, Bangladeshi, Black, Other Asian, Chinese and Mixed race are underrepresented. White ethnicity representation however is proportional to the UK population.

Figure 16. Percentage over/under representation victims by ethnicity of 2011 Census.



When demographic groups featuring most prominently as boiler-room victims are mapped across England and Wales, a picture emerges of areas where citizens fitting the over represented demographics are located, thus indicating they are at risk and require targeted prevention advice before the fraudster reaches them (and in the case of victims; before they become repeat victims).

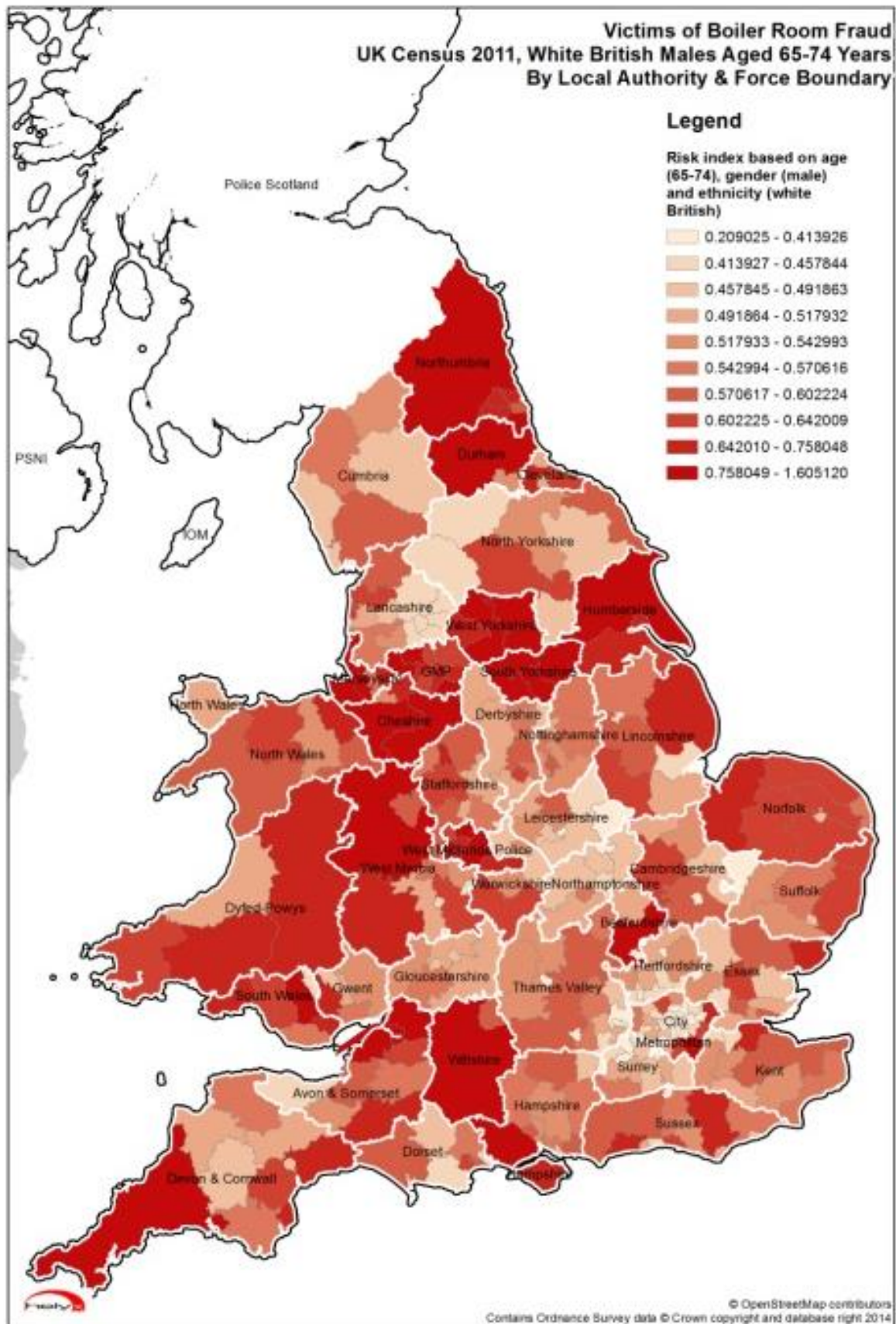
To complete this section, the Local Authorities in England and Wales were mapped thematically to show the number of high-risk individuals within that area. A measure of risk (the Risk Index) was calculated based on the proportion of the Local Authorities population that are: White British; male; and aged 65-74 (illustrating the demographic profile of a common boiler room fraud victim, as the analysis above has shown).

A measure of wealth was not included in the spatial profiling. This was due to the limitation of the data available at the time of the mapping analysis. Further consideration may also be needed in relation to the best measure of wealth within the census data (e.g. disposable income), should further research be conducted by this method.

Furthermore, it is important to note in the data used for this study, the gender and age were contained within the same census dataset whereas the ethnicity was recorded separately. It is therefore correct to say that the Risk Index is based on the cumulative proportion of 'gender and age' plus 'ethnicity'.

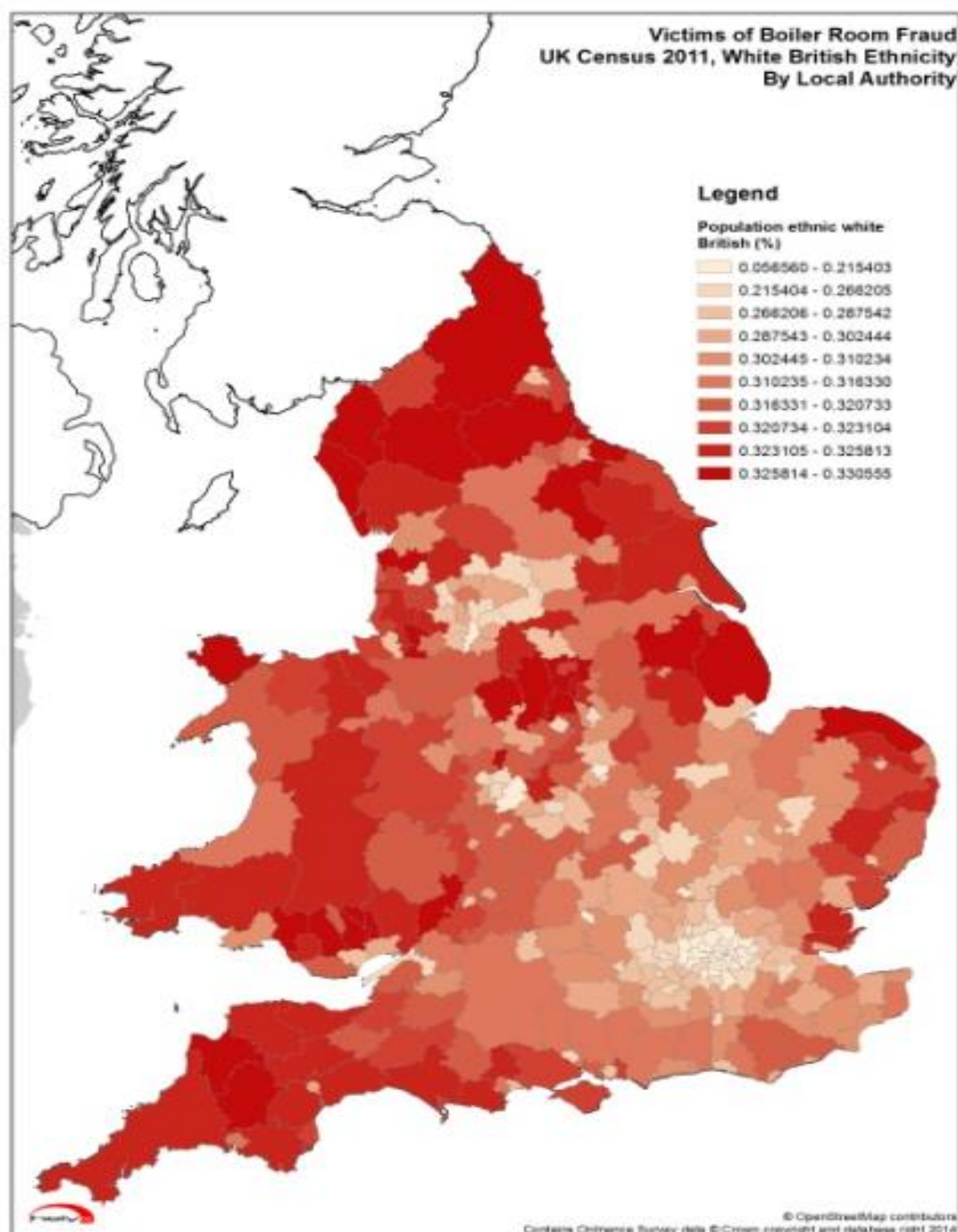
The Local Authority boundaries were then overlaid with the Police Force boundaries for England and Wales. This is illustrated in Figure 17.

Figure 17. Map: Victims of Boiler Room Fraud. UK Census 2011, White British Males Aged 65-74 Years, By Local Authority & Force Boundary.



Whilst there might be a concentration of victims in a metropolitan area (e.g. London) the Local Authority may still show as low risk based on its low proportion of White British, males, aged 65-74 in the resident population. A factor that may impact on this finding is that that the metropolitan areas have relatively lower proportions of White British ethnicity. This is illustrated in Figure 19.

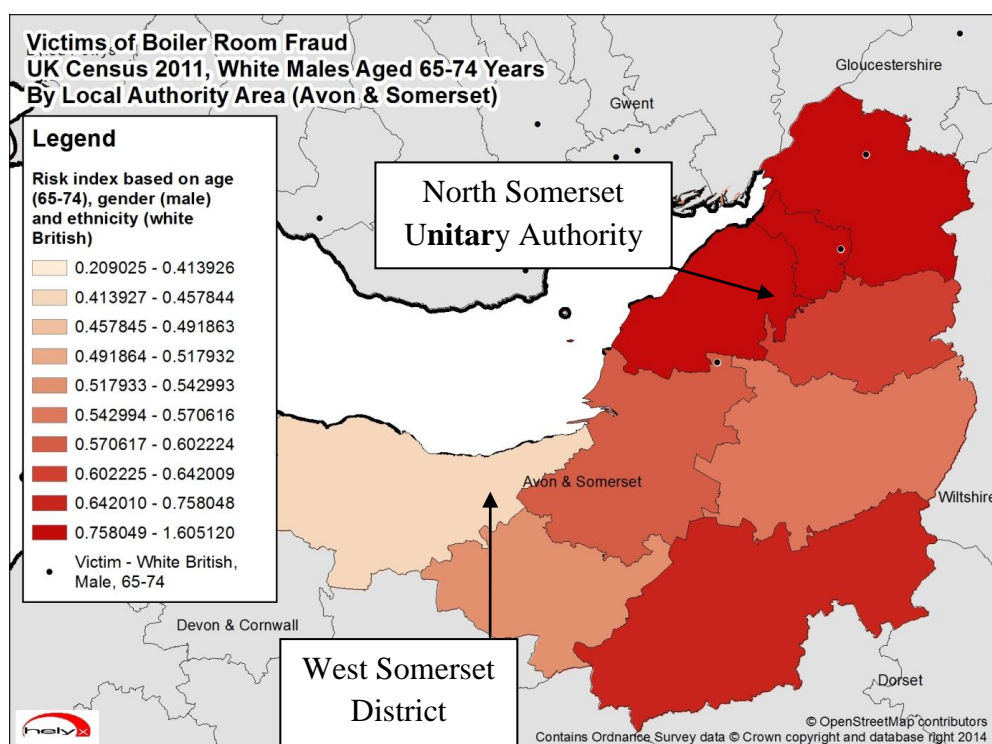
Figure 19. Map: UK Census 2011, White British Ethnicity By Local Authority.



In Policy consideration terms, the areas with citizens at risk (by local authority level in this case) in Force areas, become very interesting and illustrate where PCC's and Chief Officers should be working in collaborative ways to partner local authorities rather than implementing 'catch all' policies for cross-Force crime prevention.

Taking Avon and Somerset Police in Figure 20 below as an example, the range of risk varies across the Local Authorities markedly. This shows correlation between some victims already in the high risk area in the North Somerset Unitary Authority where repeat victimisation could be a concern for law enforcement. Alarmingly, there is an equally a high risk area in the south of the force that may require fraud prevention measures to be considered even though there are no boiler-room victims currently in that area.

Figure 20. Map: Victims of Boiler Room Fraud UK Census2011, White Males Aged 65-Years By Local Authority Area (Avon & Somerset)(including point data)



This finding also illustrates the opportunity for more aligned, efficient policy delivery between public sector bodies, in this case police and local councils.

It is interesting to note that when all boiler-room victims (i.e. no specific demographic applied) are measured against the population of Local Authority areas in England and Wales the prioritisation message can look very different. Using this example of Avon and Somerset Police, a relatively high proportion of the West Somerset District of the Somerset County Council population are boiler room fraud victims, however a low proportion of those residents are in the high risk demographic. This shows the difference in approach between reactive assessment of victims and the proactive identification of potential victims.

Identifying victims, who they are and where they are is one aspect; but it is also important to provide policing with the key characteristics and behaviours of boiler-room victims that can be transformed into prevention campaigns that are evidence based and consistently work.

Henceforth, SPSS was utilised for statistical analysis of the victim characteristic variables thought to be key for prevention purposes.

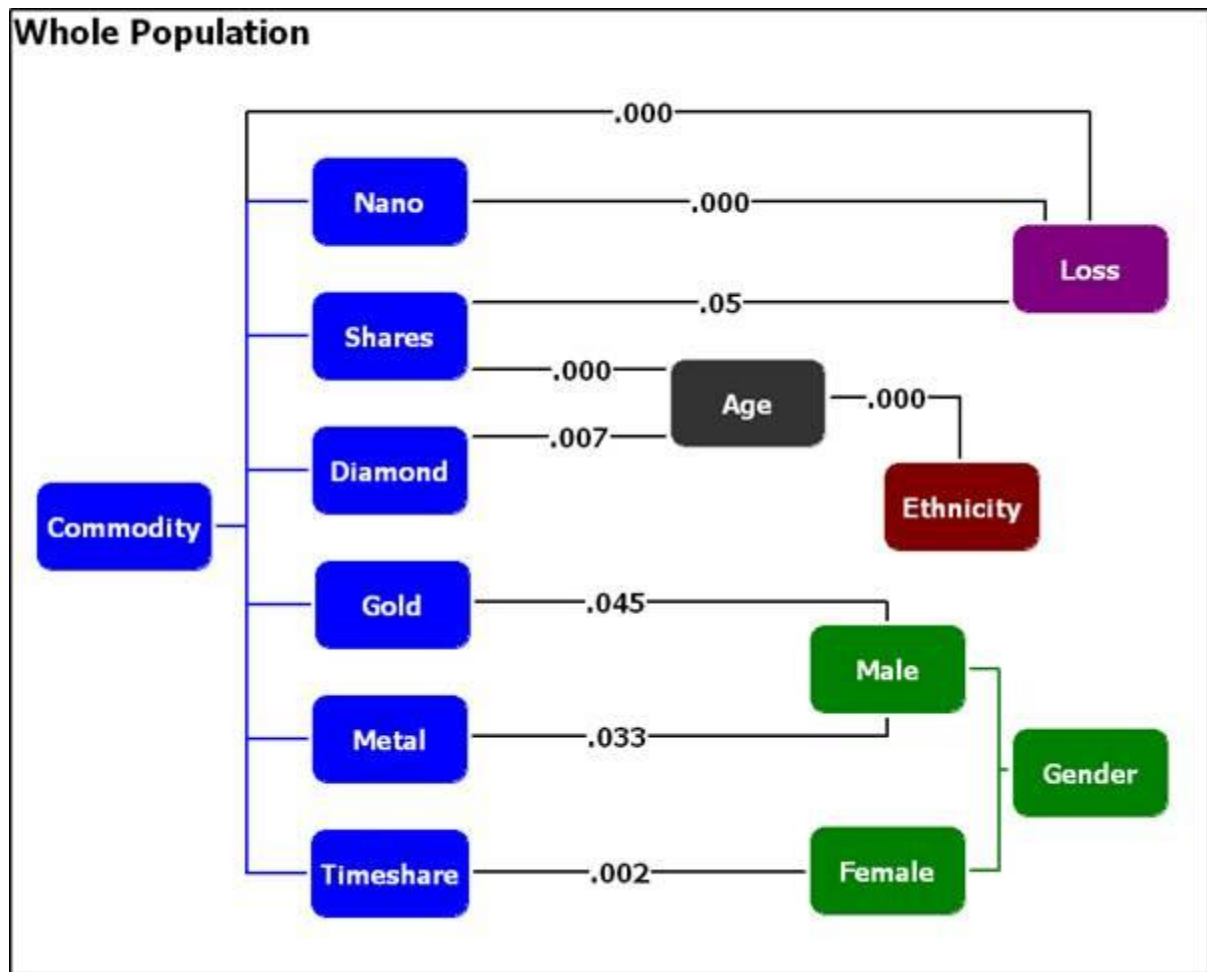
Further analysis of victim characteristics

As described earlier in this section, where appropriate, population data (n=1368) was used where variables existed at that level. Where variables were mixed and this could not be achieved, the survey data (n=402) was used.

SPSS results for the population variables

Figure 21 illustrates statistically significant relationships between boiler-room victim variables which are described in further detail thereafter:

Figure 21. Statistically significant relationships between boiler-room victim variables.



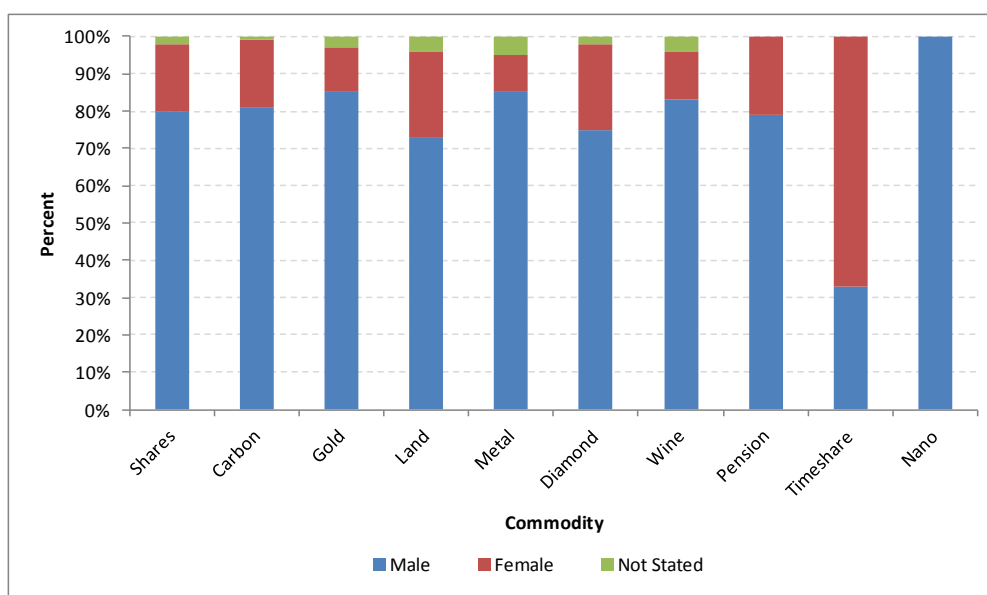
White victims are significantly older than non-white victims: ($t=12.43$, $df=1238$, $p=0.000$) with an average age of 67 compared to 53 respectively.

Conversely, there are comparisons between variables that could be just as valuable in prevention where there is no significant relationship between variables for example;

Tests were completed to establish whether male victims differed to female victims by age. The population data results established that there was no significant difference between the groups: ($t=0.330, df=1692, p=0.497$). The significance of this for boiler-room prevention messaging is however important, in that it can be translated into policy for policing to ensure no differentiation is made between the groups.

More men fall victim to fraudulent gold investment offers: ($\chi^2=4.033, df=1, p=0.045$) with 8.7% of men defrauded compared to 5.3% of women. There was also a significant relationship between men and investment in metal: ($\chi^2=4.52, df=1, p=0.033$). Almost double the proportion of men to women invested in metal, 6.6% compared to 3.4%. In respect to time share investments, women are 13 times more likely to invest, even though the percentages are at the low end of the victim commodity investment proportions, 0.1% and 1.3% respectively: ($\chi^2=9.2, df=1, p=0.002$). Figure 22 illustrates the spread across victim investments by way of gender.

Figure 22. The spread across victim investments by way of gender.



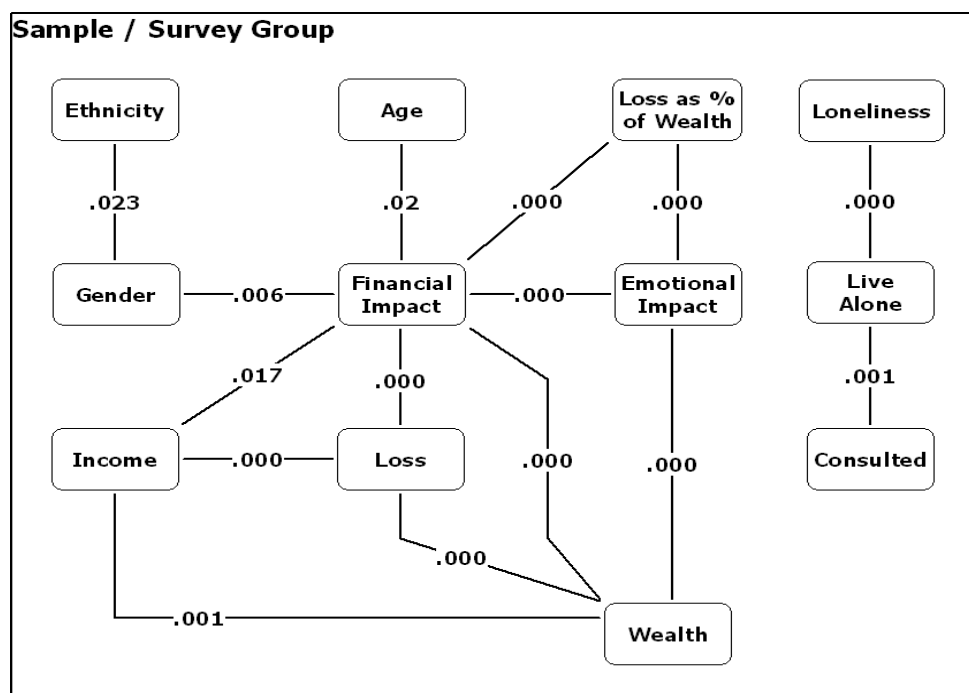
Older people invested more in shares: ($t=-5.4$, $df=1726$, $p=0.000$) with an average age of 65.9 compared to 61.9 for those that did not invest in shares. Older people also invested in diamonds: ($t=-2.72$, $df=1726$, $p=0.007$) with an average age of 67.9 compared to 63.6 for those that did not invest in diamonds.

People who invest in shares lose less than other victims: ($t=1.94$, $df=1149$, $p=0.05$) with a mean average loss of £28,355 compared to £43,253. People who invest in nano invest less than those who don't, but invest in other commodities: ($t=5$, $df=11$, $p=0.000$) £6,937 compared to £61,289. Finally, people duped into investing in more than one commodity lost more money: ($\rho=0.11$, $n=1351$, $p<0.000$).

Survey SPSS results for the interview/sample data

Figure 23 illustrates statistically significant relationships between variables at survey level data ($n=402$), which are described in more detail below;

Figure 23. Significant relationships between variables at survey level data.



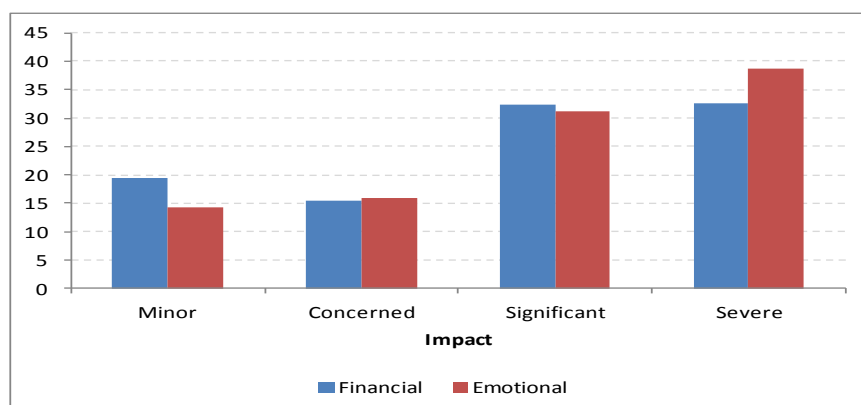
In corroboration to the population analysis the survey data (as did the population data) showed that there was no significant difference between the groups i.e. the ages of men and women didn't differ: ($t=0.330$, $df=389$, $p=0.27$).

As was previously noted in the descriptive analysis earlier in this chapter, male victims far outnumber female victims by 81% to 19% (whole population) or 82% to 18% in survey, although it is clear that their ages do not differ.

As part of the Action Fraud reporting process, victims are asked to assess the impact that the fraud has had on them, using an escalating scale of: minor, concerned, significant and severe. The survey applied the same scale to two questions that specifically sought to distinguish between the emotional and the financial impact.

Emotional and financial impact are strongly related: ($\rho=0.70$, $p=0.000$, $n=328$). For financial impact, only 19.5% reported a 'minor' impact, compared to 64% for 'severe'. For emotional impact, 69.8% said that the impact was 'significant' or 'severe'. Figure 24 illustrates victim spread across financial and emotional impact.

Figure 24. Victim assessment of financial and emotional impact by volume.



Significantly more of women victims (57.4% compared to 34.6% of men) experienced a severe emotional impact: ($\chi^2=12.57$, $df=3$, $p=0.006$). Conversely, 16.7% of men said that the fraud had a minor emotional impact, compared to 3.7% of women.

Almost 1/5th (17.5%) of victims are of ethnic minority status. Only 7% of men victims are of ethnic minority status: ($\chi^2=4.57$, $df=1$, $p=0.033$). Over twice as many ethnic minority women victims are at risk than white female victims, although men are the most at risk overall. Of the ethnic minority females against white females, ages can't be shown to be of significant difference: ($t=1.58$, $df=38$, $p=0.123$). However, from the mean average values you may think they would be as they are 65yrs for white females and 57 years for ethnic females.

Of female victims 30% are ethnic minority, more than twice that of white women (13%): ($\chi^2=5.15$, $df=1$, $p=0.023$). It must however be remembered that caution should be shown here as there was 22% missing data in respect to ethnicity group victim recording.

The financial impact is less for older victims ($\rho=-0.13$, $n=324$, $p=0.02$) and victims with larger incomes: ($\rho=-0.13$, $p=0.017$, $n=328$).

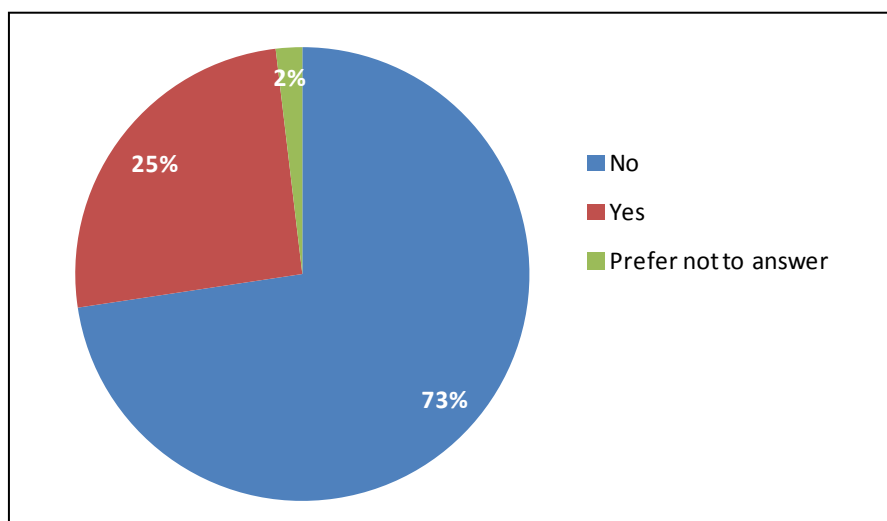
Victims that lost a larger chunk of their wealth made a larger payment (as an investment) in absolute terms: ($\rho=0.28$, $p=0.000$, $n=199$), whilst victims with lower incomes lost a higher proportion of their wealth: ($\rho=-0.23$, $p=0.001$, $n=203$). The greater the loss, the larger the financial impact ($\rho=0.38$, $p=0.000$, $n=318$).

Emotional effects were larger for wealthier victims ($\rho=0.26$, $p=0.000$, $n=187$) and when levels of loss were high ($\rho=0.30$, $p=0.000$, $n=318$). The financial impact is also significant

when the loss value accounts for a greater chunk of the victim's wealth ($\rho=0.33$, $p=0.000$, $n=187$). Those who say that they lost a bigger chunk on their wealth were the victims that lost more money in real terms ($\rho=0.26$, $p=0.000$, $n=199$).

26.5% ($n=106$) of the victims are housebound or live alone and 11.2% ($n=45$) consider themselves to be lonely. There is a strong association between victims who describe themselves as lonely and also live alone / are housebound: ($\chi^2=16.09$, $df=1$, $p=0.000$). As shown below on Figure 25, of those that live alone, 25.5% (27) also consider themselves lonely.

Figure 25. Proportion of victims that live alone who also consider themselves lonely.



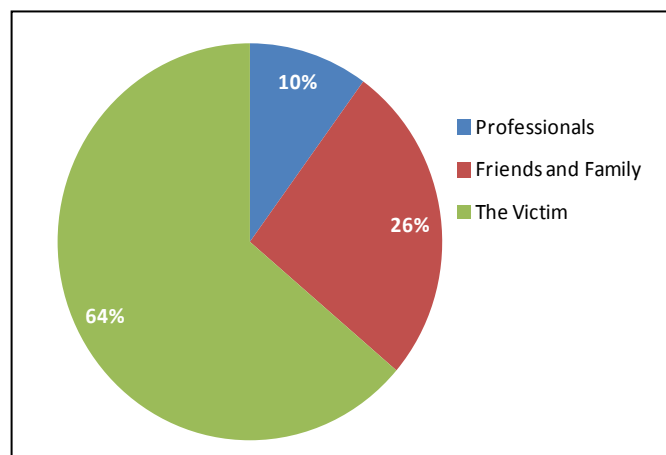
As illustrated by Figure 26 below, the majority (64%) of the victims did not discuss the investment with anyone before investing; suggesting that reaching the victim personally will have the most influence for prevention. However, of those that did discuss the investment, more consulted with friends and family (26%) than seeking professional advice (10%). Whether the victim previously owned shares does not appear to affect the likelihood of them discussing the investment with anyone beforehand. The proportion of victims who did not

discuss the investment with anyone is the same (64%) for those who did previously own shares as for those that did not.

Most of the victims (72.8%) owned legitimate shares or other commodity investments before investing in the fraudulent investment, although half of those (51% / 149) do not consider themselves to be experienced investors.

Whether the victim discussed the investment beforehand is heavily dependent on whether they lived alone / are housebound: ($\chi^2=17.53$, $df=3$, $p=0.001$). Those that did live alone discussed the investment with family rather than professionals but discussing it beforehand had no affect on the value lost.

Figure 26. Proportion of victims that consulted with someone else prior to investing ('The Victim' category means that no one else was consulted).



Finally, although not tested for significance of relationship; those interviewed were asked a number of questions directly relating to their personal characteristics that the study perceived might be useful in setting prevention messages;

Preference Services

Victims in the survey group were asked whether they are registered with the Telephone Preference Service (TPS) and / or the Mail Preference Service (MPS) to help stop fraud by cold calls. The results showed a greater adoption of the TPS (36.9% / 148) than the MPS (11% / 44) amongst victims of boiler-room fraud.

Marketing preferences

Knowing what victims take note of was deemed a relevant question to ask in assisting police using the correct means of targeting media. The top five forms of marketing that the boiler room victims were most attracted to were:

- Internet / Online / Email (36.4% / 59)
- Newspapers (22.9% / 86)
- Television advert (18.6% / 70)
- Magazines (11.4% / 43)
- Radio (3.2% / 12)

Advice from the victims

Victims were asked if there was something that might have prevented them from investing in the fraud. Two themes that emerged from their responses:

- doing research (24%)
- being wary of cold calls (15%).

Findings Summary

The study findings provide developed opportunity for evidence based policing in the allocation of the right resources to the right areas for victim support, and repeat victim

prevention, whilst also providing opportunity for bespoke and relevant prevention messaging to citizens at risk. Furthermore, by geo-mapping the known victims against the population census data, this has provided a basis for predictive policing of citizens who are most at risk of becoming victims of boiler-room fraud by their demographics, and therefore where prevention campaigns should be focussed for primary prevention.

Figure 27 below, outlines the key findings of the study analysis. This table depicts the demographic, characteristic and behavioural significance of the relationships between variables analysed (across population and interview data respectively). These new findings build upon the geo-mapping findings to provide the key statistical evidence base to boiler-room fraud prevent campaigns in the targeted approach to the right people in the right places afore mentioned. Police strategy makers can now move away from intuitive, finger in the air prevention techniques that are expensive, with no guarantee they reached the right people to prevent boiler-room fraud.

Figure 27. Summary of key findings

Variable 1	Variable 1 Category	Variable 2	Variable 2 Category	Group	Test	Summary of Findings
Age	N/A	Age	N/A	Descriptive	N/A	Average victim age 64. Victims tend to be older (increasingly from 60 to 89 years) and the 85 to 89 age group is overrepresented.
Gender	N/A	Gender	N/A	Descriptive	N/A	Majority of victims are male which is a 66% overrepresented in the victim data.
Loss	[value of loss]	Loss	[value of loss]	Descriptive	N/A	Most victims report a loss of between £10,000 and £50,000. The median average net loss is £12,750.
Ethnicity	N/A	Ethnicity	N/A	Descriptive	N/A	Most victims white Caucasians. Victim of Indian (i.e. Asian/Asian British – Indian category) ethnicity are overrepresented.
Commodity	N/A	Commodity	N/A	Descriptive	N/A	The most common commodity investment by boiler-room victims is shares
Age	Younger	Ethnicity	White	Population	t-test	White victims are significantly older than non-white: ($t=12.43$, $df=1238$, $p=0.000$) with an average age of 67 compared to 53.
Age	Older	Commodity	Shares	Population	t-test	Older people invested in shares: ($t=-5.4$, $df=1726$, $p=0.000$) with an average age of 65.9 compared to 61.9 for those that did not invest in shares.
Age	Older	Commodity	Diamond	Population	t-test	Older people invested in diamonds: ($t=-2.72$, $df=1726$, $p=0.007$) with an average age of 67.9 compared to 63.6 for those that did not invest in diamonds.
Gender	Male	Commodity	Gold	Population	Chi-square	More men fall victim to fraudulent gold investment offers: ($\chi^2=4.033$, $df=1$, $p=0.04$) with 8.7% of men defrauded compared to 5.3% of women.
Gender	Male	Commodity	Metal	Population	Chi-square	There was a significant relationship between men and investment in metal: ($\chi^2=4.52$, $df=1$, $p=0.033$) Almost double the proportion of men to women invested in metal, 6.6% compared to 3.4%.
Gender	Female	Commodity	Timeshare	Population	Chi-square	Women are 13 times more likely to invest in timeshares than men, even though the percentages are at the low end of the victim commodity investment proportions, 0.1% and 1.3% respectively: ($\chi^2=9.2$, $df=1$, $p=0.002$)
Loss	[value of loss]	Commodity	Shares	Population	t-test	People who invested in shares lost less: ($t=1.94$, $df=1149$, $p=0.05$) with a mean average loss of £28,355 compared to £43,253.
Loss	[value of loss]	Commodity	Nano	Population	t-test	People who invest in nano invest less than those who don't: ($t=5$, $df=11$, $p=0.000$) £6,937 compared to £61,289.
Loss	[value of loss]	Commodity	[commodity count]	Population	Spearman	People duped into investing in more than one commodity lost more money: ($\rho=0.11$, $p<0.000$, $n=1351$).
Age	Older	Impact	Financial	Sample / Survey	Spearman	The older the victim the less the financial impact: ($\rho=-0.13$, $n=324$, $p=0.02$) i.e. a negative relationship.
Gender	Female	Impact	Financial	Sample / Survey	Chi-square	Significantly more of women (57.4% compared to 34.6% of men) experienced a severe emotional impact: ($\chi^2=12.57$, $df=3$, $p=0.006$). Conversely, 16.7% of men said that the fraud had a minor emotional impact, compared to 3.7% of women.
Impact	Emotional	Impact	Financial	Sample / Survey	Spearman	Emotional and financial impact are strongly related: ($\rho=0.70$, $p=0.000$, $n=328$). For financial impact, only 19.5% reported a 'minor' impact, compared to 64% for 'severe'. For emotional impact, 69.8% said that the impact was 'significant' or 'severe'.
Income	[value of income]	Impact	Financial	Sample / Survey	Spearman	Less financial impact for victims with bigger incomes: ($\rho=-0.13$, $p=0.017$, $n=328$).
Income	[value of income]	Loss	[value of loss]	Sample / Survey	Spearman	Victims that lost a bigger chunk of their wealth made a larger payment (as an investment) in absolute terms: ($\rho=0.28$, $p=0.000$, $n=199$)
Income	[value of income]	Wealth	[proportion of wealth]	Sample / Survey	Spearman	Victims with lower incomes lost a higher proportion of their wealth: ($\rho=-0.23$, $p=0.001$, $n=203$).
Impact	Financial	Loss	[value of loss]	Sample / Survey	Spearman	Greater the loss, greater the financial impact: ($\rho=0.38$, $p=0.000$, $n=318$).
Impact	Emotional	Loss	[value of loss]	Sample / Survey	Spearman	Greater the loss, greater the emotional impact: ($\rho=0.30$, $p=0.000$, $n=318$).
Impact	Emotional	Wealth	[proportion of wealth]	Sample / Survey	Spearman	There is a significant emotional impact: ($\rho=0.26$, $p=0.000$, $n=187$).
Impact	Financial	Wealth	[proportion of wealth]	Sample / Survey	Spearman	There is a significant financial impact: ($\rho=0.33$, $p=0.000$, $n=187$).
Loss	[value of loss]	Wealth	[proportion of wealth]	Sample / Survey	Spearman	Those who say that they lost a bigger chunk on their wealth were the victims that lost more money in real terms ($\rho=0.26$, $p=0.000$, $n=199$)
Lonely	N/A	Live Alone	N/A	Sample / Survey	Chi-square	There is a strong association between victims who describe themselves as lonely and also live alone / are housebound: ($\chi^2=16.09$, $df=1$, $p=0.000$).
Consulted	N/A	Live Alone	N/A	Sample / Survey	Chi-square	Whether the victim discussed the investment beforehand is heavily dependent on whether they lived alone / are housebound: ($\chi^2=17.53$, $df=3$, $p=0.001$). Those that did, discussed the investment with family rather than professionals but discussing it beforehand had no effect on the loss.
Gender	Female	Ethnicity	Minority	Sample / Survey	Chi-square	Of female victims 30% are ethnic minority, more than twice as white women (13%): ($\chi^2=5.15$, $df=1$, $p=0.023$). It must however be remembered that caution should be shown here as there was 22% missing data in respect to ethnicity group victim recording.

Discussion

Victims of fraud; in particular boiler-room fraud, in many respects have been largely forgotten in victimology research (Doocy et al, 2001). This is still the case despite the huge uplift in reporting of fraud across England and Wales since the inception of Action Fraud and the NFIB in 2010 (National Fraud Authority, 2013).

Victims of boiler-room fraud are spread across every force area in England and Wales, and the loss to individual victims and the UK economy is huge (NFA, 2013). It is only in the last few years that HMG have sat up and listened to the noise, but there is still no UK strategic coordination of boiler-room victims; where they are, who they are or what their demographics, behaviours or characteristics are. Without that evidence base, targeted prevention will remain poorly informed, patchy and un-coordinated at best. Boiler-room fraudsters will continue to flourish, and crime figures will rise, if policing remains unable to effectively target and advise citizens at risk or prevent repeat victimization. Hence, why this research study is of such importance in providing evidenced based primary prevention opportunities, especially in the backdrop of austerity and shrinking police budgets (Winsor, 2011).

This paper argues that a nationally co-ordinated prevention program utilising local resources for delivery, should be commissioned to target citizens at risk of boiler-room fraud and its repeat victimisation. The findings of this study provide the evidence required to direct police prevention targeting at local level in such a manner that it reaches the citizens most at risk. Crime prevention needs to be bespoke and targeted accordingly. Broad messaging does not have the desired effect. Current local approaches are inconsistent at best. There is lots of general information produced for victims of fraud such as leaflets and posters by a plethora of

counter-fraud organisations claiming best practice, which may help (Pascoe et al, 2006). But it remains the case, that they lack a scientific approach, are sporadic, and little is known of whether they work. Although the indication is that they have little effect as fraud continues to rise in the UK (NFA, 2013). This research provides support to Ganzini et al (1990), who argument that “primary prevention could well be important” and further details that; “specific at risk groups, if educated of the dangers of speculative investments, could be a cost effective and valuable approach to the prevention of fraudulent victimization”.

The objectives of this study was to profile victims of boiler-room fraud, by using secondary data of population level from UK boiler-room victim crime reports and primary data from structured victim interviews, to profile those victims through demographic analysis and other indicators.

The study’s extensive literature review of the subject has identified gaps of knowledge that existed about victims of boiler-room fraud with regard to age, gender, ethnicity and harm caused. Additionally, the literature review established findings from other studies that could be validated or questioned by this research. This in turn also helped shape the research methods used here.

There are a range of public services involved in dealing with boiler-room victims by remit; Health care professionals, Police officers, victim support, Financial Conduct Authority to name a few, many who have no particular specialist knowledge of fraud crime, not least the nuances of boiler-room fraud. Boiler-room fraud is often complex and protracted and it is not possible to create a ‘one size fits all’ prevention approach, which meets the needs of all of its victims.

Understanding the victim to target the citizen at risk

This study illustrates the individual differences between victim's demographics and characteristics. Victims of boiler-room fraud, not only have to suffer the financial loss, but also deal with the emotional impact of anxiety, stress and loss of esteem (OFT, 2006). Many self-blame much like victims of crimes such as sexual offences (Titus and Gover, 2001). This research holds those findings to be valid and show that emotional and financial impact are strongly related: ($\rho=0.70$, $p=0.000$, $n=328$). Furthermore, for financial impact, only 19.5% of victims reported a 'minor' impact, compared to 64% for 'severe'. For emotional impact, 69.8% of victims said that the impact was 'significant' or 'severe'.

Research by Whitty (2013) concluded that in 2012 approximately 800,000 UK adults were defrauded by mass-marketing fraud but Whitty didn't place a value of loss to these findings. This is typical of much research in fraud and no different in boiler-room fraud where there has been no placement of value lost to individuals and the significance of that loss in terms of harm caused. Some of the key findings in this study identified the significance of loss to victims. These findings are invaluable for understanding boiler-room victims better and allowing for more prescript and targeted prevention campaigns.

Descriptive analysis depicts that the average age of a boiler-room victim is 64 years. Making further use of descriptive analysis results, with census data for England and Wales, made it possible to identify where there is overrepresentation of particular age categories. Thus, demonstrating how boiler room fraud victims tend to be older (increasingly from 60 to 89 years) and that the 85 to 89 age group is 264% overrepresented.

Victims are widely distributed, but feature more in areas with older white males. These areas tend to be outside metropolis areas of London, West Midlands, Greater Manchester and West Yorkshire.

A victim of boiler-room fraud who is elderly and convinced their investments are real, often have great trouble coming to terms with accepting they are a victim of crime, enter into denial and lose all sense of pride and esteem. It is not uncommon for victims of boiler-room fraud to become suicidal or fall out with their family (OFT, 2006. Button, Lewis & Tapley, 2014). Police forces and officers involved in this area of prevention and victim support therefore need the best practice advice to support them in their prevention and victim care endeavours (Pascoe et al, 2006).

As described in the literature review chapter, Alves and Wilson (2008) chose a descriptive research design, utilising a survey questionnaire to research the “effects on loneliness on telemarketing fraud vulnerability among older adults”.

Although, not directly comparable with this study, and limited in generalizability by sample size, the use of loneliness as the dependable variable, is interesting to discuss in context of the findings of this research.

Alves and Wilson were categorical of what loneliness was defined as for the purpose of their survey questions, citing Victor et al, (2002) research; loneliness categorised as “*the manner in which one evaluates his or her overall level of societal interaction*” and Wegner et al, (1996); as “*it is the subjective state of adverse feelings related to ones perceived social isolation*”. Conversely, this research simply asked the questions of victims; “Are you

housebound or live alone” and “Do you consider yourself lonely”? It was felt that this was a better way to capture victim understanding of the question and allow loneliness self-diagnosis, because that is what is important in understanding the victim better: A key objective of this research.

Applying the methodology previously described, this research found a strong association between victims who describe themselves as lonely and also live alone / are housebound: ($\chi^2=16.09$, $df=1$, $p=0.000$). This is particularly interesting in the concept of Alves and Wilson’s study as only 25.5% of those that live alone ($n=27$) also considered themselves lonely. And only 11.2% of victims in this study categorised themselves as lonely, indicating other susceptibilities exist in falling victim to boiler-room fraud.

As discussed previously in this paper, Langenderfer and Shimp (2001) explored the theory of visceral influences on persuasion of the victim in investing in scam offers. The analysis plan in this research considered Langenderfer and Shimp (2001) assertions, examining the previous experience of commodity investment by victims and who they discussed the proposals with before investing, for tangible links.

Results were clear, the majority (64%) of the victims did not discuss the investment with anyone before investing, inferring that reaching the victim in person will have the most influence in prevention terms. However, those that did discuss the investment, more of the victims consulted with friends and family (26%) than seeking professional advice (10%).

Furthermore, whether the victim previously owned shares does not appear to affect the likelihood of them discussing the investment with anyone beforehand. The proportion of

victims who did not discuss the investment with anyone is the same (64%) for those who did previously own shares as for those that did not.

Most of the victims (72.8%) owned legitimate shares or other commodity investments before investing in the fraudulent investment, although half of those (51% / 149) do not consider themselves to be experienced investors.

Linking again into the Alves and Wilson (2008) research, it is interesting also to note that this research found a strong relationship in whether the victim discussed the investment beforehand, being heavily dependent on whether they lived alone/are housebound: ($\chi^2=17.53$, $df=3$, $p=0.001$). Those that did live alone discussed the investment with family rather than professionals, but discussing it beforehand had no affect on the value lost.

Identifying the citizens at risk

Behaviours and characteristics are essential to fine-tune the prevention messages for citizens at risk and to prevent repeat victimization, but it is also imperative to establish where those citizens are. Henceforth, combined with Census data, the secondary data from this study provided an additional layer in predicting where citizens living in England and Wales are at most risk to boiler-room fraud by their demographic profiling and over-representation. Figures 14, 15 and 16 depicted in the results chapter, illustrated some key findings from the research;

- Males are 66% over represented in the victim data, compared to the population of the UK.

- Boiler room fraud victims tend to be older (increasingly from 60 to 89 years) and that the 85 to 89 age group is 264% overrepresented. And,
- Those of ‘Asian/Asian British – Indian’ ethnicity are 58% overrepresented in the victim data compared to the population of the UK.

This study has been able to demonstrate what no other research in this area can claim; that when the over-representation data is visibly mapped across England and Wales, a picture emerges of areas where citizens fitting the over represented demographics i.e. white males aged between 65-74 are located, thus indicating they are at risk and require targeted prevention advice before the fraudster reaches them (and in the case of victims; before they become repeat victims.)

Knowing where victims and high-risk citizens are in communities is imperative to effective crime reduction policies. This level of detailed information enables targeting citizens at risk to be more resource efficient and intelligent than ever before in policing this crime type.

The research examined when all boiler victims (i.e. no specific demographic applied) were measured against the population of Local Authority areas in England and Wales, how the resource prioritisation message could look very different. Using the example of Avon and Somerset Police area, a relatively high proportion of the West Somerset District of the Somerset County Council population were boiler room fraud victims, however a low proportion of those residents are in the high risk demographic groups. This showed the difference in approach between reactive assessment of victims and the predictive identification of potential victims.

These results lend themselves to corroborate the view that targeted prevention should be in partnership with other public services – in this case local borough councils in particular. This further builds upon collaboration principles set out in the Organised Crime Strategy (2013).

New findings

As Figure 6 illustrates, every Force area without exception has citizens residing who are victims of boiler-room fraud confirming that this is indeed a truly national problem. But as highlighted in the NFIB (2011) assessment, the problem is not well understood and is desperate for a research study such as this, to provide scientific evidence of the scale and nature of the problem, detail the effects the crime places on its victims, and provide the foundations for a national prevention tool-kit.

Female boiler-room victims were reported to have an older age profile than male victims in the NFIB (2011) problem profile. That assertion is supported by this research study all be it they are very close with male victim average age 63.7 (n=1382), and female victim age 64.1 (n=312).

The most common commodity investment by boiler-room victims is shares, which counts for 45.9% of all victims in the population dataset. It is important therefore for officers to know what professional advice they should be giving citizens in respect to share investments to prevent them falling foul of fake offers.

As illustrated in Figure 16 the ethnicity group ‘Asian/Asian British – Indian’ is heavily (58%) overrepresented in the victim data. This information has never been brought to light prior to

this study and is vital in terms of bespoke targeting citizens of this ethnicity, who before this discovery, weren't considered at risk to boiler-room fraud.

A further distinctive finding in this study is that of the different investments made between men and women. This too will enable more precise prevention advice to be given on a gender basis. More men are attracted by gold and other metals investments, whereas women are duped by fraudulent timeshares more often.

Impact on victims was also measured by the research study. Significant and severe financial and emotional impact often mean that the victim requires additional support of public services other than the police, such as citizens advice, NHS assistance e.g. counselling and medication. These services all place extra cost and resource burden on the UK economy. Thus, cost efficiency opportunity for government services through effective prevention campaigns is crucial. Women were more seriously affected emotionally than men even though they lost no more, either in absolute terms or as a percentage of their wealth.

Finally, knowing how best to reach victims to maximize the effect of the prevention message (if it can't be delivered personally) is key for future targeting effect. Thus, it was important to note from the question asked of the victims re their preferred marketing preferences in this research, that the top five forms of marketing attraction were; Internet / Online / Email (36.4% / 59), Newspapers (22.9% / 86), Television advert (18.6% / 70), Magazines (11.4% / 43), Radio (3.2% / 12).

Limitations and challenges of the data and systems

The research study wasn't without its challenges and limitations. Victim variables were limited in the secondary data extracted at the NFIB and reports had missing data. The limited variables captured are of a compromise between HOCR and policing requirements in ensuring victim reporting processes are swift and user friendly as possible, whilst caching the necessary detail of crime recording standards. Accepting that the original design of the NFIB's KNOWFRAUD IT infrastructure wasn't designed for research purposes, it should however be noted for future system procurement that the current structure of the system does not support flexible use.

The secondary population data did have some limitations in providing full demographic analysis of the victims against UK census data due to some victim records missing key data between variables. An example of this was in ethnicity, which has 29% of missing data. Variables of certain groups were not immediately comparable either, such as the categories used to capture ethnicity at NFIB being slightly different to those used by the Census data, and therefore had to be matched before analysis.

Data cleansing of the NFIB's KNOWFRAUD reports was not straight forward. For the purpose of this research study, the information reports categorised for 'Share sales or boiler-room fraud' had to be removed from the data set used as it could not be certain that these reports are actual victims, they may be attempted crimes at best. Any error here could have cast the study validity in doubt.

A richer data set and additional variables were captured for analysis by the primary data gained from the interviews conducted. This provided for enhanced opportunity of targeted

prevention products as this qualitative data gave the context of victim situational behaviour, was additional, personal and useful in compliment to the secondary data. Unfortunately, interview response rates were in some ways reduced by international victims with language barriers and time zone differences in addition to 12% (n=217) of boiler-room reports having no contact number entered for the victim rendering telephone contact unachievable. However, it seems possible that these factors are likely to have resulted in random non-responses and are not highly likely to have resulted in response bias. The validity of the interview data was tested before statistical analysis and was found to be of equivalence to the secondary population data.

Research cost implications influenced the decision to call the victims between the hours of 10:00 and 21:00 and adjusted for staffing levels in order to maintain the Action Fraud service. The success rate of the calls could potentially have been affected by the time of day the attempt was made.

Furthermore, limited functionality of the KNOWFRAUD system required data to be exported into a number of different applications to achieve the objectives of the research study. For example, the descriptive analysis was made possible by exporting the primary and secondary data sets into excel for manual interrogation which was very time consuming.

The KNOWFRAUD system has limited mapping functionality that is not able to manipulate the location data adequately in order to address the needs of this study and therefore once again, the data sets had to be transferred, this time into a specialist mapping application. Missing secondary population data meant that 11% of victim addresses were missing a postcode.

Finally, to conduct SPSS analysis all data sets required manual changes to the data presentation to ensure accuracy. This was extremely important and not overlooked, but it did cause time delays to the study.

Culture and Policy implications

This study is clear and unapologetic in its focus on the victims of boiler-room fraud however it is important to highlight that its conclusions are necessarily limited by examining only the victims and not other facets of the crime reports – such as the motivation of the offender, which arguably should be subject of further research.

In the context of current Government policy for serious and organised crime in the UK (Serious and Organised Crime Strategy, 2013), alongside the current Governments Comprehensive Spending review 2010 police budget cuts; the results of this research offers National policy makers, Chief officers and PCC's the foundation for policy transformation and evidence based resource deployment to counter boiler-room fraud threat in their Force areas. As Neyroud (2001) suggests in discussing neighbourhood policing structures, a multi-layered approach seems to offer the balance between local independence and responsiveness, local accountability and national direction.

Policing and Local Authority partnerships armed with precise scientific knowledge of the nature of the boiler-room threat and who the citizens at risk are, is an advanced step forward for policing, which still remains largely intuitive. This research evidence provides a much needed foundation for a prevention tool-kit to target citizens at risk, which can be rolled out operationally at no cost. This supports the view of Neyroud (2013) who states that a

collaborative effort through partnerships should also be sought to further reduce public expenditure.

Arguably, testing of the study findings against the ‘Power Few’ citizens at risk (Sherman, 2013) identified in this case should now be considered through Randomised Control Tests to track the impact of evidence-based prevention. Although, waiting for certainty of a ‘direct causation’ might not be realistic, because people’s lives and hard earned money are at risk, and police have a duty to protect life, legitimately, morally and ethically. This research strengthens Sherman’s (2013) point that the police service could create a “common currency” to guide targeting decisions and lower the rate of error.

A clear evidence-based management plan supplementing policing experience and professional skill, detailing well-defined and agreed objectives and deliverables, should provide a blueprint to overcoming the obstacles of introducing the research findings for widespread use. As Sherman (2013) points out, it is the tracking i.e. the way that evidence is used, that ensures better implementation of evidence based policies.

It is imperative that all officers and police staff have a fundamental understanding of what is meant by ‘evidence-based policing’ and know how it should be used to avoid misinterpretation or error in delivery of evidence based targeting. Adequate training is therefore imperative at a tactical level, accompanied by police leaders “challenging any claims that ‘the evidence shows’ when no evidence exists” (Sherman, 2013).

In addition, careful articulation of why transformation is required, desired outcomes, and the benefits to individuals as well as organisations, are all key features to communicate properly.

“When officers feel respected, they are more likely to follow workplace policies” when they are dealing with the public (Tyler et al., 2007). As Sherman (2013: p2) argues “the best test of evidence based policing is whether it has improved public safety and police legitimacy”. By fostering the “triple T” strategy and its three key principles (Sherman, 2013), that continuous test of the evidence based approach in this study can be measured upon implementation by tracking the delivery and the outcomes of any new boiler-room fraud strategy and its delivery.

Conclusion

This study exposes the unprecedented rise of fraud in recent years (NFA, 2013), and particularly the threat to selected individual citizens with specific characteristics from boiler-room fraud (NFIB, 2011; NFIB 2014). Historical issues in fraud reporting and disparate police recording standards are discussed. Furthermore, the gap in research is highlighted, reaffirming the importance of this research.

This study utilised combined research methods and combining population level victim data analysis with England and Wales census data, to depict demographics of the population that are over represented in boiler-room crimes and therefore most at risk.

Currently when prevention messages are delivered, there simply is no testing or tracking of their effect. Without that, policing simply will not know ‘What works and what doesn’t’ (Sherman, 1998a; Sherman, 1998b). The way to achieve this is by using the results of this study to conduct further prevention research by Randomised Control Tests (RCT’s) at least of level 3 on the Maryland scale (Sherman, 2002).

In slight defence of intuitive policing methods, it is noted that the historical absence of any UK central crime recording/reporting system has been a significant weakness when trying to fully understand the victims of boiler-room fraud. This has clearly hindered the development of previous research in providing any evidence based platform for policing to launch new operating culture; but chiefs must acknowledge this is no longer an excuse.

There has been ambiguity for victims as to where to report their crime, and a poor approach to victims from LEA in recording of boiler-room crime through lack of understanding.

Government reviews on the accuracy of the fraud figures have been welcomed by policing, helping to raise the profile of the threat and the need for better prioritisation of resourcing. The Attorney General's 'Fraud Review' across England and Wales published in 2006 was instrumental in achieving the first ever central reporting centre for fraud, Action Fraud. Without which, this study would have struggled to collate the data required.

Literature on previous research studies of fraud victims, are sparse and those that exist have generally been limited in value by the lack of national dataset availability, or by the poor research designs, whilst specific boiler-room victimology studies have been almost entirely lacking.

Within the research that exists, characteristics of boiler-room victims and their demographics have not been well studied. This study has addressed the shortcomings and deficiencies of previous studies by using the national level secondary police data and primary data collected via structured interviews to produce original insights into the characteristics of people who have fallen prey to boiler-room fraudsters.

More could be achieved in quicker time however as this paper asserts by highlighting that the national recording and analysis system at AF and NFIB has limitations in its current IT infrastructure and HMG should recognise this when procuring new systems. The research study has identified gaps and restrictions in the IT functionality to collect the range of data variables required for meaningful academic research, and its inability to work in harmony

with other systems. The most noticable issues being the way that data is structured and incompatible for use on software such as SPSS and geo-mapping programmes.

Nevertheless, despite system restrictions the research methods was designed over five distinct and carefully structured phases complementary of each other as a means of providing policing with the most reliable evidence based results.

The research questions were specific to the aim and objectives of the study and hence findings being significant.

A broad range of Law Enforcement and other private/public sector services stand to benefit by this study, in knowing who is being targeted by fraudsters in their communities and offering the opportunity to reach out to them pro-actively. The findings must however be delivered as part of setting a national co-ordination and standardised approach to prevention, for delivery at local level.

The distinctive findings of this study are that white Caucasian males constitute the majority of boiler-room victims. They are principally duped by false share, gold, metal and wine investments and the effects on them cause serious financial and emotional harm, since they involve very large sums of money running typically between £10,000 and £50,000 pounds. Although women are defrauded, particularly in connection with holiday homes and they lose slightly less money, the emotional effect on them are even more serious. Fewer minorities are duped by boiler-room fraudsters, and all groups are under-represented compared with national census figures, except for Indians, who are heavily over-represented. Women from ethnic minority backgrounds tend to be younger than other victims. White Caucasians are

defrauded in proportion to their UK population numbers, but males are markedly over-represented and women notably under-represented.

Furthermore, it seems likely that boiler-room victims in other countries will possess similar characteristics to those in the UK, so that this study's findings may be informative for police agencies in foreign jurisdictions.

Further opportunities could exist using the findings collaboratively with the Financial services sector to better profile banking customers for prevention purposes i.e. creating demographic profiles of those customers most at risk. This supports assertions by Levi & Burrows (2008) of the private sector taking responsibility to act against fraud, by investing in technology and training staff.

This study is not ignorant of the challenges a new approach will present. Any change of police culture to this magnitude brings complexities and inter-dependencies. This is why working with the College of Policing 'What works centre' will be fundamentally important.

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Appendix

Appendix A- Victim report data specified as Boiler-room crime, captured by AF/NFIB systems

Appendix A Section	Extract Field Name	Data Format	Question	Associated Fraud Type
	(i.e. person reporting on behalf of the victim)			
	Proxy_RelationshipToVictim	int	What is your relationship with victim of the fraud?	All fraud types
Proxy	Person_Title	int	Title of proxy	All fraud types
Proxy	Person_FirstName	varchar(50)	First name	All fraud types
Proxy	Person_LastName	varchar(50)	Surname	All fraud types
Proxy	Address_Line1	varchar(50)	Address line 1	All fraud types
Proxy	Address_Line2	varchar(50)	Address line 2	All fraud types
Proxy	Address_Line3	varchar(50)	Address line 3	All fraud types
Proxy	Address_City	varchar(50)	City/Town	All fraud types
Proxy	Address_County	varchar(50)	County	All fraud types
Proxy	Address_Country	int	Country	All fraud types
Proxy	Address_Postcode	varchar(50)	Postcode	All fraud types
Proxy	ContactDetails_Email	varchar(50)	Email	All fraud types
Proxy	ContactDetails_HomePhone	varchar(50)	Home landline phone number	All fraud types
Proxy	ContactDetails_WorkPhone	varchar(50)	Work or other phone number	All fraud types
Proxy	ContactDetails_Mobile	varchar(50)	Mobile phone number	All fraud types
Victim				
Victim	Person_Title	int	Title of Victim	All fraud types
Victim	Person_FirstName	varchar(50)	First name	All fraud types
Victim	Person_LastName	varchar(50)	Surname	All fraud types
Victim	Organisation_Name	varchar(50)	Organisation or business name	All fraud types
Victim	Organisation_Type	int	Organisation or business type	All fraud types
Victim	ContactDetails_OrgWebsite	varchar(500)	Organisation or business website address	All fraud types
Victim	Address_Line1	varchar(50)	Address line 1	All fraud types
Victim	Address_Line2	varchar(50)	Address line 2	All fraud types
Victim	Address_Line3	varchar(50)	Address line 3	All fraud types
Victim	Address_City	varchar(50)	City/Town	All fraud types
Victim	Address_County	varchar(50)	County	All fraud types
Victim	Address_Country	int	Country	All fraud types
Victim	Address_Postcode	varchar(50)	Postcode	All fraud types
Victim	ContactDetails_Email	varchar(50)	Email	All fraud types
Victim	ContactDetails_HomePhone	varchar(50)	Home landline phone number	All fraud types
Victim	ContactDetails_WorkPhone	varchar(50)	Work or other phone number	All fraud types
Victim	ContactDetails_Mobile	varchar(50)	Mobile phone number	All fraud types
Victim	Person_DateOfBirth	datetime	Date of birth (e.g. 01/01/1950)	All fraud types
Fraud				
Fraud	Fraud_Type	varchar(15)	NFIB fraud type	All fraud types
Fraud	FraudType_Purchase_HaveGoodsArrived	int	Has the product or service purchased been received?	NFIB3A NFIB3C NFIB3D NFIB3F
Fraud	FraudType_BankApplication_ReportedToBank	int	Has this fraud been reported to the bank or financial service provider?	NFIB5A NFIB5B

Appendix A Section	Extract Field Name	Data Format	Question	Associated Fraud Type
Fraud	FraudType_TelcoApplication_Rep ortedToTelcoOrISP	int	Has this fraud been reported to the phone or internet service provider?	NFIB5A NFIB7
Fraud	FraudType_Purchase_Reason	bit	Select if following possible indicators of fraud were evident?	NFIB1C NFIB3A NFIB3C NFIB3D NFIB3F
Fraud	FraudType_Seller_HasSellerRecei vedPayment	int	Has the seller received any payment?	NFIB1C NFIB3A NFIB3D
Fraud	FraudType_Corporate_TradingSi nce	datetime	When did the business or organisation which was the victim of fraud start trading with the suspect business? (e.g. 01/01/2010)	NFIB9
Fraud	FraudType_Corporate_NumberOr dersPlaced	int	How many orders were placed?	NFIB9
Fraud	FraudType_Corporate_Bankruptc yRelated	int	Is the fraud bankruptcy related?	NFIB9
Fraud	FraudType_BankandApplication	int		NFIB5A NFIB5B NFIB5D NFIB7
Fraud	FraudType_Investment	int		NFIB2A NFIB2B NFIB2C NFIB2E NFIB5C
Fraud	FirstContact_Method	int	How did the victim first have contact with the suspect	All fraud types
Fraud	FirstContact_Details	varchar(50)	Please give the details of any contact method you selected. For example, if the suspect made contact by email, please give the email address, or if they made contact through a website, please give the website address, and so on.	All fraud types
Fraud	FirstContact_Date	int	When did the victim first have contact with the suspect	All fraud types
Fraud	Evidence	bit	Select if victim has any of the following evidence?	All fraud types
Fraud	Reported_ToPolice	int	Has this fraud already been reported to the police?	All fraud types
Fraud	Reported_PoliceStation	varchar(50)	At which police station did you make the report?	All fraud types
Fraud	Reported_PoliceReference	varchar(50)	Police Reference Number, if given	All fraud types
Fraud	Reported_ToOtherOrg	int	Has this fraud been reported to anyone else apart from the police?	All fraud types
Fraud	Reported_OtherOrgNameAndBra nch	varchar(50)	Who did you report it to? Please give the organisation name and branch, if appropriate.	All fraud types
Fraud	Reported_OtherOrgReference	varchar(50)	If you were given a reference number, please enter it here.	All fraud types
Fraud	Enabler	bit	Select if the following enabler was used in the fraud	All fraud types
Fraud	Fraud_AdditionalInformation	varchar(1500)	Without duplicating the details already given, please provide a brief summary of how the fraud took place	All fraud types
Fraud	Fraud_VictimSupportRequested	int	Would you like us to contact Victim Support for you?	All fraud types
Fraud	Vulnerability	bit	Select if the reason below is why the victim feels vulnerable	All fraud types
Fraud	Fraud_ImpactLevel	int	How would the victim assess the impact that this fraud has had on them?	All fraud types
Fraud	Demographic_Gender	int	What is the victim's gender?	All fraud types
Fraud	Demographic_EthnicOrigin	int	What is the victim's ethnic heritage?	All fraud types
Fraud	Demographic_SourceOfAwarenes s	int	How did you find out about Action Fraud?	All fraud types
Fraud	TicketFraud_Purchase_Type	int	How did you purchase or would have purchased the ticket?	NFIB3C NFIB3F
Cyber				
Cyber	Blackmail_1	int	Was blackmail involved	NFIB52E

Appendix A Section	Extract Field Name	Data Format	Question	Associated Fraud Type
Cyber	BusinessHacking_Success	int	Was the hack successful	NFIB52A
Cyber	BusinessHacking_Success_DataAccessed	int	Did the hacker successfully gain access to data	NFIB52A
Cyber	Device_Targeted	int	What device has been targeted in the DOS attack	NFIB52A NFIB52B NFIB52C NFIB52E
Cyber	DOS_Domain	int	If known provide domain address of service targeted	NFIB51A
Cyber	DOS_Duration	int	Enter approximate duration DOS attack lasted (length of time service targeted including service suspended)	NFIB51A
Cyber	DOS_Extortion	int	Has there been a blackmail demand made in relation to this attack	NFIB51A NFIB51B
Cyber	DOS_Success	int	Was suspect successful in DOS attack	NFIB51A
Cyber	Further_Fraud	int	Did further fraud take place after the attack	NFIB50A
Cyber	Hacking_Device_Targeted	int	What device has been targeted in the hacking	NFIB52A NFIB52B NFIB52C NFIB52D
Cyber	Hacking_Extortion	int	Was extortion involved	NFIB52A NFIB52B NFIB52C NFIB52D NFIB52E
Cyber	Malware_Device	int	What has been affected by malware	NFIB50A
Cyber	Malware_Identification	int	How did you identify the malware	NFIB50A
Cyber	Malware_Installation_Method	int	How do you believe the malware was installed	NFIB50A
Cyber	Malware_Name	varchar(50)	Name of malware (if known)	NFIB50A
Cyber	Malware_SourceWebsite	varchar(50)	Source of malware (if known)	NFIB50A
Cyber	PBXHacking_FirstNumberAfterDiversion	varchar(50)	Number used after PBX hack diversion	NFIB52D
Cyber	PBXHacking_LastNumberBeforeDiversion	varchar(50)	Last number used before PBX hack	NFIB52D
Cyber	PBXHacking_NumberDivertedTo	varchar(50)	Number diverted to after PBX hack	NFIB52D
Cyber	PBXHacking_TelecomProvider	varchar(50)	Telecom Provider	NFIB52D
Cyber	PBXHacking_Type	int	What device was targeted	NFIB52D
Cyber	PersonalHacking_Device	int	Please select the device targeted	NFIB52B
Cyber	PersonalHacking_Success	int	Were suspects successful in hacking into device	NFIB52B
Cyber	PersonalHacking_Success_DataAccessed	int	If yes above, were files, data or personal details accessed	NFIB52B
Cyber	ServerHacking_Date	datetime	Enter date hacking or attempted hacking took place	NFIB52A
Cyber	ServerHacking_OS	int	Select the operating system or platform the server runs on	NFIB52A
Cyber	ServerHacking_Time	int	Enter time hacking or attempted hacking took place	NFIB52A
Cyber	SocialMedia_AccountType	int	What type of social media is involved	NFIB52C
Cyber	SocialMedia_Actions	int	What actions took place	NFIB52C
Money				
Money	AmountRequested	varchar(50)	Amount Requested	All fraud types
Money	AmountGiven	varchar(50)	Amount Given	All fraud types
Money	AmountRecovered	varchar(50)	Amount Recovered	All fraud types
Money	RefundRequested	varchar(50)	Refund Amount Requested	NFIB1D NFIB3A NFIB3D
Money	RefundGiven	varchar(50)	Refund Amount Given	NFIB1D NFIB3A NFIB3D
Money	ProductDescription	varchar(500)	Product Description	All fraud types
Money	TransferType_Method	int	How was money sent to or taken by the suspect?	All fraud types
Money	TransferType_SortCode	varchar(50)	Sort code	All fraud types

Appendix A Section	Extract Field Name	Data Format	Question	Associated Fraud Type
Money	TransferType_AccountNumber	varchar(50)	Account number	All fraud types
Money	TransferType_BankName	varchar(50)	Name of bank	All fraud types
Money	TransferType_PayeeName	varchar(50)	Name of account holder	All fraud types
Money	TransferType_PaymentReference	varchar(50)	Direct Debit Reference, if applicable (the code that appeared on the bank statement next to the payment)	All fraud types
Money	TransferType_Transaction1Date	datetime	1. Date or approximate date (e.g. 01/01/2010) of the most recent payment using the selected method	All fraud types
Money	TransferType_Transaction1Amount	varchar(50)	1. Amount in pounds sterling	All fraud types
Money	TransferType_Transaction2Date	datetime	2. Date or approximate date (e.g. 01/01/2010) of the next most recent payment using the same method	All fraud types
Money	TransferType_Transaction2Amount	varchar(50)	2. Amount in pounds sterling	All fraud types
Money	TransferType_Transaction3Date	datetime	3. Date or approximate date (e.g. 01/01/2010) of the third most recent payment using that method	All fraud types
Money	TransferType_Transaction3Amount	varchar(50)	3. Amount in pounds sterling	All fraud types
Money	TransferType_ChequeDetails	int	Was the cheque actually cashed?	All fraud types
Money	TransferType_Money_Transfer_Method	varchar(50)	If known please enter the name of the money transfer business or organisation.	All fraud types
Money	TransferType_IBAN	varchar(50)	International Bank Account Number	All fraud types
Suspect				
Suspect	Person_Title	int	Title of suspect	All fraud types
Suspect	Person_FirstName	varchar(50)	First name (or nickname or online username if this is all you know)	All fraud types
Suspect	Person_LastName	varchar(50)	Surname	All fraud types
Suspect	Address_Line1	varchar(50)	Address line 1	All fraud types
Suspect	Address_Line2	varchar(50)	Address line 2	All fraud types
Suspect	Address_Line3	varchar(50)	Address line 3	All fraud types
Suspect	Address_City	varchar(50)	City/Town	All fraud types
Suspect	Address_County	varchar(50)	County	All fraud types
Suspect	Address_Country	int	Country	All fraud types
Suspect	Address_Postcode	varchar(50)	Postcode	All fraud types
Suspect	ContactDetails_Email	varchar(50)	Email	All fraud types
Suspect	ContactDetails_HomePhone	varchar(50)	Home phone	All fraud types
Suspect	ContactDetails_WorkPhone	varchar(50)	Work or other phone	All fraud types
Suspect	ContactDetails_Mobile	varchar(50)	Mobile phone	All fraud types
Suspect	Person_DateOfBirth	datetime	Date of birth (e.g. 01/01/1950)	All fraud types
Suspect	Person_Age	int	Age group	All fraud types
Suspect	Person_Alias1_FirstName	varchar(50)	If known by an alias First name	All fraud types
Suspect	Person_Alias1_LastName	varchar(50)	If known by an alias Surname	All fraud types
Suspect	Person_Gender	int	Gender	All fraud types

<u>Appendix A</u> Section	Extract Field Name	Data Format	Question	Associated Fraud Type
Suspect	Person_EthnicAppearance	int	Ethnic appearance	All fraud types
Suspect	Person_Height	int	Height	All fraud types
Suspect	Person_HairColour	int	Hair colour	All fraud types
Suspect	Vehicle_Type	int	Type of vehicle	All fraud types
Suspect	Vehicle_Colour	int	Colour of vehicle	All fraud types
Suspect	Vehicle_MakeAndModel	varchar(50)	Make and model	All fraud types
Suspect	Vehicle_Registration	varchar(50)	Registration number	All fraud types
Suspect	Vehicle_DistinguishingFeatures	int	Did the vehicle have any unusual features that could help police identify it?	All fraud types
Suspect	Organisation_Name	varchar(50)	Organisation name	All fraud types
Suspect	Organisation_Type	int	Organisation type	All fraud types
Suspect	ContactDetails_OrgWebsite	varchar(500)	Website address	All fraud types
Suspect	ContactDetails_OrgEmail	varchar(50)	Email	All fraud types
Suspect	ContactDetails_OrgTel	varchar(50)	Main telephone	All fraud types

Appendix B – Interview Schedule

1. What bracket would you put your annual income in? 0-25k, 26-50k, 51-75k, 76-100k, over 100k
2. Do you work (what is your occupation) or are you retired?
3. What percentage of your total wealth did you lose to this fraud?
4. Did you discuss the investment with anyone before investing? If so, who?
5. Did you own legitimate shares or other commodity investments before investing in the fraudulent investment?
6. Are you housebound or live alone?
7. Do you consider yourself lonely?
8. Are you registered with the Telephone Preference Service (TPS)?
9. Are you registered with the Mail Preference Service (MPS)?
10. Do you get cold calls from other [none investment] related companies (e.g. PPI)?
11. What kind of marketing are you most attracted to – magazines, Newspapers, TV adverts, Posters, Leaflets, Community alerts, Local Police warnings or other (if so what)?
12. How would you describe the financial impact on you from this loss?
13. How would you describe the emotional impact on you from this loss?
14. Would you consider yourself an experienced investor?
15. In hindsight is there something you would say might have prevented you from investing had you been aware?

Appendix C - Telephone interviewer brief

Brief for AF staff partaking in calling victims to bridge the gap from reported Boiler-room fraud crimes.

What are we being asked to do?

As part of the NFIB mission, the Head of Economic Crime Directorate is undertaking a Masters Degree level research project to “Understanding victims of boiler-room crime” to better enable segmentation targeted prevention campaigns.

To get the most reliable research results, we need to establish an evidence based confidence level in the reporting data from Action Fraud, which has historically been difficult to achieve for a number of reasons. The historical absence of any UK central crime recording/reporting system has been a significant weakness when trying to fully understand the victims of boiler-room fraud and thus hindered the development of previous research. Furthermore, there has been ambiguity for the victims as to where to report their crime, and a disparate approach to victims from LEA in recording of boiler-room crime through lack of understanding.

The data set you have been provided to work from is from AF victim boiler-room fraud reports for FY2013-14 and is considered to be the first ‘national data set’ since all 43 Forces rolled out the service (1670 lines of data). The data however, contains variables within the data fields that are still unpopulated (i.e. the victim didn’t record the answer to the question, such as their gender, age, post code) and therefore any analysis of it at this time lacks accuracy.

What is the aim?

The aim of the exercise is to re-contact the victim reporting and populate the report in the fullest of detail by asking the necessary questions to achieve a full and accurate data set. There are also 15 new / supplementary questions added now that weren't captured through initial reporting, but are important to further enrich the data and provide for more accurate analysis of who the victims are as well as providing opportunity to complete comparison analysis with other data sets such as UK census data.

This research proposal aim is to answer what could work for targeted citizens of boiler-room fraud by tracking the existing data, conducting analysis on that data, with the vision of rolling out targeted segmentation prevention campaigns and testing outcomes/effect by performance measurement tools.

Why is this so important?

It is imperative to understand what boiler-room fraud is, review the scale and nature of the growing problem and contextualise the UK counter-fraud law enforcement response to victims.

Boiler-room fraud has been prevalent for many years; however recent years of UK economic instability are likely to have played an important role in the buoyancy of this crime. The persistent continuance of boiler-room fraud operations is detrimental to the wider UK economy as tens of millions of pounds are being siphoned on a yearly basis from UK victims to fraud offenders.

Following the 2008 recession, there is a perception that investors are more open to non traditional investments and this is an area that boiler-room fraud offenders have thrived in, adapting their sales methodology and growing in commodity expertise accordingly. Prior to the recession, investors were used to getting high investment returns. As the recession hit, they searched for alternative investments and turned without much due diligence, to companies offering the greatest return. Boiler-room fraud operations can thrive in this climate as they can offer a higher than market return which is believable to investors, but without ever having to honour their hollow promise.

Traditional crime detection methodology is difficult as Criminal proceeds are often laundered through numerous off-shore accounts. The money trail during the money laundering process becomes increasingly difficult for Law enforcement to track and Proceeds of Crime Act 2000 opportunities are sometimes limited due to the 'spend now and worry later' attitude the boiler-room offenders exhibit.

The psychological harm of this fraud should not be underestimated. Victims have lost their life savings and their homes and as a result they can suffer depression, marital problems, and there have been reports of suicide as a direct result of losing their life savings to a boiler-room operation. Action Fraud/National Fraud Intelligence Bureau (NFIB) recorded loss from boiler-room fraud in 2013-14 was £333,389,036 across 2104 reports.

The reputation of law enforcement agencies, financial markets and banks could be impeded should boiler-room fraud continue to exploit UK citizens. Victims may not report the crime as they feel the crime will not be investigated, there may be a decrease in new entrants investing on the financial markets and banks may be held accountable by the victim should a UK bank account be used for receiving the funds. In addition, victims may begin to mistrust

law enforcement and become confused due to their experiences with boiler-room fraud offenders and not knowing who to trust.

Despite the increase in citizen awareness through generic intelligence alerts, increased police executive action and centralised volume of reporting, there still remains a growing threat in boiler-room fraud and Law Enforcement do not have an evidence based strategy of what works effectively to prevent citizens being defrauded. It is for all these reasons that this research proposal is so important in protecting UK citizens from boiler-room fraud and finding a cost effective way of target harden against threat.

This is the first time in the UK there has been the opportunity to conduct research with a national data set of victim reports to fully understand the victims of boiler-room crime and facilitate a targetted segmentation strategy to prevent UK citizens becoming further victims.

What do we tell victims that we call?

It is imperative that the victim is able to verify you as being Action Fraud staff. They should be told that they are being called as part of the AF service to ascertain the most accurate details of their reporting as some key fields are missing that are required for further analysis, and MOST importantly, that these details and the extra questions they are being asked are part of the Head of Economic Crime Unit at City of London Police working with Cambridge University Institute of criminology as part of a research project aimed at better protecting citizens from becoming victims of boiler-room fraud in the future.

They should also be told that their personal details will never be disclosed by Police as part of this work, only their answers will be used in wider analysis.

When is this work required?

The research study aims to commence first phase analysis by Wednesday 20th August 2014 and therefore require the completed data set returned by Tuesday 19th August 2014.

Appendix D – Pre-question call script provided to the telephone interviewers

This is xxxx calling from Action Fraud.

I am calling to ask you a few questions about a recent report you made to us about an investment fraud.

We are working with the Economic Crime Unit at City of London Police, and with Cambridge University Institute of Criminology as part of a research project aimed at better protecting people from becoming victims of boiler-room fraud in the future.

If you would like to verify my identity, you can call Action Fraud on 0300 123 2040 and they'll be able to confirm this project.

All survey feedback will be anonymous and only used in aggregation with other survey responses, and your personal details will never be disclosed by Police as part of this work.

I just need to ask you a few questions to check some details of your report, as some key fields are missing that are required for further analysis and to add value to the research project.

Do you have a few minutes now to talk?