NOTTINGHAM TRENT UNIVERSITY

IMMIGRATION AND THE CRIME-DROP: AN EXAMINATION OF VICTIMISATION TRENDS, RISK AND INCIDENCE ACROSS ENGLAND AND WALES OVER TIME.

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Abstract

Research relating to the crime-drop has gained momentum in recent years, with various theoretical perspectives arguing on the contribution, or lack thereof, of factors which affected the decline in crime. Most research has focused on either property crime and related theories, or incorporated crime as a broader definition, lacking a focused breakdown. In England and Wales, there is a significant lack of studies in relation to the crime-drop and consequently, the empirical testing of the various theories attempting to account for it. The studies comprising the thesis expand the limited knowledge and contributes to three separate columns of literature: a) the assault crime-drop, b) the immigration and crime nexus, and c) the role of race and ethnicity in victimisation. The thesis addresses each pillar from a victimisation perspective, using the most established victimisation survey of England and Wales, and relevant Census and Immigration data. The thesis incorporates advanced statistical analysis methods, making it comparable to past literature. The findings indicate that i) the assault crime-drop has been more equitable across ethnicity than it is for socioeconomic groups. ii) The levels of unprecedented immigration influxes in the UK coincide with the unprecedented drops in assault victimisation. iii) A paradox between the levels of deprivation in multicultural areas and a lower-than-expected victimisation risk when compared to similarly deprived but less non-multicultural areas identified in other English-speaking countries are found for England and Wales. The findings have important implications for future research, as well as for the consideration of social policymakers.

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Acknowledgements

Not the book I wanted to write but the book I needed to write. Three years ago, I took a risk, today I (hopefully) turn it into a success. In the past three years I got to discover a new passion (yes, it's Dungeons and Dragons), connect with life-long friends, reinvent old passions (such as -non-academic writing to share some of the insanity), get a dog to sulk with and most importantly, a fiancé to complain to. As murky as some of those months may have been, I would embark on this journey again. I want to thank everyone I have mentioned as well as my family and my supervisors for their continuous faith in me. Without it, I may have had given up in any of the one-thousand and ninety-five days since. For that, I am thankful, and I cannot think of anything more fitting than the words from Ithaca by C. P. Cavafy; 'Ithaca gave you a marvellous journey. Without her you wouldn't have set out. She has nothing left to give you now.'

E.N

1.0 Myths, Realities, and the Needs of Ethnicity, Immigration & Crime Research

Chapter Outline:

This chapter introduces the reader to the subject matter of Immigration, Ethnicity & Crime Nexus. First, I made cross-references between media representations of immigration and ethnic minorities[1] with crime to moral panics of the past. I continued by presenting governmental and academic empirical evidence which were later examined in detail, debunking media representations. I considered the impact of media representations on social policy and policing strategies. I advanced the argument by outlining the gaps in research within the context of England and Wales and presented the key aims and objectives to be fulfilled throughout the project. I concluded with a short summary and the layout of the studies that encompass the thesis, presenting the order and content of the studies as well as the chapters.

[1] The term of ethnic minorities in this project referred to ethnicities other than white; as such, white minority individuals were part of the 'White' ethnicity which is considered a majority. This is a limitation in measuring minorities within the project due to the lack of ethnicity breakdowns of the data. While a category for unidentified minorities defined as 'other' was available, this category often includes mixed individuals.

1.1 Immigration, Ethnicity & Crime: A Moral Panic of Today?

In 1972, Cohen investigated the phenomenon of *'Moral Panics'* in relation to the movement of the Mods and the Rockers. A movement where the perceptions of the public were heavily influenced and at times manipulated in the creation of a moral panic. And yet, moral panics continue to make their way into public perception today at the same intensity as they did five decades ago. A moral panic is the phenomenon where the public perceives a specific group of individuals as threats to their societal values and norms (Cohen, 1972). Immigration can fit such concept; in countries of the European Union (EU) and the United Kingdom, the portrayal of the phenomenon of immigration and consequently immigrants as well as overall diversity has evidently formed moral panics. A stable influx of news media coverage refers to the disproportional convictions of immigrants, especially in serious offending (Caviades, 2018; Eberl et al, 2018). The pattern is found across three large EEA/EU countries, Germany, France, and the United Kingdom.

Paired with other research which found strong links between newspaper membership and crime perceptions (Mohan et al, 2011), the potential of immigration being another moral panic is evident. In the United Kingdom, the Brexit Referendum had strong elements of anti-immigration sentiment, with stricter borders being one of the main demands of the public (Goodwin and Milazzo, 2017; Riley and Ghiles, 2016; Iakhnis, Reifler & Scotto, 2018). A link was observed between the areas who voted for and against Brexit by Riley and Ghiles (2016); historically diverse areas led in votes against Brexit, while newer immigration settlements as well as potential settlements, voted in favour of Brexit. Unsurprisingly, similar narratives are identified overseas in the United States as well as in Australia (Hogan and Haltinner, 2015).

1.2 Immigration and Crime: Reality

The Office for National Statistics has reported a significant increase in the overall Diversity of England and Wales between 2001 and 2011 with White British nationals reduced by 7% (Race Disparity Audit, 2017). While conviction rates are led by White, as opposed to Black or Asian offenders, racial profiling is evident in the Criminal Justice System (CJS) with 1 in 6 individuals of stop and search being of black heritage.

And yet, the gaps between the rhetoric which affects even policing practices and reality are wide. A literature review of the links between crime and immigration by Zatz and Smith (2012) found contrary results to the ones presented by the media. The literature suggested that immigrants and historically diverse areas as well as newly formed enclaves aided in the reduction of crime through a variety of mechanisms. Between immigrant revitalisation and increased social capital theories within diverse neighbourhoods, the criminogenic harm within the examined literature is minimal, if any. In fact, policies based on immigration misconceptions increased the vulnerability of minority groups, facilitating increased crime and victimisation (Zatz and Smith, 2012). Moral panics can lead to 'self-fulfilling prophecies' through constant labelling and social discrimination/exclusion (Cohen, 1972; Merton, 1938).

1.2.1 Immigration, Ethnicity, and Crime in England and Wales

However, as it is later discussed, much of the research Zatz and Smith (2012) examined came from overseas. The United Kingdom, and subsequently, England and Wales have exhibited a lack of empirical evidence of the impact of immigration and increased ethnic diversity on crime and victimisation. The disproval of false rhetoric without established national empirical evidence is unlikely. Only a handful of seminal studies have attempted to disentangle the immigration-crime nexus in the context of the United Kingdom, each with their own limitations. While the literature review synthesised information from a variety of theoretical underpinnings and empirical evidence, this section focuses on the core studies the current project has built upon.

Jaitman and Machin (2013) employed the census and police recorded statistics in the examination of whether the different immigration levels on a Local Authority level in England and Wales. They applied of spatial causal and econometric measures, with a simultaneous examination of arrest rates of national and immigrant individuals separately. Their results indicated no causal relationships between immigration and crime at any point, while arrest levels between nationals and immigrants were observed to be similar. The limitations of their study were twofold; the evidence came a purely geographical perspective which left individual characteristics unaccounted for, while no further area characteristics were examined, both of which have been found to play a major role overseas. Due to this, the study lacks any robust policy implications but was an excellent first step to delve deeper within the exploration of immigration and crime within England and Wales.

Earlier, Papadopoulos (2012) had taken a unique perspective to examine immigration and crime – from a victimisation perspective. The study used the Crime Survey for England and Wales, potentially the most reliable survey regarding measuring victimisation and crime, when compared to Police Recorded Statistics (Rogers, 2014). Papadopoulos (2012) evidenced that crime-avoidance is part of the immigrant participants routines by examining crime and victimisation not only by the participants but by also acquaintances and family. He also noted that immigrants are brought up to a

similar risk of victimisation with nationals due to their increased levels of hate crime victimisation. His investigation of aggregated violent crime categories disallows for establishing whether immigrants are less likely to be victimised by specific types of violent crime and more likely by others. He acknowledges that further insights may be gained, especially regarding repeat victimisation by examining victimisation counts, as opposed to dichotomous victim/non-victim definitions as he did in this case. It was also noted that such models would require advanced levels of data manipulation and model selection due to the sample size of the immigrants. Finally, the study lacked any examination on sub-national geography.

A third study by Ignatans and Zielinski (2015) attempted to address the lack of area-level investigation of Papadopoulos using the same survey but in different sweeps. In addition, they examined three points in time, as opposed to just one. They arrived at multiple conclusions; first, immigration when examined in single points in time showed no effect or even positive effects with crime. However, when examined from multiple points in time it became clear that in areas previously riddled with crime and deprivation, which were also areas immigrants settled within, a reduction in crime rates and economic growth was observed. Without a reference point, such findings would have been overshadowed. A caveat is put forth, where immigrant concentration of similar cultures does better than cultures with no shared norms and values. This study shows the importance of having a temporal point of comparison as well as the importance of context when discussing immigration and area diversity. The limitations of the findings lie in the examination of aggregated crime types within violent and property categories. Furthermore, a lack of investigation of additional risk factors and interactions between immigration status and ethnicity with demographics is noted as the study examined ethnic diversity as opposed to immigration.

Finally, a follow up study by Ignatans and Matthews (2017) examined the role of immigration on the crime-drop. In this case, they used police recorded data and Census statistics to assess the impact of immigration on the crime-drop and construct overall crime-trends. However, their observation came

from a criminality standpoint. While it replicated previous international evidence that immigration not increasing crime, but rather even reducing it, it continued to follow a trend of immigration and offending examination, rather than immigration and victimisation. The analyses lacked any built-in offending factors to control for offending risk. Further limitations include the usage of police recorded crime, as well as what was noted in the previous studies, a lack of crime disaggregation. Examination of crime by type, rather than by category has been recently recommended for future research due to the variety of factors that may affect the commitment or victimisation of different crime types. As such, it is a necessary but at this point unexamined area when it comes to immigration, ethnicity and crime or victimisation.

1.3 Project Aims & Contributions to Knowledge

Based on the evidence that has and will be presented in later sections, the aim of the current project is to answer the question of:

- **What were the effects of the varying levels of immigration since the 1990s on assault victimization across individuals and police force areas (PFAs) in England and Wales when compared to the 2010s?** [2]

The following set of questions/objectives have been set to attain an understanding on the above:

1. Is there any association between the immigration & assault trends?

2. How has the assault victimisation incidence and prevalence been affected across each ethnic and National/Immigrant group by the crime-decline?

3. Are there any identifiable patterns of inter and intra race victimisation in either of the three time periods; 1990s, 2000s & 2010s.

4. Are there notable differences in residential area selection between Nationals and Immigrants?

5. How do labelled Diverse Areas differ against their counterparts within the Deprivation Indices?

6. Do Diverse Areas increase, decrease, or maintain the same levels of assault risk Pre and Post Crime-Drop?

7. *Were the benefits of the crime-drop on assault victimisation risk have equitable across:*

i) Socioeconomic Status?

ii) Ethnic Group?

[2] Originally, Household Theft from Within a Household was also included, however, due to the severe lack of sample within that crime type and further analyses beyond descriptive would be unreliable (See Chapter 4 for further technical and analytical difficulties breakdown).

iii) Immigration Status?

8. Are Ethnicity and Immigration Status effective predictors of Assault Risk?

This investigation does not solely aid the available body of literature in adding further necessary quantity of evidence but offers novel results which build on various gaps in the literature. While not without its limitations, the current project fulfilled its purpose by examining disaggregated crime types across immigrants and ethnic minority groups from a victimisation point of view both on national and sub-national geographies. Furthermore, I account not only for dichotomous definitions of victims and non-victims but consider repeat victimisation by including and investigating crime counts in the analyses to address crime distribution concerns appropriately.

The studies conducted show strong implications of immigration lowering crime and victimisation. Ignatans and Matthews (2017) identified the potential link between immigration and the crime-drop, considering the unprecedented increases of immigration in England and Wales in the past years. Immigration having a divergent trajectory with the crime-drop is one of the contending theories of the crime-drop literature. Yet Farrell (2013), looked for a global theoretical approach towards the crime-drop, subsequently refuting its' viability on a worldwide application. However, overseas evidence within specific national contexts have identified that immigration increased parallel to crime dropping in the United States (Wadsworth, 2010; Stowell et al, 2009).

I aimed to certify whether such evidence is present within the English and Welsh context from a victimisation perspective while gaining further insight from previously unexplored aspects of the immigration, ethnicity, and crime nexus. In doing this, I reconsidered the study of Ignatans and Matthews (2017) on the impact of immigration. In addition, I built on another seminal study for England and Wales by Hunter and Tseloni (2016), the only study that has examined the crime-drop this far thoroughly in relation to equity. Equity was an important concept in my study due to the consistent over-victimisation of specific Socioeconomic groups identified by repeat victimisation

literature in the past (Pease & Tseloni, 2014; Tseloni, 2006). In an ideal world, equitable results would mean that those who were victimised the most had the largest drops in victimisation after the sharp crime-drop. Yet, evidence of inequity, meaning that over-time, the groups that gathered the most victimisation did not reap the most benefits has been presented by Hunter and Tseloni (2016) in burglary victimisation after the crime-drop. Other crime types remain unexplored. Their paper acts as the main justification on the significance of examining specific crime-types rather than crime types summed within categories of violent, and property. On this end, I attempt to fill the gaps of knowledge in relation to the effects of immigration on the crime-drop, while simultaneously assessing the effects of the crime-drop on a single crime-type, assault. Therefore, not only does the project contribute to the immigration and crime nexus, but also the crime-drop inequalities which have been recently identified but remain largely unexplored. I also fulfil future research recommendations set out by Tilley and Tseloni (2016) in relation to the underutilisation of Crime Survey for England and Wales and the opportunities it provides researchers with.

This project went beyond the identified gaps in terms of novel contributions to knowledge. Apart from identifying victimisation patterns across the crime drop of different ethnic backgrounds and modelling assault victimisation risk factors, I ascertained the levels of equity across different ethnicity and immigration backgrounds as well as SES groups. I attempted to confirm Card's (2001) hypothesis on self-selection residency of ethnicity and shed light on inter and intra victimisation patterns. No literature has been identified for the latter topic aside from a single paper the methodology and theoretical principles of which were flawed (Reidpath & Diamond, 1998; Broadhurst et al, 1994). On a theoretical level, I synthesised and applied separate theoretical principles to the immigration, ethnicity, and crime nexus. Self-Selection Residency, Ethnic Conclaves, Immigration Revitalisation, Routine Activities, Strain Theory and Social Disorganisation and Equity were all core to the current project implications. Each theory connected to the other during the presentation of the evidence that has emerged throughout this study. Prior to this, an extensive

literature review chapter aids the reader in the disentanglement and forging of connections between each theoretical underpinning.

To summarise, the available evidence on immigration, ethnicity and victimisation has argued that:

- Immigrants and ethnic minority groups are overrepresented as harmful in news media.
- The public perceptions affected by the news media are false yet increase tension.
- International academic literature from English-speaking countries evidenced that immigration and diversity had positive effects on communities in relation to crime and victimisation.
- A seminal immigration and the crime-drop based US study indicated that the largest drops of crime occurred where the largest portions of immigration influx settled.

The observation of the severely limited research in the United Kingdom equates to a lack of established research to aid in social policy making. In addition,

- Both, immigration, and the Crime-Drop are phenomena that have not been thoroughly investigated, with the latter in the English and Welsh context being limited to burglaries.
- Assessing the mechanisms of the crime-drop, and the levels of equity in post-drop benefits can assist in maintain and cocoon the most vulnerable individuals.
- Immigration has been observed to have affected, at least partially the crime-drop in the US.
- Ethnicity & Immigration research is necessary in the England and Wales context to reach a conclusion and build cumulative evidence, especially when false perceptions have evidently affected policing of ethnic minority groups.
- Disaggregated by crime-type research is necessary in comparing predictors of victimisation across crime types with different mechanisms, as opposed to across crime categories.

1.4 Project Summary

I fulfil the research aims over the course of three studies; First, I analysed over 20 sweeps of Crime Survey for England and Wales, acknowledging that the examination of single points in time may mask shifts in victimisation as noted in Ignatans and Zielinski (2015). As a response to smaller samples of minorities, I pooled several sweeps for each period of interest, examining each period and addressing sample size issues. In the second study, I established and attempted to understand the inter and intraethnic victimisation patterns by compiling the victim and the non-victim forms of CSEW. Finally, in the third study, I conduct both single and multi-level regression analyses to account for both individual and area characteristics on Police Force Area geography by incorporating Census area demographic variables. Throughout the project, a variety of descriptive, inferential and data manipulation techniques are used in order to achieve the end result.

The evidence from each study was against the misconceptions of immigration, diversity, and crime and in favour of previous national and international literature, solidifying their findings. I found that immigrants were less likely to be victims of assault, and the unprecedented waves of immigration were correlated with the sharp crime reduction over time. This was evidenced by the trends which indicated divergent trends of victimisation incidence and immigration influxes over the course of more than two decades. On the ethnicity front, I identified sharp drops of victimisation in Black participants, which is either a sign of strong ethnic equity over-time, or a lack of engagement with the survey. The latter It is important to note as due to the unknown sample who chose not to engage with the survey, the populations that are not covered may be important to be studied, be it mistrusting individuals born outside the UK, or National ethnic minorities.

I find significant variations in gendered victimisation risk across ethnicity, which were reduced in later years. I also confirmed Card's (2001) of self-residency theory, where immigrants and ethnic minority participants reside at consistently higher rates in diverse, as opposed to non-diverse neighbourhoods, which explained the significantly different levels of inter and intraethnic

victimisation. I confirmed the continuous positive shift of diverse areas, from increased likelihood of assault victimisation in the 1990s, to equal grounds, which indicated slow but consistent positive change in such areas. Finally, I created regression models of both, victimisation risk and victimisation incidence to assess how the predictors have changed over-time, and as such, how equity has also shifted.

A variety of limitations in the study must be noted; first, the original aims were to include a property crime type, Household Theft from within a participant's residence to assess potential trust levels across different ethnic backgrounds. However, it was excluded after the descriptive analysis of the datasets due to severe limitations of the sample size even in the 1990s, where victimisation peak took place. The variable was deemed problematic to analyse even without dividing the sample by ethnicity and/or immigration background. A second limitation was the lack of an immigration variable in the 1990s, however, in later datasets more than 1 in 2 ethnic minority participants was also not born in the UK. Therefore, it justified using an ethnic minority/White participant split in assessing victimisation.

Another significant limitation, which is discussed further in the 'Limitations' section of the conclusion is the potential omission of a significant part of violence against women. This was due to the dependent variable not measuring victimisation within domestic settings. While such variable was available, the mixing of such different crime types would lead to inaccuracies. In addition, surveys are intrinsically inaccurate in measuring such phenomena.

Despite this, I concluded that immigration is empirically established to have had a role in the sharp crime-drop of Assault in England and Wales. While the drop could not be exclusively attributed to immigration, the connection between immigration and its' positive benefits is able to provide a theoretical framework of how immigration with robust empirical evidence to direct future research and guide social policy. On the front of equity, I concluded that from an ethnicity perspective, the most victimised ethnic groups were observed to have an equitable drop in victimisation over the

past two decades. I also concluded that area characteristics, at least on PFA level were ineffective predictors of assault victimisation, where individual characteristics accounted for almost all the variation observed. This can be due to either the limited sample or the personal nature of the chosen crime type, as well as the lack of investigation on a micro-geographical level, such as neighbourhoods.

1.5 Thesis Structure

1.5a Literature Review

The literature review consists of the key aspects of the project, the study's layout consists of a) an extensive literature review revolving around victimisation (distribution, repeat, non-randomness, victimisation divide) where I explored its theoretical underpinnings; the concept and mechanisms of social equity (formal fairness, equality versus equity of results) as well as how these have been studied within the crime-drop context and finally, immigration, ethnicity and crime (engagement in crime, victimisation, potential causes). A variety of theoretical and empirical underpinnings from international literature were reviewed and synthesised to gain a firmer grasp of the gaps within current literature.

1.5b Methods and Data

From there, I moved on to the methodology chapter, where I explored the chosen methods and data and compared them to alternatives. I justified the selection of data using previous literature and research recommendation by seminal authors. The key justifications were the underutilisation of the available datasets despite the applicability of the data on a variety of projects, the need for the project to be replicated and compared with past literature, the statistical robustness offered due to the large sample sizes, as well as the retrospective nature of the current project. I continued by introducing the selected periods and how I manipulated the data (merging, recoding, dummy coding). I went over the analyses for each chapter and the purpose they served, from descriptive statistics to a variety of regression models. I included an appendix of how I manipulated the chosen variables coded into dummy variables to assist in the replication of the study.

1.5c Results & Discussion

The results are divided in two chapters; the first chapter consists of descriptive analyses in which I explored the constructed trends over two decades of Crime Survey Sweeps and Immigration Influx based on ONS data. I continued by investigating specific periods from the previously pooled CSEW

datasets which I have checked that the victimisation incidence has remained consistent prior to pooling. I identified a variety of patterns based on Ethnicity and where available, Immigration status with both, victimisation risk and repeat victimisation. I continued by investigating patterns of inter and intra victimisation by using variables from both the Victim and the Non-Victim forms of CSEW. As such, this chapter resolved questions one to three of the set objectives relating to the main aim of the thesis; 'Is there any association between assault and immigration trends?', 'How has the assault victimisation incidence and prevalence been affected for each immigrant/ethnic group by the crime decline?', and 'Are there any identifiable patterns of inter and intra victimisation in either of the three time periods?' respectively.

On the second chapter of the results, I resolved the remaining questions. I investigated area diversity and how assault victimisation counts changed between diverse and non-diverse areas in a statistical modelling context. Furthermore, I established the different levels of deprivation between diverse and non-diverse areas to mark a comparison the findings of this project with past literature. A similar paradox was observed in the findings akin to literature from the United States. For the final part of the results, I constructed regression models of both, victimisation risk and incidence (Logit and negative binomial models respectively). I assessed equity across periods using consistently the same variables and noting their effect fluctuations. Both chapters of the results featured an extensive discussion on the implications of the findings and comparisons with past literature.

1.5d Conclusion

In the conclusion, I compiled a summary of the most important evidence I obtained from the project, their implications on an academic and social policy level as well as the limitations and recommendations for future research. I especially considered the current results in relation to the broader spectrum of immigration, ethnicity, and crime literature nationally and internationally. I conclude that the results empirically establish immigration as a factor in the crime-drop and suggest

further research based on the theoretical underpinnings which have been synthesised but could not be demonstrated with the current data and methods.

2.0 A detailed look at Equity, Immigration, and the Crime-Drop

Chapter Outline

In this chapter I examined the key concepts which the three studies encompassing the full thesis revolved around; the examined studies were identified by utilising a semi-systematic gathering method (Snyder, 2019). the method examined multiple scholarly databases, Google Scholar, Scopus and Nottingham Trent University's Digital and Physical Libraries which were linked to a variety of different databases. The semi-systematic, as opposed to systematic literature review allowed for a broader collection of research and themes, it also encouraged the application of interdisciplinary concepts (Snyder, 2019). In the first part of the chapter, I defined equity and equality as well as their role within the project. I continued by applying the concepts of equity and equality to victimisation, I identified why victimisation risk is unequal across individuals by employing previously established theories. I then shifted the focus to equity and the crime-drop where I continued to apply the concepts of equality and equity. For the second part of the chapter, I pinpointed the effects of immigration on different aspects of society, specifically those that can relate to crime and victimisation. Moreover, I considered the impact of immigration on social capital, economy, and routine activities. I progressed the argument by cross-referencing the previous examined factors of victimisation and discussing relevant crime-drop and immigration literature. I consistently identified empirical gaps throughout the literature I reviewed.

2.1 The concept of equality, (in)equity and justice:

The concept of what is equal, equitable and just is often considered the quantum physics of philosophy. Both practitioners and policy makers have been occupied with this concept since the birth of philosophy in the western world (Harvey, 2009). The current thesis aims were not to advance on the concept of what is considered equal or equitable. The focus of the literature reviewed was the application of such concepts in social policy. While a variety of terms have been discussed in the past (Lucy et al, 1977), the thesis elements the thesis adopted were vertical equity,

formal fairness, prioritarianism. These past terms were contrasted to horizontal equity and the notion of equality in later sections (Hooker, 2005; Weber, 2014; Lucy et al, 1977; Harvey, 2009).

Hooker (2005) separated equality from fairness. On equality grounds, everyone despite context received identical treatment. These could be in the form of services and goods. The notion of fairness distinguishes itself from equality. On grounds of fairness, everyone is assessed and treated taking context into account. An example by Hooker (2005) was used to highlight the mentioned distinction between the two terms. In an example of equality, an individual needed a medicine that another individual owned. Within this scenario, while the owner of the medicine had no need for it, there was no moral obligation for the ownership of the medicine to be passed on to the individual in need. Contrary to this, in a fair scenario, morality would affect any further actions taken by the owner of the medicine. Weber's (2014) prioritarianism is interchangeable with Hooker's (2005) formal fairness with regards to accounting for the distribution of services in accordance to needs. Such distribution would have ignored the numerically unequal proportions of services received. Broom (1993) however argued against both the prioritarianism and the formal fairness terms. The attempt to cover extra needs would burden those who would need to offer additional services.

2.1.1 Governance in (in)Equity

Arguments on the importance of equity outweighing proportionality and equality expanded within the last 5 decades. Lucy et al (1977) signified the necessity of equity in governance. They disagreed with governments who solely fulfilled the horizontal aspect of equity which refers to the proportional dedication of resources across society. Instead, Lucy et al (1977) supported that for complete equity to be achieved, the vertical aspect of equity was just as vital. In order for vertical equity to be attained, the results of the distribution of services should be equal for everyone on the receiving end. Equity has been investigated thoroughly in a variety of services.

At a national level, economic equity gaps, for example, between northern and southern areas of England were found (Morgan, 2006). A further study of national English trends by Bramley et al

(2012) investigated the equity in the maintenance of urban environments. Inequity was present. Other research focused on the welfare available for aging populations (Chaney, 2013). Chaney noted a constant decrease on the rights and services enjoyed in those populations with those located on the lowest end being the most impacted. Mooney and Jan (1997) addressed the issue of proportionality in health policies. They also suggested the application of vertical equity. Others opposed the concept of equity and the model of the distribution of resources in accordance with needs. Whitehead and Popay (2010), as well as Marmort et al (2010) upheld the suggestion that such inequalities are part of larger inequality schemes of power which need to be addressed. Their views could extend to other arguments of inequality.

2.1.2 Equity and Diminishing Returns

Boyne et al (2001) suggested that, by abiding to the needs model, inequity would shift from those in need of services to those who offered them at an increased rate. The argument revolved around the fact that those on the giving end would receive little in return compared to their input. Within this argument, meeting the increased needs of others did not lower inequity; it displaced it. However, Rawls (2020) referred to the necessity of weighing and meeting the needs model, rather than focusing on proportionality. Further discussion on the topic focused on the constitution of clear definitions of needs and their effects on societal welfare. Indeed, Harvey (2009) identified the trade off in both; proportionalities in terms of it being unfair on those with increased needs, as well as the needs model, as it may take a toll on those trading more for less. He suggested a strike in balance for maintained productivity on both sides. Especially for those at the higher end of needs, complete neglect may lead to increased problematic behaviour which in turn may affect the society in its substance.

Another argument within the problematic nature of equity focused on choice (Hay, 1995; Le Grand, 1991). Within this spectrum, the precipitation of increased needs through false choices by certain individuals is suggested as insufficient ground for the needs model to be implemented. Choice,

however, may be of little importance when considering inequalities created from segregation. Indeed, part of the critique by Marmot et al (2010) towards England's counter measure to inequality was the fact that its objectives leaned heavily on individual lifestyle or choice aspects and too little on the bigger picture that emerged, such as segregation. Segregated communities have been an issue for the American continent, and they have recently been noticed to be on the rise in European capitals (Cassiers & Kesteloot, 2012). Choice is therefore forfeited once segregation and community disinvestment reduces the agency of certain populations. Cassiers & Kesteloot (2012) cauterized events and policies that encourage segregation, as they increased social exclusion and community disinvestment which ultimately led to the neglect of societal welfare.

2.2 The Unequal Risks of Victimisation

Applying the concepts of equality within criminological thought leads to the emergence of a dire picture from both, theoretical and empirical standpoints. It has been continuously suggested that victimisation is not random (Miethe, 1993; Tseloni and Pease, 2005). When victimisation frequency was visited by Tseloni (2014), in the examined sample, 3.2% gathered 40% of victimisation, while 6.9% gathered 61.5%, both figures of which are indicators of crime not being distributed by chance. A variety of theories were developed to shed light on the causes of the seemingly non-random patterns of victimisation. These theories are investigated before conducting a comprehensive discussion of the crime-drop.

2.2.1 Routine Activities Theory

2.2.2 'Victims of the Routine'

Cohen's and Felson's (1979) Routine Activity Theory (RAT), added merit to the argument of 'not all victims are the same'. According to their theory, crime revolved around a triangle with a different 'encouraging' factor at each end. On one end, there is a likely offender, on the other end, there is the lack of a capable guardian and on another end lied the suitability of the target. Indeed, the theory is heavily credited, with Tseloni (2006) as well as Xie and McDowall (2008) having found evidence aligning to the claims of Cohen and Felson (1979) within the spectrum of property crime with little contrast. Further support was found within Rountree et al (1994), Liu et al (2016) and Yule and Griffiths (2009) on the broader spectrum of violence and intimate partner violence (IPV).

Within the literature, aside from the somewhat self-evident factors of time spent outside one's home, a few key indicators highlighted the necessity of guardianship, whether social or physical. For example, the justifications of going out at night seemed to mitigate the risk of violent victimisation when these were for visiting family or friends (Kuo et al, 2012; Arnold, Keane and Baron, 2005). Such results indicated that a victim may have been under a constant 'capable guardian' as defined by RAT around them; the latter contrasts with Bunch et al (2014) who defined 'nights out' on a broader

scale as high risk. However, the two agreed that their measured types of 'prosperity', whether that is education or income highlighted an inverse relationship with victimisation risk. Such results could have occurred for a variety of reasons, Miethe (1993) finds that individual characteristics (such as prosperity) were mitigated by area characteristics once added within statistical models. These add contextual factors that are beyond RAT in the picture. Another, plausible but empirically undemonstrated explanation could be the access to private means of transport by more prosperous individuals. Evidence of the latter were noted in Song et al (2019) identified an increased likelihood of becoming a victim of theft where population flows are the greatest, having utilised geocoded data from the phones of offenders, rather than victims. Further available evidence from the combination of two authors support the above theory; Blasdell (2015) suggested that the frequent use of public transport may increase target suitability and McMillen et al's (2019) evaluation of Chicago's Safe Passage programme which targeted public transportation routes, successfully reduced violent victimisation by 14%.

2.2.3 Strain, Disadvantage, and Precipitation of Victimisation

Sometimes, areas with increased amounts of deviant residents and high amounts of antisocial behavior incidents may be under the 'code of the street' (Sampson and Wilson, 1995; Mehlkop and Groff, 2010). As a result, the social construction of aggressive personas and gangs which resort to violence in order to gain respect may be the norm within the area. In this case, RAT can utilise aspects of precipitation theory (Wolfgang, Block, and Block, 1994), which suggested that victims may have partial responsibility within the context of their victimisation. In Van Gelder (2013) and Taylor et al (2008) increased odds of violent victimization were noted within gang members, which lend further support to the precipitation theory of Wolfgang, Block, and Block (1994). In this case, victims may have perpetrated violence themselves before being victimised.

Even from a homicide perspective in Finland, homicide was found to be concentrated within those out of employment, demonstrating problematic behaviours such as alcoholism (Lehti, 2014),

whether victims were previously exhibiting problematic, or increased disadvantage led to high-risk behaviours is important. In addition, victims in this case may have reached levels of intoxication where they precipitated their own victimisation as an indirect result of living in constant disadvantage and strain. Earlier papers have argued about the significance of alcohol pricing and violence rates, where strong links were identified once empirically examined through injury reports obtained from emergency departments (Sivarajasingam et al 2016). Melde et al (2014) argued that a suspension of precipitating routine activities which can occur post-victimisation. Averdijk (2011) found no evidence when the author identified contrary evidence to the suggestion of Melde et al (2014), having noted little if any impact towards one's changes in routine activities which resulted from their victimisation. In the case of aggravating behaviours which occurred by strain and disadvantage, a mitigation of the source of such behaviours could reduce them, and subsequently reduce victimisation precipitation. Additionally, Brennan et al (2010) argued that by including offence-specific factors, the validity of the predictive results increases significantly, acknowledging at the need for disaggregated examinations of crime. For example, the utilisation of alcohol use may be irrelevant to property crime, yet significantly explain variations of assault across place and time. However, context is important; evidence presented by Messner et al (2007) noted that previously independent variables of great significance towards risk within the western culture are deemed insignificant outside of it. While the evidence came from China, similar populations of ethnic minorities in the UK could replicate such evidence.

2.2.4 Victims and Repeat Victims: The ever-widening gap

For much of the population, victimisation may never occur. Within both national and international large victimisation survey datasets a percentage of 80% to 85% of the sample did not experience a single victimisation incident (Tseloni and Pease, 2003). In national trends, by statistically modeling victimisation, Tseloni (2000) noted that a degree of randomness did exist within victims, but only for those within the datasets that are termed as the 'one-offs', which sustained no subsequent events. Indeed, in violent crime the top 10% of 'repeat' victims experienced over 25% of violent incidents

(Tseloni and Pease, 2005). Additionally, 1 in 3 victims within all crime types were deemed to be repeat victims at different severities and ¾ of personal victimisation within 12 months was noted to be repeat (Farrell and Pease, 2017). The latter indicated further concentration of personal RV in recent years as Ellingworth et al (1995) had found 10% of personal crime victims accounted for half of all Personal Victimisation (PV) incidents. The practicality of identifying and targeting repeat victims from a criminal justice standpoint became evident, both in terms of resources and ethical purpose. Indeed, with the crime-drop, to be discussed in the next section, organizational budgets have been lowered in accordance with the severity of each country's crime trends. Concerns have been raised on whether crime, and therefore, victimisation may rise as a result of reduced police budget (Worrall and Kovandzic, 2010).

Some crime types are easier to target than others, especially household crime. Households are static, therefore if a household is repeatedly victimized, issuing a 'repeat victimisation' treatment may be easier. The Kirkholt project (Laycock, 2001) served as a prime example of reducing victimisation by targeting RV, where burglary victimisation was reduced to less than half post-intervention. Robinson (1998) noted how research has provided evidence more than two decades back on victimization patterns at the time. It was shown that repeat victimization occurred swiftly, in fact, within just one week of the initial victimization. With such approaches, an issue may be the increased fear of crime as a suggested side effect in areas where the interventions take place (Pease et al, 2018).

Moreover, the likelihood of being repeatedly victimized dropped as the intervals between victimisation increased. The evidence agreed with the 'immunity' theory provided by Hope and Trickett (2008), which suggested that similarly to an immune system; victimisation immunity would increase slowly but steadily if subsequent victimisation was not sustained. However, the former, as with most RV research conducted took place within the burglary/property crime spectrum, as measuring RV intervals on static units was more reliable. Lantz and Ruback (2017) expanded the

scope of RV examination, they evidenced that RV often ignores the idea of 'networked' offending. By exploring victimisation and including variables indicating whether the same or a different offender was involved, they noted that repeatedly burgled properties were not burgled by the same offenders, but by a variety of individuals. The latter supported the 'flags' theory that aimed to explain how vulnerable victims were 'flagged' for more offenders to partake, should they come in contact (Tseloni, 2003). However, the authors relied on the victim's best knowledge to categorize the offender. In burglaries, due to the household having been vacant at the time of the crime, false categorization from guessing could have occurred. Despite this, 'buddy theory' has been touched upon by Farrell (2015), acknowledging its' significance yet problematic measurement from a victim perspective when investigating unattended property victimisation.

Near-repeat victimisation literature has increased in the past years, the notion that victimisation may be contagious has been raised (Groff and Taniguchi, 2019). However, near repeat victimisation is far less accurate and therefore harder to treat, as evidenced in a post-programme evaluation which aimed to reduce near repeat incidents (Groff and Taniguchi, 2019). Further literature supported the idea of near-repeat victimisation, for example Hino and Amemiya (2019) found that 1/3 of all burglary incidents within their examined areas occurred in previously burgled buildings, yet the impracticality of targeting entire blocks rather than individual households was signified. Furthermore, near-repeat areas are found to be fluctuating over time, with research not having yet provided extensive explanations for the shifts (Hoppe and Gerell, 2018). The latter is contrary to the accuracy and perhaps more nuanced explanations of actual repeat victimization.

A dilemma arises from solely focusing on one crime, victims react differently to different kinds of victimization in accordance with their personality and perhaps culture, as it will be seen in subsequent sections. Therefore, by focusing on, for example property crime, perhaps a 'tunnel-vision' phenomenon occurs. In Powers (2014), where significant differences are noted from crime type to crime type. For instance, when crimes included an aspect of physical contact, it is noted that

repeat victims resisted less with each victimization, as well as in higher age bands. Vulnerability therefore was not static, it increased, but could also decrease, and even develop into more severe symptoms such as PTSD (Clay-Warner et al, 2016), in such cases, outside intervention would be necessary.

Past evidence has been challenged by recent research that tried to put the notion of victimisation concentration under scrutiny. Such examples are the earlier mentions of Immunity Theory, the authors of which suggested that investigating 'risk' is an improper approach to the reduction victimisation (Hope and Trickett, 2008). The theory noted the severe outweighing of non-victims to victims and suggested that identifying what makes non-victims immune to crime instead of studying victims followed a better logic. Some research has addressed and supported this notion via integrating spatial analysis software finding even more severe outweighing than previously mentioned (96% compared to 85%) in the recent years (Prieto Curiel et al, 2018). The past statement can be taken in a two-fold way, on one hand, it can be viewed as evidence that if victims are fewer in numbers, then identifying why (i.e., the protective factors as suggested earlier) may be vital. On the other hand, it can be viewed as evidence that victims have become easier to target and therefore can reduce police resources spent significantly by focusing on those repeatedly victimised which would be even fewer, as the literature has dictated than the broader definition of victims. On a more extreme, yet valid argument, inconsistencies were noted through the different crime concentration metrics which have been used throughout victimisation research (Prieto Curiel, 2019), despite this, victimisation research has had a significant impact when applied in practice, thus, imperfect measurements with room for improvement are a significant step up from previous omissions of victims from the criminological mind.

2.3 The (in)Equity of the Crime-Drop: A Breakdown

The nature and the cause of the crime drop which was initiated on the margins of the 20th century has baffled social scientists and policy makers within the political context alike (Sampson et al, 1997). Investigatory procedures have been taking place since, still unable to provide a definitive response as to why the crime drop occurred (Nilsson, Estrada, and Backman, 2017). While certain theoretical perspectives have made progress towards this, researchers have yet to grasp the essence of why the crime-drop occurred. In England and Wales, the crime rates have dropped by 64 percent in property crime and 56 percent in violent crime (Farrell et al, 2011). Research below national trends within other countries, such as Finland and even the USA indicates that on a macro level, this being states or cities, the drop was genuine (Eloheimo, 2014; McDowall and Loftin, 2009). Others suggest that the crime-drop was simply attributed to the generation of new crime types that had yet to be incorporated within the Criminal Justice System (CJS) resulting to statistical artefacts (Marlow, 2014). It was argued that a 'displacement' of crime types could be seen as a viable explanation to the crime-drop. However, the drop in the crime types, such as burglaries (Hunter and Tseloni, 2016) which have been investigated this far is genuine. Practitioners have agreed that at the local level, drops in crime were not a displacement to different crime types but a genuine drop due to the implementation of crime-fighting policies (Clancey, 2015).

By combining the concepts of both, equity within the philosophical spectrum and the non-random victimisation of victims, it is important to consider their interaction within the context of the crime drop. Trends can offer a description of events at a macro level, within a nation for example as demonstrated with the earlier reported statistics. Per contra, to what extent such events impacted the society at a meso, and micro level can only be investigated by further analyses and calculations. The statistics above referred to the total number of incidents. The examination of prevalence, however, gave a different picture. From a worldwide perspective, it seems that the distribution of crime was unaffected from the crime-drop (Pease & Ignatans, 2016). In fact, a small, yet worrying

increase in concentration was noted from an analysis of 25 countries. Additionally, the authors identified that cross-nationally, the top percentile, rather than decile, gathered 33% of all victimisation reported. The same phenomenon was noted in the US even before the crime-drop, where while violent victimisation concentration trends remained stable, property crime suffered by disadvantaged households was on the increase (Levitt, 1999). Thacher (2004) extended the scope of the investigation to the 2000s and concluded that all types of victimisation instead of only property victimisation had disproportionately been on the increase in terms of concentration. A look through the 20-20 ratio technique, often used for income inequalities, an astonishing 56% increase in concentration in burglary as well as violent crime concentration was determined. Furthermore, by introducing more socioeconomic status (SES) control variables, the difference between the poorest against the richest quantiles became even more striking, with the former being three times more likely to be victimised.

2.3.1 The Path to the Crime-Drop:

The crime-drop was, and is, a global phenomenon and therefore investigations have examined it from the macro perspective as to what characteristics were shared across nations. Farrell (2013) developed several tests to examine whether the theories may or may not be plausible, one of them included the aspect of cross-national characteristics. Only one, the theory of increased security avoided failure out of the 15 suggested crime-drop theories trialled. However, many theories have remained un-tested empirically throughout the years in relation to the crime-drop, a prime example of which is the immigration theory which is yet to be tested within the UK setting. I examined the availability of evidence of what may have caused the crime-drop, before moving on to the theory of interest.

2.3.2 Trial by Literature: The 5 Tests for a Crime-Drop Theory

Farrell (2013) suggests a trial of 5 tests to assess whether or not a crime-drop theory was considered and examined further. The tests are as follows:

The preliminary evidence test, where the empirical evidence determined the plausibility of a theory, even in the case of controversy. The cross-national test which suggested that a theory needed to have application to a variety of countries leading to a global perspective/theory towards the crime drop. The prior crime increase test which refers to how the theory in question 'fit' the increasing crime trends before the sharp decrease or was at least somewhat neutral rather than contradictory to it. The phone theft and e-crimes test, where a theory should either have been in sync or similarly to the last test, neutral to the e-crimes and phone thefts that were increasing simultaneously as the crime-drop occurred in other crime types. Finally, the varying trajectories test, where an examination of the variations of crime and the theory under investigation concluded whether the changes are in parallel with the decrease in crime.

While the detailed examination of each theory was outside the scope of this discussion, a note to the most sufficient theory in accordance with the mentioned tests was necessary. A variety of authors have found that the 'security hypothesis' passed every test where the rest were held back by two or more of the assessments suggested. The security hypothesis exceeded especially in property crime and theft (Farrell et al, 2014; Pease and Tseloni, 2014; Sidebottom and Ashby, 2014). However, some of the theories may appear neutral as opposed to contradictory at some of these assessments. An example can be taken from immigration, where influxes varied from country to country, yet may have played a role in the crime-drop from the sparse empirical evidence available (Pease and Ignatans, 2017). The theory may disagree with the previous 'rising' trends of crime for example, but an inverse relationship is noted in the examined trends within literature, both in the UK and the US as it is later demonstrated. Additionally, the case for the security hypothesis which refers to the fortification of households sounds to have no logical application to violent crime. The detailed examination of each theory is outside the scope of this discussion.

2.3.3 Social Change

Concentrated Disadvantage

From the mid-twentieth century to the last quarter of it, a variety of changes occurred in the world, economically, socially, even technologically. Similarly, it is suggested that the rise, and fall of crime can be attributed to the changes that countries were undergoing. Jennings et al (2012) found proof of such changes affecting the property crime-drop within England and Wales by examining recorded crime statistics on a national level. However, recorded crime statistics, as noted earlier, can be problematic for a variety of reasons, despite their flaws, they were capable of offering an accurate broad picture. It was noted that income disparities, compared to other factors had little impact on the crime-drop. On the contrary, some USA evidence suggests that economical change may be of higher importance than social change. It seems that demographic numbers affected the increase or decrease of crime incidents when combined with income inequality (Hipp and Kane, 2017; Moro, 2017). Perhaps it could then be argued that the findings of Matthews and Minton (2018) and Farrell et al (2015) on the reduction of convicted young offenders since the crime-drop in both the UK and the US could be partly attributed to the broader spectrum of equity increasing. The latter authors however argued that it is perhaps due to the increasing risk of getting caught due to security and other means as opposed to contemporary youth growing in less disadvantaged settings (Farrell et al, 2015).

Both could explain why crime became more concentrated over time as it was earlier presented. With less people falling at the top quantile of disadvantaged groups, offending would weight down those remaining within that zone even further, especially if, as suggested earlier, security is lacking. The theory appealed further when examining the most disadvantaged groups and conducting a comparison on an income-basis. In that case, every aspect of victimisation, including RV and fear of crime were more severe on those earning 10,000£ or less compared to their 30,000£ counterparts (Stone, 2006). The ‘wealth buys security’ argument is in accordance with Farrell’s (2013) Security

Hypothesis, especially to property crime, whether that is household or car-related (Stone, 2006; Fujita and Maxfield, 2012; Kennedy and Veitch, 1997).

2.3.4 Post-Crime Drop Victimisation Inequalities

Rennison and Planty (2006) identified significant issues with examining crime trends as a unified unit on the national scale. Indeed, the smallest of change occurring in a very large social group could create a heavy enough statistical impact to indicate change which may ignore the smaller groups that may receive little to no benefit. However, as seen earlier, the population of victims is small, and the population of repeat victims smaller. As a result, such groups may be invisible by examining the general spectrum of the crime-drop. The latter theory is empirically demonstrated by Hunter and Tseloni (2016) as well as McVie, Norris and Pillinger (2020) across English, Welsh, and Scottish contexts. In England and Wales, a victimisation divide is noted in households of different SES and property crime. Those households experienced significant disadvantage, such as, low income and lone parenthood tended to still receive the bulk of victimisation, even after the crime-drop, with little, if any change (Hunter and Tseloni, 2016). Earlier research suggested that repeat victims were reduced by 60% throughout the crime-drop in numbers, yet those that remained within the RV spectrum still endured significant amounts of victimisation, in agreement with crime concentration research (Pease and Ignatans, 2016). In Scotland, both property, and especially violent crime victims were found to be at disproportionate odds of victimisation after the sharp drop in crime, findings that raised concerns for those in the most disadvantageous positions (McVie, Norris, and Pillinger, 2020).

From an offending point of view, Berg et al (2016) noted differences in the offending patterns of youth and attributed the US crime-drop to the reduced incidence and prevalence of youth delinquency, with certain ethnicities having experienced significant drops in offending. In Europe, Nilsson and Estrada (2016) found similar results through cohort studies minus the racial aspects. They noted that infants of disadvantaged parents were at a significant risk of property offending,

while those in more affluent families leaned towards violent offending. Evidently, the distribution of offending within the crime-drop was just as inequitably distributed as victimisation.

Additionally, a variety of researchers argued against either against the aggregation of crime types (Rennison and Planty, 2006) or advocated further investigation of both aggregated and non-aggregated crime-types to receive a clearer picture of the distribution of crime (Tseloni et al, 2012).

2.3.5 A Gendered Approach: Equality... Even in Victimisation Risk?

The distribution of benefits from the crime drop was inequitable, with an observed victimisation divide between those in higher and those in lower SES. Lauritsen and Heimer (2008) added to the argument by adopting a gendered approach to the crime-drop. They noted that victimisation risk increased significantly for women, equalizing the two genders in terms of aggravated and simple assault. Such results can be discussed in conjunction with the social change that was previously mentioned, as well as a new addition, the notion that violence sensitivity, and reporting has increased because of the rise in feministic movements and implementation of policies (Kivivuori, 2014). Tonry (2014) added further merit to the argument when discussing non-lethal violent crime rates examined through both recorded incidents and victimisation surveys in relation to the mixed evidence through Europe.

In agreement with Kivivuori's findings, Tonry argued that the mixed evidence was part of the cultural and sensitivity shifts towards non-lethal violence, rather than actual increases. The latter suggests that data on non-lethal violence may be problematic to analyse, especially if the evidence presented by Los et al (2017) on the cultural aspects of victimisation affecting report rates are considered. However, the same cannot be said for homicide, which the picture seems identical, indicatory of a 'dark' turn of events towards equality (Selmini and McElrath, 2014). Indeed, from a multi-country investigation, the authors concluded that the gap between female and male homicide, the former of which used to be significantly lower has significantly increased to almost the same

height as men. While the uniform increase in gendered violence is important, this thesis focuses on assault victimisation.

2.4 The Application of Equity Within the Crime-Drop

The discussion around the crime-drop this far has involved a variety of criminological and even philosophical aspects. The inequitable drop in victimisation interweaved with the definitions of equality and equity, which have their roots in philosophy. It also related and highlighted that equity issues were one of the many to be added alongside public health, income etc. Additionally, the use of past criminological theory to address the crime drop phenomenon seemed to explain 'why' such inequitable picture emerged, yet not 'why' the crime-drop occurred. With most of the research in the UK focused on property crime, violent crime within the crime-drop warrants investigation, especially while the latest figures indicated an increase over the last decade. Finally, a lack of empirical testing within crime-drop hypotheses was noted regarding immigration. The latter is an area that lacks in general from the UK literature, increasing the necessity of further empirical research.

2.5 Immigration and Crime

Immigration and crime, especially in recent years became a topic of lengthy, often controversial debates. From news reports to changing governments and political parties, immigration was, and is portrayed in various lights, both positive and negative (Caviedes, 2018). Whichever portrayal immigration receives, it is often presented without substantial, if any evidence to confirm or deny the claims made (Knepper, 2012). Researchers have urged for the distancing of research from political, journalistic, and rhetorical debates towards empirical research paths for the minimisation of bias (Hargreaves, 2012; McDonald and Erez, 2007). Such research is necessary, as such portrayals have been used to manipulate public perceptions, which led to false perceptions about crime in ethnically diverse areas and prejudice (Mohan et al, 2011). This chapter explores the availability as well as the quality of evidence relating to immigration and crime.

First, I assessed the quantity of the evidence in regard to the country of interest, England and Wales (E&W), and compare it to a similarly economically strong country, the United States of America (USA).

In the USA, immigration and crime research is a well investigated sector of criminology. A variety of seminal authors and their work has shed light to the links, if any, of crime and immigration. Recent US findings noted that immigration increases were in parallel with the drop in every type of crime (Feldmeyer et al, 2018). In fact, it becomes evident that immigration once more either plays an assistive role in lowering crime or irrelevant, as areas without impactful immigration influxes seem to also benefit from crime reductions. The evidence of the relationship between the two noted that it is significantly more complex and non-linear than it is presented. Goncalves and Matos (2016) highlighted that immigration research within Europe and not just the UK has fallen behind. The meta-analysis of Goncalves and Matos (2016) indicated that a relatively low figure of 33% of research was conducted on the victimisation of immigrant women in Europe compared to the 67% of the USA from their sample. A similar figure emerged during the literature review carried out for

the present project. A total of 46, of which 33 being American empirical papers were identified which measured the impact of immigration on society in a variety of aspects. Such aspects were inclusive of victimisation perspectives using the similar to the Crime Survey for England and Wales (CSEW) and National Crime Victimisation Survey (NCVS). Others investigated the incidents recorded by Uniform Crime Reports (UCR) which are the equivalent of UK police recorded data with a minority of papers using less common and more experimental methods, touched upon at a later point. The findings were in-line a previous extensive literature review which found either no evidence or a negative association between immigration and crime in a US context (Lee and Martinez, 2009).

The remaining total of 13 articles were of European origin whilst some included E&W as countries of interest. It is necessary to highlight the significant lack of research within immigration, as well as race, ethnicity, and religion which has been noted by recent studies. The consequences of which have been suggested to be the omission of cultural differences amongst heterogenous populations (Parmar, 2017). These investigated the link between immigration and crime in similar ways. However, many of these were more theoretical than empirical, while in the US the opposite was true. They also accounted for 29% of the total studies, indicatory of the lack of empirical evidence. In France, the secular nature of Official Statistics ignores race, ethnicity, and religion. Similarly, it has failed to recognise foreign and immigrant groups for a prolonged period of time (Body-Gendrot et al, 2014). Both latter can heavily impact European immigration and crime research, when the country with the largest Jewish and Muslim populations in the EU (Pew Research Centre, 2017) lacks such important measures. Germany, on the other hand has conducted limited research on overall crime-rates in relation to immigration and found links of increased crime in areas with increased proportions of foreigners (Piopiunik and Ruhose, 2017). However, the last-mentioned authors also found that such areas were already suffering from high crime rates, as well as unemployment and poverty. The largest study of ethnicity conducted within a European context by Awaworyi and Laryea (2019) which modelled the data of 78 countries notes crime-reduction benefits related to

higher ethnic and linguistic diversity. While not directly related to immigration, higher levels of diversity, especially linguistic were evidence of high levels of historical immigration.

Before addressing further literature, it is vital to define migration and some of its' causes which can be relevant to theories about links to the crime nexus.

> "Some of these migrants hail no farther than from the next parish; others are natives of a neighbouring county; others again have come from a more remote part of the kingdom, or even from beyond sea. And when I inquire into the motives which have led these migrants to leave their homes, they will be found to be various too" (Ravenstein, 1885, Pp. 181).

In "The Laws of Migration", Ravenstein (1885) addressed the, up to that point unpredictable patterns of migration. By dissecting the influxes of migration, he noted 7 general laws. Three of these laws revolved around the attractiveness economic growth, the absorption capabilities of each area of destination, and the balance between incoming and outgoing migration. He then focused on migrant characteristics and highlighted three additional laws regarding demographics, first, females were found to be migrating in larger numbers than males, second, short distance migration was much more frequent and third, cosmopolitan centres, such as London were preferred over other alternatives. The 6 laws mentioned above, especially those concerned with distance and absorption were closely linked with the 7th law, as distances of migration increased, so did the probability of positive outcomes, i.e. absorption. While the author attempted to pin down the causes of migration, the flexibility of immigrants, compared to migrants in terms of distance may offer a significant advantage in terms of absorption. The time of which the book was published limited its contemporary validity. With the UK entering the European Union (EU) which translated to open borders, the means of travel overseas becoming not only easier but also cheaper, and two world wars having occurred as well as middle eastern country wars that are still unresolved, perhaps the laws of both migration and immigration have changed. The latter is supported by the evidence provided by the ONS (2015) immigration data, where a staggering 120% increase was noted in

immigration influx when 1994 is compared to 2017. While reasons for immigration and migration vary from context to context, the scope of this chapter was not to examine the causes of immigration but their impact on crime from multiple perspectives.

Below (Table 2.1) I summarised the number of research articles on immigration and crime association. As mentioned in the outline of the chapter, I used a semi-systematic, as opposed to a systematic method of literature review (Snyder, 2019), due to the broader themes investigated. The table (2.1) summarises the number of immigration and crime nexus studies gathered.

Table 2.1: Proportions of empirical studies divided by immigration being positively, negatively, or not associated with crime.

Study Focus	***Positive Association***	**Negative Association**	**No Association**
European	16% (n=2)	50% (n=6)	34% (n=5)
American	13% (n=4)	66% (n=22)	22% (n=7)

2.6 Is immigration bad for communities?

2.6.1 The Notion of Social Cohesion

Social cohesion is not an easily defined and measured term, yet the one closer to the aims of the project is Larsen's (2013) where 'Social Cohesion' can be measured by the level of shared beliefs and morals that lead to increased trustworthiness amongst the members of a community. One of the theoretical underpinnings which is often used in the immigration-crime nexus of arguments is its effects on social disorganisation as defined by Shaw and McKay (1942) and discussed during the broader crime-drop and crime theories section. Based on that evidence, context matters more than the individual when it comes to criminality. Neighbourhoods with significantly less fortune and goods than others were noted to be 'destined' to be scourged by crime. A variety of studies have linked social disorganisation to crime rates, in Kawachi et al (1999) such relationship is noted, although the omission of individual characteristics limited the extent of the validity of the study.

Nevertheless, a vast number of authors have found significant positive relationships between social disorganisation and crime in a worldwide context. Whether that is in Kenya (Parks, 2014), Brazil (Da Silva and Alves 2014), Korea (Ok-Kyung, 2005), USA (Gracia et al, 2015; Blumstein and Jasinski, 2015), China (Liu et al, 2016) or the UK (Tseloni and Pease, 2015), social disorganisation was a strong explanatory variable for crime and victimisation in every study. Due to the array of variables that could indicate social disorganisation, the methods of measurement tend varied from study to study, yet despite the blurred definitions some characteristics were always included (Braga and Clarke, 2014). Signs of spatial disorder, residential mobility, average socioeconomic status and, most relevant to this section, ethnic diversity/heterogeneity were the characteristics that were consistently included in past research.

2.6.2 The Impact of Immigration on Social Cohesion

It is uncontested that neighbourhood social cohesion, a phenomenon that is affected by the levels of social disorganisation is linked to crime and victimisation of different types. Similarly to social disorganisation, it's definition and measurement is fragmented (Holtug and Mason, 2010). Within the American context, Sampson (1997), suggested that issues of social disorganisation and therefore, reduced area cohesiveness were issues to be addressed with informal, as opposed to formal means. Burgason et al (2014) as well as Ignatans et al (2015) found that cultural disorganisation was in fact a possible negative outcome when a variety of otherwise incompatible cultures gathered within one neighbourhood. This does not indicate increased hostility, and therefore crime within an area but rather a lack of communication and social guardianship. The latter can be linked to the routine activities and opportunity of crime (Tseloni et al, 2012; Rountree et al, 1994). Empirical tests on the impact of social cohesion and violent crime have showed promise, as social cohesion increased, violent victimisation rates fell (Lee, 2000; Sampson and Raudenbush, 1999). Additional evidence within both the UK and the USA which focused more on victimisation related research lent further support such hypotheses (Tseloni, 2014; Stone, 2006; Feldmeyer, Steffenmeier and Ulmer, 2013).

Disagreements are present in literature on the nature of the effects of ethnic heterogeneity on social cohesion and consequently on crime. The notion of what constitutes a social norm for other cultures as well as their sensitivity to, for example, violence was debated by Rhinenberger-Dunn and Carlson (2011). Another, and rather problematic factor linked with social cohesion is concentrated disadvantage (Bones and Hope, 2015), the term 'problematic' applies to the complex relationship of highly concentrated immigrant neighbourhoods and concentrated disadvantage. It was noted that newly arrived immigrants and even long-settled immigrants often reside in neighbourhoods of which the SES averages were low (Ignatans & Zielinski, 2015; Feldmeyer et al, 2013). However, over-time examinations by Ignatans et al (2015) indicated that such neighbourhoods take a turn for better, rather than worse, but not in a drastic manner.

Another perspective could undermine social cohesion not by the immigrant influx that may accumulate to an area but rather by the individuals who already resided in it (Wiertz, 2015). In this case, the labelling of 'others' as well as the fragmentation of national identity as a result of the negative perceptions by existing residents can create artificial reductions of social cohesion in areas targeted by immigration influx. Perceptions at that level are not examined in this thesis, but I reviewed every element that was found to affect social cohesion in diverse communities to offer a more complete argument.

2.6.3 Contextual Influences of Social Capital

Such issues could perhaps be mitigated through community organisations, as Sampson (1997) previously suggested. Building on community, rather than formal interventions, Andrews (2011) found positive effects towards social cohesion in communities with high ethnic heterogeneity which featured religious movements such as the protestant and catholic churches. This was also true for long-term residents within the US, as protestant communities tended to mitigate the violence trends of neighbourhoods (Harris & Ulmer, 2017). Akin to Andrews (2011), little, if any effects were found by any other religious groups in comparison. The article built on the idea of religious movements that focus on the acceptance rather than the 'othering' of new residents as a contributor to social bonding. This comes in opposition with the recent trends of increased nationalism within Europe, where immigration is often characterised as the decay of communities (Boucher and Samad, 2013). Such 'speculations', as they often come without evidence resulted in division and disinvestment within communities.

The picture of disinvestment in both area and individual level is clear when neighbours have rarely spoken or seen each other unless necessary (Colic-Peisker and Robertson, 2014). Such issues intensified in recent years in areas of high gentrification. Van Wilsem et al (2006) identified severe heterogeneity issues where gentrification has occurred, not only in ethnic but also in socioeconomic status. The evidence highlights the multi-factored relationship of social cohesion and different types

of disparity, not just racial. A contradictory theoretical standpoint suggested was the immigration revitalisation of areas, where immigration boosted the economic potential of an area (Xie and Baumer, 2018). This would be achieved through the introduction of additional labour force and investment opportunities of local economies (Xie and Baumer, 2018), which in turn would create a 'neighbourhood' sentiment, eventually leading to increased social cohesion (Kubrin et al, 2012).

Is immigration bad for communities? The answer seems to vary. The mixed evidence could be a result of different measurements since 'community cohesion' as a definition is, as mentioned earlier, blurred, and an indicator of a complicated non-linear relationship.

2.6.4 Social Cohesion and Strain from an Individual Perspective

This section investigates the potential influences of immigration on crime at the individual level, compared to the meso/macro level that social cohesion was applied to. Community cohesion and concentrated disadvantage are linked with Merton's (1938) strain theory and crime. Indeed, Agnew (1999;1999) adopted the theory and applied it within the spectrum of criminology. Having applied it to crime, Agnew found positive links of strain and crime. Indeed, the notion that the 'grind' for almost unattainable life achievements dictated by the 'American Dream' may never end could lead individuals expressing their frustration through a variety of crime types (Van Gelder, 2013; Agnew, 1999). Jones (2000) expanded the argument and introduced the self-control theory as a mediating factor. Having consulted the the Pareto Principle (Rosen & Resnick, 1980), it is suggested that a small but significant percentage of individuals may yield low self-control which in combination with strain may lead to chaotic offending patterns. Whilst disadvantaged populations exist in every country, it has been mentioned in earlier sections that immigrants have previously resided in areas of low SES. In conjunction with Fernandez's and Rienzo's (2020) report on migrant workers being more likely to be on temporary jobs, involuntarily working part-time instead of full time and 56% of highly educated EU-born workers working in low or low to medium skill jobs is indicatory of economic struggle, a defining characteristic of Merton's (1938) strain theory.

Per contra, in the US, where most of immigration research has been conducted, a paradox is noted. The 'Latino Paradox' referred to the highly impoverished and disadvantaged communities of Latino immigrants that contrasted with what is known about the impact of strain (Sampson, 2006). Sampson (2006) argued against the simplification of the impact of strain on communities. In fact, the results suggested a 25% decrease of risk of violence exposure within Latino communities compared to their non-Latin, equally disadvantaged counterparts. While the role of disadvantage on crime was not dismissed, it seemed that concentrated diversity lightened the impact significantly. The idea of 'solidarity' and the social cohesion within neighbourhoods could have acted as deterrents of delinquency at the individual level. It could also be argued that cultural processes of, for example, reintegrative shaming and informal control techniques are efficient (Braithwaite, 1989). In fact, research in eastern countries such as China found a positive impact of informal shaming on offenders (Chen, 2002).

2.7 Current Empirical Evidence on the Crime-Immigration and Ethnicity Nexus:

2.7.1 Immigration plus Disadvantage equals Violence?

The last three sections have discussed different theoretical perspectives that could be applied to immigration and crime. While complicated, connecting the dots between theoretical and empirical studies assist in the disentanglement of theory/practice and test the concepts mentioned before. The question of this section is how does the empirical evidence shape the picture of immigration and crime?

The available research has considered property, and personal crime separately. Most of the empirical evidence in regard to violent crime the picture was a negative or un-related association between the immigrant concentration/ethnic heterogeneity of areas and violence. That was true in homicide (Sampson, 1999), the levels of which remained unaffected by controlling for immigration while similar uncorrelated results were found when investigating a variety of crime types, both within the property and violence spectrum (Van Wilsem et al, 2006). Additionally, concentrated disadvantage was considered separately by the author, the dissection of which proved fruitful as it was directly related to homicide rates. Even on a larger scale, having measured foreign born individuals, reductions in both Latino and White homicide victimisation were noted by Martinez & Stowel (2012) and Martinez et al (2016). Moreover, the authors found no evidence of lowered social cohesion or the disruption of communal relationships in disadvantaged, ethnically diverse communities. In fact, Xie and Baumer (2018) expanded on the notion of immigration reducing violence and not just homicide, they identified that even in disadvantaged neighbourhoods, increased immigration reduced violence suffered by victims significantly.

As noted earlier during the Latino Paradox discussion, communities with increased Latino immigrants enjoyed further reductions. This may have resulted due to cultural differences, or, per

the authors, due to the immigration proximity of Latinos which created large blocks of neighbourhoods composed by immigrants with the potential to increase social cohesion (Xie and Baumer, 2018). In fact, it was noted that 70% of the drop of lethal violence which occurred in Latino communities came from changes in family structure. As part of the latter, a significant cultural shift between 2000 and 2010 was suggested as a possibility for the changes in family structure (Berranco et al, 2017).

Further evidence indicated the significantly reduced likelihood of first-generation US immigrants to engage in violent crime by 45% (Sampson, 2006). The same was true for victimisation, as immigrant youth was found to be at significantly reduced risk of violent victimisation than their US-born counterparts (MacDonald et al, 2012). However, recent research has found contrasting evidence to the above; on neighbourhood level, the effects in primarily Black and Latino individual neighbourhoods of high inequality noted increased predictions of homicide (Torres, 2019) At the same time, property crime was significantly increased in areas primarily inhabited by White and Latino individuals with high levels of inequality. These findings were similar to the ones identified in England and Wales by Ignatans and Zielinski (2015), which argued on the positive or negative effects being dependent on the cultural compatibility of the inhabitants of an area. Incompatibility may have been the leading factor for reduced social cohesion in this case, and effectively social guardianship. The effects may also depend on which immigrant generation inhabited an area, a core suggestion for future research by seminal authors (Sampson, 2018). The typical processes of increased criminality which would be assumed to take place in disadvantaged neighbourhoods (Diagram 2.1) were not observed in most research in area diversity, disadvantage, and crime.

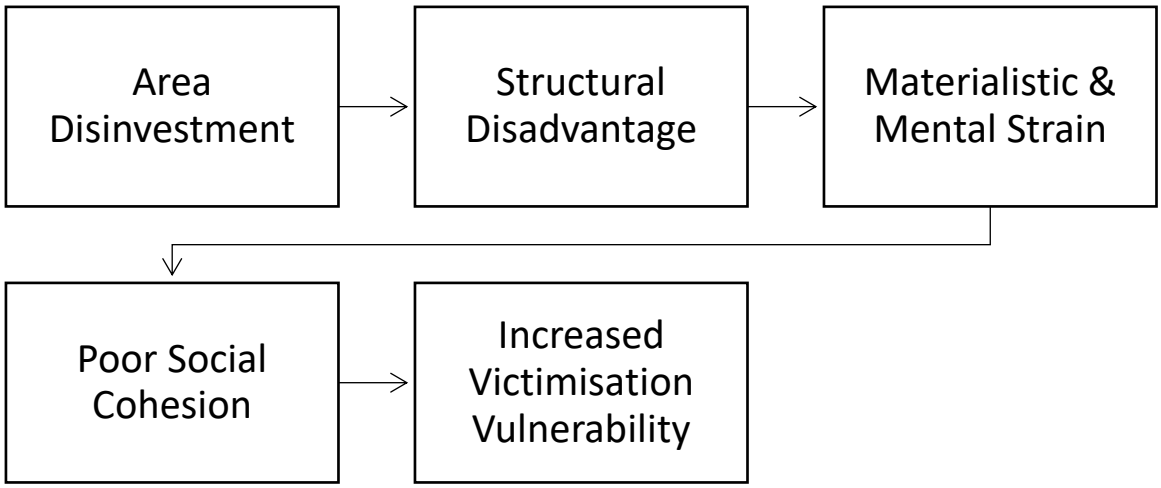
Studies have increasingly investigated ethnicity and immigration further. From a longitudinal perspective, despite previous literature, immigration has been found to have no effect on victimisation in various measures, including Repeat Victimisation (Mammadov et al, 2020). From an offending standpoint, Van Der Gaag (2019) noted that all migrant but Asian groups featured the

highest levels of serious offending outcomes compared to nationals. However, the results implied increased complexity, with those of high cultural similarity with their host country exhibiting the highest offending rates. Based on the previously presented evidence, I could attribute such patterns to a lack of crime-avoidance behaviours due to the familiarity and therefore a quicker, or uninitiated process of assimilation. On the other hand, middle eastern groups with high offending rates were explained by structural disadvantage, an expected finding. The countries examined by Van Der Gaag are of important to the discussion of this thesis. Previous studies have noted increased offending rates in non-English speaking countries, in this case, the sample examined was sourced from various, non-English speaking European countries, once again indicating the differences in context. Within the Belgian context, Bircan and Hooghe (2011) identified immigration as an insignificant contributor to crime, with disadvantage being a major driver for crime irrespective of the presence of high levels of immigrant concentration. This was one of the few non-English speaking country studies which identified social inequalities as the main drive for crime with immigrant concentration being insignificant to the findings. Parker (2008) proposed a connection between the labour market outcomes and the risk of victimisation, with ethnic minorities being severely affected due to their poor socioeconomic outcomes.

Nevertheless, Birican and Hooghes' study evidenced the necessity of context and, the consideration of the crime and immigration nexus as one of the various branches of the tree of victimisation. In relation to assimilation and crime, a likely explanation originates from the non-linear elements of assimilation theory; the assimilation of sub-cultural characteristics can lead to negative, rather than the expected positive outcomes (McCann, Zhang and Boateng, 2021). Assimilation Theory can be a fruitful future inquiry, the current data did not allow for relevant analyses to be conducted. Consulting relevant literature to aid the concepts is necessary. Contrary to the European study, recent empirical evidence from a US non-traditional immigration destination was noted to be neutral (Sagir and Feldmeyer, 2020). Further evidence of immigration lowering crime rates came from an urban immigrant destination, Dallas, Texas (Han and Piquero, 2021). Such effects persisted

even after controlling for neighbourhood disadvantage. At a national level, the previously identified immigrant paradox continued being replicated through various sources with consistent evidence of lesser victimisation and criminal involvement in immigrants in recent findings (Moore et al, 2020). Yet in Vancouver, positive associations between immigration and property crime are identified (Andresen and Ha, 2020). However, such associations were present alongside various empirically established factors which increased crime and linked to social cohesion, such as residential instability. The contrasting findings strengthen the previous argument on the necessity of context, and the necessity of the examination of such effects on a case by case, or country by country basis.

Diagram 2.1: *Process of Area Disinvestment leading to increased Victimisation.*



2.7.2 Intra and Inter Group Victimisation

Inter, intra ethnic victimisation, as well as factors which affected it were first introduced by Blau (1977), the core determinants were classified as segregation and racial income inequalities. However, Stacey (2019) found little evidence to support racial inequality as a driver for inter group victimisation, while areas with higher levels of segregation and ethnic heterogeneity noted increases in interethnic group victimisation. These are relevant to the current study; while the data of my studies did not allow for examinations to take place at county and/or neighbourhood level, an

exploratory cross-examination of the English and Welsh context with the United States was conducted and is discussed at a later chapter.

The effects of immigration on inter and intra ethnic victimisation were noted in past literature. It was found that Hispanic immigration tends to mediate the relationship of black on black and black on white victimisation risk (Harris et al, 2015). In this case, the risk of homicide offending from an ethnicity standpoint was calculated by the authors. It turned out that black on black, and black on white violence risks increased significantly in the presence of increased Hispanic immigration. The findings implied that victim racial selection was present at the time of the study. The authors also argued that increased diversity may have led to increased levels of social cohesion of black inhabitants as a result of the breakage of the dyadic and often opposing composition of cultures (Harris et al, 2015). The latter findings were in opposition with E&W evidence by Ignatans & Zielinski (2015) where the presence of more than two cultures seemed to increase victimisation rates which could be seen as evidence for increased tension.

The impact of immigration on crime seemed to be dependent on the quantitative methods used, as investigated by Wadsworth (2010). While he found that the rates of robbery and homicide, contrary to Sampson (1999) were positively correlated with immigrant concentration, the results changed in favour of immigration when looking through the cross-sectional lens of examining datasets over different time periods through trend analysis. Indeed, within the cross-sectional examination a decrease of 9.3% and 22.2% in homicide and robbery respectively became evident. Even when examined from a longitudinal perspective, one that severely lacks in any country, Light (2017) found reductions in lethal violence that extended to every ethnic group, immigrant, and non-immigrant.

These results tie in with UK research by Ignatans et al (2015) which suggested a positive longitudinal effect of immigration on areas that was otherwise masked when only looking at specific points in time. A contending paper of aggregate crime rates by Alonso-Borrego et al (2012) found positive links between crime and immigration. However, they argued that the SES characteristics of

areas/individuals were the ones mediating the relationship, not the quantity of immigrant populations. Additionally, Graif and Sampson (2009) suggested that aggregate crime rates could do little to disentangle complex theoretical perspectives that only fit within one crime type. It was also argued that due to the diversity and the stratification of contemporary cities, examining the immigration-crime relationship at a macro level posed validity issues (Graif and Sampson, 2009). Therefore, an invitation for meso/macro level analyses of metropolitan areas was brought forward by the authors to avoid inaccurate results. Within national trends, further researchers either found neutral or negative correlations of immigration and crime. Whether these looked at immigration spikes of eastern European citizens entering the UK post-EU ascension (Jatiman and Machin, 2013; Stansfield, 2016), or on the broader subject of immigration (Bell and Machin, 2012; 2013), the results were inconsistent on whether crime rates are negatively impacted or simply unaffected. So far, no increase in violent crime was noted. The results çɛpɛ replicated in a variety of countries by Nunziata (2015) finding no evidence of increased crime in western European countries after large immigration influxes took place. Instead, the insidious nature of xenophobia surrounding the EU increased victimisation risk in foreigners, as Policek, Ravagnani, and Romano (2021) identified increased victimisation in almost every type but assault for non-Italians in Italy.

2.7.3 Crime-Specificity: Cultural Aspects

Aside from the cross-sectional research by Alonso-Borrego et al (2012), the findings in Spain when investigating specific crime types, such as intimate partner violence (IPV) leaned towards both sides, rather than one. In short-term trends immigrant concentration played a significant explanatory role in IPV (Gracia et al, 2015), such results were mirrored by Blumstein and Jasinski (2015) in the USA on a non-cross-sectional analysis of reported incidents. The reporting patterns of different populations affects measurements of incidence. It is acknowledged that the ‘dark figure of crime’ does indeed exist and perhaps, in immigrants, it may be even darker when it comes to crimes such as IPV. It has been discussed that the classification of ‘seriousness’ by first generation immigrants in the UK varies from culture to culture as it does for each crime type (Los et al, 2017; Sydes, 2017). The cultural

aspects of crime seriousness can be seen when immigrants are used as an 'aggregated' group (Papadopoulos, 2012). The findings contradicted Los et al (2017) as they highlighted that, immigrants viewed crime suffered as more serious in every aspect than nationals. When not accounting for the immigration status of the respondents, Brennan (2016) identified that norms had little contribution to the identification of violent incidents as 'crime worthy', and as such, worthy of a police report. Instead, the subjective seriousness of their latest experience of violence was adjusted accordingly by past encounters.

Additionally, while Papadopoulos (2012) found little evidence to support the under-reporting of crime compared to nationals, past evidence supported the notion of individualistic judgements of crime, Stylianou (2003) noted varying levels of approval and disapproval on assault within rural environments. This was also true for the USA, as little consensus existed on what constitutes a serious crime, an issue that has caused debates on the 'objective' punishment of crimes (Vogel, 1998; Vogel and Meeker, 2001). Crime seriousness research is important in relation to determining under-reporting. It was evidenced within the US regarding Asian immigrants that fear of crime as well as criminal justice understanding varied significantly between groups. The variations were largely explained by time spent within the US, indicating that the process of assimilation was necessary for shifts in participant perceptions (Grubb and Bouffard, 2014). In the UK, no similar studies have been identified. Additionally, Papadopoulos (2012) indicates that, at least in the UK, immigrants adopted crime-avoidance lifestyles because of increased fear of crime and/or unfamiliarity with the country they resided in. Further evidence indicated the significantly reduced likelihood of first-generation US immigrants to engage in violent crime by 45% (Sampson, 2006). However, Papadopoulos (2012) also noted the increased risk of UK immigrants to be victimised by hate crime, a trend that was mirrored in other European countries (Van Kesteren, 2016), perhaps a result of a rise in far-right movements and scepticism which continues to surround immigrant populations (McDonald and Erez, 2007; Caviedes, 2018). In Van Kesteren (2016), it was noted that immigration status only came second to young age in relation to victimisation risk, an often-accurate

predictor of violent crime. Further evidence in the UK suggested that Jew, and Sikhs religious practitioners were victimised more than their Christian counterparts, supporting the notion of increased hate-crime victimisation presented (Papadopoulos, 2012; Hargreaves, 2012).

2.7.4 Strong, Cohesive Communities

An explanation for the lesser victimisation of Muslims can take the form of strong communities formed by Muslims which act as a protective factor in terms of increased social cohesion and social guardianship. The latter is linked to qualitative research which proposed that cultural homogeneity mattered towards their measures of social cohesion (Colic-Peisker & Robertson, 2014). Ethnic minorities as opposed to immigrants were found to be victimised less than nationals when looked at from an aggregated personal crime perspective (Tseloni and Pease, 2015). It was earlier mentioned that perhaps alternatives to formal control may be used in immigrant communities, such as reintegrative shaming. Evidence of the latter was traced in Asian criminological studies, where the structure of their communities embraced informal control based on social capital more than formal interventions, such as incarceration (Chen, 2004). In contrast Botchkovar and Tittle (2008) found the opposite results in Russia, where reintegrative shaming intensified the deviant behaviour of the subjects in question. The theory of Reintegrative Shaming is then highly dependent on cultural factors based on the two contradictory findings. Therefore, if applied in immigrant destination settings, newly found inhabitants may bring culturally appropriate methods of dealing with delinquency before resorting to formal means which would record crime activity. In turn, this could lead to artificial reductions in crime at such areas, while areas without such informal means of control allow for more accurate measurements of recorded crime. Such hypotheses were impossible to test with the current available data sources. However, some of the issues can be mitigated by using victimisation surveys where formal intervention is not required to measure crime. The complete picture remains complex, as it is likely from the evidence above for specific immigration groups and influxes to adhere to contrasting cultures which each could function drastically different. In turn, results could also be inconsistent when comparing culturally distant groups. A

demonstration by Knepper (2012) can be used as evidence; within qualitative research, a desisted drug dealer narrated the story of how faith made him question his actions and therefore ceased dealing.

An indirect negative effect of immigration has been argued to be increased unemployment with the portrayal of immigrants as job thieves. The literature examined did not support those arguments (Coleman and Rawthorn, 2004; Kasnauskiene and Vebraite, 2013). However, economists have identified the diminishing returns of immigration to wages. More specifically, while increased employment opportunities are present where immigrants resided, the size of the available wages shrank inversely (Kasnauskiene and Vebraite, 2013; Coleman and Rawthorn, 2004). This effect can be linked to two previously mentioned processes of increased crime incidence. One, Coleman and Rawthorn (2004) argued that residents moved elsewhere to attain a satisfactory wage where wages were insufficient, which caused residential instability and therefore, lower community cohesion. Two, it could lead to areas being less affluent to considerably disadvantaged and as it was previously discussed, disadvantaged communities faced higher amounts of crime and victimisation apart from the Latino Paradox. Context remains a central aspect across findings. While Sampson (2018) mostly investigated the trends of crime and victimisation within the city of Chicago, Kubrin (2012) built on the theory of context and picked two structurally very similar places receiving dissimilar results. In Chicago, Sampson's (2018) results were replicated on neighbourhood level, in Los Angeles, violent crime within immigrant neighourhoods was found to be higher than their counterparts in perhaps the only study acknowledging increased violent crime within multicultural neighbourhoods (Kubrin, 2012). Overall, the disentanglement of disadvantage is also important, as the LA neighbourhoods suffered from more severe poverty and unemployment levels than their Chicago counterparts. Another significant difference between the two cities was the ethnic composition, featuring different sizes of ethnic groups, which may have limited social cohesion. In Wales, Wiertz (2015) measured civic participation against national and ethnic identity. Civic participation can take a variety of forms and can also be used to measure community cohesion. The results showed an

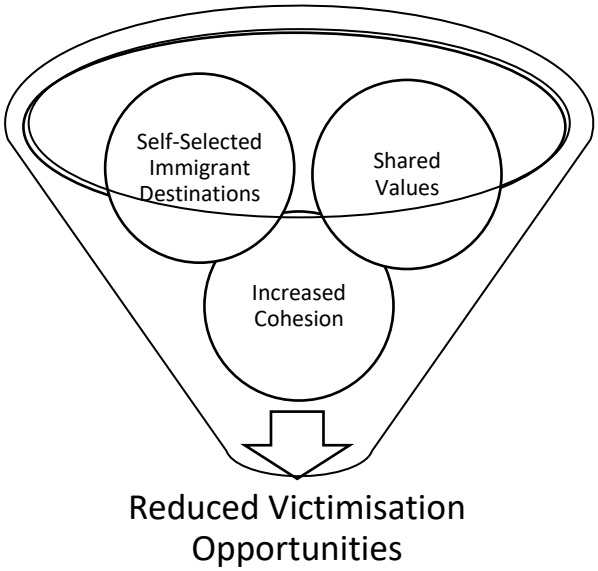
increase in areas where high assimilation had taken place and therefore national identity was stronger, than to those whose ethnic identity outperformed national identity. There was a subjective factor that could be measured within most large surveys at the time, identity. How much did participants identify with the recipient country culture, or how much did they distinguish themselves from the host country may be important in the cooperation of residents between each other.

Did the reviewed evidence support the theoretical standpoint of immigration causing social disorganisation? Much of the evidence argued otherwise. While community destabilisation can occur when large immigration influxes arrive at an area, these are identical to the effects of residential mobility, not exclusive to immigration waves. Feldmeyer (2009) argued on the necessity to examine both direct and indirect effects of immigration, as certain cultures aided the stabilisation of communities, and not the opposite. Even from Light's (2017) longitudinal perspective, both historically established as well as less established, more recent immigrant destinations were positively affected. Those areas noted reductions in crime as opposed to increases, a result often linked with social disorganisation. Earlier papers by Sampson (1987) identified links with black individuals violent offending and male joblessness, indicating that while poverty and disadvantage left Latino communities unaffected compared to their less diverse counterparts, adopting that assumption for other cultures is incorrect (Kubrin, 2012).

The previously mentioned studies suffered from a variety of limitations. A major limitation was the inability to address the self-selection bias of those who wished to live amongst diversity. Williamson (2015) addressed the latter issue by approaching immigration and social capital through a 'natural' experiment in the form of Somali refugees being placed within a community which was historically inhabited by nationals. An 'injection' of a large number of Somali immigrants were then administrated by the government which extinguished the often impossible to address self-selection bias. While some anti-immigrant sentiment was recognised, social cohesion seemed unaffected at a municipal level. However, in examining neighbourhoods, an astonishing 41 percent reduction was

noted in the drop of interracial cooperation and contradicted past evidence on the impact of immigration on social cohesion. Such evidence was agreement with Putnam's (2007) findings which suggested that increases in immigrant concentration go hand in hand with reductions in both intra and inter group social cohesion. These findings also highlighted how self-selection may be an important process to avoid tension within communities facing rapid changes (Diagram 2.2). Additionally, they demonstrated the interaction between different cultures was drastically different and complex, as evidenced previously (Ignatans et al, 2015; Kubrin, 2012). At the same time, previously mentioned prejudice and negative perceptions towards immigration could have precipitated such effects (Boucher and Samad, 2013), as would the rapid social change that was otherwise unprecedented for the area of the natural experiment. Further evidence of the impact of immigration on social cohesion within England and Wales was identified by Lymperopoulou (2019) regarding contextual differences by examining areas separately. The results were as varied as the areas. The core findings hinted towards important challenges in areas of low diversity and higher levels of deprivation when such areas were targeted by immigration waves. And yet, further studies within England and Wales have noted a severe lack of consideration to aid in the preservation or creation of social cohesion in social housing areas in which diversity has shifted over the years (Finney et al, 2019; Lymperopoulou and Finney, 2017). Paired with past evidence of immigrant settlement in highly deprived areas (Lymperopoulou, 2013) and the unlikely economic mobility of such groups (Clark et al, 2019), the lack of tailored approaches the English and Welsh context was apparent. Recent evidence noted that the concept of offender deterrence via the informal control through social bonds varied in each culture (Craig, Guerra and Piquero, 2020). The lack of community bonding creates opportunities for victimisation and crime to occur based on the principles of RAT, where social guardianship is lacking.

Diagram 2.2 *How Immigration in self-selected areas can reduce crime within disadvantaged areas in culturally compatible contexts.*



2.8 Chapter Summary

This section examined the impact of immigration on crime from various empirical perspectives, whether those were from victims, crime rates or even offending. Throughout an extensive review of the available literature, it became clear that, at least in the United States, immigration was likely a factor that either reduced or left crime unchanged in terms of violence. Similar findings were noted within the United Kingdom; however, conclusions can be drawn less reliably as the research conducted and as a result the evidence was sparse. Immigrant communities went against traditional criminological perspectives of disadvantage acting as a criminogenic factor. The need to disentangle such phenomena in more detail was noted. Similar contradictions were found within the examination of more sociological phenomena, such as social cohesion. It was made apparent that context matters in communities with high immigrant concentration, whether this significant cultural differentiation or prejudiced perspectives by previous residents of the areas in question. Such evidence contradicted recent deportation tactics and far right movement claims on the impact of immigration on a variety of subjects which included crime. The 'Secure Communities' initiative, a deportation scheme implemented in the US was evaluated and was found to be ineffective in reducing crime rates (Miles & Cox, 2014). More work is necessary to disentangle the complicated relationship between immigration and crime within both the US and the UK, with the US having a significant head start.

The above can be used to make a working hypothesis for the crime-drop; Empirical evidence already noted the diverse impact of immigration, and unprecedented influxes of immigration globally, including E&W. The immigration theory remains one of the several theories aimed to explain the crime-drop. Yet at this point, the evidence is overall limited, and non-existent from a victimisation point of view. The examination of the impact of immigration from a victimisation point of view bypasses traditional police recorded crime limitations which previously noted the different patterns of reporting crime to the police across ethnicity and immigration status. While not adhering to

certain principles of Farrell's (2013) tests for a crime-drop theory, the evidence reviewed has noted a need to treat crime-falls by individual crime types, as well as a national, rather than an international phenomenon. A grand theory of the crime-drop was therefore discounted, and the examination of whether immigration had an impact in the sharp crime-decline is a novel contribution to the crime-drop, and immigration discussion.

Furthermore, the establishment of whether the inequitable results previously noted in E&W by Hunter and Tseloni (2016) are replicated across ethnicity and crime type is another novel contribution of the thesis. Finally, replicating evidence from the US, such as the impact of area diversity, and any patterns of inter and intraethnic victimisation in E&W would provide otherwise unknown insight to policymakers.

The research question, alongside with the several objectives that derived from the reviewed evidence are reiterated:

- **What were the effects of the varying levels of immigration since the 1990s on assault victimization across individuals and police force areas (PFAs) in England and Wales when compared to the 2010s?** [3]

The following set of questions/objectives have been set to attain an understanding on the above:

1. Is there any association between the immigration & assault trends?

2. How has the assault victimisation incidence and prevalence been affected across each ethnic and National/Immigrant group by the crime-decline?

3. Are there any identifiable patterns of inter and intra race victimisation in either of the three time periods; 1990s, 2000s & 2010s.

[3] Originally, Household Theft from Within a Household was also included, however, due to the severe lack of sample within that crime type and further analyses beyond descriptive would be unreliable (See Chapter 4 for further technical and analytical difficulties breakdown).

4. Are there notable differences in residential area selection between Nationals and Immigrants?

5. How do labelled Diverse Areas differ against their counterparts within the Deprivation Indices?

6. Do Diverse Areas increase, decrease or maintain the same levels of assault risk Pre and Post Crime-Drop?

7. *Were the benefits of the crime-drop on assault victimisation risk have equitable across:*

iv) Socioeconomic Status?

v) Ethnic Group?

vi) Immigration Status?

8. Are Ethnicity and Immigration Status effective predictors of Assault Risk?

3.0 Methodology and Data

Chapter Outline

I began by presenting the justifications for the selected methodology, method, and data. I identified their strengths and weaknesses in relation to the project. Past literature was used to further establish the chosen methods prior to providing a thorough section on the data and analysis techniques. I have also provided guidance for the datasets and data to be replicated. I continued by discussing the variables of interest, their structure and any manipulation which may have been necessary, as well as some of their limitations. I then moved forward by reintroducing the project layout, in this case, I approached the layout through an analysis perspective, assigning analytical techniques in each of the analytical chapters. Finally, I presented a few preliminary analyses regarding the sample size and the proportions exhibited by the variables of interest.

3.1 Quantitative Methodology & Secondary Data Analysis:

'Realism' is the term described by the ontological point of view that is often used to describe the mindset of most quantitative researchers (Gray, 2013; Alasuutari et al, 2008). While to a certain extent, subjective bias may unwillingly be introduced within research, the nature of quantitative research attempts to limit it to a minimum. Indeed, Neuman (2014) claimed that in the mind of the quantitative researcher, facts, whether they are uncovered are not, remain stable in both natural, and social sciences. The quantitative inquiry is positivist at its core and attempts to create robust evidence of facts as well as establish theories to act as guides to the implementation of policy (Bryman, 2015). The realistic and positivist nature of the quantitative methodology acts as a tool to confirm or deny hypotheses and theories, rather than to induct new ones. Others argued that such approach, especially within the social sciences can be destructive as it ignores the very creators of sociological phenomena, the social actors (Singh, 2007). When such approaches are discussed in relation to the current project, the latter argument can be dismissed. Firstly, this project used the perceptions, lifestyle choices, living conditions and routine activities of the social actors responsible

for the phenomenon of victimisation. Secondly, while an argument can be made on the depth of data used by quantitative methodology in comparison to qualitative means, the targeted populations were thoroughly examined by the survey conductors, offering a significant number of informative variables and sample size.

The latter can be linked to the notion of generalisability and the guidance needed for policy implementation (Dale et al, 2008). Generalisability is an aspect that often suffered when qualitative research was carried out because of its' time-consuming nature (Matthews, 2010). Generalisability was a vital aspect of the project, to have an impact to the previously mentioned crime-fighting organisations, and in order to contribute to the sparse empirical evidence related to the crime drop. Additionally, the project focused on the application and the empirical testing of how immigration affected different police force area trends in assault[4] since the crime-drop. It is important to note that whilst numerical values and analyses can be robust, the handling of the data itself is subject to human error. The results presented here were reviewed by senior peers to ensure the quality of the thesis.

The project utilised secondary datasets instead of primary data. The advantages and the limitations of using secondary sources were considered prior to this choice. Firstly, considering the nature of the project, the design and piloting a large scale survey within the given timeframe as well as achieving high response rates would not be feasible. Especially in relation to sample size, low response rates would have significantly limited the statistical power of any analyses conducted to the data (Cohen, 1992). Consequently, the quality of not only the data but the project itself would have been severely impacted. Additional time spent on conducting analyses yielded further results which would not have otherwise been possible to obtain within the same timeframe. Using already validated measuring tools also led to more robust evidence and lessened the chances of

[4] Household Theft was excluded after initial descriptive analyses indicating a severe lack of data even after dataset pooling. The relevant analyses are only presented in the first section of chapter four for comparison purposes.

misguidance. Finally, and perhaps most importantly, the retrospective framework that the project was placed in disallowed any reliable primary data collection. The crime-drop, as originally mentioned took place in the 1990s.

An initial disadvantage of any secondary data analysis is the purpose of the primary data (Nardi, 2018). In this case, the aims of the primary analysis overlapped with the secondary analysis. However, some key variables, as these will be detailed later, were bound to be unavailable. Broader issues noted by Cheng and Phillips (2014) related to the use of secondary data were the lack of context and the familiarity with potential quality issues of the data.

Despite this, a variety of researchers across different contexts have acknowledged the value of available secondary data analysis regardless of the disadvantages. Support for secondary data analysis is noted from the broader spectrum of research (Mainous and Hueston, 1997) as well as from specific fields such as in nursing (Castle, 2003), criminology (Tilley and Tseloni, 2016), and education (Gorard, 2002). The findings of each have leaned towards greater use of secondary data analysis. In fact, and related directly to this project, Tilley and Tseloni (2016) identified a lack of use of secondary data analysis in the UK, the resolution of which could lead to advancements in UK policing, as discussed earlier. As such, secondary data analysis seemed like the most beneficial approach for this project both in terms of practicality and contribution to knowledge.

3.2 Crime Survey for England and Wales and the Census

The crime survey for England and Wales, previously known as the British Crime Survey, is the largest victimisation survey that has been conducted annually in recent years and biyearly in the past. The survey benefits from a sample of 20,000 in the past to 35,000 participants approximately in recent years per sweep. By utilising the post-code address method combined with a cross-sectional stratified sampling tactic, it ensures for the accurate representation of the inhabitants of England and Wales on a smaller yet reliable scale. Where a participant does not speak English, interpreters are employed for the completion of the questionnaire, ensuring further representativeness. Such measures were encouraged by researchers, yet unachieved by non-governmental projects given the differences in the levels of available funding (Nardi, 2018). The estimates produced by the survey have been deemed to be far more accurate than the traditional and heavily criticised police recorded crime statistics. In fact, under-recording was noted as an important limitation of police recorded statistics with 90% of police recorded crime obtained by victim reports (Rogers, 2014). As crime reporting patterns vary, especially per crime type, this limitation contributed to the creation of a 'dark figure' of crime that could only be visualised by other means. This was not only acknowledged by researchers (Rogers, 2014; Maguire & McVie 2017) which added the argument of manipulation to boost police force performance to the table, but also by the Office for National Statistics (ONS, 2016) which recognised the issues posed in police recorded data. Additionally, the CSEW has continuously managed to deliver a substantial response rate of the participants, averaging on 78% on the broader scale (Jansson, 2007). It was furthermore advocated by Tilley and Tseloni (2016) that the vast array of variables included in the survey could be used to test a variety of hypotheses that can be highly generalisable and consequently, to act as a steppingstone to informed and effective policy. The survey began in 1981 by being conducted every two years. Starting in 2001, the survey's sweeps came on a yearly basis while also increasing the sample size. The sweeps are carried out by conducting face to face interviews with the participants, with some questionnaires having been utilized for self-completion modules, such as domestic violence and substance misuse.

In the early years of the survey, individuals aged 16 to 59 were interviewed, with modules including minors introduced at later dates, these will not be expanded on as they are not of interest to the project. While the victimization modules have remained the same, the rest of the modules and their subsequent questions have been modified over time across sweeps. Those changes reflected the differential governmental interests in the survey, boosting previous comments on the advisory role of surveys in policy implementation. Additionally, not all questions are completed by the complete sample of the participatory households, an example was taken from the crime perceptions module, where only ¼ of the sample was chosen for its' completion (Downham, 2015). Finally, the reins of the survey were passed to the ONS from the Home Office in the April of 2012. The abbreviation CSEW was used throughout the remainder of the thesis to denote both BCS and CSEW.

The variety of the questions answered by analysing the CSEW and BCS is reflected in the available research over time: Miethe and Meier (1990) tested the hypothesis of the rational actor theory, Mohan, Twigg & Taylor (2011) investigated the attitudes of respondents towards the police, Maguire & McVie (2017) examined the large reporting gap of violence between the police and the CSEW while Hunter and Tseloni (2016) scrutinized socioeconomic group specific benefits of the crime-drop. Victim surveys were as utilised within the UK as they are internationally, a swift examination of international research on victimisation yielded a similar to the UK picture: Tseloni and Pease (2003) explored the non-random distribution of victimisation using the National Crime Victimisation Survey (NCVS) of the United States (US), Xie and Baumer empirically tested the role of immigration in the crime-drop within the US and Lauritsen and Heimer (2008) investigated a gendered approach to violent victimisation. Each of the mentioned research papers made a unique contribution in different branches of criminological thought using national and international crime surveys.

Whilst the CSEW offered great utility for this project, some of the disadvantages specific to the survey were noted. Firstly, geocoded information was not available which disallowed for pinpointing hotspots since the interviews took place in an individual's household. The issue is partly mitigated by

the availability of secure datasets allowing for low geographical data to be used to compare areas of different compositions. However, access to such data is severely limited, as it was noted in later sections. Additionally, the CSEW only covered private accommodation. The survey therefore omitted the homeless, individuals in student halls, and persons in elderly homes. Such groups could not be explored using the survey, limiting the policy reach of this as well as previous studies (Heerde, Scholes-Balog & Hemphill 2015; Mosher, Miethe & Hart 2010). Furthermore, victims could omit or suffer from memory decay when it comes to certain events. Either because such events were traumatic and shameful or simply because of vast numbers of crime suffered (Nunziata, 2015; Newburn, 2017). The former was considered by the surveys, with the inclusion of self-report modules for the participants to complete in their own time. One thing that could not be controlled is the omission of 'unimportant' events. This was noted in the findings of Los, Ignatans and Pease (2017) where immigrants rated different types of crime victimisation more, or less important in accordance with their individuality and culture. Despite the latter, continuous developments in data linkage have allowed for the linking of governmental datasets in order to gain access to additional variables to integrate into analyses. Harron, Goldstein and Dibben (2015) offered an extensive list of techniques available to researchers for data linking. Warnings however were present on the careful handling and examination of the data before and after linkage, as errors led to biased results. In the case of the UK, aggregate census area characteristics were widely available to be linked with other sociological surveys conducted by the Office of National Statistics. The project utilised this measure as an additional source of data which identified changes in immigration across time and obtained deeper demographical information. Elements of multilevel modelling were also incorporated because of the linkage, due to expected data nesting across areas and individuals (Leeuw, Meijer, and Goldstein, 2008).

3.3 Immigration Data

The immigration statistics were sourced from the ONS International Migration Report (2015). In this instance the data covered the periods 1980 to 2013. An additional, Quarterly Migration Report (ONS, 2017) was sourced to fill in for the years between 2014-2017. According to ONS, the findings for the 2017 Quarterly report were calculated using a mixture of data from the International Passenger Survey (IPS) and Long-Term International Migration (LTIM). In addition, long term immigrants in this case were defined by the recommendation made by the United Nations (UN). The earlier report, spanning from 1993 to 2013 utilised only LTIM.

3.4 Examined Periods and Variables of Interest

The pre-crime-drop sweeps which were merged and modelled consist of the CSEW sweeps of 1994 to 1998. Trend analysis is conducted between 1994 to 2018. Earlier CSEW sweeps lacked the counts of how many incidents occurred to a victim, as a result, trend analysis and the measurement of repeat victimisation were unavailable prior to 1994 and hence early sweeps were excluded from being considered in the study. Certain variables were also replaced or removed over-time, which hindered some comparisons across periods. Further technical information was covered in the 'Analyses by Chapter Break-Down' section.

The selected pre-crime-drop datasets were as near to the peak of crime before the crime-decline as possible, which assisted in post crime-drop comparisons. Furthermore, during the dataset scouting process, contact with the UKDS was initiated to discover whether police force areas and other regional variables were available in earlier datasets. In correspondence with King-Hele, after carrying out an investigation of the 1992 and the 1994 sweeps, which were closer to the census of 1991, it was noted that regional variables were not available within these datasets. The only viable alternative was then to make a compromise and choose different datasets without straying from the crime-drop timeline to the nearest possible crime peak. As assault began falling from mid to the late 1990s, such changes did not affect the quality of the project to a significant, if any degree. Nevertheless, to make the descriptive analyses more robust during the exploration racial subsamples, a subset that included the 1993-94 alongside the 1995-6 and the 1997-98 sweeps was created before the key inferential analyses and statistical modelling took place. Similar reasoning was followed for the post crime-decline sweeps of 2005-06/2006-07 and 2016-17/2017-18.

The choice of variables was based on two aspects: one, the nature of the research hypotheses and two, the analytical approaches of past research within the literature reviewed to verify or reject the importance of such variables within the crime-drop context.

The variables of interest at the individual level were considered prior to moving on to area-level variables. As mentioned in earlier the Literature Review chapter, area cohesion was affected by a variety of factors including immigration; a variable that has been often used in US but not in UK research, especially not within the crime-drop context.

Immigration at the Individual Level

At the individual level, immigration will be tested by using variables focusing on the participants' place of birth being in or outside the UK. In relation to collective efficacy and/or neighbourhood cohesion, Mazerolle et al (2010) found international evidence on its' reductionist violent crime effects. An important limitation of the immigration construct in this case is the lack of actual immigration status. Individuals born outside the UK could have spent most of their lives in the UK, being indistinguishable from nationals. In a similar manner, individuals who were born in the UK, could have returned to the UK recently, but share none of the norms of the nationals. With country of birth being the only indicator of immigration status, there was no alternative, or better construct to address the research questions.

Neighbourhood Cohesiveness

The studies of this thesis attempted to capture neighbourhood cohesiveness by variables focusing on participant perceptions. While perceptions can be inaccurate or biased when it comes to for example police performance, perceptions of neighbourhood cohesiveness could otherwise provide an important insight on the well-being of the social ties of an area. Variables used for such measures were the willingness to help a neighbour; however, this was also a limited measure in terms of measuring cohesiveness, as well as the lack of sample in later years due to changes in the survey. Regarding the relevance of area demographic characteristics, *residential stability* which has been observed to spike the victimisation risk of newly moved tenants (Parks, 2014; Fagan and Mazerolle, 2011) will also be measured by touching upon available variables on the length of tenancy of the participants. While not as accurate as actual turn-over rates (Tseloni and Pease, 2015), since area-

level characteristics were insignificant in the models, this measure was the only available individual characteristic to measure how residency length affected victimisation risk.

Unemployment rates were another variable to be tested in accordance with the literature, as it increases the risk of both property and violent victimisation on area and individual level (Ok-Kyung, 2005; Hooghe et al, 2011; Hipp and Kane, 2017). This could be due to the potential lack of neighbourhood cohesiveness in high residential turnover areas, as well as the criminogenic effects of strain. Variables on the employment status and professional level of the participants were available within the CSEW at the individual level and will be utilised during statistical modelling. On the other hand, the census data assessed the area-level picture of unemployment and used as a level two predictor. Repeat victimisation in violent crime has been shown to have significant detrimental effects to those on the receiving end (Hope and Norris, 2013). To analyse RV more accurately, updated versions of the CSEW featuring uncapped counts at the 98th percentile as offered by the UKDS (2019) were used to measure the frequency and concentration of such incidents on both individuals and geographical units.

Night-Time Economy Participation

The debate of whether individual characteristics have a lighter or heavier impact on victimisation favours both individual and area characteristics. For example, research on the arts and recreational sectors, violent victimisation risk tended to be significantly higher despite of area characteristics. In this case, the size of impact leaned towards individual characteristics relative to RAT (Garius, 2016; Hopkins, 2016; Schnell et al, 2019). Individual level variables of night-time activity were available to be investigated. However, recent literature distinguished between the quality of the recreational establishments, noting significant increase or decrease of risk which depended on the level of eclecticism of an establishment (Sanchez et al, 2018). While valuable, such distinctions are unobtainable on large scale surveys and will therefore not be considered by this project. Evidence on assault pointed at in-transit victimisation and how the close guarding of such route's limited victimisation risk (McMillen et al, 2019). In the past, frequent night-time activities were found to

otherwise raise violent victimisation risk significantly (Garius, 2016). Frequency of club/pub attendance was available and was utilised in the analyses.

Gender

Gender was another emerging theme from the available literature, where violent crime types are discriminative against genders, such as the likelihood of IPV (Lauritsen and Heimer, 2008; Walby et al, 2012). The latter justified the disaggregation of violence trends in this project, which was reinforced by the health warning offered by Rennison and Planty (2006) to encourage disaggregation of crime type in order to avoid overgeneralisation. Not all violence is the same, this was evidenced by research on instrumental and expressive violent behaviour (Youngs, Ioannou and Eagles, 2016; Van Gelder, 2013). For instance, the code of the street, as mentioned in the literature review section dictated expressive violence (McNeeley and Wilcox, 2015; Taylor et al, 2008). As such, this project focused solely on the issue of assault, rather than aggregated counts of violence which would be inclusive of robbery, sexual violence and IPV. It is important to note that due to IPV, and its domestic nature, it is estimated that a large proportion of female victims have been excluded from this study. Further discussion on the matter was noted during the literature review, as well as in the limitations chapter.

Target Hardening

Variables regarding *cohabitation* and the *ownership of a car* directly affect the level of social guardianship of an en-route victim and the use of public transport during both, night and daytime activities. This concept was utilised in this project as a measure of 'security' extending beyond household and property crime. In-transit victimisation can happen to owners of vehicles, as night-time economy participation would often relate to alcohol consumption, and therefore prohibit driving. In this case, routine activities may have a larger impact to victimisation risk, but pro-social tendencies and being in groups may mitigate such issues.

Disability Status

Another individual variable of importance noted by Fogden et al (2016) as well as Bones and Hope (2015) was *disability status*. The authors found that seriously disabled individuals were targeted more frequently by both violent and property victimisation. Since such variables were present in the CSEW, an additional group to be measured against the benefits of the assault crime-drop will be those who suffer from disabilities that affect their daily lives. It could perhaps relate to other individual characteristics that have been previously investigated and linked with higher victimisation rates such as lower educational attainment and socioeconomic status (Gracia et al, 2015; Kuo et al, 2012) which could overlap with disability.

Immigration at the Area-level

In relation to *area characteristics*, protective effects have been noted on violent crime by measuring immigration concentration on area level in the US (Xie and Baumer, 2018). A similar analysis was conducted in this thesis to empirically test the role of immigration within the crime drop using both census and ethnicity using CSEW data. This area-level construct also utilised UK/Non-UK born individuals, which shares the same limitations as the individual-level immigration construct.

Area Types

Further area variables involved the predictors on *urban against rural areas*. Discrepancies were found to be present on the significance of predictors that were considered 'standard' for urban environments when tested in rural geographical units such as small towns and villages. The significance of those factors was either mitigated or severely boosted (Lee et al, 2003; Kaylen and Pridemore, 2011). This considered in this thesis to replicate such inconsistencies by examining so drastically different social environments. Urban/Rural classifications are routinely collected and used widely in the UK, this construct had no limitations due to extensive quality assurance from the data owners.

Area Perceptions

The *proximity* of victims to criminogenic areas has also been noted as an important factor to victimisation risk by Sampson and Lauritsen (1990), in the case of this project, analysing units in such

low geography was not feasible. Barton et al (2017) found that perceptions of crime are often accurate or at least relevant to the actual crime levels of an area. Such variable was available within CSEW yet only included 10% of the sample, severely limiting the viability of including it in the analyses and statistical models.

3.5 Data Preparation Process

When it comes to the datasets, the methodology for data pooling, matching, and linking were kept to an unambiguous level to avoid significant errors that can occur (Harron et al, 2015) as well as to aid in the replication of any analyses conducted. Before obtaining low-level geographical data, necessary UKDS training on handling secure data was required. During the training downtime, analyses on widely available PFAs took place. To pool from different datasets to improve statistical power (Cohen, 1992), data matching as described by Hernandez and Stolfo (1998) was performed. By sorting each of the related timeline datasets on an ascending order by their encrypted row labels, I used SPSS to merge datasets. Descriptive statistical analyses were performed before for each of the datasets and variables of interest and after the merge to ensure that no errors have occurred during the merge. Once secure datasets became available, data linking would be conducted between the main datasets and the supplementary lower geography datasets of CSEW[5].

Variables of interest were then renamed, recoded where necessary in preparation for further analyses. Certain new variables were formed such as the lone parent variable in the pre crime-drop dataset where in contrast to the later timelines, such variable was not available officially. The variable was created by combining the information of two variables, the number of adults in the household and whether or not children lived in the household. The outcome variable considered someone to be a 'lone parent' if the number of adults in the household was limited to one and they had replied yes to whether or not children lived within the household. Two more variables were created using relevant proxies in relation to immigration and diversity; The first was whether or not the participant was born in the UK or elsewhere by collapsing the Country of Birth variable offered in the post crime-drop sweeps but not in the pre crime-drop subset. The other was whether the area

[5] Due to the tardiness of the UKDS process to gain access to the data, secure data analysis was eventually removed from the project goals. However, a preliminary PFA-Level analysis during the peak of assault victimisation indicated no PFA variation of violence, rendering the secure data redundant for PFA modelling purposes. Reasons for the lack of variation can be found during the discussion of the finding and by referring to Pease and Tseloni (2014) as well as Ward (PhD, 2021).

the participants reside in was diverse or not. This variable was also created by collapsing the area classifications offered by the UKDS in the pre crime-drop subset, while the later datasets collapsed the relevant Census Pen Portrait categories. In all cases, crosstabulations of the outcome variable and the number of adults in the household were performed in order to assess the validity of the outcome variable. Another important process was the creation of dummy variables in order to run regression analyses with nominal/ordinal variables of multiple categories. The process followed was alike to what was described in Goldstein (1995) and Long (1997), creating one variable of each category with a binary outcome of 0 to 1. One of the categories which were dummy coded was excluded from the models, that was established as the reference/baseline category (Goldstein, 1995; Long, 1997). Finally, frequency tables were performed for each of the dummy variables comparing them to the variable of origin to note any discrepancies.

It is noted that missing values plague survey analysis, whether it is secondary or primary (Leeuw, Goldstein, and Meijer, 2008; Young & Johnson, 2013), variables with large numbers of missing values were treated differentially depending on how vital they were considered as predictors. A variety of research highlighted the different advantages and disadvantages of different treatments of missing data. The most common methods according to Donders et al (2006) are data imputation, the missing indicator, and case-wise deletion. Imputation is considered the most favoured method as it provides the most accurate results within the medicinal field when results are missing at random (MAR) (Donders et al, 2006; Van Der Heidjen et al, 2006). Imputation acts as a predictor of what the missing values could have been in accordance to past observations, essentially simulating the data (Donders et al, 2006). On the other hand, the missing-indicator method includes the missing-values in the analysis as dummy variables, indicating their significance to the model (Van Der Heidjen et al, 2006). While Van Der Heidjen et al (2006) find that while including all cases improves the predictive power of the regression models, uninterpretable bias is perhaps introduced with this method. Case-wise deletion is the least recommended method of missing data handling as when large amounts of missing data are present, the sample observations can be significantly reduced and consequently,

the statistical power of the analysis (Cohen, 1992). While imputation is often regarded as the leading and good practice method for handling missing data, Schumacker and Lomax (2016) limited its' use to moderate, rather than large amounts of missing values. Most cited research on missing data is often taking place in the field of medicine, a field where predictive power requirements are severely different from social sciences, as a result of the relatively high predictable nature of medicinal sciences. In social sciences and especially in surveys, missing data is often not MAR (Chen et al, 2018; Young & Johnson, 2013). In this case, including missing values in an analysis instead of imputing or deleting them offers predictive value.

For this project, missing values of insignificant quantities were removed manually from the datasets that were created for the analysis if the effect of their removal did not affect the results. The removal process that was followed was to recode the missing values of every variable to -99 and once the data was imported in MlWin to conduct the removal. Where large amounts of missing data were present, those were dummy coded within the analysis datasets to assess and interpret differences in each of the statistical models.

3.6 Preliminary analyses

Descriptive analyses were conducted both weighted and unweighted to conform to a variety of articles suggesting to descriptively analyse variables weighted to avoid misrepresentation (Biemer and Christ, 2008). When it comes to weighting outside descriptive analyses, there is little consensus on whether or not weights are appropriate for inferential analyses, Brogan (1998) argued against the use of weights as they argue that statistical software handles them poorly. Further advisory papers by DuMouchel and Duncan (1983) were against the use of weights if the original, unweighted linear modelling was deemed acceptable after the residuals, interactions and use of transformed variables were inspected for inconsistencies. Little (2004) argued that the distortion of inferences can and will take place if weighted analyses are not used. The middle ground on this debate is offered by Kish (1995) with the suggestion of the use of weights in descriptive analysis but not in statistical modelling, instead, shrinkage could be used for more accurate and unbiased predictive models. Indeed, Hansen et al (1983) supported that as the use of weights in regression analysis is inefficient and can have negative impact depending on the sample size. Below, I present the unweighted descriptive statistics of the core datasets which have been pooled to conduct the inferential analyses for each period of time.

Table 3.1. Individual Characteristics for 1990s Period

% of Individual Characteristics 1990s					
White		Education		Drinking Behaviour	
Yes	90	None	38.6	Heavy	40
No	10	GCSE	35.9	Moderate	50
		Other	4.1	Unspecified	10
Ethnic ID		Degree	21.3		
White	91.6			Experienced Violence	
Black Caribbean	2.5	Marital Status		Yes	4.3
Black African	1.1	Single	21.2	No	95.7
Black Other	.4	Married	54.1		
Indian	2.3	Divorced	11.4	Tenure Type	
Pakistani	1.3	Widowed	13.1%	Owners	82.8
Bangladeshi	.6			Social Rent	12
		Offender Ethnicity		Private Rent	3.5
Ethnic ID (3 Cat.)		White	81.1	Other Tenure	1.6
White	91.6	Black	12.6		
Black	4	Asian	3.5	Illness	
Asian	4.3	Other	2.6	No	68.7
				Yes	31.3
Gender		Length of Residence			
Male	44.1	<Year	6	Lone Parent?	
Female	55.9	<2 Years	4.9	No	94.2
		<5 Years	11.3	Yes	5.8
		<10			
Repeat Victim?		Years	14.2		
		>10			
No	65.8	Years	63.4	Age	
Yes	34.2			Mean	48

Table 3.2. Household and Area characteristics for 1990s period.

% Household Characteristics 1990s				% Area Characteristics 1990s			
Accommodation Type		Motorcycle		Area Vandalism Problems		Diverse Area	
Detached	19.3	Yes	5.3	No	71.1	Yes	7.2
Semi-Det	31.5	No	94.7	Yes	28.9	No	92.8
Terraced	31.2						
						Neighbourhood	
Other	17.9	Bike		Area Racism Problems		Assistance	
						Help Each	
		Yes	42	No	93.9	Other	30.3
Income Bands		No	58	Yes	6.1	Go Own Way	49.7
Under 10k	42.4					Mixed	19.9
Under 20k	29	Council Housing?		Area Drug Problems			
Under 30k	15.6	No	76.1	No	76	Inner City Area	
Over 30k	13	Yes	23.9	Yes	24	Yes	25
						No	75
Adults in HH		Children in HH		Area Litter Problems			
Mean	2	No	68.8	No	70.9	Area Drunk Problems	
Median	2	Yes	31.2	Yes	29.1	No	92
Std.Dev	1					Yes	8.1

Table 3.3. Individual Characteristic for 2000s period.

% Individual Characteristics 2000s							
White		Age		Repeat Victim?		Ethnic ID	
Yes	93.8	Mean	48	No	70	White	93.9
No	6.1			Yes	30	Black	3.3
		Offender Race				Asian	1.8
Gender		White	87.2	Pub		Other	1
Male	45.3	Black	7.1	No	49.3		
						UK Born	
Female	54.7	Asian	3.8	Infrequently	27.3	Yes	91.7
		Other	1.8	Frequently	23.4	No	8.3
Lone Parent?							
No	94.8	Out Alone Frequency		Illness			
Yes	5.2	Weekly	61	No	71.5		
		Fortnightly	19.3	Yes	28.4		
Experienced Violence		Monthly	19.6				
Yes	2.4			Length of Residence			
No	97.6	Education		<Year	9.9		
		A levels	23.7	<2 Years	6.8		
UK Born		GCSE	27.7	<5 Years	17.6		
Yes	91.7	Other	6.16	<10 Years	17.9		
No	8.3	Degree	42.4	>10 Years	47.9		
Marital Status		Occupation		NTE Transport			
Single	20.3	Professional	34.5	Private	65.6		
Married	56.3	Intermediate	21.2	Public	9.8		
Divorced	11.8	Manual	41.1	Walk	24.6		
Widowed	11.5	Unemployed	3.1				

Table 3.4. Household and Area Characteristics for 2000s period.

% Household Characteristics 2000s						% Area Characteristics 2000s			
Income Bands		Neighbourhood Assistance		Accommodation Type		Area Racism Problems		Inner City Area	
Under 10k	21.2	Always	26.9	Detached	19.3	No	94.2	Yes	25
Under 20k	23.2	Sometimes	60.4	Semi-Det	31.5	Yes	5.8	No	75
Under 30k	17.7	Very Little	10.6	Terraced	31.2				
Over 30k	37.8	Not at All	2.1	Other	17.9	Area Drug Problems			
						No	74.7		
Adults in HH		Children in HH		Tenure Type		Yes	25.2		
Mean	2	No	72.3	Owners	82.8				
		Yes	27.7	Social Rent	12	Neighbourhood Assistance			
				Private Rent	3.5	Always	26.9		
		Bike		Other Tenure	1.6	Sometimes	60.4		
Cars		Yes	42			Very Little	10.6		
One	42.2	No	58%			Not at All	2.1		
Two	28.7								
Three Plus	8.3	Council Housing?				Area Drunk Problems			
No Car	20.8	No	83.5			Yes	23		
		Yes	16.5			No	77		
Cars									
One	42.2					Diverse Area			
Two	28.7					Yes	4.2		
Three Plus	8.3					No	95.8		
No Car	20.8								

Table 3.5. Individual Characteristics for 2010s period.

% Individual Characteristics 2010s					
Gender		Ethnic ID		Repeat Victim?	
Male	53.5	White	89.6	No	70.9
Female	46.5	Black	2.9	Yes	29.1
		Asian	5.1		
Illness		Other	2.3	Lone Parent?	
No	75.8			No	95
Yes	24.2	Religion		Yes	5
		Christian	57.7		
				Experienced	
Offender Ethnicity		Budhist	.5	Violence	
White	79.9	Hindu	1.3	Yes	1.4
Black	8.3	Jewish	.4	No	98.6
Asian	5.5	Muslim	3.5		
Other	6.3	Sinkh	.5	UK Born	
		Other	.6	Yes	86.1
Age		No Relig.	35.5	No	13.9
Mean	42.8				
Median	42.8	Occupation		Marital Status	
Std.Dev	14.3	Professional	37	Single	22.5
		Intermediate	24.1	Married	55.8
Education Level		Manual	35.1	Divorced	11.9
A levels	21.8	Unemployed	3.8	Widowed	9.7
GCSE	22.6				
Other	5.3	Pub			
Degree	50.3	No	52%		
		Yes	48%		

Table 3.6. Area and Household characteristics for 2010s period.

Area Characteristics 2010s				**Household Characteristics 2010s**			
Area Density		Rural Area		Council Housing?		Cars	
Low	37.1	Yes	69	No	83.5	One	42
Middle	32.8	No	31	Yes	16.5	Two	28.5
High	30.1					Three Plus	8.9
		Inner City Area		Children in HH		No Car	20.5
Length of Residence		Yes	9.4	No	73.4		
<Year	5.9	No	90.6	Yes	26.6	Accommodation Type	
<2 Years	5.5					Detached	25
<5 Years	13.3	Area ASB Problems		Adults in HH		Semi-Det	30.8
<10 Years	13.4	No	80.8	Mean	2	Terraced	29
>10 Years	62.9	Yes	19.2			Other	15.1
		Area Drug					
Area Drunk Problems		Problems				Tenure Type	
No	85.3	No	78	Number of Adults		Owners	64.6
Yes	14.6	Yes	22	One	32.8	Social Rent	16.6
				Two	51.9	Private Rent	18.7
Diverse Area		Area Vandalism Problems		Three Plus	15.3		
Yes	83.4	No	86.2			Income Bands	
No	14.6	Yes	13.8			No Info	17
						Under 10k	9.3
Urban		Area Littering Problems				Under 20k	19.4
Yes	21.5	No	70.4			Under 30k	15
No	78.4	Yes	29.6			Over 30k	39.3

3.7 Methods by Study Break-Down

3.1.0 Studies One and Two:

Assault Trends & Patterns across Ethnicity & Nativity

A variety of data sources were used in the study for the link between ethnicity, immigration, and the crime-drop to be explored thoroughly, these ranged from ONS International Migration & Quarterly Reports (2015;2017), and 25 sweeps of the CSEW Non-Victim Forms. The above conformed to the first objective in relation to testing for association between immigration and violence trends over the specified period. Furthermore, Census 1991 & 2011 Sweeps were employed to assess diversity on sub-national levels, more specifically, Police Force Areas. In this case, Local Authority (LA) boundaries were unified and divided in their respective PFAs. By doing this, I was able to assess the relationship of diversity and violent victimisation for each PFA.

Crime trends were constructed using assault risk/prevalence[6] calculated from the CSEW annual data sets between 1994 and 2017/18; an approximate sample of N=500,000 respondents over the period. It is important to know the CSEW collects information about and estimates the number of crimes which occurred during each financial year (April to March) since 2001/02. Earlier sweeps refer to the calendar year prior to fieldwork. For example, the 1994 BCS provides data and estimated crime levels for 1993 whilst the 2001/02 CSEW refers to the period from April 2001 to March 2002. For economy the following discussion and Figures in the findings' sections provide the year with the larger share in the financial year of the CSEW; for example, 2017 refers to 2017/18. Crime levels for fieldwork BCS years prior to 2001/02 have been interpolated based estimates of adjacent years. Supplementary variables include sociodemographic information and respondent routine activities. The previously defined prior and post crime-drop pooled sweeps of the CSEW are used when the discussion deviated

[6] The terms victimisation risk and prevalence are used interchangeably.

from the examination of trends. The sub-national trends utilised an additional tool in measuring and comparing the ethnic diversity of PFAs between 1991 and 2011, the Herfindahl-Hirschman Index (HHI) (Sturgis et al, 2013). HHI is a validated necessary tool to assess the significance of such differences at different times to draw empirical conclusions between victimisation and immigration. The formula for HHI is as follows:

$$HHI = S_1^2 + S_2^2 + S_3^2 + \cdots S_n^2$$

Where $S_n = The\ Heterogeneity\ of\ a\ PFA\ is\ expressed\ as\ a\ whole\ number, not\ a\ decimal.$

While this index has been used to assess market diversity and monopoly, I followed the same principles to assess the ethnic heterogeneity of PFAs. More specifically, the formula is written as:

$$HHI = White^2 + Asian^2 + Black^2 + Mixed^2$$

In this case, when S_n resulted in a number >2,500, there was severe ethnic heterogeneity, between 1,500 to 2,500, the ethnic heterogeneity of a PFA was moderate, and <1,500, the ethnic heterogeneity of a PFA was low.

3.1.1 Statistical Procedure & Variable Selection

This chapter provided the first step and basis for further investigation through exploratory analysis of the association of immigration and the falls in assault victimisation[7]. These built upon the current crime-drop literature on violent victimisation trends which encouraged further investigation of the

[7] Similar exploratory analysis evidenced the inequitable distribution of benefits of the crime drop for aggregate crime types (vehicle crime, property and personal) across demographic characteristics (Ignatans & Pease, 2016).

extent to which these were equitable (Ganpat et al, 2020). The analyses presented in the chapter were both, descriptive and via testing for statistical significance of bivariate associations, and inferential[8].

The dependent variable (DV) was 'Whether anyone has used violence/force on the respondent in the last 12 months', it corresponded to assault excluding domestic incidents but including work, stranger and acquaintance violence. A second dependent variable was constructed from the number of times the respondent had experienced assault in the screener filtered question given to respondents who said 'Yes' to the previous one. These answers enabled the identification of single and repeat victims[9]. As mentioned, CSEW victimisation and crime counts referred to any incidents that occurred within the past year (financial year since and calendar before 2001). Apart from this, the DV provided a consistent measurement of assault over time because the definitions remained stable over the period examined. The independent variables (IV) included gender (binary variable, Female/ Male), ethnicity (categorical variable denoting White/ Asian/ Black/Mixed, Chinese or Other ethnic background), immigration influx (indexed to the value of influx in 1993) and immigration status (binary variable, UK/ Immigrant respondent). For single points in time night-time economy activity was also considered. The variable to divide Nationals (UK-Born) from immigrants (non-UK Born) was introduced to the CSEW in 2001/02 and therefore direct comparisons with before the crime drop were impossible. However, it is worth noting that, while earlier datasets did not feature immigration status, an astonishing 60% of the ethnic minority respondents were classified as immigrant in preliminary analyses of post 2000 CSEW aggregate data.

Victimisation risk across ethnicity groups and/or immigration status (% of Victims within each Ethnicity/ Immigration Status) was used to measure any victimisation divides and (where possible)

[8] This is the first empirical work to explore the link between immigration and the crime drop in E&W, hence statistical modelling as previously undertaken in relation to burglary (Hunter and Tseloni 2016) is beyond its scope. Future analyses extending this investigation are suggested in later sections.

[9] Separating Repeat from Non-Repeat Victims was carried out manually as a result of using both, the Victim, and the Non-Victim Forms of the sweeps as they contained the variables of interest.

their over-time changes and thus (in)equity of the crime-drop to address the second objective. The control variable of whether respondents' frequent public houses (pubs) was used to assess night-time economy engagement differences between national and immigrant individuals. This enquiry is informed by RAT and tested the hypothesis that immigrants adopt risk avert routine activities, which arguably lead to lower victimisation risk compared to nationals. However, this is tested only for the more recent CSEW sample which included such variables. This examination also related to the concept of 'security' which comes from adhering to crime-avoidance behaviours.

In both, trends and single time points the bivariate relationship between the relevant IVs and DVs was considered. For single points in time the significance of the differences across ethnic and national/immigrant groups was tested using contingency tables (Martin and Bridgmon, 2012). The over-time trends were examined via correlations[10].

The inter and intra victimisation patterns in the second section of the chapter following the examination of trends are identified through the examination of the proportions of both the race of the victim and the offender. Three separate sets of contingency tables were obtained per examined period:

a) Ethnicity of the Victim X Offender Ethnic Group

b) White/Non-White Victim X Offender Ethnic Group

c) UK/Immigrant Victim X Offender Ethnic Group

The analyses conducted examine the third objective of the investigation, which related to patterns of inter and intra victimisation across ethnicity. The statistical significance in the differences between each victimised/offending race was measured using Chi-Square as well as Phi and Crammers V (Liebetrau, 1983); Phi and Crammers V assisted with the increasingly small sample size offered by victims and offenders when they were broken down by ethnicity. Splitting the sample by

[10] Due to the few datapoints available this far time series cointegration tests have not been possible.

both immigration status and ethnicity would result in unreliable sample sizes. The sample was only large enough to be split by immigration status or by ethnicity, not both. However, over 65% *(Appendix Figures vii1;2)* of the non-white samples in both 2000s and 2010s comprised of immigrants. The reverse was true in White respondents in each period, where the percentage of immigrants remained below 5% and 10% respectively for the 2000s and 2010s. The above improved the basis for the examination of ethnicity in earlier datapoints where the immigration status of the participants was unavailable.

Respondents were labelled as victims if they had suffered from any assault incidents in the last 12 months during the victim screening process. The ethnicities of the respondents were split by White, Asian, Black or Mixed respondents. The number of victimisations was omitted because of the lack of sample size within the datasets, even when multiple sweeps were pooled. The dependent variable, due to the nature of the research aims is limited to the ethnicity of the offender and was split in four categories: White, Black and Asian and Mixed. Adjusted residuals were used to calculate the p-values of between group differences using the Bonferroni-adjusted values (Agresti, 2003).

The above analytical approach was applied place across three distinct periods and samples; the 1990s, the 2000s and the 2010s. Significance tests were conducted between timelines in order to identify significant increases/decreases in the inter/intra group victimisation patterns through sample proportions. In this case, as only victims are considered, the sample size is severely limited as seen in the preliminary analyses section.

Further analyses were conducted in relation to the perceptions of the motivation behind the violent incidents the respondents experienced. I assessed whether ethnic minority and White respondents considered their incidents as racially motivated via crosstabulations and using Phi and Cramer's V due to the limited sample. As a final step for this study, I assessed the areas whether the incidents occurred within, or outside a 15-minute walk from their home via contingency tables to assess any significant differences across ethnic minority and White participants using Chi Square or Phi and

Cramer's V where appropriate based on the expected counts. These analyses were conducted independently from the core objectives to support or deny certain theoretical hypotheses which arose from the discussion of the findings of the original analyses. As such, they are not inherently connected to an objective but supplement the context of the core analyses.

3.1.2 Study Three

Differences in Assault Victimisation Across Diverse and Non-Diverse Areas

The area classifications for 1991 came from the definitions assigned in the BCS, in 2011 they were defined by the ONS (2018) in accordance with the Output Area Pen Portraits within the Census 2011. In both cases, they were altered to a dichotomous diverse/non-diverse area variable. More specifically, the diversity classifications for CSEW 2011 were split by 'Multicultural Metropolitans' and 'Ethnicity Centrals'. In 1991, they consisted of a single 'Large Ethnic Minorities' category. In both cases, any additional categories were aggregated and compared with their respective counterparts; In 2010s 'Multicultural Metropolitans' and 'Ethnicity Centrals' were aggregated into a single category. It must be noted that the definitions of the multicultural areas in question also referred to areas of lower affluence. The pen portrait of 'multicultural metropolitans' noted large numbers of privately or socially rented property, below national average qualifications, above the national average unemployment rates and low proportions of car ownership. It also described the residents of such areas as young blue-collar workers in parenthood. On the other hand, 'ethnicity centrals' referred to diverse areas within London, these were characterised by lone individuals with no children, while the rest of the SES characteristics were comparable to multicultural metropolitans. Due to the lack of a pen portrait for 1991, the category of 'Large Ethnic Minorities' lacked an official description.

In the post crime-drop period, a dichotomous variable in relation to whether the respondent was born in the UK was used to identify any differences between the patterns of nationals and immigrants towards diverse and non-diverse area residency, addressing the fourth objective. Such variable was unavailable before the CSEW 2004 and consequently during the pre-crime decline examination.

Nevertheless, ethnicity was used as a proxy to identify any patterns in the 1994-98 period, as an approximate 60% of the non-white respondents were also classified as immigrants for this project. In this case the categories of ethnicity were dived by White, Black, Asian, and Mixed respondents.

The English and Welsh IMDs were merged. The diverse area dichotomous variable was then used to assess any differences in levels of deprivation by comparing their respective IMD means after conducting bivariate correlations between IMD and the number of Assault Victimisations suffered. If IMD was connected to increased Assault Victimisation, then significant differences across diverse and non-diverse areas in IMD would have also resulted in significant differences in mean assault victimisations. The inspection of the above addressed objectives five and six, which pertained to the differences of diverse and non-diverse areas in victimisation risk across different levels of deprivation indices. I expanded further on objective six in the statistical modelling section.

3.8 Statistical Modelling

For the statistical models, a reference individual derived from the descriptive statistics below which the estimated odds and means of victimisation are compared to. The individual in question was white, around 50 years of age, and female. They held a degree, owned their own home and were on a salary of over £30,000. They have resided in their two-adult household in a non-diverse area for over 10 years. They did not suffer from any long-lasting illnesses. They were not a lone parent, and they were not regular pub/club goers, they also did not drive. This section presented evidence for each element noted in objectives seven and eight. I also discussed objective six further in light of the findings from the statistical models.

Table 3.7. Predictors for 1990s Period.

	%	**Predictor Descriptives1990s**			
Individual Characteristics				**Household/Area Characteristics**	
Education		**Lone Parent?**		**Tenure Type**	
None	38.67	No(B)	94.23	Owners(B)	82.81
GCSE	35.94	Yes	5.77	Social Rent	12.04
Other	4.10			Private Rent	3.56
Degree(B)	21.30	**Gender**		Other Tenure	1.59
		Male	44.10		
Illness		Female (B)	55.90	**Neighbourhood Assistance**	
No(B)	68.73			Help Each Other	30.36
Yes	31.27			Go Own Way(B)	49.73
		Pub/Club		Mixed	19.91
White		Yes	49.97		
Yes(B)	89.96	No(B)	50.03	**Diverse Area**	
No	10.04			Yes	92.78
				No(B)	7.22
Ethnic ID		**Age**			
White(B)	91.69	Mean(B)	48		
Black	4.06	Median	46		
Asian	4.25	SD	18		

Income Bands	
Under 10k	42.40
Under 20k	28.96
Under 30k	15.67
Over 30k(B)	12.98
Adults in HH	
One	31.46
Two(B)	51.59
Three	16.95
Length of Residence	
<Year	6.00
<2 Years	4.91
<5 Years	11.34
<10 Years	14.28
>10 Years(B)	63.46

Table 3.8. Predictors for 2000s Period.

	%	Predictor Descriptives for 2000s					
Individual Characteristics				**Household/Area Characteristics**			
Ethnic ID		**Illness**		**Adults in HH**		**Cars**	
White(B)	93.87	No(B)	71.55	One	32.07	One	42.22
Black	3.32	Yes	28.45	Two(B)	52.52	Two	28.68
Asian	1.77			Three	15.41	Three Plus	8.30
Other	1.04	**Age**				No Car(B)	20.81
		Mean(B)	48	**Income Bands**			
White		Median	46	Under 10k	21.22	**Diverse Area**	
Yes(B)	93.85	Std.Dev	18	Under 20k	23.24	Yes	4.22
No	6.15			Under 30k	17.76	No(B)	95.78
		UK Born		Over 30k(B)	37.79		
Gender		Yes(B)	91.71				
Male	45.30	No	8.29	**Tenure Type**			
Female(B)	54.70			Owners(B)	82.81		
		Lone Parent?		Social Rent	12.04		
Education		No(B)	94.81	Private Rent	3.56		
Alevels	23.74	Yes	5.19	Other Tenure	1.59		
GCSE	27.70						
Other	6.16	**Pub/Club**					
Degree(B)	42.40	No(B)	49.27				
		Yes	50.73				

Table 3.9. Predictors for 2010s Period.

		%	Predictor Descriptives for 2010s				
Individual Characteristics				**Household/Area Characteristics**			
White		**Illness**		**Number of Adults**		**Tenure Type**	
Yes(B)	89.49	No(B)	75.85	One	32.83	Owners(B)	64.65
No	10.51	Yes	24.15	Two(B)	51.87	Social Rent	16.62
				Three Plus	15.30	Private Rent	18.73
Gender		**Lone Parent?**					
Male	53.49	No	95.06	**Cars**		**Length of Residence**	
Female	46.51	Yes	4.94	One	42.01	<Year	5.89
				Two	28.53	<2 Years	5.47
Age		**Pub/Club**		Three Plus	8.93	<5 Years	13.35
Mean(B)	48	No	52.01	No Car(B)	20.53	<10 Years	12.36
Median	46	Yes	47.99			>10 Years(B)	62.93
SD	18			**Diverse Area**			
		Education Level		Yes	83.67	**Income Bands**	
Ethnic ID		A-levels	21.82	No(B)	16.33	No Info	16.95
White(B)	89.65	GCSE	22.60			Under 10k	9.29
Black	2.87	Other	5.30			Under 20k	19.41
Asian	5.15	Degree(B)	50.28			Under 30k	14.99
Other	2.34					Over 30k (B)	39.37

3.9 Data structure and Regression Types

Multilevel analyses within the social sciences were employed in the late 1900s by social researchers in a variety of fields. In single level regression models, all data was treated as a single cluster (Bell, Bryman & Harley 2018). Area and contextual effects were then omitted by the analysis which could lead to incomplete results (Goldstein, 1987; Subramanian, Duncan and Jones, 2001). While debates continue to increase in relation to the appropriateness of ML models for each data type, ML has been acknowledged acknowledged as the most appropriate method for handling nested data (Bell et al, 2018; Goldstein 1991;2007). As an evolution to the simple regression models, multilevel modelling was brought to light by interdisciplinary scientists with interest in their application in the social sciences. With multilevel modelling the comparison of within and between group differences were considered (Leeuw and Meijer, 2007; Hauser, 1970). Whilst the easiest demonstration to be made by researchers was students that are part of different schools, multilevel modelling in this project referred to the practicalities in relation to the data in hand.

The modelled data was the various CSEW merged sweeps across different periods. This approach allowed for the direct comparison of different points in time. To reiterate, the pre crime-drop period examined the CSEW sweeps of 1994 to 1998[11], the datasets were pooled to receive an increased number of observations which in turn will lead to increased statistical power (Cohen, 1992). The post crime-drop periods investigated the aftermath of the crime drop. In addition, following the seminal work of Hunter and Tseloni (2016) on the crime-drop in England and Wales, census data was incorporated within the original datasets as well as data file matching would be conducted with low geographical variables of the securely kept datasets that are to be obtained by the UK Data Service[12]. The thesis compared timelines on a national level and a sub-national level, police force areas (PFAs).

[11] An extra subset which combined only the sweeps of BCS 1995-96 and 1997-98 was constructed for Multilevel Modelling due to the lack of Police Force Areas in earlier sweeps. However, due to the lack of statistically significant PFA level variation it was discarded from further analyses.

[12] Due to the tardiness of the UKDS in releasing the datasets on MSOA geography, and the lack of significant variation at the PFA-level, these elements were eventually removed from the objectives of the thesis.

The data, in this case was assumed to be nested at two levels. On the first level existed the individual, which consisted of demographic characteristics that related to previously mentioned theories of rational choice, strain, and immigration. MSOAs constituted the second level of investigation.[13] those are divided in 7,201 areas with at least 2000 and a max of 6000 participatory households nested within them (ONS, 2016), every area indicated differential characteristics and contexts to be examined at each period. These differenced slightly on a percentage of 2.5 per census, despite this, areas that were available at the pre-crime-drop and most recent timelines would have been selected manually picked by the researcher. Alternatively, the second level integrated the 43 available PFAs of England and Wales (ONS, 2016). The police force areas consisted of multiple MSOAs per area, whilst less practical when it came to policy implications on such large geographical scales, the differences, if any, across PFAs were no less important in relation to the contribution of knowledge. The latter two levels were used to empirically measure the impact of immigration to victimisation through area composition. Further information on data manipulation, chosen variables of interest and dataset matching/linking was discussed earlier. Concerns towards confidentiality were dealt by the standardisation and an induced 5% error variance by the National Centre for Research, which handled the CSEW sweeps included within the Census data used (Tseloni, 2006). Furthermore, both Tseloni (2006) and Osborn and Tseloni (1998) noted that variables measuring deprivation often exhibited very high correlation which can lead to multicollinearity issues. Therefore, a principal component analysis was necessary to extract a number of highly correlated area variables as components[14].

[13] Because of the lack of variation on PFA level, MSOAs were expected to feature no statistically significant variation, this can be due to Assault being indeed a personal crime with little to do with area characteristics, or, as seen in Tseloni & Pease (2014), due to the small number of Assault cases. The hypothesis was eventually not tested due to the data holder taking longer than two years from the date of application to release the PFA-level data, requiring further applications for MSOA-level data, which was unsustainable given the time-boundaries.

[14] The Principal Component Analysis was discarded as the null multilevel models indicated a statistically insignificant level of variance at PFA Geography.

A variety of criminological studies previously revealed the practicality of multilevel modelling and the necessity of placing facts, such as victimisation, into context. Rountree and Land (1996) identified how context was linked with fear of crime and constrained behaviour by comparing disorderly to non-disorderly areas. Results vary across regression types such as Ordered Least Squares (OLS) in single level regressions compared to the maximum likelihood estimation featured in ML modelling (Orrick and Piquero, 2013; Silvia, 2007). Moreover, whereas regressions typically treated every coefficient as fixed, ML models allowed for obtaining random coefficients where needed. The notion that characteristics of different levels intersected was further supported by Tseloni (2006) where such interactions were noted in relation to crime concentration at the individual and area level. An array of studies was covered within the literature review section which performed ML analyses in an innovative manner and highlighted the use of ML analysis as means of good practice and increased validity. It must be noted that certain assumptions of the basic Poisson model are not easily satisfied outside of artificial settings (McCullagh and Nelder, 2019), with the case being even stronger in survey data. In the case of victimisation for example, Hope, Bryan & Trickett (2001) found that victimisation incidents of different types were interwoven, and one affected the other.

ML modelling simultaneously estimates differences between individual and in this case between area characteristics whether these are PFA or MSOAs in the case**.** As Tseloni (2006) stressed, multilevel models in Goldstein (1995) were aimed towards modelling proportions, rather than counts. In this case, the Poisson ML model is established before extracting the NB model. This is achieved by blending the Poisson and NB models in one, in more detail, the Poisson model with random effects is expressed as the function of:

$$\ln\left(\mu_{ij}\ \right) = n_{ij}\ \ = X_{ij}\beta + \sum_{q=0}^{\rho} u_{qjz_{qi}} + \sum_{q=p+1}^{Q-1} u_q z_{qj} \qquad i=1,\ldots,I,\ j=1,\ldots\ldots,J,$$

Where μ_{ij} for the purposes of this project is the expected number of assault incidents, in i, the individuals are represented while in j is the representation of areas and X_{ij} is the row vector of K

$(K \geq Q)$ for both household and area covariates for every i jth household together with intercept and any occurring interactions: $Z_{0ij} = 1$. Then, the household characteristics for every i jth household with random effects are expressed as $Z_{qij} = X_{qij}$ for q=1,..,p. $Z_{qj} = x_{qij}$, for q=p+1,p+2…,Q relate to the area covariates with random effects for the jth area are expressed as Q-p-1. $[u_{qj}] \sim N(0, \Omega_u)$ then constitutes the random departure from the jth area. Finally, Q is expressing the number of random coefficients in the model in conjunction with the intercept.

The Poisson probability distribution is seen in Y_{ij} and therefore the possibility of Y_{ij} falling in the specified y_{ij} is the following instead of the model expressing the probability distribution as $E(Y_{ij}) = var(Y_{ij}) = \mu_{ij}$ as the latter is not applicable in accordance with the earlier presented analysis:

$$\Pr(Y_{ij} = y_{ij}) = \frac{\exp(\mu_{ij})\mu_{ij}^{y_{ij}}}{y_{ij}!}, \quad y_{ij} = 0,1 \dots \dots$$

As an extension to the Poisson distribution which is the expected number of assault incidents (μ_{ij}), the NB model presented below provides the between-individual random variation.

$$\ln(\lambda_{ij}) = n_{ij} + e_{0ij}$$

In accordance with Cameron and Trivedi (1986), exp((e_{0ij}) is results in a gamma probability distribution expressed as Γ(ν), with $E\{\exp(e_{0ij})\} = 1$ and var $E\{\exp(e_{0ij})\} = \alpha = \nu^{-1}$. Additionally, the probability distribution which is the compound of the last two equations is unified, resulting to a ML NB model which is described by Cameron and Trivedi (1986), NegBin II:

$$\Pr(Y_{ij} = y_{ij}) = \frac{\Gamma(y_{ij} + v)v^v \lambda_{ij}^{y_{ij}}}{y_{ij}!\,\Gamma(v)(v + \lambda_{ij})^{v+y_{ij}}} \qquad y_{ij} = 0,1 \dots \dots$$

The presented model as Model MNBM II presents the expected means of assault incidents in the same manner as the Poisson distribution equation described earlier does $E(Y_{ij}) = \lambda_{ij} = \exp(n_{ij})$ but differentiates itself when it comes to the expression of the variance in order to allow for the overdispersion of values:

$$var(Y_{ij}) = \lambda_{ij} + \alpha\lambda_{ij}^2$$

Therefore, on level 1 the concept of the Poisson variation is α where α>0 and λ_{ij}^2. It is then that α, in accordance with Cameron and Trivedi (1986) can be treated as the overdispersion coefficient and precision parameter, in-line with the seminal work of Tseloni (2006), the thesis used overdispersion to measure unexplained heterogeneity as the datasets analysed were of the same series and identical nature. Additionally, the thesis examined the distribution of crime during and post crime-drop and the measurement of heterogeneity rather than event dependence, something that could not be accurately measured with non-panel data (Heckman, 1981). Finally, MLWin (Goldstein et al, 1998) used iterative generalised least squares estimation with first-order marginal quasi-likelihood approximation rather than the ordinary least squares (OLS) which researchers have advised against when encountering nested data. However, Tseloni (2006) acknowledged the limitations of the first-order marginal quasi-likelihood approximation as it may result in severe underestimates of random-effects variance when the level 2 sample sizes are small. The thesis pooled data to mitigate issues of the level 2 sample sizes and used both MSOAs and PFAs to increase validity through additional sampling and reduce such errors (Browne and Draper, 2000). Another advantage of the first-order marginal quasi-likelihood approximation is the computational efficiency that it offers in addition to its' accuracy.

In the second occasion, I examined the dichotomous DV of whether the participants have been victims of crime, the modelling techniques were identical except for the different type of regression used. In this case, I used logistic regression to model victims and non-victims.

The basic function of a logit model is:

$$Ln\left(\frac{P}{1-P}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_\kappa X_\kappa$$

The principles of the logit model are akin the ones expressed above, with the difference that the dependant variable only ranges from 0 to 1 (non-victims to victims). Hence in this case, P equals the probability of the dependent variable, Y being 1.[15]

3.1.5 Predictors of Victimisation Before & After the Crime-Drop Paired with Ethnicity and Immigration Status

Regarding statistical models, two models were discussed for each period: one logit and one negative binomial. The logit models used a dichotomous assault victimisation variable on whether the participant was a victim of assault in the last 12 months before responding to the survey. The negative binomial models used the assault victimisation counts which ranged from 0 to 15. Due to most of the participant reports ranging between 0 or 1 the Negative Binomial model was an undoubtedly better fit than competing approaches to account for the overdispersion of values (Tseloni, 2006). A zero-inflated negative binomial model was also considered, yet recent literature has found little if any benefits outweighed by the excessively complex structure it would require (Allison, 2012). The modeling technique used was manual stepwise forward deletion. The predictors were divided in modules which were then added and reduced accordingly leaving only significant predictors in the model unless they were of theoretical relevance to the research questions. The number of modules increased and decreased accordingly per decade with their respective availability of predictors. The main effects models were then complimented by higher-level interactions between variables.

The modules were divided in demographic characteristics (Income, Education Level etc.), residential information (Dwelling Type, Tenure Type etc.), neighbourhood perceptions where available (Neighbourhood Problems, Neighbour Attitudes etc.) and higher-level interactions in relation to ethnicity and immigration status. Due to the vast numbers of categorical variables a lengthy process

[15] A multilevel logit model was not attempted due to the lack of significance of the PFA variance during the examination of the count of victimisations.

of dummy coding took place during data manipulation and cleaning. The Alpha for statistical significance was set at p<.1 due to the nature of the dummy variables. The process was repeated for area characteristics, area perceptions as well as for routine activity variables. Literature has argued against the established norm of p<.05. The analyses and the data manipulation took place in the Statistics Package for Social Sciences (IBM, 2017) and MLWin (Rasbash et al, 2005).

4.0 Trends of Immigration & Crime

4.0.1 Chapter Outline

The first part of this chapter focused on the construction of trends and the identification of patterns of victimisation across different ethnicities. First, I established that diversity increased significantly between the 1990s and the 2010s. I then identified a variety of patterns before considering the starting and ending periods of each ethnicity. In this case, I considered repeat victimisation across ethnicity, with nativity being explored where available. Across both sections I examined the crime types of Assault and Household Theft. The final part of the chapter considered patterns of intra and interethnic victimisation in conjunction with the own and previous empirical evidence on the diversity levels of England and Wales. In addition, I considered the effects of area diversity on victimisation. I conclude that:

1. There was significant divergence between the immigration and the assault as well as the household theft trajectories.
2. There were significant differences between the victimisation trajectories of certain ethnic groups.
3. There were significant differences in observed repeat victimisation incidents across ethnicity.
4. Both intra and interethnic victimisation patterns were present across ethnic groups.
5. Area diversity offered varying effects in relation to victimisation.

4.0.2 Research Aims

The analyses conducted in this chapter were separated in three parts, each with each own research questions and objectives. Each research question was tied to the core aim of the project presented in the earlier Data & Methods chapter.

In order of presentation, the questions considered were:

- *Is there any association between the immigration & assault trends?*
- *How has the assault victimisation incidence and prevalence changed across each ethnic and National/Immigrant group by the crime-decline?*
- Are there any identifiable patterns of inter and intra victimisation in either of the three time periods?

4.1 Trends & Immigration Influx; National and Subnational Comparisons

The trajectories of immigration and both, household theft & assault victimisation were in opposition[16]; where immigration began to gradually increase, assault victimisation fell, the biggest changes occurred during the initial sharp increase of immigration influx (Figure 4.1). While certain reductions were visible, immigration influx remained on a stable rate at 200% of its original value recorded in 1993. Between 1993 and 1997 immigration and assault remained stable.[17] In more detail:

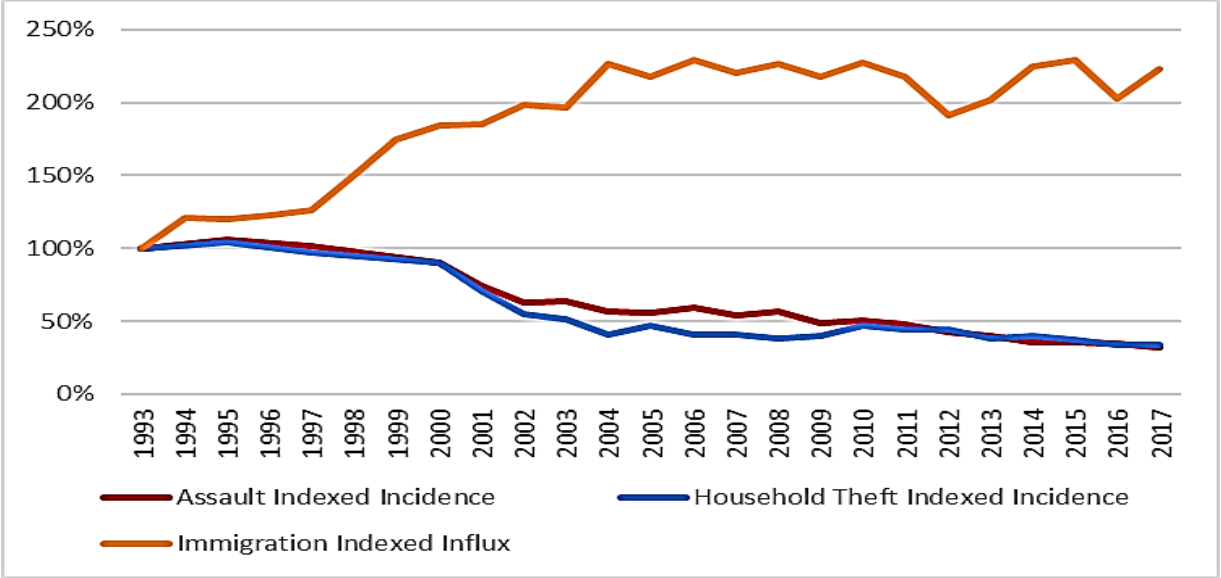
1) Between 1993-1997 the immigration and assault/HH Theft trends noted small, albeit statistically insignificant respective increases and decreases respectively[18].
2) The two trends (Crime Types / Immigration) started rising and falling sharply between 2000 to 2004, where the biggest drops and increases in victimisation and immigration respectively were noted.
3) The remaining years were defined by (mostly) stability, having maintained the respective increases/decreases seen in the previous period.

[16] Prior to 2001 where BCS/CSEW became an annual survey both trajectories were interpolated to the dates BCS was carried out (e.g BCS 1993-94 was interpolated at 1993, BCS 95-96 to 95 etc.) From 2001 onwards the yearly sweeps are 2001-02, 2002-03 and so on.

[17] First differences trends are negatively (albeit non-statistically significant) correlated.

[18] Prior to pooling BCS 1993-94/1995-96/1997-98 sweeps significance tests ($p>.05$) were carried out between the three sweeps to identify any significant inconsistences in incidence which would skew the merged set.

***Figure 4.1**. Indexed (1993=100%) Trajectories of Immigration Influx & Assault Risk, and Household Theft Risk (Y) over time (X).*

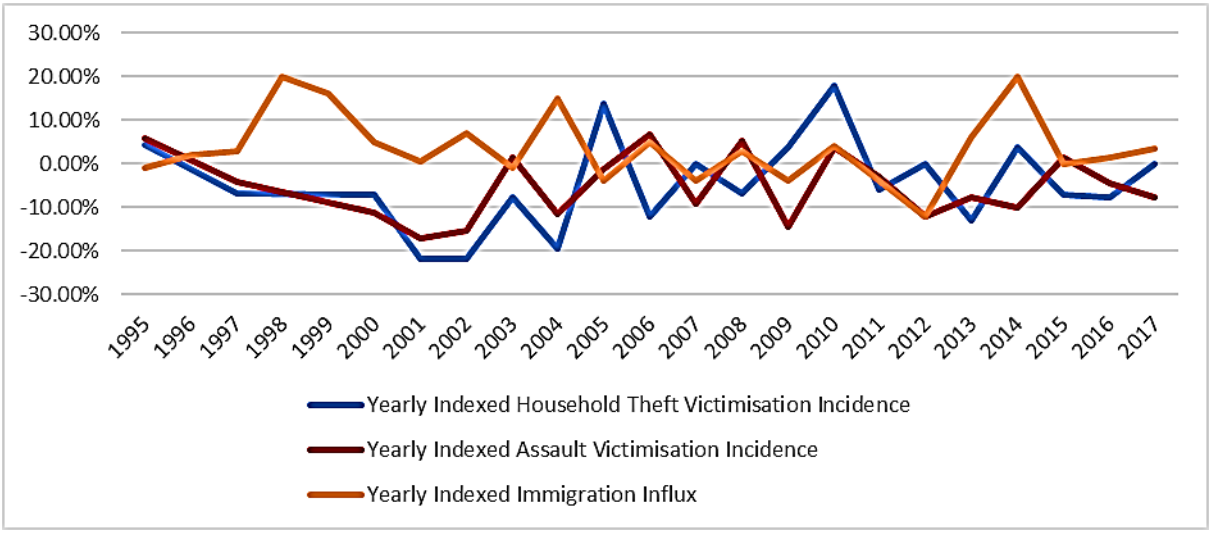


The plots which illustrated first-differences between immigration and assault/HH theft are comparable:

- When 1998 immigration influx spiked, Assault began to fall.
- In 2003, when the first differences of immigration dropped to the lowest observed levels, assault incidence increased sharply.
- The pattern then repeated for every large spike of immigration except for when the insignificant differences between incidence and immigration were observed.
- In general, while HH Theft and Assault first differences were parallel; (a) household theft increases preceded assault increases (e.g 2005, 2006) (b) certain years noted household theft & assault in opposition (e.g 2015).

Both, the indexed and the first differences graphs offered distinct perspectives.

***Figure 4.2**. First-Differences of Immigration & Assault, and Household Theft Incidence (Y) over time (X).*



The drastic increases in immigration and as a result, diversity was highlighted by the HHI values. While the change in the diversity index was not significant in every case, the overall change in the mean values of HHI indicated significant drops in the ethnic homogeneity across all PFAs (Heatmap 4.1). The Wilkinson's test indicated that while the change was significant ($p<.05$) overall, the most diverse areas also received the largest reductions in homogeneity.[19]

[19] Conducted bivariate correlations between immigrant population and victimisation risk divided by PFAs provided statistically insignificant results.

Heatmap 4.1. *Heatmap visualising HHI values across PFAs between 2011 (Left) and 1991 (Right); deeper colours indicate increased Heterogeneity.*

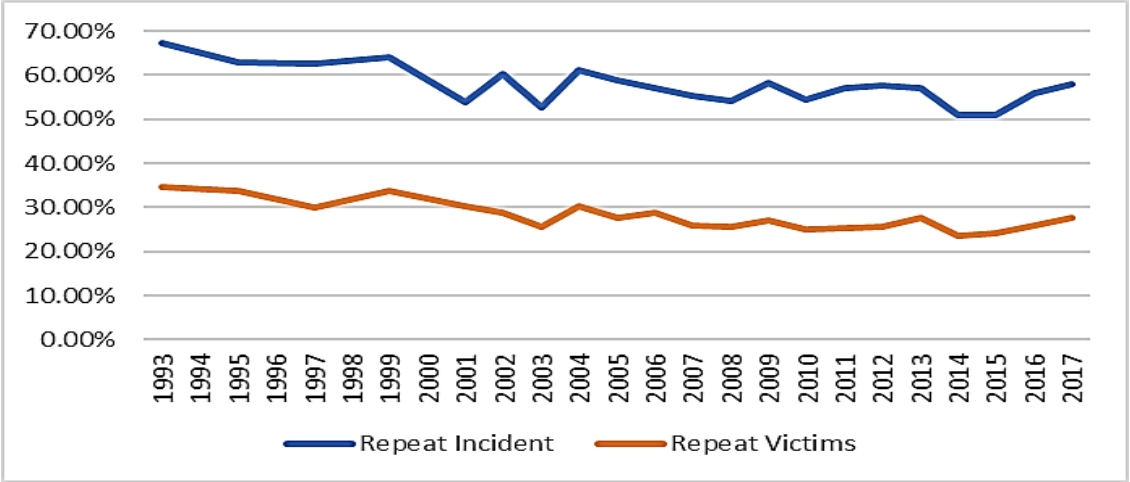
4.1.1 Dividing Victimisation: Repeat Victims

Repeat victimisation has been a constant cause of concern within the literature, accounting for large amounts of crime. In the analyses carried out to assess the trends of repeat victimisation, the evidence showed improvement, yet the drops were not as significant as the total amount of victimisation. While the staggering 60% drop in assault victimisation was noted earlier, the drop in RV equalled only 15%, just ¼ of the drop. The 15% drop in RV may equal a very high amount of victimisation prevented, as RV has been noted to account for a large amount of victimisation; the proportion of repeat crimes was observed to be at 67% in 1993 and 58% in 2017. Additionally, a sudden drop was noted in 2004. At a lesser extent, the declining trends of repeat victimisation were still divergent from the rising immigration trends noted earlier. From 2004 to 2008, the second largest decrease was noted. Assault RV was reduced by 7%, half of the entire reduction seen in 20 years. The spike within the discipline of victimology and the acknowledgement of RV as a significant issue alongside with the cooperation of the academia and policy makers could have played a vital role. At the same time, as seen from the immigration chart, immigration influx peaked.

Considering the number of incidents that constitute repeat victimisation without accounting the proportions of repeat victims yielded an incomplete picture. Graphs (4.3, 4.4) indicated that despite the 10% drop throughout the decades, the change in the proportions of repeat victims was far less. Indeed, the change equalled a class of 7% drop. Additionally, repeat victims originally made up only 1/3 of all victims, as a result, 67/57 percent of victimisation was suffered by 34/27 percent of the total victim sample (Figure 4.3) between the start and end of the trends. Therefore, much of the crime viewed through these illustrations was in fact suffered by the minority of the victims, in a group (victims overall) which already functioned as a minority within the bigger picture of society. Such trends were confirmed in a variety of crime types as well as combined crime types under the labels of ‘property’ or ‘personal’ crime as noted in the literature review. The fact that the drop in the proportion of repeat victims was not equal or more to the one of repeat victimisation incidents

indicated a slight increase in overall concentration at first glance, rather than a decrease. The crime-drop's (in)equity is apparent through overlooked aspects of victimisation.

Figure 4.3: Proportions (Y) of Repeat Incidents and Victims of Assault over time (X)[20].

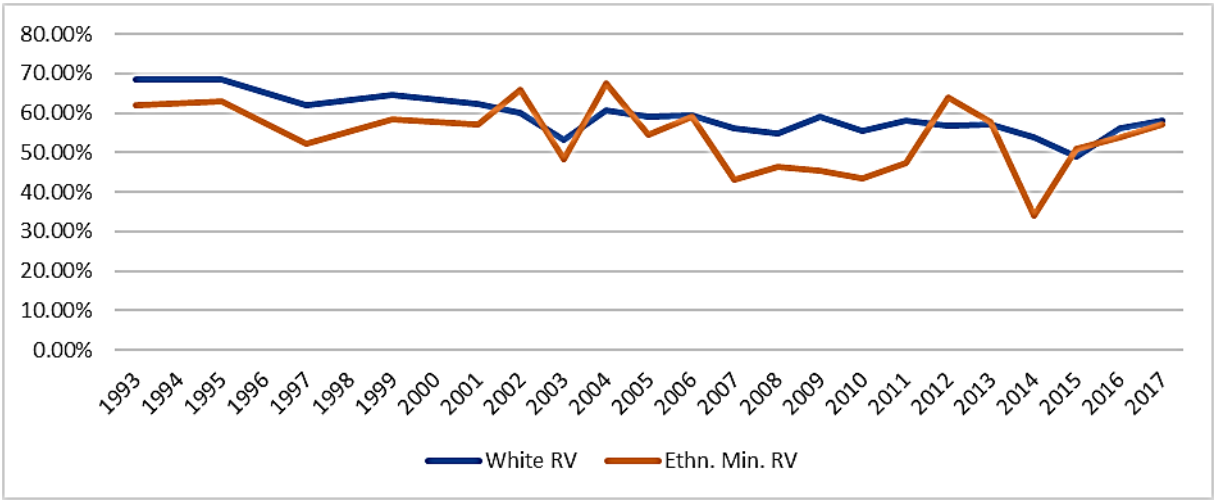


Repeat victimisation within both white and ethnic minority populations adhered to each other (Figure 4.4). From 69% of crime incidents being repeat in 1993, white populations experienced a drop to 57%. ethnic minority victims who experienced a significant proportion of repeat victimisation of the class of 62% at the same year, witnessed a smaller reduction to 58% at the end of the decade.

In the same timeline, the reductions were more unstable than their opposite category. In the years preceding 2017, ethnic minority repeat victimisation recorded a drop which touched 43.15% at the lowest, a percentage that raised back to 57% from 2007 to 2017. A similar, yet less drastic drop was viewed in white participants towards 2003 which reached 53.09% before increasing back to 56.96%.

[20] Trends regarding Repeat Incidents/Victims for Household Theft were omitted due to the severe lack of cases. This was true for any examination, even when the datasets were pooled for the examination of single points in time. Relevant appendices highlighting the effects of the lack of cases on the trends and other measurements (e.g unnaturally bumpy trajectories, cases of 0% Repeat Victims/Incidents in certain ethnicities) are included.

Figure 4.4. *% of Assault Repeat Incidents (Y) Split by White/ethnic minority Respondents over time (X).*



4.2 Assault Victimisation Trajectories Across Ethnicity and Nativity

The first figures addressed ethnic groups split by White/ethnic minority participants. It is worth noting that the majority (approx. 65%) of the ethnic minority sample was also classified as immigrant. Clear distinctions were observed where each group started on a different victimisation risk scale (Figure 4.5), interwoven at the end of the examined period. Contingency tables indicated a statistically significant change ($p<.05$) but no significant differences were noted at either end of the examined timeline between White and ethnic minority participants.

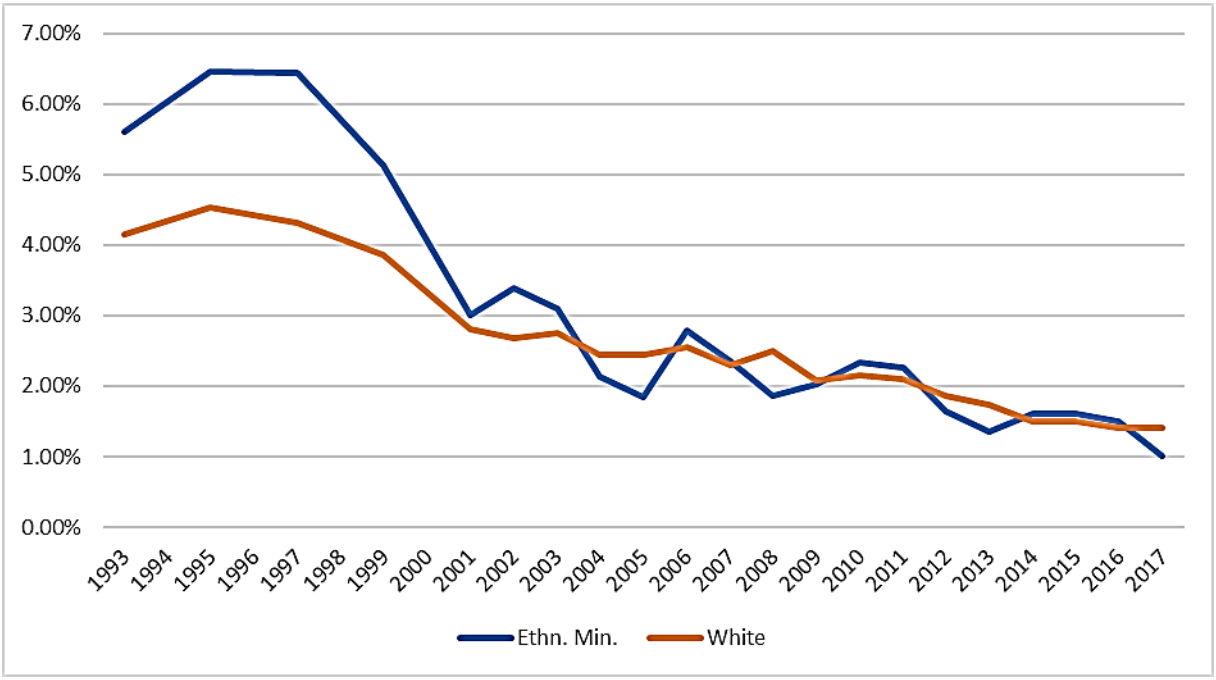
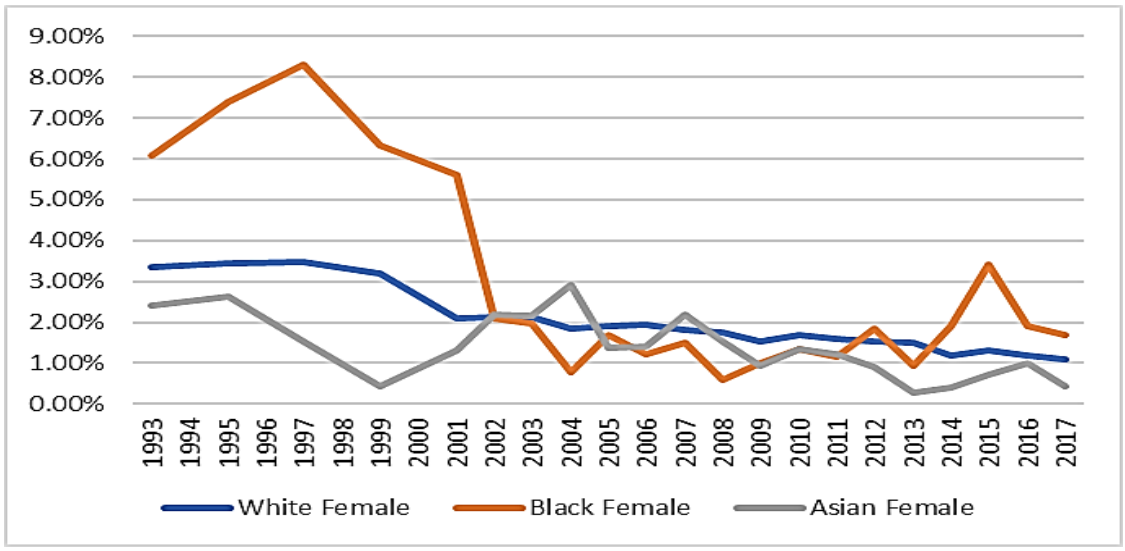


Figure 4.5. *Assault Risk (Y) over time (X) for White and ethnic minority participants.*

Female and male ethnic minority participants were at increased risk of assault in the 1990s compared to white individuals ($p<.05$). The victimisation risk of ethnic minority females was effectively equal to that of White males at the respective peak years (1997 and 1995, respectively). However, any differences in relation to assault risk between ethnic minority and White males and females disappeared in the 2000s ($p>.05$ in 2016 & 2017). The two eventually intercepted each other on a downward trend with any remaining gaps not exceeding statistical significance (Figure 4.6).

In the period prior to the crime-drop, when the participants were split by gender ethnic minority females were less likely to be repeat victims of assault ($p<.05$, Figure 4.7). On the contrary, ethnic minority males were statistically insignificantly ($p>.05$) above their counterparts across both pre and post crime-drop periods for overall risk and RV. The statistically significant differences between ethnic minority and White females ceased in the post-crime drop dataset. [21]

[21] Further analyses were carried out by breaking down Ethnicity in three; White, Black & Asian Males/Females yet these were almost identical to the patterns noted in the White/ethnic minority split, denoting that RV



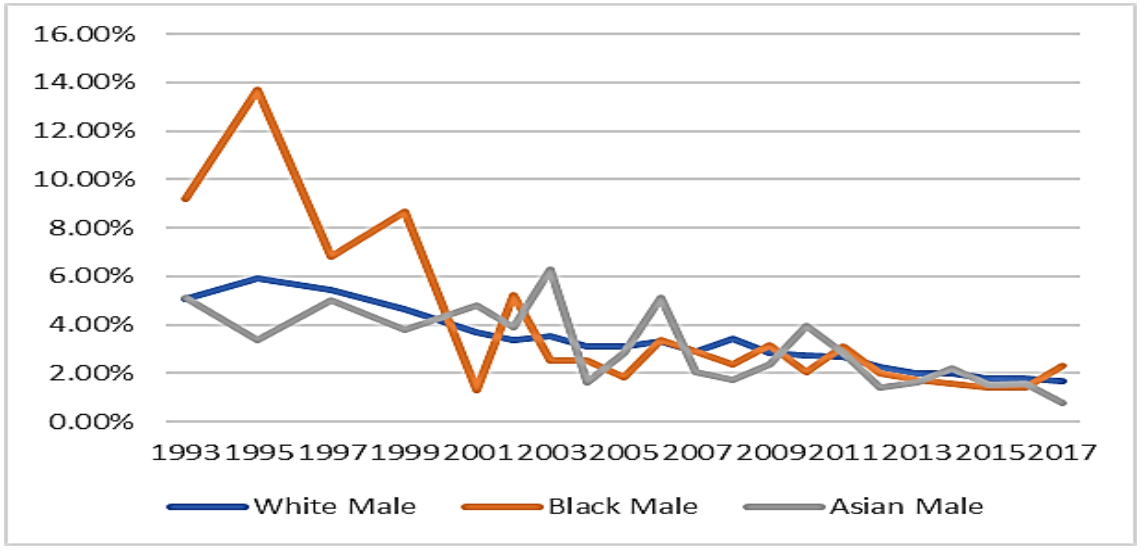


Figure 4.6. *Gendered Assault Risk (Y) over time (X) for White individuals and ethnic minorities.*

patterns are in fact alike irrespective of the respondent ethnicity as opposed to the overall risk patterns which were significantly different across ethnicity.

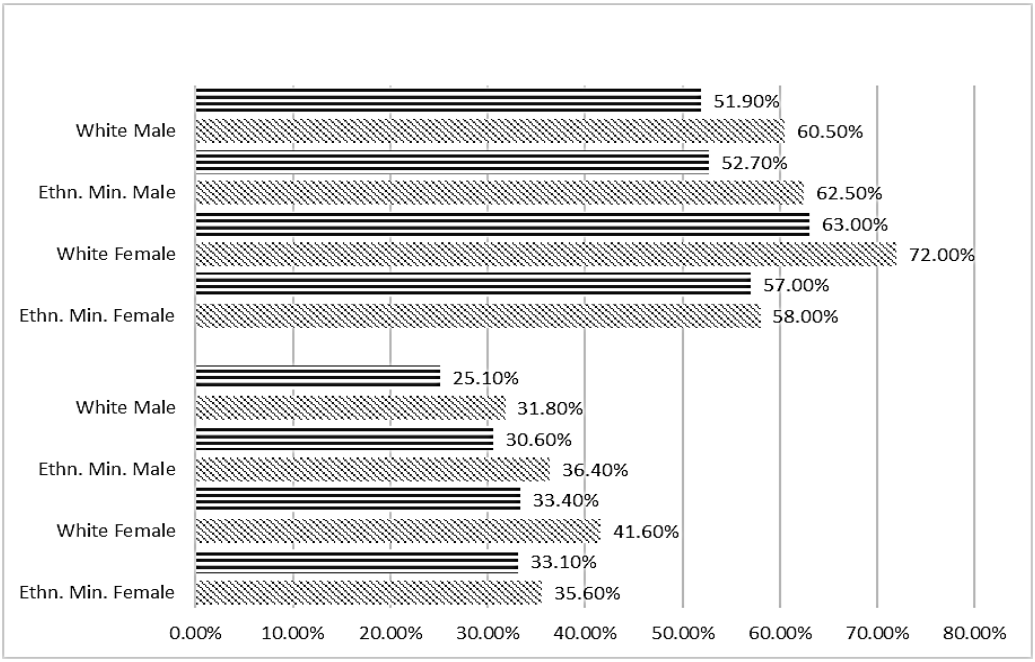


Figure 4.7 *Gendered Proportions (%) of Repeat Victims (Bottom Part)/Incidents (Top Part) split by White & ethnic minority participants Post (2016-17/2017-18) & Pre-Crime-Drop (1993-94/95-96/97-98). Pattern fills denote each period in their respective order of mention.*

A further breakdown by splitting the respondents in three major ethnic groups (Figure 4.8) was conducted, White, Black & Asian revealed potential factors that may have skewed the analyses with White/ethnic minority respondents; more specifically, the trajectory of Black individuals experienced the most severe decrease in victimisation risk, which ended only slightly above White and Asian participants from twice and thrice their victimisation risk respectively during their peak. On the other hand, Asian participants bore varying levels of victimisation risk having started and ended at the lowest values of the three ethnic groups across time. Asian individuals only surpassed the risk of both Black and White individuals during a late peak when sharp drops had already been observed in Black and White victimisation victimisation risk respectively. While the peak periods of assault victimisation risk were the same for both White and Black participants, a 6-year lag was noted in the Asian trajectory.

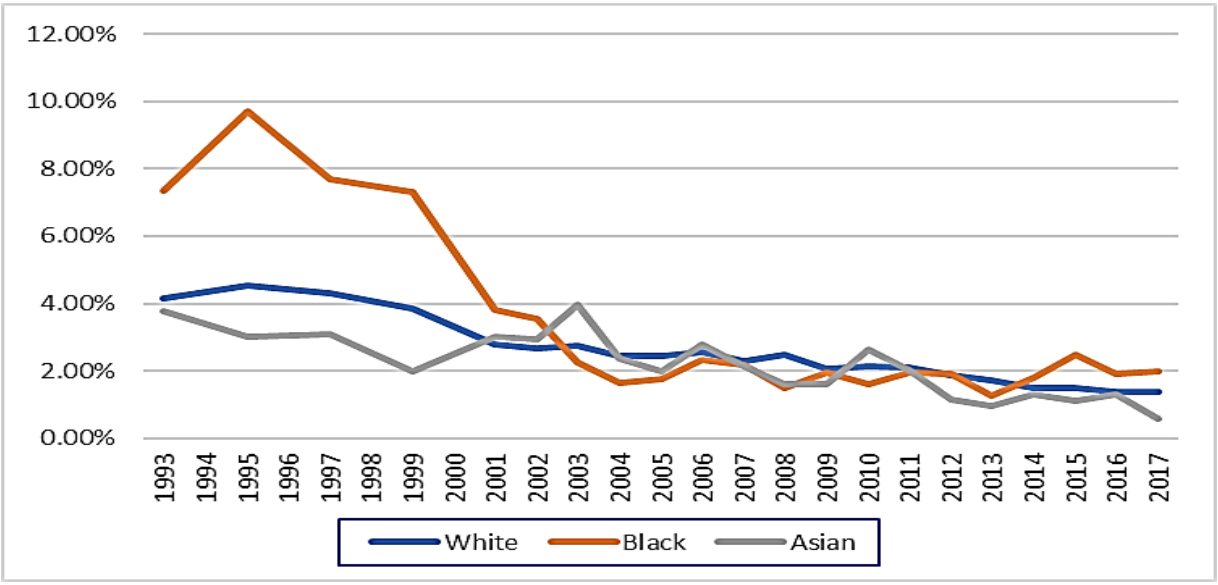


***Figure 4.8**. Assault Risk (Y) over time (X) for White, Black, and Asian individuals.*

4.2.1 Assault Victimisation Risk Differences between Nationals & Immigrants

The variable concerning the respondent's country of birth allowed for further analysis of the victimisation risk; as expected, the differences in 2016-17 were sparse, yet statistically significant[22]. The levels of both overall and repeat victimisation remained similar for both national and immigrant individuals (Figure 4.9). The differences across White and ethnic minority groups split by nationals and immigrants showed statistically significant ($p<.05$) differences with immigrants featuring half the proportions of repeat victims when compared to immigrant White participants. Despite this, having examined the proportions of repeat incidents, both Immigrant White and ethnic minority individuals reported 1 in 2 incidents as repeat.

[22] The total sample size of Immigrants in 2016/17 was considerably bigger (N= 9,727) than past examined minorities while the total sample size of victims features the lowest proportions of victimisations in three decades. In the previous decade, the risk of victimisation for both National and non-UK Born participants was equal at 2.40%.

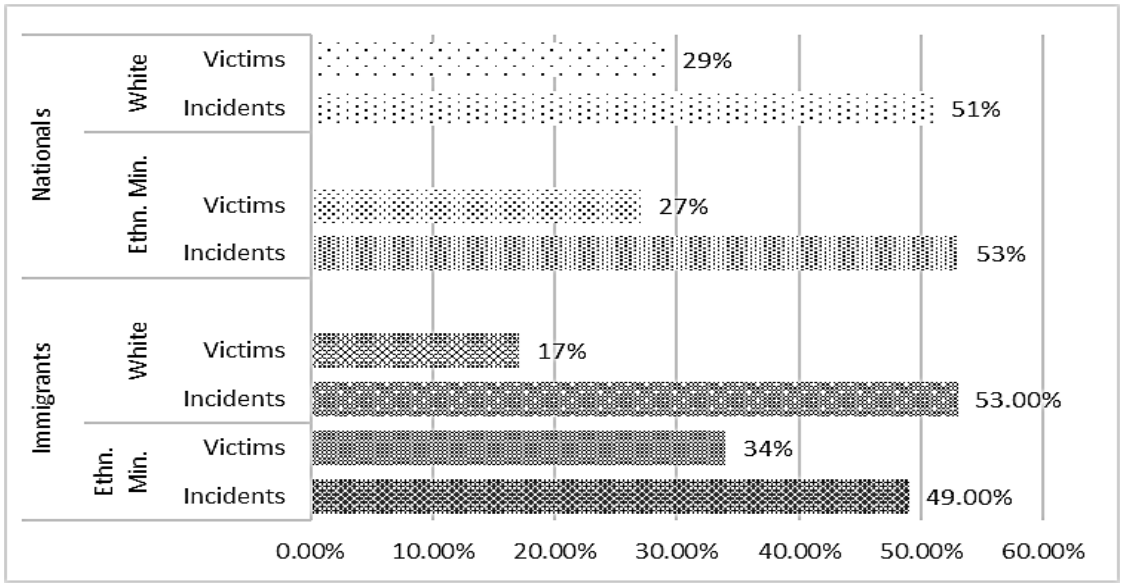
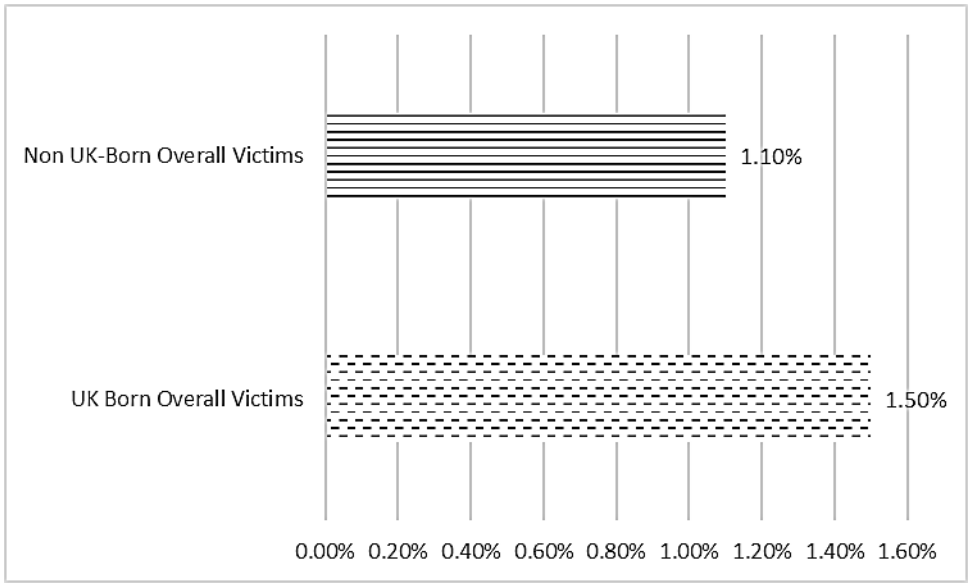


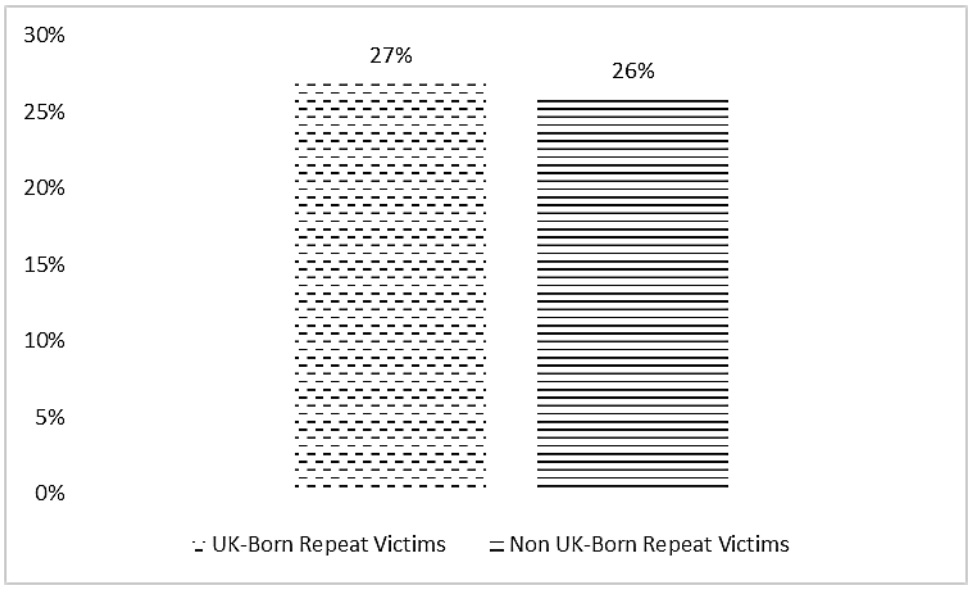
Figure 4.9. *Repeat Victimisation Respondent (Y) and Repeat Victimisation Incident (Y) proportions between National/Immigrants split by White & BAME Respondents in 2016-17/2017-18.*

Whilst the differences in the era before the crime-drop were substantial, the observed differences between the national and immigrant respondents showed scant divergence from each other in victimisation risk within each category (Figure 4.10). Such picture aligned with the trends which highlighted the eventual interweaving trajectories of the different races and ethnicities. An insignificant ($p>.05$) difference in risk was noted between immigrant and national respondents (1.1% vs 1.5% respectively). A similar picture was also noted in the proportions of repeat victims found within each of the categories (Figure 4.10, 27% for national, 26% for immigrant)[23].

Figure 4.10 Differences in Risk (Top) and Repeat Victims (Bottom) between Immigrant and UK Participants in 2016-17/17-18.

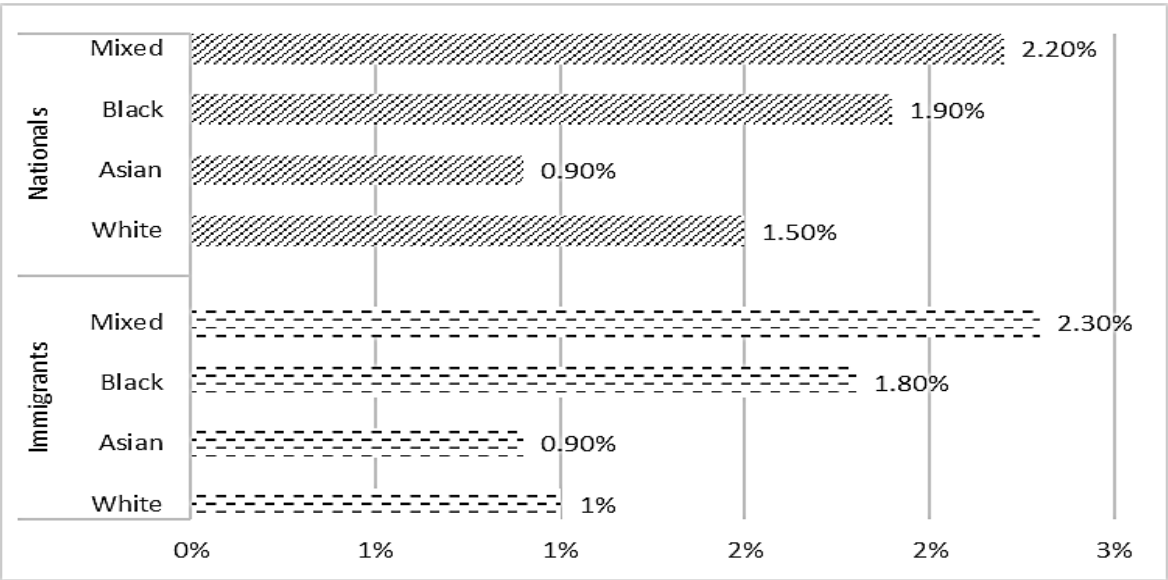
[23] A similar examination took place in the first decade of the crime-drop, however the differences remained on similar levels, albeit higher as Assault continued to fall according to the constructed trends, hence those are omitted from the discussion. Yet will be included in the appendix section.





In a further breakdown, the categories within each of the national and immigrant categories differed significantly in proportions from each other (Figure 4.11); Mixed ethnicity victims had double the risk of the Asian victimisation (2.2% vs .90%). Between the two extremes were White and Black respondents (1.50% and 1.90% respectively).

Figure 4.11 Differences in Risk Across National and Immigrant Participants of Different Ethnicities.



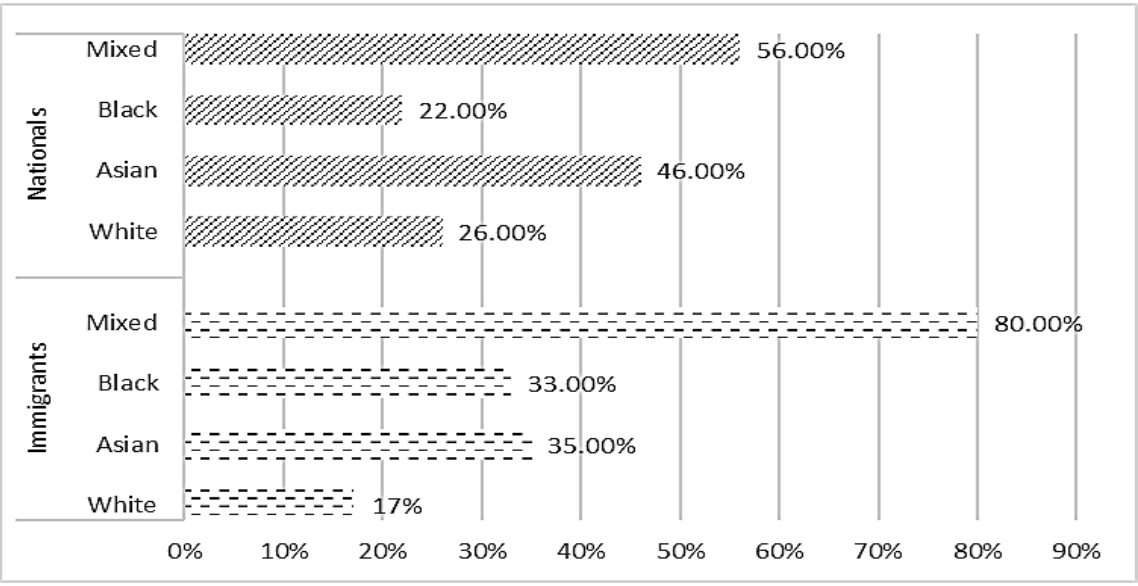
Whereas proportions of overall risk differed slightly and insignificantly between national and immigrant, the proportions of repeat victims unfolded differently; national Black respondents (22%) had a smaller proportion of repeat victims than their Black immigrant counterparts (33%). Asian participants, albeit from the least proportions of victimisation suffered from the largest amounts of repeat victims, with almost ½ (46%) national Asian victims having suffered from repeat incidents, contrary to this were the Asian immigrant repeat victims (11%). Similarities were seen in national White respondents (26%), compared to immigrant White (17%) participants. The repeat victim proportions of mixed participants were akin to Black individuals, in national mixed participants the figure was severe (56%), while for immigrant mixed participants the proportion increased to 80%.[24]

Such changes were far less pronounced the categories were examined on a unified basis, such as the first case of simply National/Immigrant respondents, or on more aggregated ethnic categories such as white and ethnic minority participants. In the latter, the descriptive examination indicated that victimisation risks were identical between British white participants and ethnic minorities. Similarly, the victimisation risk across immigrant respondents was also invariable. When considering repeat

[24] The sample for mixed participants featured an exceptionally small number (add number) of participants, as such, the observations may be unreliable.

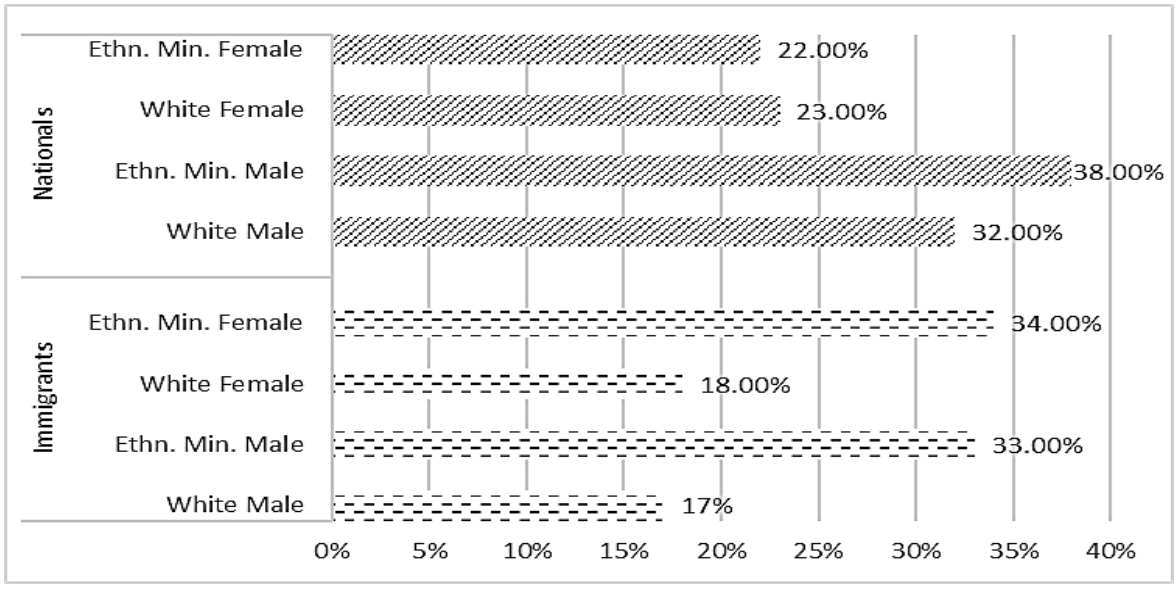
victimisation however, it was discerned that a 5% difference in proportions in ethnic minorities between those born in and those born out of Britain existed, as did the 10% difference that was earlier noted in white repeat victims during the extended breakdown (Figure 4.12).

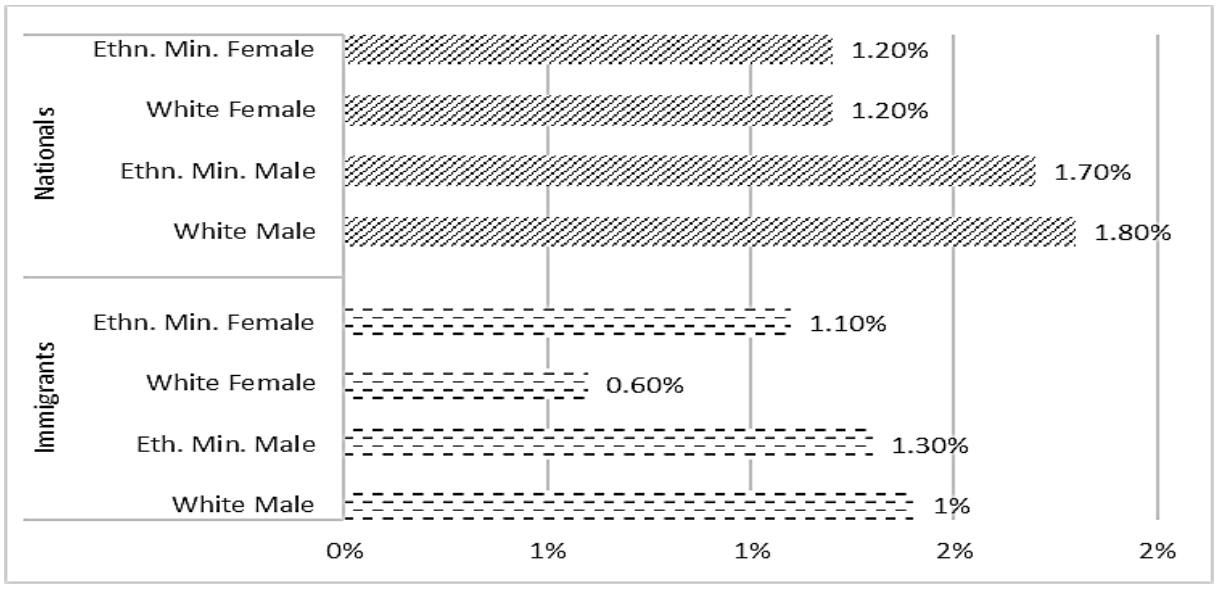
Figure 4.12 Differences in Repeat Victims of Immigrants and National Across Ethnicities.



During the gendered examination of the above categories' inequality was evident (Figure 4.13), with ethnic minorities immigrant females having similar victimisation risk (1.1%) as their male counterpart (1.3%), compared to white females that only suffered from half the risk (.6%) whilst not including IPV. In addition, the proportions of repeat victimisation were double that of their white counterparts, for both male and female ethnic minorities at 33% and 34%, compared to 18% and 17% for white immigrant respondents. In national white and ethnic minority respondents, females shared the same risk of victimisation (1.2%), similarly, the risk for national white & ethnic minority males was at 1.8% and 1.7% respectively. The case of inequality in repeat victimisation became more pronounced, as 1/3 of white females were repeat victims, compared to almost 1/5 of males. The same was true for ethnic minorities at a more severe rate, with female repeat victims exceeding 1/3, whilst males stayed at a similar value as the ethnic minority males.

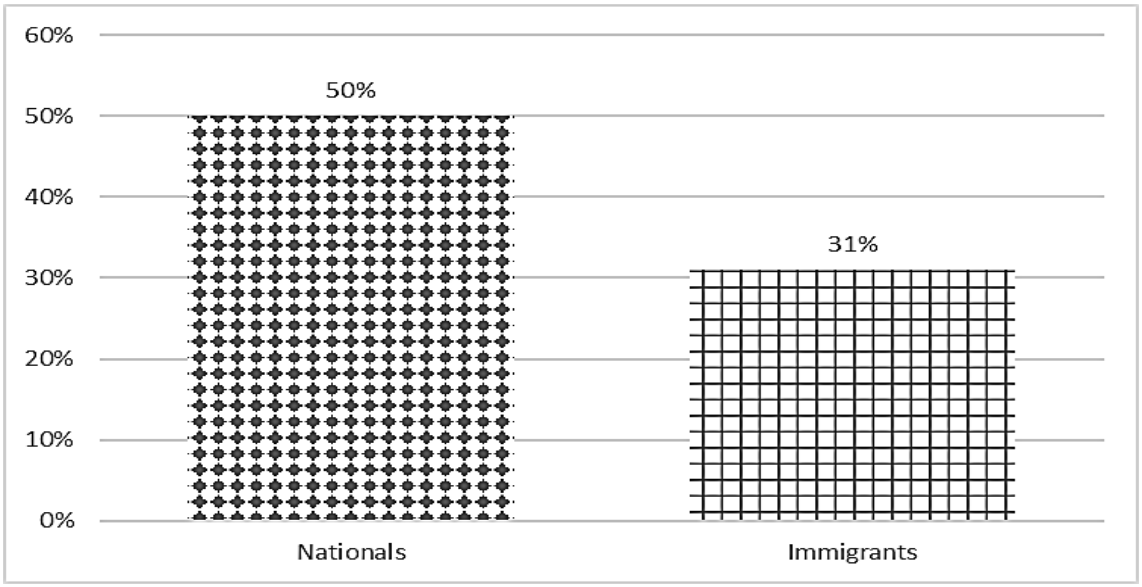
Figure 4.13 Differences in Repeat Victims (Top) and Victimisation Risk (Bottom) across National and Immigrant White & ethnic minority ethnicities split by Gender.





Worthy of note was the fact that the contingency tables across Nativity and Pub Going identified statistically significant (p<.05) differences between national and immigrant respondents in relation to frequenting in pubs (Figure 4.14). More specifically, national individuals were significantly more likely to frequent pubs, as opposed to immigrant. The evidence was in support of previous literature which identified group differences in routine activities within E&W by Papadopoulos (2012). More specifically, 31% of the immigrant individuals frequented pubs within the survey, as opposed to over 50% of their national counterparts.

Figure 4.14 Differences in Pub/Club Going between National and Immigrants



To summarise, a significant inverse relationship was observed between immigration and assault incidence rates. Significant progress in assault victimisation equity, ethnicity and nativity was observed from the pre to the post crime-drop era. Black individuals were observed to have received considerable benefits from the falls in assault. In recent years Black victimisation fell from thrice the risk of other ethnicities to equal levels. These changes have benefited both genders across ethnicity. By contrast, the country of birth of individuals seemed to have a small role in unequal victimisation risk. Non-significant differences were noted between national and immigrant victims coupled with

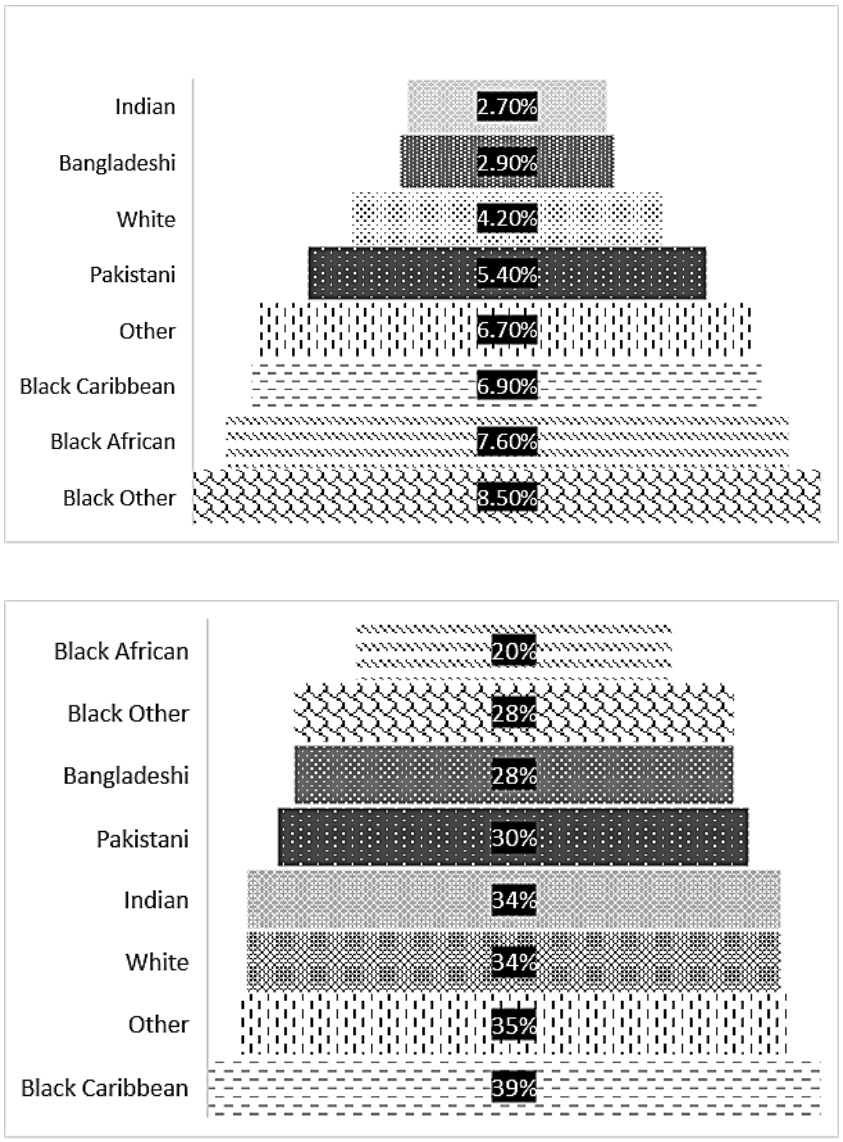
considerably fewer repeat victims but a higher number of reported repeat incidents against ethnic minorities which were not national. Finally, significant differences were observed in night-time economy activity between national and immigrant participants.

4.3 Further Ethnicity Breakdowns

Prior to 2011 datasets included further breakdowns of ethnicities consisting of different geographies. More specifically, the sample was further broken down into Black Caribbean, African and Other Black participants, as well as Indian, Pakistani, Bangladeshi and Other respondents[25]. Unsurprisingly, Black individuals in the 1994-97 subset were marked by excessive assault victimisation risk compared to other ethnicities (Figure 4.15). The order is almost identical to the earlier described trends, except for Pakistani victims where their victimisation risk was twice as much as Indian or Bangladeshi respondents, and even exceeded White individuals. The following chart illustrated the differences between the overall proportions of victims in each sub-category against the proportions of repeat victims within the same category (Figure 4.15); in this case, a reversal in their ranking was noted within black ethnicities. African and other black participants were far less likely to be repeat victims (1 in 5 and a little over 1 in 4 respectively). In comparison, a little over 1 in 3 Caribbean participants are repeat victims. White, Indian and other ethnicities had similar proportions of repeat victims.

[25] Chinese was also a sub-category included within the original sets, per contra, the sample size did not exceed 45 after the merging of 3 datasets and a total of 32.000 participants, as such, it was excluded. Additionally, the sub-category 'Other' received a sufficient number of participants after the merging to include in the analyses for those who did not fit the 'Black', 'Asian' or 'White' archetypes.

Figure 4.15. % of Victims within each Ethnic Group ordered from low to high (Top) for 1990s period. % of Repeat Victims within each Ethnic Group ordered from low to high (Bottom) for 1990s period.

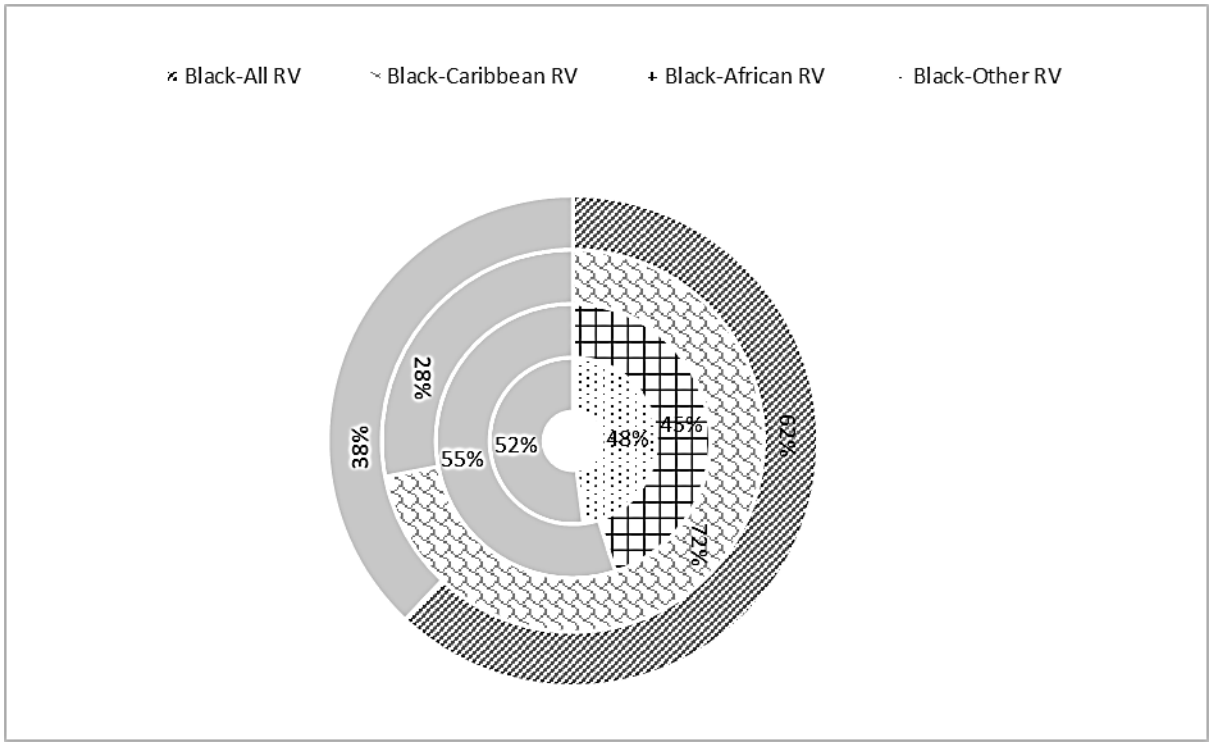


4.3.1 Proportionating Repeat Incidents across Ethnicity

The next figures identified the proportions of incidents that were classified as repeat or single. First the entirety of the black sample was considered (Figure 4.16), indicating that 62% of the assault incidents reported by black victims were repeat. By examining the largest black sub-group, which was formed by Caribbean participants, it was noted that their proportions of repeat incidents (RIs) remained at 72%. The picture changed drastically for the next two categories. In this case the

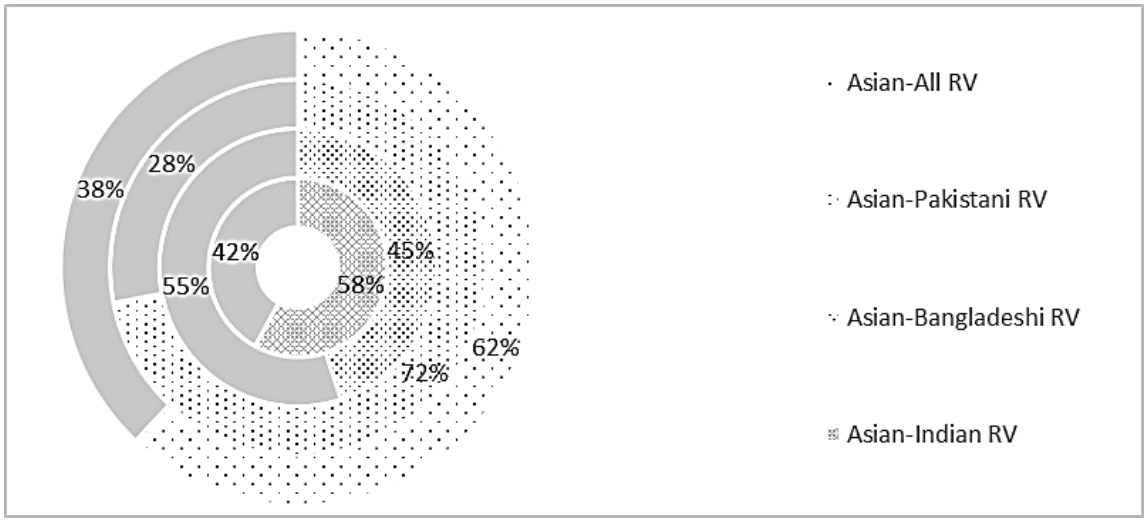
proportions of RIs for African black individuals were at 45%, while for 'Other' black individuals at 48%, both values of which were significantly different from the earlier identified overall and the Caribbean victim RIs. It is important to recite the overall sample's repeat incident proportions at that period were at 69% for the purposes of context.

Figure 4.16. Pattern fills indicate the % of Repeat Incidents for Asian participants overall and within specific origins for 1990s period. Non-Patterns show the proportion of Single Incidents experienced; From larger to smaller 'Doughnuts' in order: Overall Black, Caribbean, African & Other Black respondents.



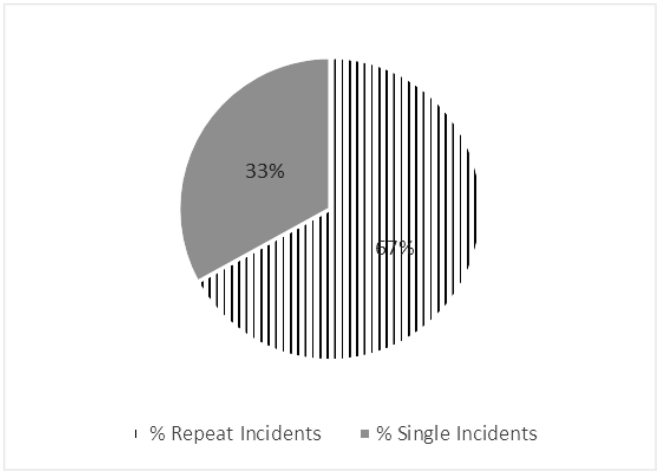
The proportion of RIs for Asian individuals did not differentiate much from the graph illustrating black RIs. In this case, the RIs remained at 62% for the aggregated Asian category (Figure 4.17). Pakistani victims indicated that 72% of their incidents were RIs, almost 30% more than Bangladeshi participants which remained at 45%. The gap was smaller for Indian participants who received the second highest proportion of RIs with 58%, yet still significantly lower than the Bangladeshi population. Overall, from the otherwise identical proportions for both Asian and Black individuals, the smallest minorities in each group, precisely Other Black and Indian individuals faced a difference of 10% in relation to RI proportions in their respective categories.

Figure 4.17. Pattern fills indicate the % of Repeat Incidents for Asian participants overall and within specific origins for 1990s period. Non-Patterns show the proportion of Single Incidents experienced; From larger to smaller 'Doughnuts' in order: Overall Asian, Pakistani, Bangladeshi and Indian individuals.



White individuals were observed to have 5% more RI proportions compared to Asian and Black ethnicities (Figure 4.17). The category which received the lowest proportions of RIs consisted of other ethnicities (Figure 4.17), with 58% of their reports being RIs. While the differences between each seem significant, limitations in relation to repeat victimisation in such disaggregated levels were present. Significance tests were conducted between each sub-category and between races. These indicated that while the percentages from each seemed significant, they were not. This was potentially due to the lack of sample in each of the increasing levels of breaking down the ethnicities

into separate nationalities. Detailed Z-Values of each comparison are available for inspection in the appendix section.[26]



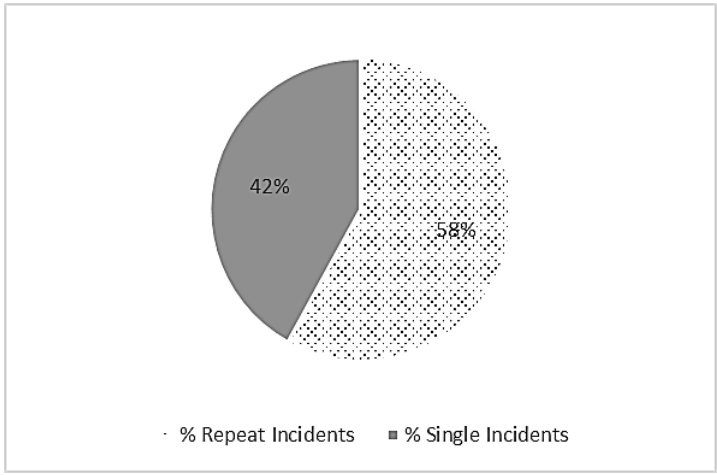


Figure 4.18. 1990s proportions of Repeat Incidents for White (Left) and Other (Right) Participants Non-Patterns indicate Single Incidents while Patterns indicate Repeat Incidents. 'Others' include ethnicities that were not classified as either of the three (White, Black, Asian) categories, such as Chinese and Mixed Ethnicities.

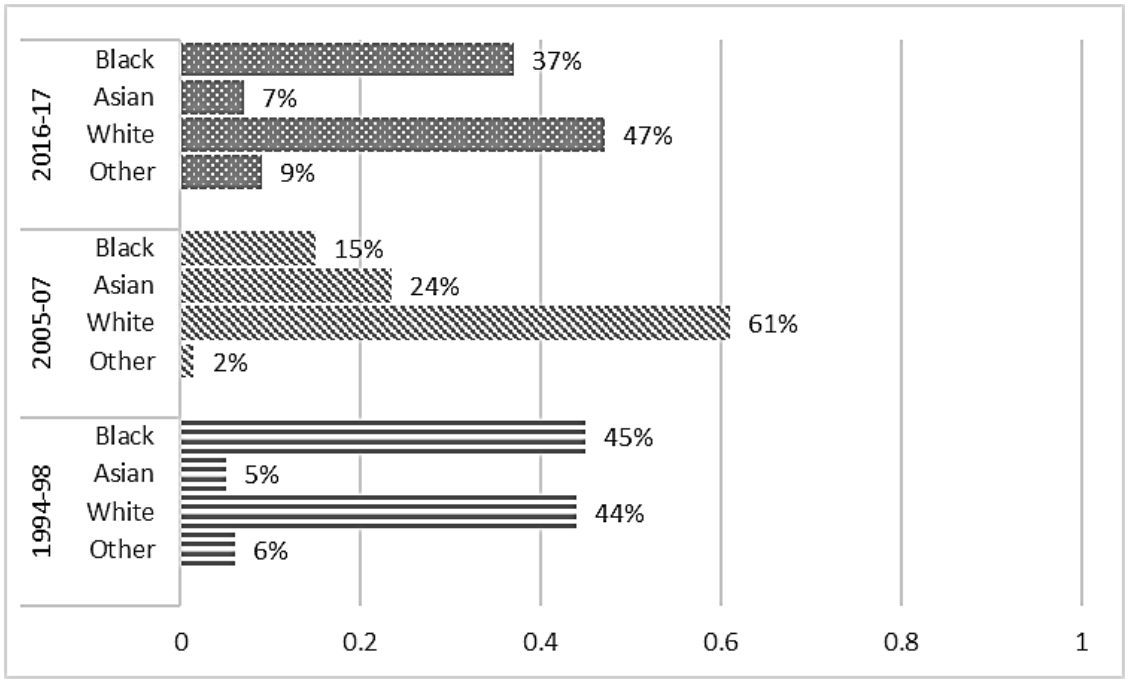
4.3.2 Proportionating Offending Ethnicities Across Victim Ethnicities

The proportions of reported offenders by Black victims (*Figure 4.18)* were statistically significantly different in the pre-crime drop era where 89% of all Black victims were victimised by White (44%) or Black individuals (45%). A very small proportion of the sample reported Asian (5%) or Other (6%) offenders (*Figure 4.18*). In the first post-crime drop decade *(Figure 4.18)* the picture became even more skewed towards White offenders (61%). The proportion of Black offenders reported by Black victims was less than half of the original (15%), while Asian offender reports increased drastically (23.5%). On the other hand, 'Mixed' offender ethnicities fell to ¼ of their value in the pre-crime drop era. In the final period *(Figure 4.18)* the proportions of each offending ethnicity returned to their

[26] Due to a severe lack in sample sizes for such breakdowns which affected the reliability of any conclusions drawn, the analyses presented here were discontinued for the 2000s period and the ethnicity breakdowns were not available in the 2010s period.

pre-crime drop values; Black offenders received 37% of the reports, White 47%, while Asian and Other ethnicity participants 7% and 9% respectively.[27]

***Figure 4.19**. Reported Ethnicity Proportions of Offenders by Black Respondents for 1990s, 2000s and 2010s (top to bottom). Source: BCS/CSEW 1994-2017*

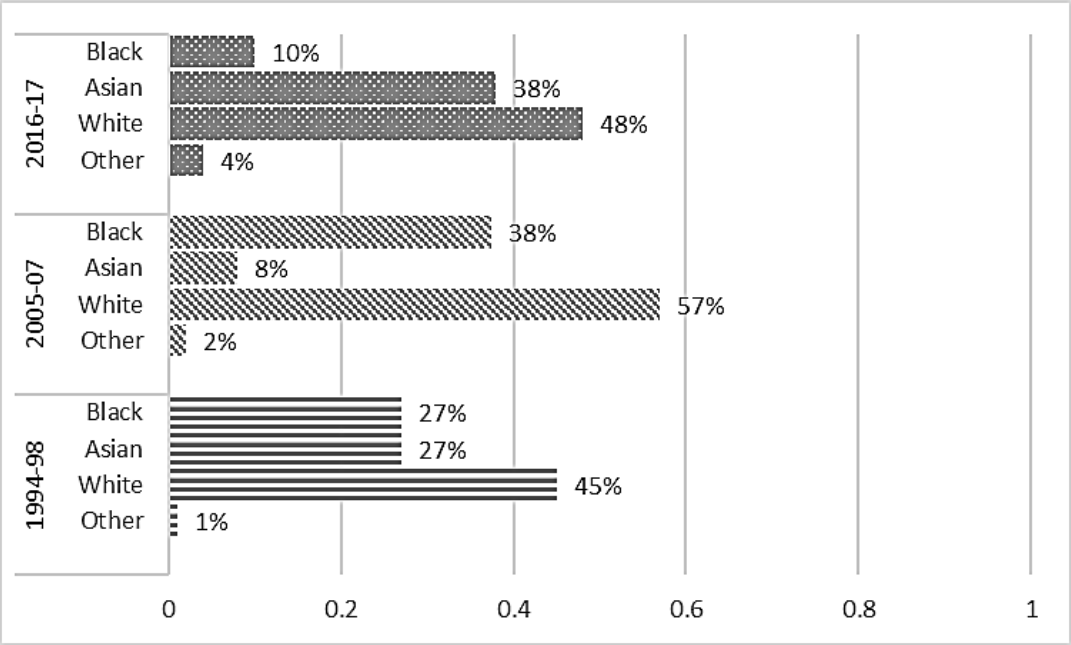


Asian participants on the other hand exhibited higher proportions of interethnic victimisation patterns, in the timeline preceding the crime-drop *(Figure 4.19)*, 72% of the reports were either White (45%) or Black (27%) while Asian offenders occupied 27% of the reports, leaving 1% of the reports for Other ethnicities. The patterns became more skewed in the 2000s *(Figure 4.19)*, where White and Black offender reports increased to 57% and 37.5% respectively as Asian participants dropped to 8%. The pattern of Black was largely repeated for Asian individuals in the 2010s *(Figure 4.19)*, where the values of White offenders returned to 48%, Asian reports increaseed to 38% and

[27] Significance tests across the starting and ending periods indicate that the differences between each are insignificant.

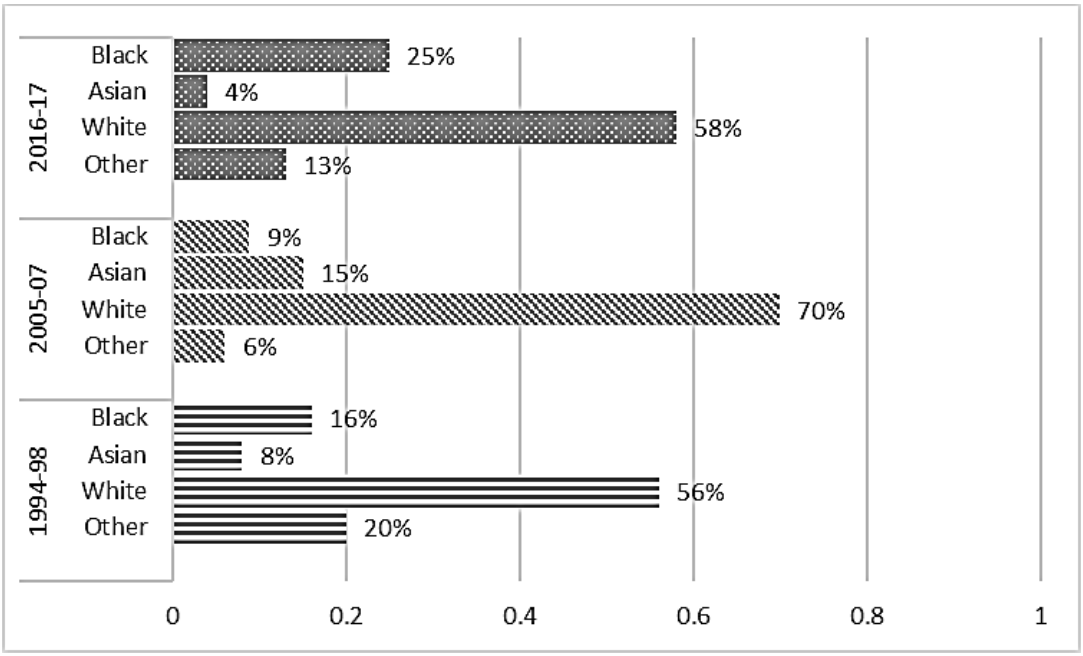
Black offenders dropped to 10%. Worthy of note is the fact that throughout each timeline 'Other' ethnicities did not exceed 4% of the reports, half of Black victim reports.

Figure 4.20. *Ethnicity Proportions of Offenders by Asian Respondents for 1990s, 2000s and 2010s (top to bottom). Source: BCS/CSEW 1994-2017*



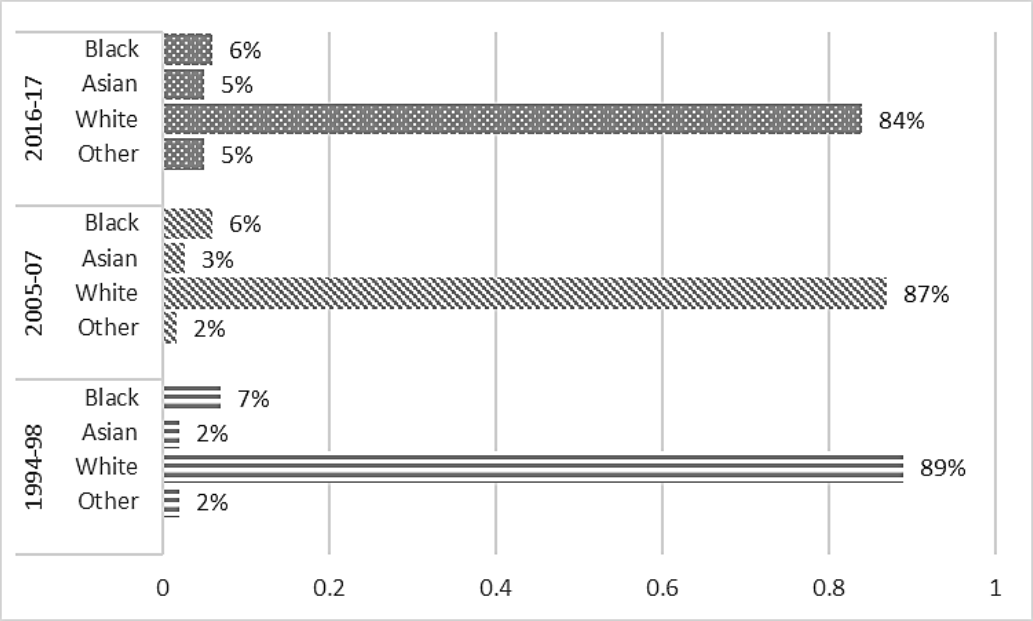
Victims classified as Mixed ethnicity followed the pattern of Asian and Black individuals, with increased proportions of White reports ranging between 58% for both the starting and ending periods to 70% in the 2000s *(Figure 4.20)*. A constant fluctuation across the reports of different offending races was noted throughout the three decades, with the second largest reported offender being Black, constituting 1 in 4 offenders of Mixed victims in the 2010s *(Figure 4.20)*. A similarly stable yet far less diverse picture of offender reports was noted for White victims. In this case, throughout the decades a stable rate of almost 9 out of 10 offenders were reported to be White by White victims. Additionally, there were no fluctuations in proportions which were noted earlier for other ethnicities.

Figure 4.21. *Ethnicity Proportions of Offenders by Mixed Respondents for 1990s, 2000s and 2010s (top to bottom). Source: BCS/CSEW 1994-2017*



Consequently, White victim offender reporting patterns were in contrast with the past examinations *(Figure 4.21)*; Whereas previous ethnicities exhibited elements of interethnic victimisation, the proportions of White offenders reported in the case of White victims evidenced strong intraethnic victimisation patterns.

Figure 4.22. *Ethnicity Proportions of Offenders by White Respondents for 1990s, 2000s and 2010s. Source: BCS/CSEW 1994-2017*



Cross-year examinations took place between the 1990s and the 2010s to identify any significant changes in proportions *(Figure 4.22)*; Aside from the drop from 89% to 84% for the reports of White offenders by White victims, the only other significant change was seen in Black offender reports from Asian victims which also dropped from 27% to 10% in a 30-year span. Evidence of stability is noted overall.

Figure 4.23. *Post-Hoc Tests via Adjusted Residual Values for Victim and Offender Ethnicity (~-/+2=p<.05). Source: BCS/CSEW 1994-2017*

	Z Scores			
	Victims			
Offenders	Black	Asian	White	Mixed
Black	0.87	2.16*	-1.26	0
Asian	-0.41	-1.14	0.76	-0.85
White	-1.48	-1.48	-0.99	3.69*
Other	-0.46	-0.83	0.71	-0.68

Post-hoc tests conducted relay the statistically significant between group differences per Agresti (2002); In the 1990s, the adjusted residual values (Z-Scores) between victim and offender ethnicities identified the between-group differences. White victims were observed to have significantly less than the assumed proportions of ethnic minority offenders while exceeding the assumed proportions in White offenders *(Figure 4.22)*. Their Z-Score was halved over the three decades yet remained the most statistically significant value out of every ethnicity.

Figure 4.24. *Post-Hoc Tests via Adjusted Residual Values between the Ethnicity of the Victims and the reported Offender Ethnicities (~-/+2=p<.05) for each time period. Source: BCS/CSEW 1994-2017*

			Offenders:			
		Victims:	White	Black	Asian	Other
		White	17.3	-12.4	-10.1	-5.1
		Black	-13.9	13.9	5.1	1
Period		Asian	-8	-0.2	12.8	2.2
1994-98		Other	-4.6	2	-0.6	7.6
		White	10	-5.9	-8.8	-1.1
Period		Black	-6.7	2.1	9	-0.1
2006-07		Asian	-7	7.8	1.4	0.4
		Other	-3	0.4	3.4	1.8
		White	8.4	-4.7	-5.1	-4.1
Period		Black	-6.4	-0.2	7.1	3.6
2017-18		Asian	-5.8	9.4	0.2	-0.2
		Other	-1.4	-0.8	0.5	2.9

Black victims on the other hand noted significantly lower than the assumed proportions in White offenders despite the otherwise high proportions noted in the earlier bar charts. Their Z-Scores indicated statistical significance in every other ethnicity except for the Mixed category *(Table 4.23)*. The latter continues for the remainder of the examined periods. Fluctuations were also noted in the statistical significance of Asian offenders, ending with a non-significant Z-Score.

Asian victims maintained the statistically significantly lower than expected proportions of White offender reports over the years. Similar fluctuations to Black victims were noted with substantial changes occurring in Black offender reports, in which case the reports started and ended in statistical insignificance despite reaching very low p-values in the 2000s. Opposite to that were the Z-Scores of Mixed offender reports by Asian victims where they started at a marginally statistically significant Z-Score which was not maintained in later years.

Finally, Mixed victims featured statistically significant positive Z-scores when victimized by Mixed and Black offenders and statistically significant negative scores in relation to White offenders.

Fluctuations were noted over time as earlier with Black offender proportions transitioning to statistical insignificance over time. In the 2000s the previously significant proportions of Black Offender reports were replaced by high Asian offender proportions. Mixed Offender reports lost statistical significance during the 2000s, but the significance was reclaimed in the 2010s.

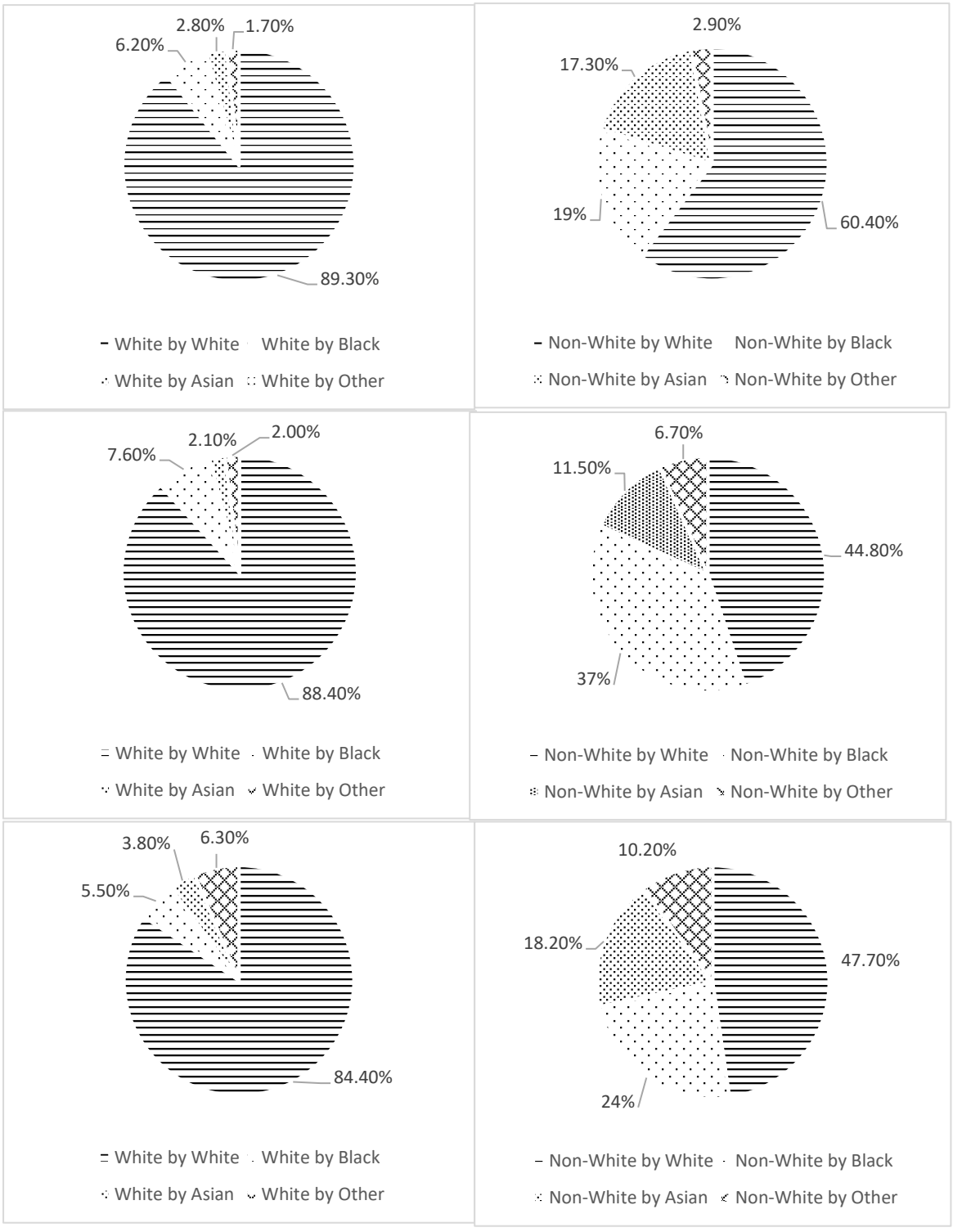
4.3.3 Determining the differences between White and Ethnic Minority Respondents

Further examinations of White/ethnic minority respondents against offender ethnicity reports were conducted. The increased sample size from collapsing the ethnic categories assisted in raising the reliability of further analyses. For white individuals, over a period of 30 years their reports consistently focused on White offenders 9 out of 10 times with slight *(Figure 4.24)*, yet significant changes towards interethnic victimisation over time. For ethnic minorities, the proportion of White offender reports remained at significantly lower proportions, with the highest proportions found in the 2000s. In that period, 6 out of 10 ethnic minority reports referred to White offenders. Nevertheless, a large proportion of the offenders were part of the ethnic minorities category. Mixed offenders received the least reports in every occasion, barely reaching 1 in 10 in the 2010s. The latter was expected as mixed backgrounds when it comes to offenders are often indistinguishable. The post-hoc tests aided this observation, where White offenders constantly surpassed the expected frequency of White reports *(Figure 4.24)*, while stay significantly behind other ethnicities. The opposite is true for ethnic minorities, where relative to the overall proportions of White offenders, they had reduced odds of reporting White offenders (Figures 4.24; 4.25).

		Victims	
	Offenders	White	Ethn. Min.
Period 1994-98	Black	-13.7*	13.7*
	Asian	-7.8*	7.8*
	White	17*	-17*
	Other	-4.5*	4.5*
Period 2006-07	Black	-5.8*	5.8*
	Asian	-8.7*	8.7*
	White	9.9*	-9.9*
	Other	-1	1
Period 2017-18	Black	-6.4*	6.4*
	Asian	-5.8*	5.8*
	White	8.4*	-8.4*
	Other	-1.4	1.4

Figure 4.25. *Post-Hoc Tests via Adjusted Residual Values between White/Ethnic Minority Victims and Offender Ethnicities (~-/+2=p<.05) for each time period. Source: BCS/CSEW 1994-2017.*

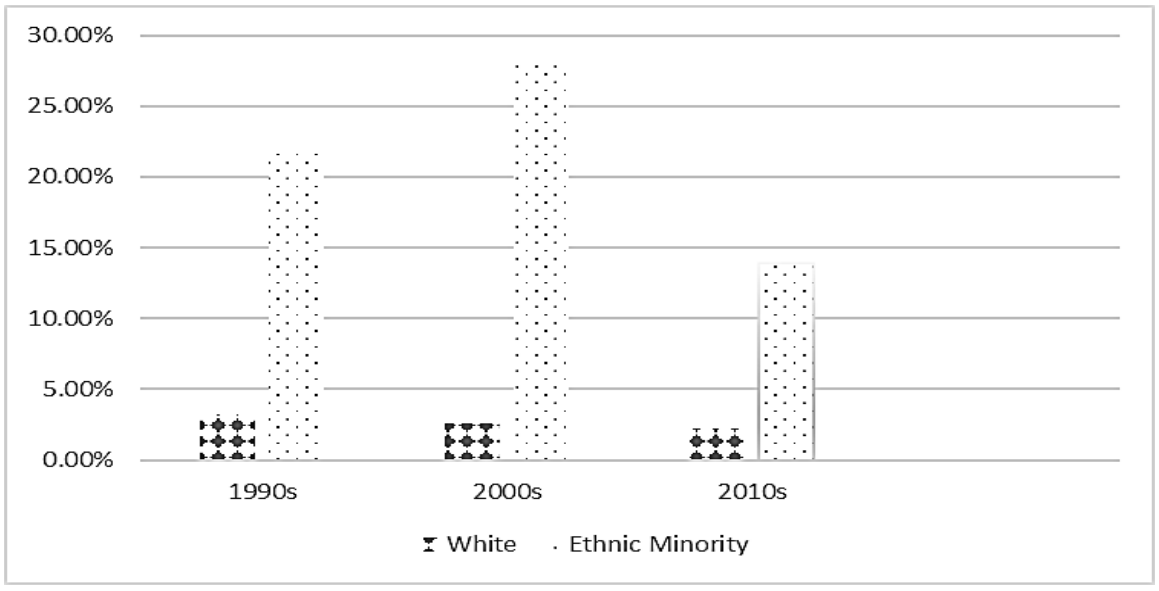
***Figure 4.26**. Proportions of White (Left) & Ethnic Minority (Right) Victim reports of Offender Ethnicities for 1990s, 2000s and 2010s (top to bottom). Source: BCS/CSEW 1994-2017*



4.3.4 Perceptions of Violent Motivations Across Victims

On a different, yet relevant subject to inter and intra victimisation, by utilising the Victim Form and Non-Victim Form variables, I conducted further analyses in relation to whether the perceptions of racial motivation behind their incidents differed. the findings stayed similar across time each timeline. More specifically, in figures 4.27, statistically significant differences are observed towards ethnic minorities. Due to the sample size are limitations which were noted earlier, as well as the results indicating that the core differences were between ethnic minority and White participants, I conducted the research between ethnic minority and White respondents, as opposed to each ethnicity where cell counts previously fell to below 1. Even in this case, certain cell counts were expected to be below 5, making the standard Chi Square measurements unreliable, as such, I used Phi and Cramer's V which indicated that the results were significant irrespective of sample size. Ethnic minority participants were significantly more likely to perceive their victimisation as racially motivated, and this has remained stable over-time.

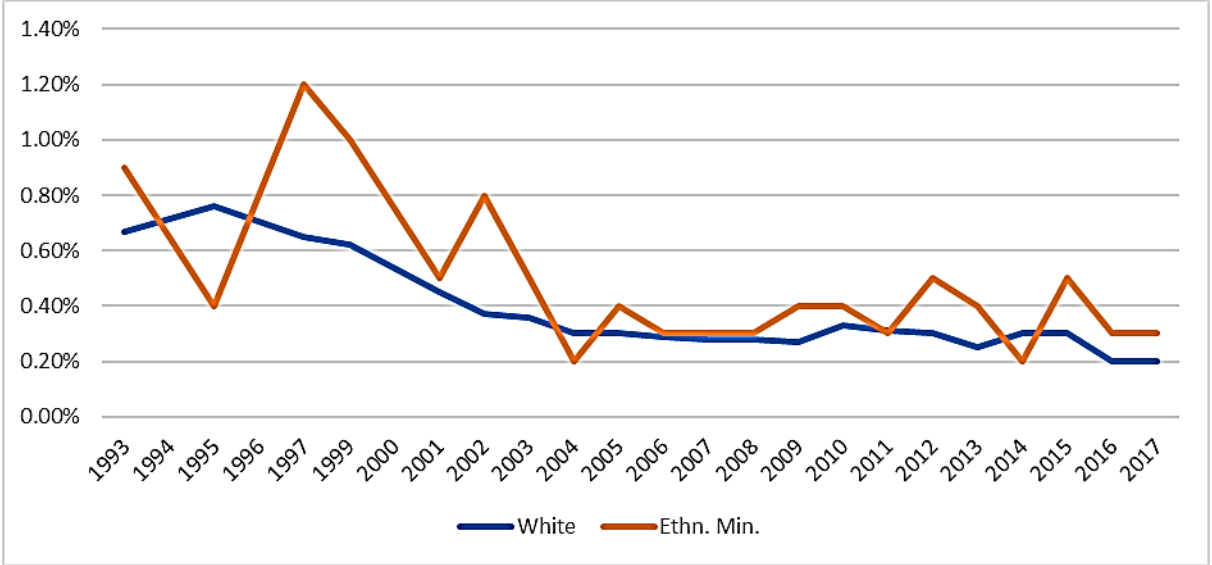
Figure 4.17. *Proportions (Y) of White and Ethnic Minority participants considering their victimisation as racially motivated.*



4.4 The Examination of Household Theft: Results, Implications and Complications

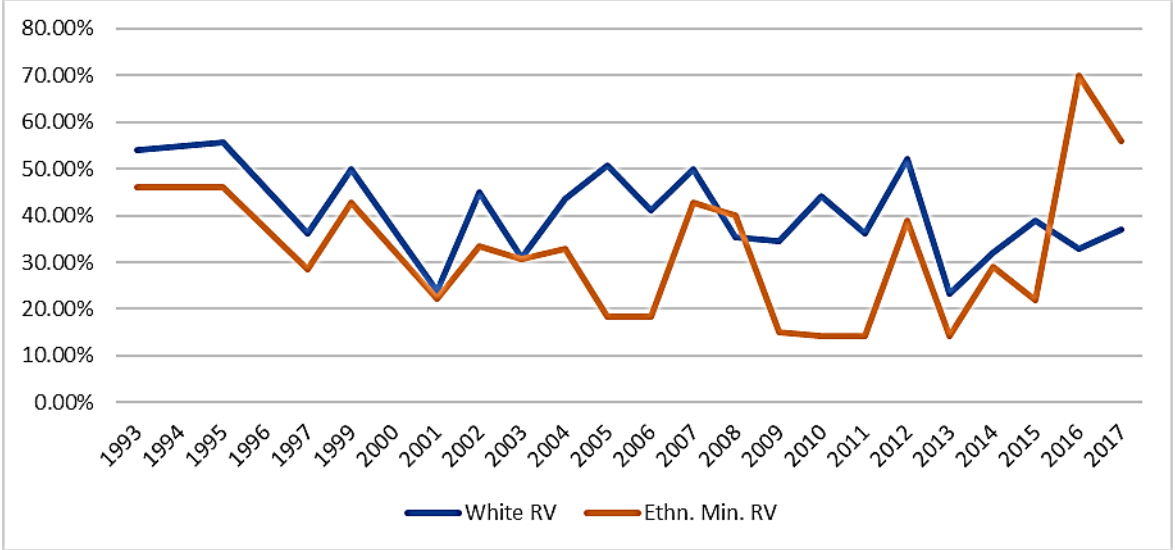
The picture for Household Theft victimisation remained at significantly lower levels in both white participants and ethnic minorities as it did during other trend examinations. Nevertheless, ethnic minorities' victimisation risk was observed to be greater compared to their white participant counterparts, with a starting point of .9% compared to .7% in 1993. The value increased significantly for ethnic minorities after a sharp drop in 1995 from .4% to a peak of .8% in 2002, before a gradual drop was noted, leading the value down to .4% by the end of the timeline, not maintaining its' all-time low of .20% noted in 2004, yet still indicating a significant drop. In comparison, the White counterparts recorded a gradual drop throughout the timeline with little, if any spikes aside from the peak of .8% in 1997, ending at .25%, 1/3 of the peak value of .76%.

Figure 4.28. Trends of Household Theft Risk (X) Over-time (Y) across Ethnic Minority & White Respondents.



The trends of RV for Household Theft were unstable when compared to Assault; observations in both White and ethnic minority groups noted fluctuations during the examined period. For White individuals, the fluctuations ranged between 58% in the period preceding the crime-drop to 23% when at an all-time low in 2001. This continued until 2012 where a value of 52% was reduced to less than half (23.40%) the following year. Such fluctuations grew in the case of ethnic minority participants, more specifically, from a starting value of 46% over a period of 10 years it dropped to 18% in 2004, before rising to 43% in 2007 and to an all-time low of 14% in 2010. A period of stability followed until 2012, at which point drastic fluctuations were noted again prior to the final year value of 14%. A peak value of 70% is noted in 2016, higher than the peak noted prior to the crime-drop.

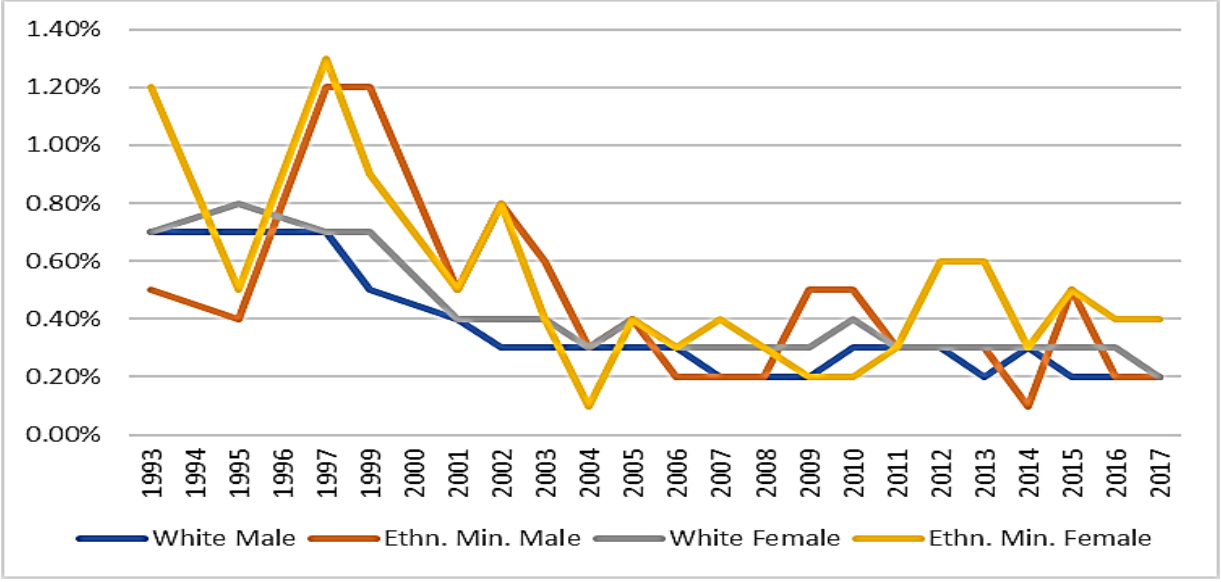
Figure 4.29. Trends of Repeat Incidents (X) Over-Time (Y) across ethnic minority & White Respondents.



For victims of Household Theft, the trends of white and ethnic minority participants of both genders aligned for most of the timeline except for their starting points. Such differences were seen between 1993 and 2002 where white and ethnic minority males faced an increasingly larger gap in risk denoted with a secondary peak (2002, 2.1%) compared to the white category risk of .50% in 2001 before gradually aligning until the end of the timeline. In females, such gap existed from the beginning, with ethnic minority females starting at 1.2% compared to the .7% of their counterparts. The alignment coordinated with the subcategory of males as from 2002 to 2017 the trends met and continuously overlapped with each other. Furthermore, white male and female trends were observed to fall or increase in tandem from the beginning to the end; both started at .7% and ended respectively at .3% and .2%, indicating similar drops yet more benefits reaped by males. The opposite was true for the ethnic minority category, where the risk between males and females shifted inversely before reaching the end of the two decades from the beginning of the examination of .6% and .3% for females and males respectively, values that were halved from their starting points of 1.20% and .50%, yet still inequitable. During that time, a reversal in the gap of risk between ethnic minority genders was noted, with males reaching a peak of 2.10% from .50% in 2001 whereas female risk was observed at 1.10% from their starting value of 1.20%. They then aligned and overlapped

before reversing back to the female category hosting disproportionately more victims than males. After the period between 1993-2002, the trends in white and ethnic minority participants in relation to males stayed at similar if not identical values. For females, the lowest value of white ethnics stood at .3%, half of their ethnic minority counterpart of .6%.

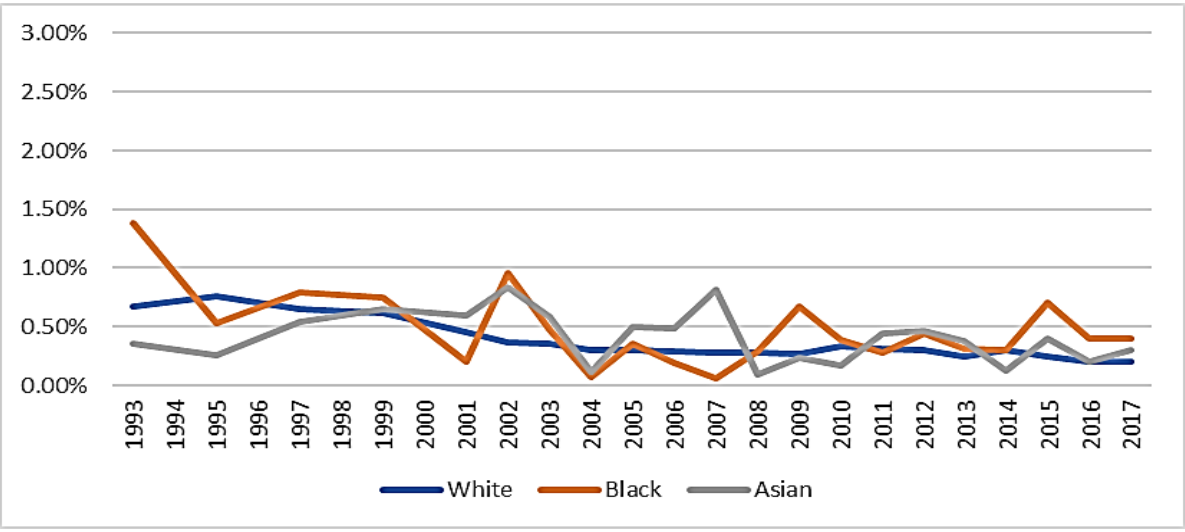
Figure 4.30. Trends of Household Victimisation Risk (X) Over-Time (Y) across ethnic minority & White participants split by Gender.



White participants were noted as the second most beneficial change from the crime-drop. They begin at .7% with a peak of .8% before gradually dropping down to .25% by the end of the examined period, 1/3 of the original value. The group which benefited the most, as with assault were black participants, whereas previously increased victimisation risk was observed (1.4%) when compared to Asian at .4% and White participants at .7%; double the value of white and approximately 4 times the value of the Asian participant category. However, by 2017 the proportions dropped to .3%, closing the enormous gap between both categories which remained at .25% and .4% for White and Asian participants respectively. Various spikes are noticed alongside the trend, more specifically the steep decline from 1993 to 1995 where a gradual increase followed until 2002 before another steep drop of an all-time low of 0.6% was noted. Those in the Asian category remained stable before and after.

In this case, the trends for each category were characterised as gradual falls for White individuals, inconsistent yet sharp drops for Black individuals, and, overall stable for Asian participants.

Figure 4.31. Trends of Household Victimisation Risk (X) Over-Time (Y) for White, Black & Asian Respondents.



The latter was cross-examined with significance tests between the proportions and means of each key timeline to the other. Such tests indicated that the changes before and after the crime-drop were statistically significant ($p<.05$). This is true for both the overall and ethnicity-specific changes over time. The same was true for repeat victimisation and victims in each of the categories where the sample allowed for such examinations to be conducted.

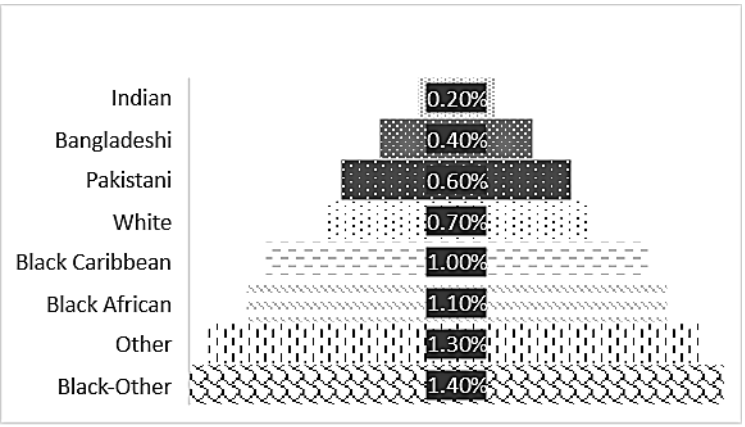
4.4.1 Victimisation Risk and Repeat Victim Breakdown by Geographical Origin

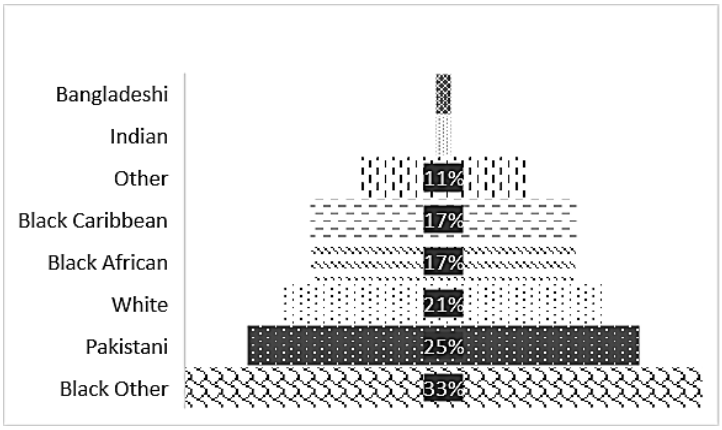
The victimisation risk for Household Theft was not as substantial as assault. The risk chart shared similarities with what has been described in assault in terms of the ranking of each ethnicity. Indian participants remained at the bottom of victimisation risk with .2% in this case with Bangladeshi respondents following at .4%. Instead of White participants following in the next tier as seen previously in the Assault chart, a reversal between the Pakistani and White individual risk was observed, which remained at .6% and .7% respectively. In the middle-range were Black individuals of Caribbean descent with 1.3% instead of the 'Other' category which was part of the higher risk tier of 1.6%. Black African participants remained at the higher tiers in household theft (1.10%), they were

observed to have lower victimisation risk than they did in assault compared to other ethnicities. Other Black participants remained at the highest victimisation risk in both, assault as previously seen as well as household theft (1.40%).

The examination of repeat victims was methodologically limited, Indian and Bangladeshi respondents indicated no repeat victims, while 'Other' ethnicities dropped from the highest proportions of victims to the lowest proportions of RV with 11%. Black Caribbean and African outperformed the White respondents' category with 17%, compared to 21% of victims being repeat. Furthermore, Pakistani individuals indicated the second highest proportions of repeat victims with 25% of the victim pool being repeat. Paired with the earlier findings of having received the smallest proportions of overall victims, this was an indication of increased concentration. The Other Black category remained at the same position throughout, receiving both the highest victim and repeat victim proportions out of every examined ethnicity with 33%. The latter was in contrast with the findings of the assault analysis, where Other Black individuals were on higher tiers of the risk pyramid. Black Caribbean participants, were noted to be at a higher risk tier of the Household Theft pyramid, having previously been at the bottom of the Assault pyramid. Other, smaller changes occurred, however, when measured against the overall proportions between the assault and household theft pyramids, the assault pyramid showed greater risk of RV in every ethnic background with the smallest gaps observed by the ethnicities at the bottom of the pyramid. More specifically the risk of RV in Black Caribbean respondents was observed to be at 39%, compared to 33% of Other Black in Household Theft.

Figure 4.32. Ethnicities ordered by Victimisation Risk (Left) and Repeat Victims (Right) broken down by Geographic Origin.

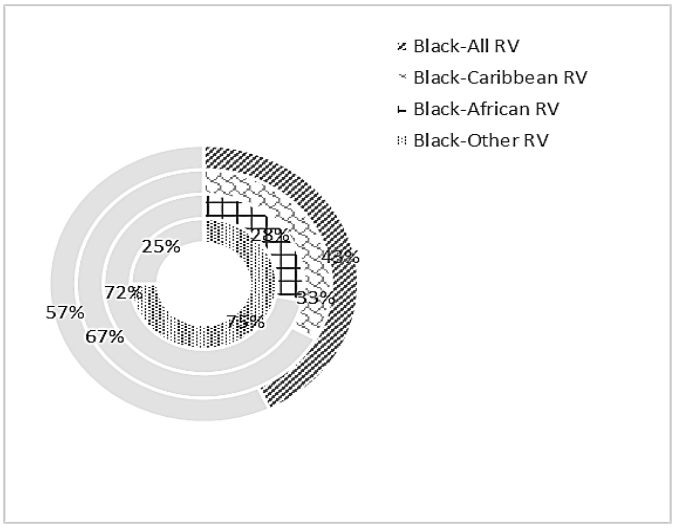


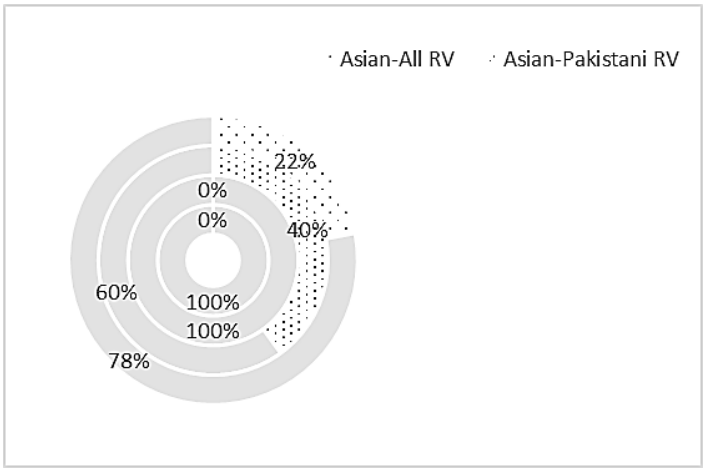


4.4.2 The Variation of Household Theft Repeat Incidents across Ethnicities of Different Geographical Origin

In comparison to their assault counterpart, Black ethnics reported less repeat victimisation incidents in household theft, the overall RV incidents comprised of 43% of all reported incidents, as opposed to 62% in Assault. The same was true for most of the sub-categories, experiencing approximately half of the RV proportions of Assault with Black Caribbean victims at 33%, compared to 72% in Assault, and Black African victims at 28% compared to 45%. A slight shift in Other Black individuals is noted in Household Theft RV incidents which constituted 75% compared to Assault standing at 48%, whereas repeat victim proportions were the opposite; at 33% and 39% respectively.

Figure 4.33. % of Repeat Household Theft Incidents for Asian and Black respondents split by geographic origin.



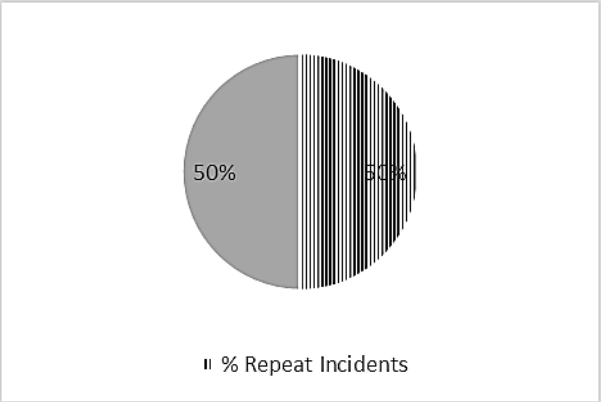


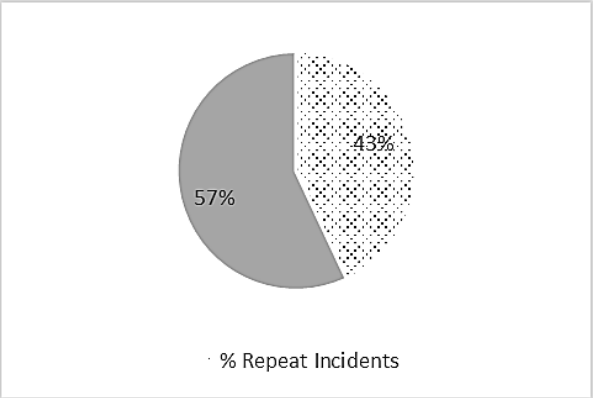
Results from Asian individuals were problematic[28], with the entire sub-group of Asian individuals experiencing only 22% of household theft incidents as repeat, 40% below the proportion of their respective Assault RV incident proportions. In a further breakdown, the proportions of RV incidents that Bangladeshi victims experienced reached 40%, an increase from the aggregated finding Asian group yet still significantly below the 72% of their assault counterpart. The differences in further sub-groups were exceedingly problematic, with repeat victimisation reaching values of below of 0%. For White individuals, the ratio was 1:1 for repeat and single incidents, where 1 out of 2 incidents was repeat, the highest for any group categories. The 'Other' category followed the same trajectory as the rest of the ethnicities, with single incidents being less frequent than RV. The lack of sample size was more pronounced than it was for Assault victimisation in Household Theft, the significance levels with lacking numbers even during the peaking of the specific crime-type were still below the significance threshold. From the evidence presented here, the manual calculations of the χ^2 comparisons between the samples were unnecessary. If larger numbers with vast differences were

[28] This is due to the severe lack of both, Household Theft Cases and Asian respondents, making current as well as any further analyses in relation to Household Theft & Ethnicity unreliable.

not sufficient to reach significance in Assault, smaller numbers with similar differences would not either.

Figure 4.34. % of Repeat Incidents in White (Left) and other ethnicity (Right) respondents.





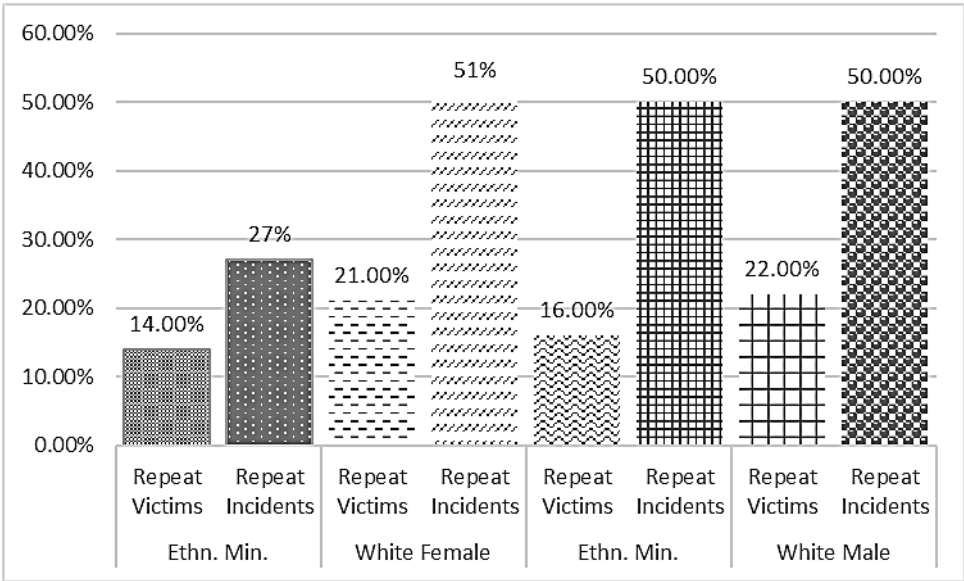
4.4.3 Household Theft Repeat Incident and Victim Risk Variation in White/Ethnic Minority and Gender Split Respondents

More equal across gender and race findings were depicted are when the white and ethnic minority respondents were examined, more specifically in the proportions of repeat victims and repeat incidents in Assault victimisation. From white to ethnic minority and males to females, the risks varied from a minimum of 30% in repeat victims for male white and female ethnic minority participants to a maximum of 39% in white females with a middle value of 34% for ethnic minority males. In repeat incidents, the highest proportions of RIs n the chart were within White Females (72%), followed by Male ethnic minority respondents (63%), White Male respondents (62%) and 57% from ethnic minority females. The incidents were consistently an approximate of twice above repeat victims, with no notable fluctuations. However, there were notable differences of 15% between white and ethnic minority females in repeat incidents, compared to the smaller gaps of 5% - 6% seen for the rest of the gendered ethnicity comparisons.

The previously equal picture for Assault became expectedly distorted within the household theft examination as certain categories noted increased amounts of concentration compared to others. The ethnic minority male repeat victims were observed to be three times lower than their RIs (16%

RV vs 50% RIs). Similar but to a lesser extent were the white male participants, (50% RIs vs 22% RVs) and white females (51% RIs vs 21% RVs). ethnic minority female victimisation was the least concentrated (27% RIs vs 14% RVs).

Figure 4.35. % of Repeat Victims/Incidents Divided by White & ethnic minority Respondents split by Gender.

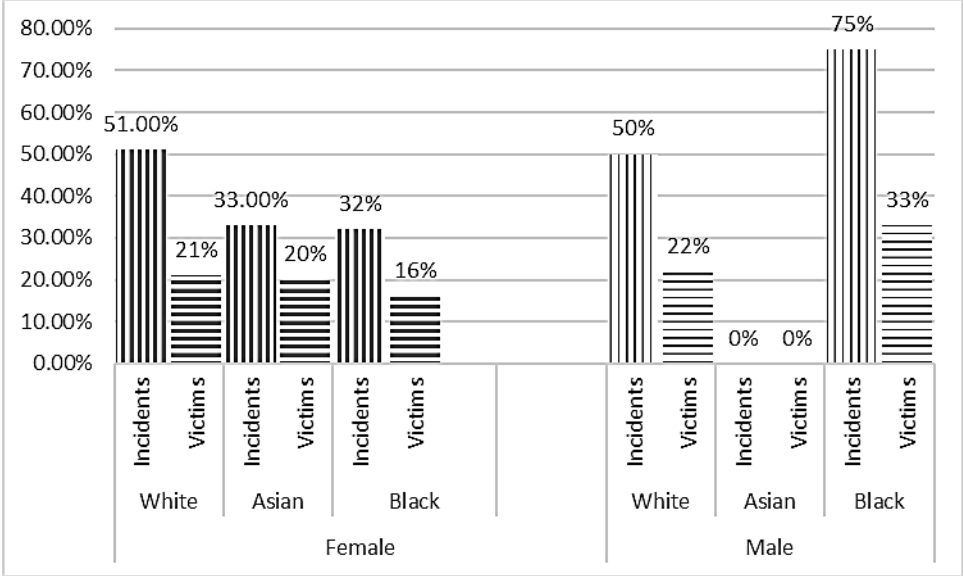


On further breakdown, the added Asian category was identified as the mildest case of Assault RV when the analogy of repeat victims and incidents was considered with some of the smallest values: 30% for males and 35% for females in victims complimented by relatively smaller proportions of repeat incidence at 51% and 59% respectively. Similar to White females, Asian females faced higher proportions of repeat victimisation in assault than the male category, a pattern that was not replicated within the black sub-category of ethnic identity.

Household theft, as earlier touched upon continued to offer an unreliable perspective due to the sample limitations, with Asian males scoring below 0% in both repeat incidents and victims. RV on Asian females continued to be the least concentrated in comparison to the rest of the races with 33% of incidence constituting repeat and 20% of the victims labelled as such. The visualisation of the data indicated further concentration in both white males and white females with them experiencing 1 in 2 incidents of household theft as repeat yet only 1 in 5 victims met the definition of repeat in

both cases with nearly identical values of approximately 50% and 20%. On the other side, ¾ of the black male incidents were repeat, whilst 1/3 identified as a repeat victim, their female counterpart was equal to Asian participants in regards to concentration with 1/3 of victimisation incidents labelled as repeat and only 1 in 8 victims being repeat at the values of 32% and 16% individually.

Figure 4.36 % of Repeat Victims & Incidents for Asian, Black & White Ethnicities divided by respondent Gender.



4.5 Variety in Calculations:

4.6.1 Weighted Sample Differences:

Before the Crime-Drop

During the weighted descriptive analysis process, some degree of divergence was noted, particularly when re-calculating repeat victimisation[29]. During the general incidence calculations little to no differences were noted for the incidence rates of the different sub-samples such as ethnicities and genders. However, this changed promptly during the repeat victimisation calculations, more notably, while White respondents stayed at similar levels of repeat victimisation and incidents, Asian repeat incidents dropped from 62 to 53 percent. Similar reductions are seen on further ethnicity

[2929] The respective tables and graphs are available on request. These have been excluded from the thesis as no further analyses were conducted using the weighted samples but only to detect and report inconsistencies.

breakdowns, with Black African victims lowering from 45% to 32% and Other Black victims from 48% to 43%. Contrastingly, Indian victims were the only ethnicity which increases were noted, from 58% in the unweighted to 65% in the weighted sample. In other Asian ethnicities reductions of approximately 14% were observed in Bangladeshi participants as well as 28% in Pakistani respondents. Simultaneously, repeat victims for the same sub-categories were reduced with Pakistani repeat victims dropping by 5%, Bangladeshi victims by 10%, Other Blackr victims, Caribbean victims by 4% and finally Black African victims by 7%. An increase of 8% in repeat victims was observed in Indian participants. The gendered changes of the 1990s subsets of Black, noted a 5% reduction in female repeat victims and a 10% reduction in the percentage of repeat incidents suffered in the Assault crime type. Those changes remained in the aggregated White/ethnic minority categories where reductions of 4% and 7% were noted respectively for female repeat victim and female repeat incidents suffered.

In household theft, small reductions for Black respondents were noted in repeat incident proportions with a drop of 4%. These were magnified on further breakdowns with Black Caribbean victims observing drops of 5% and black African victims 7% while Other Black individuals were observed to have an increase of 11%. Repeat victims also increased and decreased accordingly from 13% to 17%, 17% to 12% and 33% to 50% for each respective category. On the Asian front, percentages remained at similar levels aside from the Pakistani participants' 8% increase in repeat incident proportions corresponding to a 7% increase in repeat victim proportions. A reduction of 6% and 5% respectively was noted for male and female Black repeat incident proportions. A drastic change in household theft repeat incidents was noted in Asian females, where repeat incidents increased from 33% to 59% during the weighted calculation process while repeat victims increased only by 6%. Smaller scale changes occurred for Black Males with a decrease in repeat incidents as repeat victim proportions remained at the same levels, and 5% decrease in both victim and incident proportions for black females. When the categories were collapsed to White/ethnic minority

participants, the most notable changes were observed in ethnic minority males with an increase of 10% in repeat incidents but no increases in victims.

4.6.2 After the Crime-Drop:

In the post-crime-drop era, changes between weighted and unweighted calculations were increasingly more pronounced. The victimisation risk of British Born Mixed participants was halved. Reductions of 4% in repeat victim proportions were observed for the British born category of Mixed participants. No changes were noted in the victimisation risk of British and Immigrants, however, significant changes were observed in repeat victims. Firstly, the unweighted calculations indicated almost identical repeat victim proportions for both National and Immigrant respondents, whilst the weighted calculations indicated a 6% difference, with immigrant proportions reduced from 26% to 21% while national respondents remained at 27% of the victims being repeatedly victimised. During further breakdown, national Asian participants' risk dropped from 46% to 24% in the proportions of repeat victims with similar reductions of more than half of their original value in British-born Black individuals, dropping to 8% from 22% during the unweighted analysis. A 21% reduction in the proportions of repeat victims was observed in the case of immigrant Mixed respondents, the most substantial change in comparison with other category within this comparison; more specifically, immigrant white participants were observed to be at 13% from 17% and foreign born black individuals at 16% from 33%. Immigrant Asian individuals remained at 35% in both weighted and unweighted analyses. British Born ethnic minorities' repeat victims shifted from 29% to 24% in the weighted analysis, less than their white counterparts of 27%. Both immigrant categories of white individuals and ethnic minorities showed similar reductions from 17% to 13% in white and from 34% to 29% in ethnic minority participants respectively. When split by gender, both genders in white and ethnic minority participants that were immigrants experienced changes to a lesser degree than the above; ethnic minority males dropped from 33% to 29% repeat victims and white males from 17% to 15%. Differences were more pronounced in females, where white females' proportions halved from 18% to 9%, whilst ethnic minority females dropped from 34% to 28%, a less drastic yet larger effect

than what white males indicated. On the other hand, British white participants held their values throughout both examinations, with only ethnic minority females benefiting from a reduction from 38% to 28%, one of the most notable differences throughout both British and Immigrant respondents split by white and ethnic minority participants.

4.6.3 Summary of Findings

The results clarified three of the eight objectives set in the earlier sections of the thesis. These are discussed in detail during the discussion section 'Interpreting the Emerging Evidence'. This section briefly presents the core evidence extracted from the conducted analyses.

In relation to objective one, there was a significant relationship between the immigration influx and crime trends on a national level, but not on a PFA level. For objective two, the most victimised of ethnicities received severe reductions in victimisation, hinting towards an equitable crime-drop; a cautious educated assumption can also be made for immigrant groups, yet these cannot be confirmed. Finally, pertaining to objective three, strong patterns of inter and intra victimisation were noted; these patterns suggested either a victim selection process based on ethnicity, or a strong indication that ethnic minority groups frequent areas of high diversity.

While the weighted analyses offered some variation in the results, the themes remain almost identical. In addition, due to the lack of consensus on the use of weighted data for statistical modelling (refer to methodology section for further clarification), the unweighted outputs were chosen for interpretation for purposes of consistency with the relevant statistical models. For further theoretical discourse of the results and their implications refer to the relevant section. Due to data limitations, the conducted analyses of Household Theft were not deemed reliable enough to extract any credible conclusions.

5.0 Assault Victimisation Risk Factors Across Ethnicity, Nativity & SES

Chapter Outline

This chapter established whether participants from ethnic minority groups and immigrant backgrounds were more likely to live within diverse areas than White participants. I extended the argument by cross-referencing area diversity with deprivation indices, before considering the likelihood of victimisation between diverse and non-diverse areas of residence. For the second part of the chapter, I focused on two types of regression models in which I model victims and non-victims as well as victimisation counts. In either case, I consulted the same predictors, to identify differences between the different levels of victimisation (Count/Dichotomous). I identified that:

1. Ethnic Minority and Immigrant populations were more likely to live in diverse areas.
2. Diverse areas had higher levels of deprivation.
3. Deprivation was a significant predictor of victimisation.
4. Diverse areas did not show increased victimisation means compared to their counterparts.
5. Risk and protective factors varied both across time and across victimisation definition.
6. Ethnicity and UK/Immigrant status registered a variety of significant effects that fluctuated over-time.
7. Interaction effects were established over-time, especially for low-income and Lone Parent Ethnic Minorities

Research Aims:

This chapter responded to the following:

a) Were the benefits of the crime-drop on assault victimisation risk have equitable across:

i) Socioeconomic Status?

ii) Ethnic Group?

iii) UK and immigrant groups?

b) *Are Ethnicity and UK/Immigrant Status effective predictors of Assault Risk?*

Prior to addressing these questions, it was necessary to also assess any potential patterns of Ethnic Minority and immigrant group distributions across space and time. The validity of Card's (2001) theory on self-selection residency was tested within the setting of E&W.

As such, other questions arose during the examination of the patterns. More specifically, the additional questions which were addressed were:

1. *Were there notable differences in residential area selection between UK Born (National) and Non-UK Born (Immigrant) individuals?*
2. *How did Areas labelled as Diverse differ against their counterparts within the Deprivation Indices?*
3. *Did Diverse Areas increase, decrease, or maintain the same levels of assault risk Pre and Post Crime-Drop?*

5.1 Results

5.1.1 Self-Selection Residency & Nativity

Card's (2001) perspective was partially affirmed within the E&W context; In the post-crime drop dataset (Figure 5.1), major differences were noted between UK and immigrant respondents in relation to their area of residency ($p<.05$). The adjusted residuals stemming from the contingency tables lent further support towards the likelihood of national individuals to reside in areas defined as Diverse. A further breakdown by ethnicity indicated much higher figures of minority ethnicities residing in diverse areas (Figure 5.2;5.3). The values across ethnic minorities were similar ($p>.05$) for both UK and immigrants: At least 1 in 2, and at times 2 in 3 respondents from minority ethnic backgrounds resided in diverse areas. In contrast, 1 in 10 UK born white participants resided in Diverse areas and 1 in 3 of their immigrant counterparts. The differences between UK and Immigrant White individuals as well as between Whites and ethnic minority individuals overall were sizeable and statistically significant ($p<.05$). Compared to the pre crime-drop years, the overall differences were also significant, where less than 1 in 10 of Other/Mixed Ethnicity participants to a high of 1 in 3 Asian respondents resided in diverse areas. However, the differences between the classifications of diverse areas must be kept in mind when interpreting these statistics despite the sizeable increases in immigration since.

Figure 5.1: *Proportions of Residents in Diverse Areas by UK/Non-UK Country of Birth for CSEW Sweeps 16-17.*

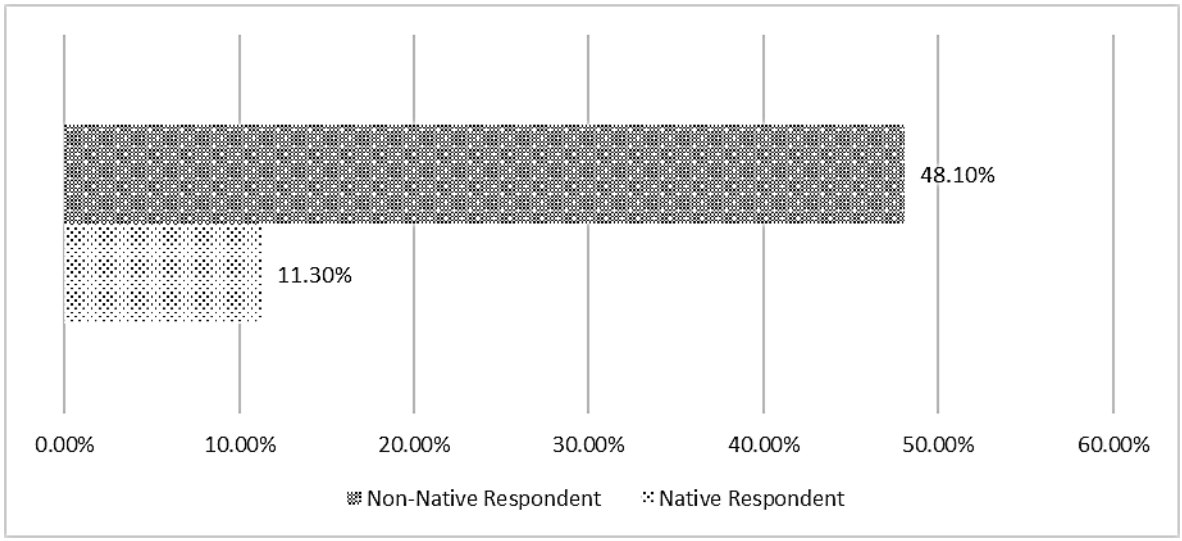


Figure 5.2: *Proportions of Residents in Diverse Areas by UK/Non-UK country of birth and Ethnic Background for CSEW Sweeps 16-17.*

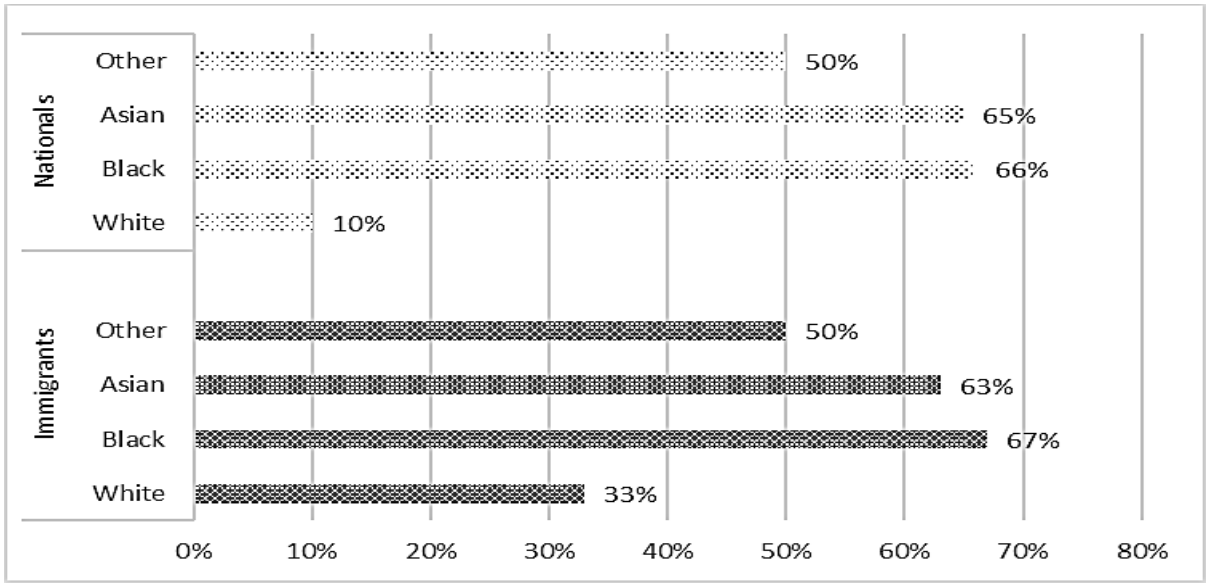
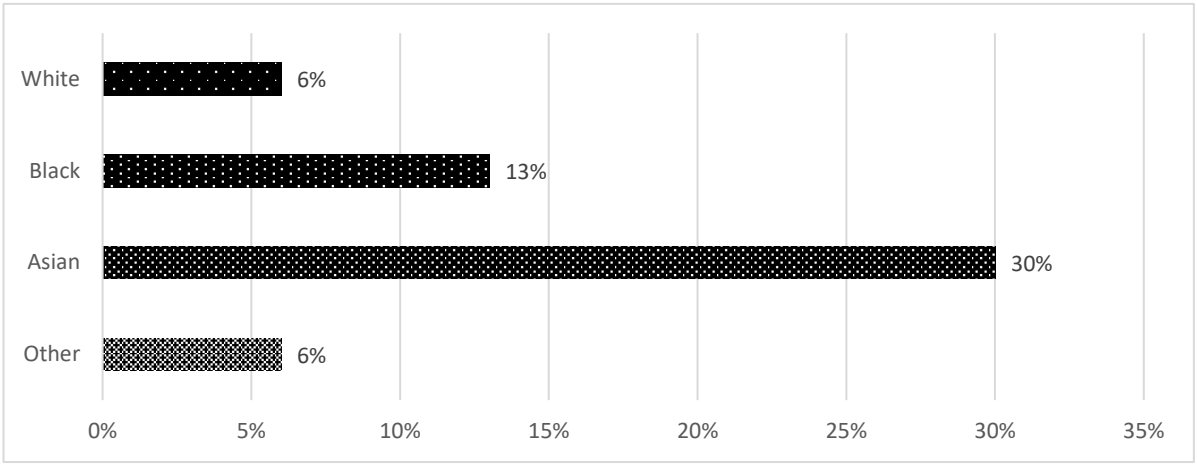


Figure 5.3: *Proportions of Residents in Diverse Areas by Ethnic Background for CSEW Sweeps 94-98.*



5.1.2 Deprivation, Crime, and the Immigration Paradox

The Kruskal-Wallis (K-Test) results reaffirmed the statements of diverse areas being on the most deprived ends of the Welsh and English IMDs compared to their counterparts ($p<.05$) in Figure 5.5. This was the case for IMD Totals, Income, Employment, Education, Health, Safety, Housing and Living Conditions. The largest gap in IMDs between Diverse and Non-Diverse areas was noted in Safety deprivation. The smallest, yet nevertheless significant gap was in Education deprivation.

Figure 5.4: *Bivariate Correlations between Indices of Multiple Deprivation and Counts of Assault Victimisation for CSEW Sweeps 2016-17.*

Pearson Correlations								
IMDs	**Total**	**Income**	**Employment**	**Education**	**Health**	**Safety**	**Housing**	**Living Conditions**
Assault Victimisation	.017**	-.018**	-.018**	-.020**	-.016**	-.013**	0.003	-0.003

A complimentary examination of bivariate correlations between Assault Victimisation and IMDs, indicated that all, except for the Housing Deprivation and Living Condition Indices were loosely but statistically significantly ($p<.05$) related to assault incidence (Figure 5.4), these measures were limited to more recent sweeps, disallowing for the examination of the pre crime-drop period. Naturally, significant differences in victimisation between assault victimisation and whether a respondent resided in a diverse or non-diverse area were expected from subsequent inferential analyses. While this is the case for the 1990 period, the differences between diverse and non-diverse areas in the number of reported assault victimisations were statistically insignificant in later periods.

This indicated a significant over time drop for both diverse and non-diverse areas, with the former experiencing a larger decline in assault victimisation and as a result their differences becoming non-significant in the 2010 post crime-drop period. Due to the lack of IMDs and the variable revolving around UK/Non-UK country of birth, the analysis was limited to the comparison of K-Tests between Assault and Area Diversity across time periods. This finding was of great significance as it recreated the evidence gathered from the US in relation to the Latino Paradox. Despite (a) the positive correlations of IMDs with Assault victimisation, (b) the significantly larger proportions of immigrants

residing in diverse areas and (c) the diverse areas in question experiencing significantly more deprivation than their counterpart, they indicated no increased risk of assault than the better-off in terms of deprivation non-diverse areas.

Figure 5.5: *Kruskal-Wallis Tests between Indices of Multiple Deprivation and Counts of Assault Victimisation for CSEW Sweeps 2016-17.*

K-Test	Area Diversity	Mean Rank
IMD Totals	Diverse	20279.87
	Not Diverse	37252.52
IMD Income	Diverse	19513.52
	Not Diverse	37402.05
IMD Employment	Diverse	24254.9
	Not Diverse	36476.91
IMD Education	Diverse	28647.51
	Not Diverse	35619.83
IMD Health	Diverse	26761.5
	Not Diverse	35987.82
IMD Safety	Diverse	17127.07
	Not Diverse	37867.69
IMD Housing	Diverse	20688.17
	Not Diverse	37172.85
IMD Living Conditions	Diverse	20728.04
	Not Diverse	37165.07

Figure 5.6: *Kruskal-Wallis Tests between Diverse/Non-Diverse Areas and Counts of Assault Victimisation for CSEW Sweeps 2016-17.*

K-Test	Area Diversity		Mean Rank
	Period	2016-17	1994-98
Assault Counts	Diverse:	34512.13	24122.34*
	Non-Diverse:	34456.4	23907.49*

5.1.3 Assessing Equity of Incidence Across Time Periods

The current examination had two objectives. First, to determine if there have been significant over-time changes in the effects of a variety of individual demographic, residency, and routine activity characteristics on assault victimisation. Second, to assess whether the effects of immigration status on predicted victimisation means and odds (for negative binomial and logistic regressions respectively) were mediated by other predictors. A reminder is necessary in relation to the type of victimisation; domestic and sexual violence categories are excluded; the literature review has touched upon those limitations and the exclusion is further discussed in later sections. First, a note must be made on the reference individuals which the comparisons take place against throughout the different statistical models which spanned for a little over two decades.

At any of the three periods examined, the reference individual was a female, around fifty years of age. The respondent was born in the UK and is categorised as of White ethnic background. They held a degree and lived in a two-adult household. They owned their home and have no cars. Their routine activities did not involve frequent activity in the Night-time Economy.

Presented below (Table 5.1) are the first models of each period, assessing whether residents of diverse areas were affected differently by assault victimisation. In every case the results are non-statistically significant. In later sweeps, the impact of immigration status was also assessed. In this case, immigration status was significant in every case, with the predicted mean number of victimisations of those born outside the UK dropping in each period (Exp(b) = 0.655, $p<.005$ for the period of 2000s, Exp(b) = 0.530, $p<.005$ for the period of 2010s).

Table 5.1. Negative Regression Model 1 presenting Estimated Mean Assault Incidents.

Model 1 Neg.Bin						
	1990s		2000s		2010s	
	Exp(b)	S.E	Exp(b)	S.E	Exp(b)	S.E
Intercept	1.446*	0.167	0.632**	0.192	0.222***	0.163
Age	0.934***	0.002	0.933***	0.002	0.949***	0.003
Male (Female)	1.222***	0.071	1.36***	0.07	1.355***	0.104
Diverse Area (No)	0.991	0.139	0.909	0.169	1.253	0.151
National (Yes)			0.655***	0.128	0.53***	0.167
* Denotes significance of p-values >.01 but <.05 **Denotes significance of p-values >.005 but <.01 *** Denotes significance of p-values to p-values <.005 P-values of >.05 are considered non statistically significant						

Table 5.2. inserted the main effects of the models in every period. Age and Sex remained significant throughout, while immigration status retained its statistical significance only in the 2010 period (Exp(b)=0.640). The latter implied that the protective effect of immigration status was mediated by the rest of the demographic and routine activity predictors added to the model to a certain extent. Further significant predictors included the statistically significant protective effects noted in Asian participants (Exp(b)=0.508, p<.005; Exp(b)=0.535, p<.01; Exp(b)=0.549, p<.05) compared to individuals of White background in all periods. Educational attainment offered a peculiar picture, where those who held GCSE/O Levels in the 1990s also had statistically significant lower predictions of mean assault incidents (Exp(b)=0.781, p<.005) compared to degree holders. The effect diminished in the next two decades. A more stable over-time risk factor was noted in single-adult occupied households when compared to the reference category of two-adult households. The predicted mean victimisations dropped by 11% in 2000s and increased by 12% in the 2010s (compared to the 2000s period), akin to the predicted victimisations noted in 1990s (Exp(b)=1.950 in 1990s, Exp(b)=1.731 in the 2000s and Exp(b)=1.946 in the 2010s respectively). Statistical significance was retained at a p<.005 throughout. At a lesser extent, households occupied by three or more adults also noted increased predicted victimisations (8.5% decrease between the decades of 1990s and 2000s) which ceased to be significant in the 2010s (Exp(b)=1.388, p<.005 for the 1990s, Exp(b) = 1.273, p<.01 for the 2000s respectively) compared to two adult households. In relation to tenure, compared to owner occupied households no statistically significant differences were noted for social and private renters and other tenure type categories in the 1990s. However, this ceased to be the case in later years. In this case, the victimisation for social renters exceeded this of homeowners significantly in both the 2000s (Exp(b)=2.000, p<.005) and 2010s (Exp(b)=1.733, p<.05) with an overall increase of 75% in the 2000s and a small decrease of 13% in the 2010s. On the other hand, lone parenthood received an almost 100% reduction in the predicted mean victimisations between the 1990s and 2010s from Exp(b)=1.956 (p<.005) in 1990s and Exp(b)=1.759 (p<.005) in 2000s to a statistically insignificant when compared to coupled parents Exp(b)=1.193 in the 2010s. Chronically ill

participants were worse off in the 2010s than they were in 1990 with a gradual 32% increase in predicted mean victimisations between 1990 and 2010 which was is foreshadowed in the 2000s with a 20% increase from 1990 (Exp(b)=1.494, p<.005; Exp(b)=1.528, p<.005; Exp(b)=1.911, p<.005 respectively) . A final note in relation to routine activities showed a 22% reduction in mean victimisation predictions participants frequenting in NTE from a statistically significant Exp(b)=1.329 (p<.005) in 1990s, to Exp(b)=1.233 (p<.05) in the 2000s and finally, an insignificant Exp(b)=1.088 in the 2010s.

Model 2 Neg.Bin	1990s Exp(b)	S.E	2000s Exp(b)	S.E	2010s Exp(b)	S.E
Intercept	0.794	0.218	0.156***	0.193	0.115***	0.237
Age	0.933***	0.003	0.944***	0.003	0.95***	0.004
Male (Female)	1.645***	0.085	1.650***	0.09	1.667***	0.12
National (Yes)	N/A	N/A	0.968	0.177	0.640*	0.198
Ethnicity (White)						
Black	1.275	0.183	0.631	0.256	0.777	0.362
Asian	0.508***	0.207	0.535*	0.326	0.549*	0.299
Other	1.041	0.299	1.55	0.386	0.746	0.382
Education (Degree)						
GCSE/Olevels	0.781*	0.104	1.032	0.107	0.822	0.151
A Levels	N/A	N/A	0.836	0.113	0.807	0.151
Other Qualifications	0.873	0.231	0.731	0.212	0.742	0.288
Adults in HH (2)						
One	1.95***	0.11	1.731***	0.114	1.946***	0.146

Model 2 (Cont'd)	1990s		2000s		2010s	
Neg.Bin	Exp(b)	S.E	Exp(b)	S.E	Exp(b)	S.E
Three Plus	1.388***	0.113	1.273*	0.143	1.175	0.173
Tenure (Home Owner)						
Social	1.172	0.123	2***	0.136	1.733***	0.181
Private	1.228	0.197	1.267	0.134	1.167	0.156
Other Accom.	1.402	0.286	1.131	0.234	N/A	N/A
Lone Parent (No)	1.956***	0.172	1.759***	1.88	1.193	0.267
Illness (No)	1.494***	0.097	1.528***	0.113	1.911***	0.148
Pub Going (No)	1.329***	0.09	1.233*	0.095	1.088	0.226
Neighbour Assistance (Neutral)						
Assistance	0.731**	0.121	N/A	N/A	N/A	N/A
No Assistance	1.049	0.102	N/A	N/A	N/A	N/A

Table 5.2. Regression Model 2 presenting Estimated Mean Assault Victimisation Incidents with every significant main effect.[30]

*Significant p>.01 **Significant p<01 but >.005 ***Significant p<.005.

[30] If a predictor had a significant effect in one period in time, the predictor was included in every model in order to assess equity over-time as opposed to being removed.

Table 5.3 presented the significant interaction effects of a variety of combinations repeated over different periods in time. Immigration and Area Diversity were included within these combinations. However, no effects were noted. Significant effects were noted for ethnic minority participants across different periods. More specifically, ethnic minorities in households with 3 adults or more were less assaulted than their White background counterparts. The effects were only significant in the 1990s (Exp(b)=0.846, p<.05). Similar protective effects were noted for ethnic minority residents which lived in their area for less than a year in the 2000s (Exp(b)=0.366, p<.05) as well as Lone Parents ethnic minorities in the 1990s (Exp(b)=0.918, p<.05). Opposite to that were the effects noted in ethnic minority participants which their household earned less than £10,000 per year.[31] In the 2010s they were assaulted significantly more than their White counterparts (Exp(b)=1.725, p<.05).[32]

[31] The 'Under £10,000' term was insignificant across periods and was only included as a main effect due to the requirement for the interaction to take place, hence why it has been omitted from Model 2. The same example is followed for other non-significant predictors that were not included in previous models. The differences across Model 2 and Model 3 were insignificant, if any, hence the main effects of Model 3 have been omitted to avoid repetition.

[32] The mean estimated assaults for each interaction were calculated by multiplying the Exponents (Exp(b)) with each individual effect and the Exp(b) of the interaction terms. For example, for BAME Households that made less than £10,000, the calculation was as follows; BAME (Exp(b)=0.652) x HH Under £10,000 (Exp(b)=0.731) x BAME Households with Less than £10,000 Annual Income (Exp(b)=3.621). So, (0.652) x (0.731) x (3.621) = 1.725, and so on.

Table 5.3. Negative Binomial Regression Model 3 presenting Estimated Means of Assault Victimisation Incidents of the significant interactions[33] between main effects.[34]

Model 3 (Interactions)	1990s		2000s		2010s	
Neg.Bin	Exp(b)	S.E	Exp(b)	S.E	Exp(b)	S.E
Ethn. Min. with HH Incomes Under £10,000	1.078	0.154	1.349	0.527	1.725*	0.661
Ethn Min. Residents Below a Year	0.676	0.454	0.366*	0.572	1.038	0.655
Ethn. Min. in 3+ Adult Households	0.846*	0.316	0.68	0.427	0.399	0.518
Ethn. Min. Lone Parents	0.918*	0.455	1.685	0.547	1.425	0.645

*Significant p>.01 **Significant p<01 but >.005 ***Significant p<.005.

[33] This is a summary of the interactions model where only the significant interactions are presented; these were part of a complete model with identical Odds Ratios to Model 2. Additional lower terms were included prior to the introduction of higher terms.

[34] Due to sample limitations, for the interactions the different ethnicity categories were replaced with a White/BAME dichotomous variable, the impact in the overall model was minimal with the predictors remaining as significant/insignificant as in Model 2.

5.1.4 Assessing Equity of Risk Across Time Periods

Tables 5.4-5.6 presented the estimated odds of victimisation of individuals. In this case I measured risk of one becoming a victim, rather than receiving estimates of mean assault victimisations. As per the Negative Binomial Regressions, the first model (Table 5.4) concerned itself with the effects of Area Diversity and Country of Birth. No noticeable differences were noted between this and the Neg. Bin. Model.

Table 5.4. Logistic Regression Model 1 presenting the Estimated Odds of being an assault victim for Immigration Status and Area Diversity without mediating predictors.

Model 1						
	1990s		2000s		2010s	
Logistic						
	Exp(b)	S.E	Exp(b)	S.E	Exp(b)	S.E
Intercept	0.811	0.1	0.261	0.115	0.091***	0.117
Age	0.937***	0.002	0.94***	0.002	0.957***	0.002
Male (Female)	1.678***	0.046	1.662***	0.044	1.572***	0.065
Diverse Area (No)	0.892	0.082	0.968	0.101	0.99	0.089
National (Yes)	N/A	N/A	0.747***	0.081	0.563***	0.11
* Denotes significance of p-values >.01 but <.05						
**Denotes significance of p-values >.005 but <.01						
*** Denotes significance of p-values to p-values <.005						
P-values of >.05 are considered non statistically significant						

Model 2 presented some interesting differences from the earlier Neg. Bin. Model presented; First, Area Diversity significantly reduced the odds of victimisation of the participants who resided there

(Exp(b)=.810, p<.05). Other noticeable effects were seen in Ethnicity, where Black participants were at significantly lower odds of victimisation than White participants in the 2000s (Exp(b)=0.691, p<.05). On the other hand, the protective effects of the Asian ethnicity marginally diminished in the 2010s. Regarding Tenure, contrary to the results when examining mean assaults, Social tenure consistently raised the odds of assault victimisation across periods (Exp(b)=1.314, p<.005; Exp(b)=1.639, p<.005; Exp(b)=1.673, p<.005 respectively) compared to homeowners. Private renters' raised odds of victimisation were significant in the 2000s and 2010s at Exp(b)=1.202 (p<.005) and Exp(b)=1.198 (p<.05) respectively. No significant differences were observed for lone parents in the period of 2010s in relation to victimisation means. However, their odds of victimisation remained significant in relation to their counterparts (Exp(b)=1.271, p<.05). Similarly, increased odds of victimisation were noted in lone adult households consistently across the 1990s, 2000s and 2010s respectively (Exp(b)=2.073, p<.005; Exp(b)=1.693, p<.005; Exp(b)=1.576, p<.005) compared to their two-adult base category. Households with three plus households were also at increased risk of assault prior to the crime drop (Exp(b)=1.295, p<.005) and for the first decade after (Exp(b)=1.310, p<.005). Car ownership recorded no significant differences in any period in the Neg.Bin models, in this case however owners one and up to two cars were at significantly reduced risk of victimisation in the 2000s (Exp(b)=.839, p<.005; Exp(b)=.662, p<.005). Those affected with chronic illnesses presented no different results from the Neg.Bin models, being at significant odds of victimisation across all periods. Neighbourhood assistance, while not a viable predictor in later dates (see Methods section), continued to be a significant protective effect compared to more neutral neighbourhoods. The final noticeable difference was in relation to pubgoers, in which case in the Neg. Bin. Models their higher means of victimisation became statistically insignificant. However, in the case of the logit models, pubgoers continued to be at significantly higher odds of victimisation compared to those who do not frequent in pubs (Exp(b)=1.252, p<.005).

Table 5.5. Logistic Regression Model 2 presenting the Estimated Odds of being an assault victim for all significant predictors.

Model 2						
	1990s		2000s		2010s	
Logistic						
	Exp(b)	S.E	Exp(b)	S.E	Exp(b)	S.E
Intercept	0.247	0.146	0.139	0.114	0.05***	0.132
Age	0.938***	0.02	.944***	0.002	.954***	0.002
Male (Female)	1.938***	0.055	2.001***	0.049	1.780***	0.07
National (Yes)	N/A	N/A	0.867	0.093	.688***	0.12
Area Diversity (Not Diverse)	0.81*	0.091	0.998	0.107	1.044	0.095
Ethnicity (White)						
Black	1.151	0.1	.691***	0.139	1.068	0.197
Asian	.604***	0.139	.660*	0.174	0.694	0.196
Other	1.085	0.168	1.124	0.188	0.804	0.22
Tenure (Home Owner)						
Social	1.314***	0.067	1.639***	0.066	1.673***	0.094
Private	1.172	0.107	1.202***	0.066	1.198*	0.087

Model 2 (Cont'd) Logistic	1990s		2000s		2010s	
	Exp(b)	S.E	Exp(b)	S.E	Exp(b)	S.E
Lone Parent	1.564***	0.091	1.768***	0.076	1.271*	0.125
Adults in HH (2)						
One	2.074***	0.068	1.693***	0.063	1.576***	0.091
Three Plus	1.295***	0.069	1.310***	0.063	1.11	0.098
Cars (No Access)						
One	N/A	N/A	.839***	0.061	0.927	0.087
Two	N/A	N/A	.662***	0.076	0.811	0.115
Three Plus	N/A	N/A	0.863	0.099	1.042	0.145
Illness (No)	1.612***	0.058	1.744***	0.55	1.929***	0.077
Neighbour Assistance (Neutral)						
Assistance	.804**	0.08	N/A	N/A	N/A	N/A
No Assistance	1.072	0.065	N/A	N/A	N/A	N/A
Pub/Club Visits (No)	1.282***	0.057	1.340***	0.051	1.252***	0.071

*Significant p>.01 **Significant p<01 but >.005 ***Significant p<.005.

Finally, the most distinct changes when compared to the Neg. Bin. Regressions are noted in the Logistic Model 3 (Table 6.0), which presented the interactions across different periods in time. In this case, previously insignificant combinations of UK/Non-UK birthed individuals with a range of demographic characteristics were statistically significant. More specifically, immigrant individuals in

Households with 3 or more adults indicated reduced odds of victimisation the 2000s compared to national participants. Protective effects were also noted in residency length, with those not born in the UK and having resided in an area for less than 12 months having lesser odds of victimisation than national individuals in both 2000s and 2010s (Exp(b)=.696, p<.005; Exp(b)=.550 p<.05 respectively). Significantly reduced odds were noted in other tiers of residence for immigrants as well in the 2010s, such as those who lived in an area between one to two years (Exp(b)=.417, p<.05) and three to five years (Exp(b)=.542, p<.05) respectively. Differences in previously insignificant/significant factors were also noted in ethnic minority backgrounds; the previously significant Lone Parent ethnic minority participants had no observable effects in the logit models, akin to residence length and household income bands. Instead, lone adult households inhabited by ethnic minority participants noted significantly higher odds of victimisation in the 2000s (Exp(b)=2.262, p<.05) and 2010s (Exp(b)=2.201, p<.05) compared to White individuals. Contrary to what was observed in the main effects model, when ethnic minority participants interacted with three plus adult households, significantly reduced odds of victimisation were observed (Exp(b)=.989, p<.05) compared to White participants in the 1990s. Lastly, ethnic minorities in Social Renting, again in contrast with the main effects of Social Housing being a risk factor benefited from protective effects (Exp(b)=.736, p<.05).

Table 5.6. Logistic Regression Model 3 presenting the Estimated Odds of being an assault victim for a variety of significant interactions between main effects[35].

Interaction Terms	**1990s**		**2000s**		**2010s**	
	Exp(b)	**S.E**	**Exp(b)**	**S.E**	**Exp(b)**	**S.E**
Immigrants in Three Adult Households	N/A	N/A	0.959***	0.225	1.276	0.312
Immigrant Residents for <12 Months	N/A	N/A	0.696***	0.271	.550*	0.337
Immigrant Residents for 1-2 Years	N/A	N/A	1.172	0.269	.417*	0.391
Immigrant Residents for 3-5 Years	N/A	N/A	1.276	0.233	.542*	0.292
Ethn. Min. in Single Adult Households	2.016	0.17	2.262*	0.241	2.201*	0.265
Ethn. Min. in Three Adult Households	.989*	0.194	1.034	0.266	0.603	0.337
Ethn. Min in Soc. Rent.	1.383	0.19	0.736*	0.229	1.136	0.272

*Significant p>.01 **Significant p<01 but >.005 ***Significant p<.005.

5.1.5 Calculating the Interaction Effects

The examination of the calculation process (Tables 5.7-5.8) which the final interaction effects were extracted from is worthy of discussion. Starting with the first significant interaction, the ethnic minority households with an income smaller than £10,000 annually in the 2010s. Both, ethnic minority participants (Exp(b)=.652) and the Under £10,000 (Exp(b)=.731) predictors were protective factors in the main effects (only BAMEs were p<.05). However, when considered together, the picture changed, and the protective effects shifted towards a severe mean number of assaults (Exp(b)=3.621). The second interaction term of interest was ethnic minority households with a residency length of less than a year in the 2000s; in this case, none of the main effects were

[35] This is a summary of the interactions model where only the significant interactions are presented; these were part of a complete model with identical Odds Ratios to Model 2. Additional lower-terms were included prior to the introduction of higher terms. The saturated models can be found in Appendices 8.6 and 8.7 for Logit and Negative Binomial models respectively.

significant with each other (Exp(b)=1.004; Exp(b)=1.119 respectively for ethnic minorities and income), yet the interaction of the two indicated significant protective effects compared to their counterparts (Exp(b)=.326). In 1990s, the interaction between ethnic minority participants (Exp(b)=1.091) and three or more adult households (Exp(b)=1.478) the interaction mitigated the significant mean number of assault incidents for living in a household with multiple adults (Exp(b)=.525). In the same period, ethnic minorities that were lone parents were also observed to have a significantly reduced number of mean incidents than White individuals. In this case, both the ethnic minority main effect (Exp(b)=1.087) and the interaction term (Exp(b)=.386) mediated the previously severe estimated number of assaults for lone parents (Exp(b)=2.190).[36]

[36] The main effects of the interaction terms are notably different from the main effect models. Previous literature (Aiken and West, 1991) has extensively discussed such differences between IVs and Moderators (E.g BAME (IV) X Single Adult Household (Moderator). It has been concluded that interpreting the main effects without taking into consideration the interaction can be misleading and as such is avoided.

Interaction Terms Against Base (Negative Binomial)	**1990s**	**Calculation Process (Exp(β))**
Ethn. Min. with HH Incomes Under £10,000	1.078	Ethn. Min.(1.390) x Under £10,000(1.134) x Ethn. Min. + Under £10,000(0.684)
Ethn. Min. Residents < 12 Mo	0.676	Ethn. Min.(0.974) x Under 12 Months Residence (1.136) x Ethn. Min. + Under 12 Months (0.611)
Ethn. Min. in 3+ Adult Households	0.846	Ethn. Min.(1.091) x 3 Plus Adults (1.478) x Ethn. Min. + 3 Plus Adults (0.525)
Ethn. Min.Lone Parents	0.918	Ethn. Min.(1.087) x Lone Parent (2.190) x Ethn. Min. + Lone Parent (0.386)
	2000s	
Ethn. Min. with HH Incomes Under £10,000	1.349	Ethn. Min.(1.071) x Under £10,000 (0.983) x Ethn. Min. + Under £10,000 (1.282)
Ethn. Min. Residents Below a Year	0.366	Ethn. Min.(1.004) x Under 12 Months Residence (1.119) x Ethn. Min. + Under 12 Months (0.326)
Ethn. Min. in 3+ Adult Households	0.68	Ethn. Min.(0.667) x 3 Plus Adult Households (1.289) x Ethn. Min. + 3 Plus Adult Households (0.792)
Ethn. Min. Lone Parents	1.685	Ethn. Min.(0.714) x Lone Parent (1.671) x Ethn. Min. + Lone Parent (1.413)
	2010s	
Ethn. Min. with HH Incomes Under £10,000	1.725	Ethn.Min. (0.652) x Under £10,000 (0.731) x Ethn. Min. + Under £10,000 (3.621)
Ethn. Min. Residents Below a Year	1.038	Ethn. Min. (0.498) x Under 12 Months Residence (0.768) x Ethn. Min. + Under 12 Months Residence (2.715)
Ethn. Min. in 3+ Adult Households	0.399	Ethn. Min. (0.605) x 3 Plus Adults (1.109) x Ethn. Min. + 3 Plus Adults (0.596)

Interaction Terms		
Negative Binomial (Cont'd)	**2010s**	**Calculation Proccess**
Ethn. Min. Lone Parents	1.425	Ethn. Min. (0.673) x Lone Parent (1.046) x Ethn. Min. + Lone Parent (2.025)

Table 5.7. Process of Interaction Terms Calculations for the Negative Binomial Regressions.

Similar effects were also noted in the logistic regression models; in the 1990s the victimisation risk of ethnic minority participants (Exp(b)=1.152) and three plus adult households (Exp(b)=1.352) was mediated by the interaction effect of the two (Exp(b)=.635). In contrast, in the 2000s ethnic minority participants (Exp(b)=.752) mitigated the severe risk levels exhibited by Single Adult Households (Exp(b)=.1684) and their interaction (Exp(b)=1.796) to a certain extent. Impacts akin to the latter were noted in the Social Renting (Exp(b)=1.778) predictor during the same period, the risk of which was severely reduced by both ethnic minorities and their interaction effects (Exp(b)=.593). Finally, in the 2010s the reduced risk of ethnic minority individuals (Exp(b)= .697) continued to mediate the otherwise increased risks of assault victimisation in single adult households (Exp(b)=1.693) when the terms interacted with each other (Exp(b)=.1686).

The effects of not being born in the UK where the predictor was available and the interactions bore statistical significance were also noteworthy; in the 2000s, a reduced risk of assault victimisation was observed in immigrant individuals (Exp(b)=1.395) in three plus adult households (Exp(b)=.1406) within the interaction effects of the two predictors (Exp(b)=.489). Analogous effects were observed in immigrant residents of an area for less than a year (Exp(b)=.696), the effect of which mitigated the increased risks of the main effects for the specific length of residency (Exp(b)=1.147). The patterns identified in the 2000s are repeated in the 2010s, while other tiers of length of residency rise in statistical significance and follow the same trend, as observed in the table below.

Interaction Terms	**1990s**	**Calculation**
Ethn. Min. in Single Adult Households	2.016	BAME (1.152) x Single Adult HH (2.161) x BAME + Single Adult HH (.810)
Ethn. Min. in Three Adult Households	.989*	BAME (1.152) x Three Plus Adult HH (1.352) x BAME + Three Plus Adult HH (.635)
Ethn. Min. in Social Renting	1.383	BAME (1.213) x Social Renting (1.348) x BAME + Social Renting (.846)
Interaction Terms	**2000s**	
Ethn. Min. in Single Adult Households	2.227*	Ethn. Min. (.752) x Single Adult Household (1.684) x Ethn. Min. + Single Adult Household (1.796)
Ethn. Min. in Three Adult Households	1.019	Ethn. Min. (.752) x Three Plus Adult Households (1.408) x Ethn. Min. + Three Plus Adult Household (.964)
Ethn. Min. in Social Renting	.792*	Ethn. Min. (.752) x Social Renting (1.778) x Ethn. Min. + Social Renting (.593)
Immigrants in Three Adult Households	0.959***	Immigrant (1.395) x 3 Plus Adults Household (1.406) x Immigrant + 3 Plus Adults Household (0.489)
Immigrant Residents for <12 Months	0.696***	Immigrant (1.395) x Under a Year Residency (1.147) x Immigrant + Under a Year Residency (0.435)
Immigrant Residents for 1-2 Years	1.172	Immigrant (1.395) x 1-2 Years Residency (1.007) x Immigrant + 1-2 Years Residency (0.835)
Immigrant Residents for 3-5 Years	1.276	Immigrant (1.395) x 3-5 Years Residency (.913) x Immigrant + 3-5 Years Residency (1.002)

Interaction Terms (Cont'd)	2010s	Calculation
Ethn. Min. in Single Adult Households	2.201*	Ethn. Min. (.697) x Single Adult Household (1.693) x Ethn. Min. + Single Adult Household (1.866)
Ethn. Min. in Three Adult Households	0.603	Ethn. Min. (.697) x Three Plus Adult Households (1.174) x Ethn. Min. + Three Plus Adult Households (.738)
Ethn.Min. in Social Renting	1.136	Ethn. Min. (.697) x Social Renting (1.768) x Ethn.Min + Social Renting (.922)
Immigrants in Three Adult Households	1.276	Immigrant (1.028) x 3 Plus Adult Households (1.174) x Immigrant + 3 Plus Adult Household (1.058)
Immigrant Residents for <12 Months	.550*	Immigrant (1.028) x Under 12 Months Residency (1.147) x Immigrant + Under 12 Months Residency (.467)
Immigrant Residents for 1-2 Years	.417*	Immigrant (1.028) x 1-2 Years Residency (1.024) x Immigrant + 1-2 Years Residency (.397)
Immigrant Residents for 3-5 Years	.542*	Immigrant (1.028) x 3-5 Years Residency (1.043) x Immigrant + 3-5 Years Residency (.506)

Table 5.8. Process of the Interaction Terms calculations for the Logistic Regressions.

Below I present detailed tables of the significant interaction terms for comparison purposes, these used only the respective Exp(b) values of the interaction terms. To estimate the effects of each interaction as presented above, the Exp(b) values presented below can be multiplicated with the respective Exp(b) values of the main effects that were involved. The base categories have been inputted as '1' within the estimations.

Table 5.9. *Multiplicative Exp(B) Values of Logit Interaction Terms for Comparison Purposes. To be multiplicated with their respective Main Effect Exp(B) Values as illustrated in Tables 5.7 and 5.8. Reference Categories of are noted as 1.*

Logit Interaction Term Exp(B) Values						
	1990s		**2000s**		**2010s**	
	White	Ethn. Min.	White	Ethn. Min.	White	Ethn. Min.
1 Adult HH	1.234	0.81	0.556	1.796	0.535	1.866
2 Adult HH	**1**	**1**	**1**	**1**	**1**	**1**
3 Adult HH	1.574	0.635	1.037	0.964	1.355	0.738
	1990s		**2000s**		**2010s**	
	White	Ethn. Min.	White	Ethn. Min.	White	Ethn. Min.
House Owner	**1**	**1**	**1**	**1**	**1**	**1**
Private Rent	1.499	0.667	1.222	0.818	1.231	0.812
Social Rent	1.182	0.846	1.687	0.593	1.084	0.922
Other Tenure	1.254	.797	1.488	0.672	N/A	N/A
	2000s		**2010s**			
	Immigrant	Native	Immigrant	Native		
Under 12 Months	0.435	2.297	0.467	2.14		
1 to 2 Years	0.489	2.044	0.397	2.516		
2 to 5 Years	1.002	0.998	0.506	1.978		
5 to 10 Years	1.078	0.926	0.768	1.302		
10 Years or More	**1**	**1**	**1**	**1**		
	2000s		**2010s**			
	Immigrant	Native	Immigrant	Native		
1 Adult HH	0.703	1.421	1.042	0.959		
2 Adult HH	**1**	**1**	**1**	**1**		
3 Adult HH	0.489	2.044	1.058	1.057		

Table 5.10. *Multiplicative Exp(B) Values of Logit Interaction Terms for Comparison Purposes. To be multiplicated with their respective Main Effect Exp(B) Values as illustrated in Tables 5.7 and 5.8. Reference Categories are noted as 1.*

	Negative Binomial Interaction Term Exp(B) Values					
	1990s		**2000s**		**2010s**	
	White	Ethn. Min.	White	Ethn. Min.	White	Ethn. Min.
Under £10,000	1.46	0.684	0.779	1.282	0.276	3.62
Between £10,000 and £19,000	1.52	0.657	0.946	1.056	1.457	0.685
Between £20,000 and £29,999	1.381	0.723	1.574	0.635	0.758	1.319
Over £30,000	**1**	**1**	**1**	**1**	**1**	**1**
Unspecified	N/A	N/A	1.306	0.765	1.179	0.847
	1990s		**2000s**		**2010s**	
	White	Ethn. Min.	White	Ethn. Min.	White	Ethn. Min.
Under 12 Months	1.635	0.611	3.05	0.326	0.368	2.7
1 to 2 Years	0.895	1.116	1.161	0.86	0.581	1.721
2 to 5 Years	1.242	0.804	1.166	0.865	0.49	2
5 to 10 Years	0.915	1.09	2.177	0.459	0.651	1.534
10 Years or More	**1**	**1**	**1**	**1**	**1**	**1**
	1990s		**2000s**		**2010s**	
	White	Ethn. Min.	White	Ethn. Min.	White	Ethn. Min.
1 Adult Household	0.654	1.528	0.59	1.693	0.44	2.25
2 Adult Household	**1**	**1**	**1**	**1**	**1**	**1**
3 Adult Household	1.635	0.611	1.261	0.792	1.67	0.596
	1990s		**2000s**		**2010s**	
	White	Ethn. Min.	White	Ethn. Min.	White	Ethn. Min.
Lone Parenthood	2.672	0.374	0.707	1.413	0.493	2.02
Other	**1**	**1**	**1**	**1**	**1**	**1**
	1990s		**2000s**		**2010s**	
	White	Ethn. Min.	White	Ethn. Min.	White	Ethn. Min.
House Owner	1	1	1	1	1	1
Private Rent	3.64	0.274	1.278	0.781	0.828	1.206
Social Rent	1.174	0.851	1.44	0.691	0.59	1.693
Other Tenure	1.761	0.567	2.21	0.452	N/A	N/A

5.1.6 Summary of Findings

As with the previous analytical chapter, this section provides a brief insight of how the current findings were associated with the objectives of the thesis. A detailed discussion of each objective and the relevant conclusions towards the core aim noted in the earliest section of the thesis are part of the next chapter.

For objectives (a) and (b), a moderate picture of equity was observed across the crime-drop from the perspective of socioeconomic characteristics in relation to assault victimisation, with the effect sizes of certain factors lowering over-time, while increasing for others. The ethnic groups with the highest predicted victimisation risk and mean victimisations recorded significant reductions, an indication of an equitable crime-drop on the ethnicity front. At either point in time, belonging to an ethnic group other than white had significant effects on an individual's predicted victimisation means, or risk. That is true for both Black and Asian ethnicities, where the effect sizes fluctuated across models from protective to equal means and risk of victimisation to their White counterparts, but not for Mixed ethnicity individuals which were consistently at the same level as White individuals. Finally, foreign born individuals are increasingly protected from assault victimisation, as observed by examining the effect sizes of the country of birth of an individual on either predicted mean victimisations, and victimisation risk.

Further findings correspond to the subsequent objectives (1), (2), and (3). The results indicated that immigrant and BAME groups were more likely to live in diverse areas. Furthermore, diverse areas scored consistently higher on deprivation indices compared to their counterparts across every period. While in earlier points in time, diverse areas gave prominence to a significant increase in mean counts of victimisation, the effects were nullified in later periods. At the same time, when controlling for other predictors, diverse areas were observed as a protective factor in the logistic models, hinting towards an intersection between diversity and other controls.

In relation to incidence versus risk, the findings prompted to significant differences in the predictive power of each factor between the logit and the negative binomial models. Perhaps the changes evidenced a reduction of repeat victimisation towards certain groups, but a consistent higher risk of being a victim, nevertheless.

6.0 Interpreting the Emerging Evidence:

6.0.1 Chapter Outline

In the final chapter, I discuss the evidence which has emerged in the analyses in the order which they were conducted. I touch upon the results and employ the array of theories I discussed during the literature review chapter. By synthesising previous empirical and theoretical evidence with the current results, I find possible interpretations of the findings. I also identify the limitations of the current data in relation to confirming or denying certain aspects of the theoretical inductions. At the end of the discussion, I share the concluding thoughts which summarise the key findings, research, and policy recommendations as well as the limitations that need to be surmounted to establish some of the emerging hypotheses.

6.1 Discussing the Findings, Consolidating Previous Evidence and Policy Implications

6.1.1 Trends of Nativity, Ethnicity and Victimisation:

The Non-Linearity of the Current Evidence

The current thesis first explored the impact of immigration on the crime-drop using multiple sweeps from 1994 to 2016-2017 of the CSEW, E&W's national victimisation survey. Further data published by the ONS assisted in the construction of the available trends. In relation to the first research question, *whether the influx of immigration is interwoven with assault victimisation,* the answer was positive. The relationship was clear from the graphs and correlations indicated a significant negative relationship. Yet correlation does not equal causation. Recent empirical evidence from Canada supported the concept of ethnic enclaves (Andresen and Ha, 2020), adding to the generalisability of the concept irrespective of context. The assistance of immigration in respect to the crime-drop may have come in the form of small, cumulative, yet unobserved contributions if smaller geographical units

were not considered. This seems to be the case in Ignatans et al (2015), where diverse areas had high levels of crime prior to their increased diversity: the crime levels then lowered as area diversity increased.

In addition, the presented findings challenged the notion that violence has not declined. At least in England and Wales, the trajectories showed a clear decrease in incidence over time, not an increase as noted in Aebi and Linde (2010) on a broader Western Europe trend. Per contra, the definition of Assault in CSEW differed greatly from the definitions used in ICVS and Police Recorded Crime, therefore the two studies could not be directly compared. A potent interpretation comes from Aebi & Linde (2010) where in their investigation domestic incidents were included in their measurements of assault; an offence the reports of which have increased over time as a result of an increase in domestic violence awareness and reporting (Elkin, 2018). I have refrained from doing this in the studies of the thesis, as explanations for various crime types differ, and results would lose validity, something I have noted in the limitations, as well as in the literature review sections.

6.1.2 Vertical Equity Across Ethnicity & Nativity

The second research question on *how have individual ethnic and native/immigrant group victimisation trajectories been affected by the crime-decline* is multifaceted: The trajectories of victimisation for ethnic groups have followed the general trends on different levels, the fall met the requirements of vertical equity; in White individuals and ethnic minorities, those who received the most dramatic falls also ranked the highest in the original victimisation risk, especially females. Amongst the three main ethnicities, Black individuals were experiencing the highest victimisation risk in the 1990's. However, since the early 00's their risk fell dramatically to similar levels with others and has remained so till the end of the examined period. Asian and White participants ' 1993 assault risk was half or less compared to Black individuals and therefore fell less dramatically.

The differences of assault victimisation risk across nativity were insignificant. However, significant differences were noted between White and ethnic minority population groups split by Nativity. ethnic

minority respondents born outside the UK report almost double repeat incidents than national ethnic minority groups, while facing similar victimisation risk.

Regarding immigrant respondents, the presented findings agreed with theories on crime avoidance behaviours adopted by new country residents from the observed differences in relation to night-time activity. This reaffirmed previous E&W literature on the matter (Papadopoulos, 2012). However, it has had little impact towards the overall assault risk between nationals and immigrants. Potential explanations can be found in Papadopoulos (2012) where the equal risk of violent victimisation was attributed to higher amounts of hate crime experienced, contrary to national respondents. Further investigation on the trends of hate-crime and how the proportions of race-related hate-crime have changed over time are necessary next steps. However, if the case presented by Xie and Baumer (2018) on immigration reducing overall crime levels was taken in consideration, then the victimisation risk should indeed have been equal. Yet the difference of context matters; whereas Black individuals did not seem to benefit from the crime-reduction benefits of immigration in the US (Xie and Baumer, 2018), in E&W they experienced the largest falls. Nevertheless, comparisons still cannot be made with other European research focusing on immigration and crime which found different effects on victimisation risk according to immigration influxes at a local level (Van Wilsem et al, 2006). Large proportions of non-western immigrants, as opposed to all immigrants, were associated with increased risk of violent victimisation on neighbourhood geography.

The above found merit in the pre crime-drop findings; between the beginning of the 1990s and the early 2000s the Somalian Civil War took place, at the same time an increase of 160,000 in immigration influx fuelled by Somali refugees was noted (Coleman & Rowthorn, 2004). The significantly higher risk of Black individuals could fit the context of significant social change during the first big waves of Somali immigrants. Over time and once the first waves settle in selected areas the drop for Black residents could have been initiated as part of the constant increase of social cohesion amongst neighbourhoods targeted by the large influx. Additionally, whilst large immigrant waves were often unspecialised and

mostly of manual labour occupations which would translate to low overall SES, over time Kasnauskiene & Vebraite (2013) found evidence of decreased unemployment due to new economic opportunities created from immigrant groups, such as demand rises for specialised services and goods. Unemployment has been found to be one of the key criminogenic factors as it led to economic and potentially mental strain (Hipp and Kane, 2017; Lehti, 2014; Agnew, 1999); hence if unemployment was mitigated through immigration, the same could be apply to criminality.

Both the increased social cohesion within neighbourhoods of high immigrant concentration and the economic revitalisation over time were applicable the context of the Somali Civil War immigrants and supported Sampson's (2008) social cohesion and immigrant revitalisation theories. Qualitative research supported the notion of decreased offending affected by religion in Scandinavia (Knepper 2012). Portes and Rumbaut (2014) emphasized the importance of family ties and kinship networks when it came to ethnic enclaves. A similar process to the Somalian case could have taken place on a lesser degree for the second of the two largest immigration influxes which originated from Eastern Europe and Balkan countries (Kasnauskiene & Vebraite, 2013). In this case, a total of 1,5 million immigrants arrived in the UK as part of the 'Four Freedoms' offered by their ascension to countries of the EU post 2004. However, European countries shared common social norms and were predominantly white, as is the UK. Therefore, the effects of this wave may have been less impactful. This could partially explain the continued decrease of victimisation risk on a slower, yet still significant pace[37]. Nevertheless, the results agreed with Jaitman and Machins' (2013) investigation of the Eastern European immigration influx which identified no increased crime rates and with broader immigration & crime literature in E&W (Stansfield, 2016).

Has the crime drop been equitable across gender, ethnicity and nativity? In terms of incidence, the drop has been equitable. Drastic drops were observed where the most drastic drops were needed.

[37] While year to year comparisons did not take place, significance tests were conducted across three decades (Pre-Crime Drop Pooled Sweeps of BCS 93-94/95-96/97-98, 1st Decade of the Crime-Drop Pooled Sweeps of CSEW 2005-06/2006-07, 2nd Decade of the Crime-Drop Pooled Sweeps of 2016-17/2017-18) to ascertain the significance of each decades' differences which had a $p<.05$.

Whilst having no previous individual immigration data from the 1990s, the identified victimisation risk was equal to that of nationals. Interestingly, when divided between White and other than white participants, other than white immigrants faced vastly higher concentration of assault incidents than all other ethnicity/nativity groups (both White and ethnic minority national as well as their white immigrant counterparts).

The results were mostly in agreement with the sparse immigration & crime literature that exiseds within the UK but disagreed with international evidence. In Spain positive (more immigrant, more crime) associations within each crime type were found when comparing geographical areas with different levels of immigrant populations (Alonso-Borrego et al, 2012). Similar increases of victimisation risk in non-western immigrant areas were evidenced in the Netherlands (Van Wilsem et al, 2006). These were very different from the findings in the US which uniformly noted negative relationships between immigration and crime (Light, 2017; Sampson et al, 2019; Feldmeyer et al, 2018). Finally, Andresen and Ha (2020) noted significant increases in predicted criminality within high immigration influx areas of Canada for four out of the six property offences examined, especially in areas with recently settled foreign residents. In this regard, the results were in line with the gang activity hypotheses in European studies (Aebi & Linden, 2010). Further research identified overall noticeable positive effects between immigration and crime in E&W (Ignatans & Roebuck, 2018; Jaitman and Machin, 2013; Stansfield, 2016); yet such research uses police recorded incidents which were found to be highly flawed by governmental sources (ONS, 2016; Dijk, Tseloni and Farrell, 2012).

Aside from the research questions in relation to the trends, some of additional insights emerged from the results in relation to repeat victimisation which also conformed to previous crime concentration literature (Ignatans & Pease, 2016). Almost 1 in 3 victims were still repeat in the 2010s, a remarkably stable pace, considering the immense drops in incidence. This became more profound when the examination was under the lens of disaggregated ethnicity and immigration status in 2016-17/2017-18 where every British citizen suffered from 10% less repeat incidents than

their immigrant counterparts. The fact that immigrant White and Asian individuals were less repeatedly victimised than even their British counterparts hinted to crime-avoiding behaviours. Asian populations were also heavily concentrated in comparison to black populations in accordance with Census 2011 which despite being minorities, could have led to newly arrived individuals self-selecting such areas to inhabit. In turn, such values could have increased social ties which would directly affect the social guardianship of an individual. On the other hand, dissimilarities in values may lead to isolation which can be converted to social guardianship deprivation. The latter could also provide a plausible justification on why certain ethnicities who were born in the UK suffered from fewer repeat victims than first-generation immigrants. The generations that come after the first grow with the values of the country they grow in, as opposed to the country they migrated from. As such, social ties are easier to form. An argument against the latter would be the self-selected settling, where individuals settled in neighbourhoods that are historically known to attract migration influx of certain types (Card, 2001). However, on first instance first-generation immigrants may settle in deprived neighbourhoods as a result of possible economic strain and structural disadvantage which correlates to violence (Lymperopoulou, 2019; Painter-Davis and Harris, 2016).

Multiculturality may be a positive characteristic of such areas while other, non-cultural issues arise; In 'transition' areas as defined by Thrasher & Short (1927), the inhabitants were constantly changing and were plagued by social disinvestment. In turn, inhabitants suffered from severe economic and mental strain which led to isolation from even their self-selected neighbourhoods. The fact that constant, quick change was the norm in such areas also reduced potential social bonding between individuals in such neighbourhoods. Additionally, long-living residents of such areas could at times turn to deviance which included the notion of the 'code of the street', the adoption of 'tough' personas (Young, 1999) which may pry on newly settled neighbours. One inequality linked to another, creating an interconnecting network of potential social actions and reactions.

Another alternative hypothesis could be the notion of class-based intra-group victimisation which would explain the higher percentage of Asian and White British victims; That is a notion supported in an exploration of the victimisation of the social bands by Pantazis and Gordon (2000), where lower social classes victimised each other, rather than individuals beyond their social status. Hipp, Tita and Borgess (2009;2011) found mixed evidence of the intra-group victimisation within races, where increased cultural diversity, as opposed to specific ethnic group concentrations was positively associated with increased inter-group victimisation but remained inconclusive on the intra-group aspects as earlier discussed. On the other hand, earlier papers by Sampson (1987) in the US and found increased intra, rather than inter group victimisation in black individuals which projected increased severity as ethnic heterogeneity increased. Nevertheless, it is an established fact that repeat victimisation relates time and time again to vulnerability within the socioeconomic background of the victims. Perhaps those characteristics have been fluctuating over time, especially for new residents from foreign countries. The result may be increased repeat victimisation yet still at a smaller scale than originally experienced.

6.1.3 Addressing Current Intra & Interethnic Victimisation Patterns through Previous Studies

Where did the evidence lean towards in relation to the objectives of earlier sections? There were clear indications of inter and intra victimisation patterns across each period from the pre-crime drop to the post-crime drop era. However, these were more complex than originally anticipated. The most explicit indication of intraethnic victimisation patterns was offered in the case of white individuals. Nine in ten reports consistently referred to white offenders while the likelihood of reporting any other offender in the multinomial models was negative and statistically significant. This is in line with the overall proportions of population within E&W (Jivraj, 2012; ONS, 2018). The rest of the examined ethnicities offered much more diverse patterns of reporting and never reach the skewed frequencies White reports did. Their patterns over time became less specific, opposed to

the consistency of white victims. Therefore, both inter and intra ethnic victimisation patterns were noted in each of the three periods.

The evidence skewed numbers in white participants was hardly notable, after all, the residents of E&W are predominantly White (ONS, 2018). However, the difference of offender diversity between the white ethnic group and any other ethnicity examined is striking. Under the lens of Broadhurst et al's (1994) model, racial bias would have been present when considering these offending patterns. After all, it was earlier reported that 50% of the E&W population resided in high immigration influx local authorities (Poppleton et al, 2013). If that was the case, then the results should have replicated such picture in terms of proportions, 9 out of 10 of offender reports should have been white irrespective of the race of the victim, yet they were not. Another argument can be made for the diversity exhibited in these patterns. That is the self-selection process of which area native and immigrant minorities chose to reside in (Portes & Rumbaut, 2014). Similar findings in the United States proposed a similar framework, where white participants often lived in more homogenous areas than ethnic minorities (Stacey, 2019). In this case, the highly diverse patterns of intra race victimisation may have had little to do with racial bias and more to do with the geographical units' minorities inhabit. As such, the race of the offenders varied accordingly while still being skewed towards White individuals, being the majority of residents in E&W. This would also account for the lack of inter victimisation patterns noted in White participants, as the other 50% of the population resided in moderate to low immigration influx areas. In either case, I was unable to examine Blau's (1977) theoretical framework in England and Wales extensively due to the limitations of the sample which forbade regression modelling as well as the macro-level of geography.

Immigration influxes may tie into both, native and immigrant proportions of ethnic minorities in an area. Historically diverse areas would continuously attract new generations of immigrants as well as be the home to second or third generation of immigrants, now being national minorities (Andrews, 2011; Williamson, 2015; Lymperopoulou and Finn, 2017). And yet, even historically diverse LAs as

discussed earlier would still feature immensely higher proportions of White individuals on that geography. Indeed, the examinations of Census data indicated that in the majority of the 348 LAs minorities do not exceed 10%. Only 10 (2.9%) of all LAs, all of which but Leicester located in London constituted an exception where White population proportions range between 29% to 52.2%, making up the top 10 diverse Local Authorities in the nation (ONS, 2018; Jivraj, 2012). Then perhaps the interethnic victimisation patterns noted in ethnic minorities would be far more distinguishable on the geographical levels of LA or below.

Furthermore, the inter and intra ethnic victimisation patterns remained largely the same over time with some statistically significant increases leaning towards interethnic victimisation. Consequently, while the overall incidence was established to have declined by more than half (Ganpatt et al, 2020), the offending/victim proportions according to race remained largely the same. Previous literature on the pre and post-crime drop proportions on demographics have identified little change in the distribution of victimisation in a variety of crime types (Ignatans and Pease, 2016; Hunter and Tseloni, 2016). The slight leniency towards interethnic victimisation in ethnic minorities can be linked to the unprecedented immigration influxes that took place during late 1990s and over 2000s; First the Somalian Civil War and then the ascension of Eastern European countries in the EU and the Four Freedoms offered by the union (Coleman & Rowthorn, 2004). Historically high immigration influx areas received even larger influxes than they did in the past and the potential victims and offenders are as diverse as the residents of such neighbourhoods. The likelihood of different ethnicities being victimized by a variety of offender ethnicities adjusts accordingly.

The portion of area diversity analyses support the notion of self-selection residency, these were even more well-founded in recent years than they were in the past. Per contra, when the definition of the ONS for the multicultural areas was considered as a whole, further deductions were made, ethnic minorities living in disadvantaged areas at a greater extent than their counterparts. As such, whether or not such areas were selected on the basis of featuring more diverse residents or due to

the potentially inexpensive housing opportunities is a debate that cannot be concluded with the available datasets. Second, Hipp et al (2009) identified a 'victim-selection' process that involved race as both inter and intra group victimisation increased. This is the case in neighbourhoods where an overtaking from one predominant minority to another occurred, especially when structural disadvantage was added to the argument. The increase in intra-group violence was only noted for the newly established minority (Hipp et al, 2009). A similar concept was presented in a Greek study relating to the increased intra victimisation of immigrants (Antonopoulos, 2002), however the means in order to solidify or deny such theory were not available due to the lack of national victimisation surveys. Considering the last-mentioned evidence and concepts, the current trends showed a potential instigation of the victimisation drop through the induction of further immigrant groups that mediated the existing victimisation relationships, yet at the same time may have intensified the victimisation relationships within the newly settled inhabitants. This could relate to the 10% increase in reports of Asian offenders by Asian victims in 2017/18 compared to 1993/97, while also experiencing a 17% drop in black offender proportions. In contrast, white victims recorded stable victimisation by white individuals and less by other ethnicities as a result of living in highly homogenic areas. Similarly, victims of unidentified ethnicities due to their potential lack of strong ethnic identity ended up being a non-contesting minority, potentially being the most conforming and least, in terms of numbers 'threatening' to other groups in terms of dominance/shift of values.

A line must be drawn between increased intra and interethnic victimisation and the over-time assault victimisation trajectories for each ethnic group. The first did not correspond to the overall victimisation trends of races which have decreased significantly over time. The trajectories of victimisation had an absolute inverse relationship with the trajectories of immigration over time on a national level (Ignatans and Roebuck, 2018; Ignatans and Matthews, 2017). While the shift towards interethnic victimisation could perhaps hint towards racial tensions (Van Kesteren, 2016; Colic-Peisker & Robertson, 2014) and cultural disorganization (Burgason et al, 2014; Pitts, 2009), these would have to remain to a minimum to leave the falling trajectory of assault unaffected as it was.

Additionally, an argument could be made against the racial tension and disorganization hypotheses which have been presented in previous literature by considering the crime-avoiding behaviours found to be exhibited in first-generation immigrants. Interethnic victimisation could have increased simply because the diversity of the pool of victims as well as the offenders did. In fact, previously discussed mechanisms and theoretical underpinnings of how immigration may have affected the crime-drop has referred to i) the notion of increased social cohesion within ethnically diverse neighbourhoods (Portes and Rumbaut, 2014), ii) increased resistance to the criminogenic influence of economic disadvantage, especially violence (Sampson, 2013), iii) crime avoidance behaviours of newly found residents of the host country (Kubrin, 2013; Papadopoulos, 2012), and, iv) the over-time creation of micro-communities and the necessity of specialized services and products seems to revitalize otherwise increasingly disadvantaged areas (Xie and Baumer, 2018; Kubrin, 2013). Within the context of E&W Ignatans and Zielinski (2015) found that immigrants reside in highly problematic areas which over time improve in terms of victimisation rates.

6.2 Immigrant and Ethnic Minority Group Residency in Diverse Areas and Victimisation Risk Impacts

6.2.1 Dissecting Self-Selection Residency

To this end, it was confirmed that CSEW respondents differed significantly in the selection of residential areas. While Cassiers and Kesteloot (2012) found that segregation compared to the US was lower in the EU, it remained present. Sampson (2013) found that newly arrived immigrants correlated to decreases in violence, especially in those with higher amounts of poverty and racial segregation. The social process of the latter was debated; Knepper's (2012) perspective relied on strong community bonds, akin to the evidence presented by Portes and Rumbaut (2014). However, Ignatans and Zielinski (2015) questioned the compatibility of the cultural norms of different ethnicities, concluding that the extent to which the norms differ from each other also determined the positive effects of diversity. It is possible that on lower geographical levels, for example neighbourhood geography the results would have offered a different perspective, such as the identification of the clustering between similar cultures. The current findings took the first step towards a deeper understanding of self-selection residency of the different ethnic backgrounds and newly arrived immigrants in E&W. While the categories were not identical between the periods of 1990s and 2010s, significant differences over time were likely to exist, even if they were of less magnitude than the present results.

6.2.2 Disentangling the Paradox

The disconnect between the significant correlation of IMDs with Assault Risk, the significantly more deprived Diverse areas and the lack of significant differences in Assault Risk between Diverse and Non-Diverse areas was unreasonable; at least when considering traditional criminological theories. Chouhy and Madero-Hernandez (2019) noted that immigrant populations would naturally lean towards criminality due to the increasing amounts of strain they faced upon arrival while their SES was on the lower end. Additionally, the social disorganisation which transitory areas faced, a result of high residential turnover (Pitts, 2019), could affect the cohesion of such areas. Both the latter and the

former failed to consider the self-selection process of both, being an immigrant and residing in specific, historically diverse areas as per Card (2001) and Kubrin et al (2012). Both the paradox identified here and the Latino paradoxes in the US (Sampson, 2013) were alike, explanations towards which revolve around Ethnic Enclaves and Strong Communities (Knepper, 2012; Portes and Rumbaut, 2014). In turn, strong community bonds may lend support to informal social control theories which were illustrated in relation to religiosity in Andrews (2011) while its overall effects were demonstrated by Rhinenberger-Dunn and Carlson (2011). In response to potential unwanted behaviour, informal means of punishment, such as Braithwaite's (1989) Reintegravive Shaming Theory have been found to have variable impacts depending on the culture; positive in Asian countries (Chen, 2002) and substandard in the Russian context (Botchkovar and Tittle, 2008). In short, the element of agency mitigated the negative aspects of deprivation.

A note must also be made on the pre crime-drop period of Assault Risk between Diverse and Non-Diverse areas, in which case the differences were significant. The over-time change between the two area types satisfy the earlier set notions of equity, formal fairness and prioritarism (Hooker, 2005; Lucy et al, 1977; Weber, 2014). Throughout the crime-drop, the areas with the most significant Assault Risk received the greatest benefits, previously significant differences became statistically insignificant in relation to their counterparts. The current findings were interchangeable with the differences noted in the investigation of assault trends between before, during and after the crime-drop in relation to the different ethnicities of the respondents, especially Black. In this case, Black respondents experienced thrice the Assault Victimisation Risk in the 1990s, falling to the same levels of White and Asian respondents in the 2010s. The rest of the participants split by ethnicity experienced similar, or lesser risks of victimisation compared to their White counterparts which is the major ethnicity of the UK. The above occurred during a time of unprecedented increases in immigration influx across the countries of the UK. In conjunction with previous and the current findings, inferences were made on the connection of immigration, self-selection residency and the significant drop in victimisation risk within diverse areas.

6.2.3 Inequalities of Ethnic Minority Groups Across Predictors

Jivraj and Khan (2013) identified that ethnic minority groups were by default more likely to live in deprived environments on neighbourhood level, especially those of Asian background. Black participants featured the worst labour outcomes when compared to White British neighbourhoods irrespective of living in both, better off or deprived environments. Additional evidence showed that ethnic minority groups were less likely to own their home and more likely to be in social housing (BAME Housing Strategy, 2003). This divide carried over in recent years, where White individuals in social housing were consistently found to be half the proportions of other ethnicities, especially Black individuals (ONS, 2020). Bigger gaps were found in London than any other region. The gaps persisted through examining and comparing social housing not only by ethnicity but also by income bands. When divided by age, older ethnic minority people were the most likely to be in social housing, while younger British White people were more likely to be in social housing than their counterparts. The inequalities expanded in every facet, including poverty, where ethnic minority headed households were found to be more likely to indicate persistent poverty; 1 in 4 and 1 in 5 Asian and Black households respectively compared to 1 in 10 British White households. While economic attainment was suggested to be linked with educational attainment, something that the ethnic minority pupils in the report are found to perform better than the national average (ONS, 2017), the earlier report showed consistent inequalities irrespective of income bands (ONS, 2020). The divide noted by Jivraj and Khan (2013) in labour outcomes became narrower but remained significant with 1 in 10 ethnic minority respondents unemployed (when compared to 1 in 25 for British White individuals). However, when ethnic minorities were broken down further by ethnicity, a different picture emerges. Indian participants had the largest proportions (15.4%) of higher managerial and professional occupations across every ethnic group (ONS, 2020). These were followed closely by White Irish (12%), White Other (12.4%) and White/Asian (11.5%) mixed groups.

Opposite to that, Black individuals featured the lowest higher managerial positions, which potentially affects the overall ethnic minority SES estimations.

What is more, 1 in 5 Black individual headed households were found to be single parents in the Census of 2011, proportions that exceeded any of the other ethnic categories (ONS, 2019). Previous literature has touched upon the severe impact of lone parenthood on victimisation (Hunter and Tseloni, 2016, Ganpatt et al, 2020). And yet, Black respondents were still found to be at lesser odds of victimisation now than almost three decades ago. Asian individuals on the other hand being less likely to be victimised was supported by the evidence; they were the least likely ethnicity to be a lone parent household and the most likely to be married, both of which are important protective predictors against victimisation risk. Other ethnic groups were found to be consistently at the lowest tiers of marriage yet were the most likely to cohabit. Despite the latter, the proportion of participants who lived alone were still much higher than the rest of the ethnicities. Previous literature has suggested that divorce rates were also significantly lower than their White group counterparts in other countries (Ousey & Kubrin, 2009), yet such statistics were not available in England and Wales, nor the UK and hence cannot be confirmed or denied. Nevertheless, divorced and single individuals in this case are found to have significantly higher odds of victimisation than their married opposites. Hence the lower risk of victimisation of Asian participants can also be explained by using the evidence presented previously in relation to their high proportions of married population.

Despite their differences, 88% and 77% Asian and Black adults respectively were in support of the notion that people of different backgrounds in their area got on well (ONS, 2020). Their sense of belongingness was also equal or similar to their White ethnic group counterparts. The potentially increased amounts of social cohesion suggested by previous literature could be evidenced in the report. In this case, steady proportions of ethnic minority participants felt that they can influence the decisions of their local area, with White participants ranking last. While the evidence is

conceptually rigid, qualitative research akin to Knepper's (2012) study in Norway would clarify and establish whether this is indeed the case. To this end, comparisons of with the era prior to the crime-drop are unlikely due to the lack of division in ethnicity when it came to each predictor mentioned above. Whether the reduction of proportions in lone parenthood, social housing and labour outcomes across ethnicity have made them less likely to be victimised, or other factors were responsible remains theoretical in principle. Nevertheless, international empirical evidence leaned towards such theories. In support of the latter, earlier presented evidence by Ignatans and Zielinski (2015) found that areas which received large amounts of immigrants improved economically and reduced victimisation rates over time. Albeit the differences were not notable. Recent ONS (2020) findings evidenced that the gaps between car availability, an indirect measurement of household wealth, has stayed static between 2002/06 and 2014/18. Black individuals remained twice less likely to have car availability when compared to their white counterparts. Simultaneously, White individuals were the most likely ethnic group to have car availability. This is important for reasons beyond measuring wealth indirectly; In the case of assault, previous literature has identified that public transport increases the likelihood of violent incidents to occur (Lemieux and Felson, 2012). As such, BAME groups should record increased odds of victimisation from both, lower SES and the lack of private transport. Additional economy-focused investigations on lower geographies may shed further light towards the knowledge gap of whether economic changes have occurred on neighbourhood level over-time. This could be achieved by targeting areas which observed significant increases in immigration over-time and their socioeconomic picture before and after the immigrant waves settled.

6.2.4 Inequalities Between Immigrant and National Across Predictors

The 2011 Census data extracts (ONS, 2014) showed that immigrants were more likely not to be employed when compared to nationals (4.6% vs 1.9% respectively). However, it is worth keeping in mind that immigrant students were thrice the proportions of nationals (12.3% vs 3.8%). 16% of the Census participants classified as immigrants lived in Social Housing, an unnatural small difference

than UK nationals (16.5%). Perhaps that is indicatory of the low SES status of immigrants, especially long-term immigrants which were eligible for social housing. Larger gaps of 15% were noted in house ownership, which also highlighted the more disadvantaged position immigrants were in. In 2016, another report highlighted the differences in gross pay across immigrants and nationals. In this case, every immigrant group except for those from EU14 countries had a gross median hourly pay less than the nationals or the national average (ONS, 2016). This is in accordance with the skill levels offered by immigrant residents which for the most part is below national except nationals of EU14 countries. However, a significant number of immigrants were overqualified for their respective jobs (40%), compared to UK nationals (15%), indicating significant inequality in labour opportunities for the former. It becomes clear that the gaps noted across ethnicity in England and Wales are replicated across immigration status more notably. Certain predictors were unavailable in reports for immigrants, such as car availability. In general, the evidence for immigrants and ethnicities other than white show that

- Ethnic Minorities were more likely to be in Social Housing and less likely to own their home.
- Ethnic Minorities and Immigrants had a lower socioeconomic status (except for some Asian ethnicities) and occupational positions.
- Ethnic Minorities and Immigrants had worse labour outcomes, and in the case of immigrants the outcomes contrasted the higher levels of overqualification for their respective jobs.
- Ethnic Minorities had higher proportions of lone parent headed households in Black participants but lacked relevant data for immigrants.
- Ethnic Minorities were less likely to have car or van availability and public transport has been previously linked with increased likelihood of violent victimisation.

Each of these predictors were expected to have had a negative impact on victimisation odds dictated by previous literature in different crime types or the broader category of violence. However, this was not the case in the current study, which necessitates further inquiry and interpretation of the present results.

6.2.5 Differences Across Residential Area Types

In relation to residential areas, increased victimisation risk has been noted in previous literature in both property and violent crime (Tseloni, 2006; Duhart, 2000). The current results however showed that in Assault the area type only became statistically significant during 2016-17/17-18. This can be due to other predictors having mitigated the issue in earlier dates. The Area Diversity predictor showed statistically significant aggravating effects in the years preceding the crime-drop, an effect noted in the previous chapter where a T-Test was conducted between Assault Counts and Area Diversity. The pattern was repeated more severely during the interactions of the era prior to the crime-drop. However, area diversity lost its significance in the next two decades. Perhaps this is indicatory of internal changes that have taken place within diverse areas. The result could also be affected by the different definitions offered in the post crime-drop surveys.

Contrary to the main effects, the interactions showed drastic, statistically significant protective effects against assault at different lengths of residence in 2005-06/2006-07. The only evidence in relation to this came from routine activities literature and how newly settled residents may drastically change their routine activities due to fear of crime (Rountree and Land, 1996). However, this should occur irrespective of area diversity and did not explain the statistically significant differences noted between the two area types. In addition, Miethe (1993) found that regardless of lifestyle and routine activities, the risk of individuals living in disadvantaged areas (which as stated above, were often interchangeable with large proportions of ethnic minority residents) was higher than their affluent counterparts. It is also worth noting that the statistically significant protective effects were observed in the logistic models which refer to the likelihood of one becoming a victim, rather than considering the number of incidents. In the latter, statistical significance was not found. In 2016-17/2017-18 any statistically significant effects across area diversity ceased altogether. The definitions of area diversity came from Pen Portraits of Census which varied from the previous two decades. The limitations of this predictor across time were in the form of lack of consistency in its

definition. Yet it remained the only available measurement of area diversity that the participants of the survey can be placed in on individual level.

6.2.6 Ethnicity and Immigration Status as Protective Predictors

From 1993 to 2017, dynamic changes were noted across the different ethnicities of participants, an earlier mentioned striking feature of the differences in each decade was the trajectory of black participants. The latter moved from increased odds of assault victimisation to significantly reduced odds of victimisation in 2006, with insignificant yet still reduced odds in the most contemporary analysis of 2017. Previously examined trends indicated that during 2006, black ethnicity had lower proportions of victims than any other ethnic category before coming to equal terms with white individuals. At the same time, immigration at a national level was at the second highest of the decade (ONS, 2015). A core assumption can be made that the already established diverse areas may have been targets of newly found residents of the country. This was supported by governmental research reports which assessed the impact of immigration influxes on social cohesion (Poppleton et al, 2013). Simultaneously, a potential formation of new multicultural settlements through the transition of previously non-diverse areas could have also taken place. Previous literature has argued that bicultural areas undergo a process of increased cohesion, whilst their multicultural parts may encounter increased tension (Ignatans et al, 2015). The latter is based on notions of power struggle which in turn define norms (Brown, 2015).

However, it is also pointed out by immigration research that, new residents adopted crime avoidance techniques (Papadopoulos, 2012; Ousey & Kubrin, 2009). An approximate 65-70 percent of ethnic minority participants within the examined samples also featured different countries of birth (COB) than the UK. Consequently, much of the ethnically diverse sample according to previous evidence could have adopted different routines than nationals as means to mitigate their risk of victimisation (Papadopoulos, 2012). This may also link to the earlier odds ratios at higher level interactions which proposed a stable increase of victimisation odds for immigrants at different tiers

of residency length. Evidence by Chouhy and Madero-Hernandez (2019) found that second generation immigrants were more alike in their perceptions towards the legal system with nationals than their first-generation counterparts. Similarly, Ousey & Kubrin (2009) found different levels of assimilation across census tracts in Los Angeles for immigrant populations. Therefore, an overtime change of behaviour due to the assimilation process was probable in the UK context. Such process could mark the stable aversion from said protective routines in time, as indicated in the models. It could also potentially hint as to why in 2017-18 the statistical significance was mitigated simultaneously with a 20% reduction in immigration compared to the earlier years. However, such statements cannot be empirically proven without a longitudinal study of individuals.

Another perspective could be the differential interpretation of assault victimisation by immigrants and other ethnicities. Suggestions that potential increases in the reports of racist crime were attributed to the Lawrence case in 1993 have been noted (Isal, Schmitz & Cooper 2011). Large proportions of inter-racial victimisation, especially by strangers could be identified as racially biased by victims. Quinn (2019) found that 76% of Police Recorded hate crime was classified as racial while the number of overall hate crimes had doubled between 2013 and 2018 with more than 1/3 being violent offences. Therefore, the scenario of identifying inter-racial victimisation as hate-crime is plausible. Especially when more than half of the reported offender race by the victims has been found to be different to the victim race. Recent evidence has showed that stranger violence has been generally slower to fall than acquaintance violence (Ganpat et al, 2020). If that was generalised to every ethnicity and in turn immigrants, the argument gains further merit. Whether the interpretations of such incidents being racially biased are accurate depends on the victims. Yet it cannot be denied that in recent years the British National Party (BNP) has gained momentum and anti-immigration sentiments have grown stronger during the Brexit referendum.

Further comparisons of current and past evidence indicated an agreement with the literature in the United States when it comes to multicultural disadvantaged communities (Sampson, 1985; Knepper,

2012). In the current study, the odds of being victimised in accordance with one's salary were insignificant and negative rather than positive at almost every HH income tier except for those under £10,000. The latter contrasted with relevant sociological theories of strain and structural disadvantage which hint at a lateral relationship with crime at first glance (Jones, 2000; Van Gelder, 2013). It is indicatory that factors outside material strain mitigate the phenomenon's negative effects. Another viable explanation can be found in the context of CSEW/BCS; more specifically, those with under £10,000 annual income could potentially be retired homeowners, which is likely considering the average age of the sample (~50 Years of Age). In this case the circumstances are not tied to economic strain or deprivation.

In relation to immigration, using the self-selection residency and ethnic enclave theories, potential mediating factors were presented: Familial ties as well as tight community settings may lead to social exclusion if delinquency or criminality were detected, as reintegrative shaming theory suggested (Braithwaite, 1989). Examples can be taken from Valasik and Barton (2018) which provide indirect evidence. Their investigation of areas with varying social cohesion concluded that delinquency was less of an issue in areas on the higher scale of social cohesion. Due to their family-focused structures, examples from Asian countries provided further empirical support (Chen, 2002). Paired up with crime-avoidance routines, high levels of social cohesion imposed severe limitations to criminogenic factors. In the period where the immigration status variable was unavailable, the residency tier of less than a year interacted significantly with those residing in non-diverse areas, indicating marginally significant decreased odds of victimisation compared to their diverse counterparts. This effect reversed from an aggravating to a protective factor in the next two decades. The occurrence happens simultaneously with spikes in immigration influxes, whether these were linked is unclear unless lower geographical points of interest are examined.

Inspecting the paired odd ratios of income and ethnicity or immigration status offered an interesting perspective. So did the length of stay in an area, which when inspected as a main effect indicated

significant increases in odds of victimisation for new residents. Social renters were also at a disadvantage in the main effect models, something that ceased to be true when paired with ethnicity. These findings complemented Ignatans et al. (2015) where it was suggested that whilst immigrants resided in problematic areas or are in troublesome circumstances, their presence has an overall reduction effect on victimisation risk.

The current evidence also complimented the investigation of the crime-drop by Hunter and Tseloni (2016), in which they identified burglary protective and aggravating factors very similar to the demographic characteristics that bear statistical significance in this study. Naturally, some vital burglary factors such as home security and household occupation were insignificant within these models due to the nature of the crime. Yet, cofounding factors across these different crime types proved the magnitude inequity has on victimisation, as well as the reduced benefits such groups have received across time. Their odds and means of victimisation respectively remained high and statistically significant throughout the three decades. A distinction from Hunter and Tseloni (2016) was the lack of variation on PFA level, as the null multilevel models indicated. Furthermore, with PFAs featuring covering broad areas with large amounts of populations, areas with distinguishing characteristics were overshadowed by the majority of homogenous areas. Such could be the case when considering the concentrated nature of multicultural areas across the England and Wales. It also supported the notion that aggregation omitted unique characteristics of areas which may otherwise have proven fruitful. Therefore, multilevel variation should be sought at lower, potentially more distinct levels. As such, the ability of selecting historically and newly founded diverse areas would be plausible, and it could be confirmed whether a statistically significant variation between individual and area levels existed. Another potential explanation on the lack of multi-level variation was the lack of cases to detect such variation due to the examination of a single crime type, assault (Tseloni & Pease, 2015).

On a different note, the changes in significance levels of the factors within each of the regression types indicated the potential strength that varied when considering the notion of repeat victimisation. While the varying impact of the same factors across logit and NB models was striking originally, the fact that such differences existed were not as conspicuous. Earlier studies have highlighted time and time again how repeat victims accounted for a large part of victims and an even larger number of victimisations. Drawing from these, the current results served as further validation of such claims. Osborn, Ellingworth, Hope & Trickett (1996) conducted a similar investigation using hurdle models, noting the same differences in different crime types. Evidence noted that the causes of this are in the form of Flag victimisation theory (Tseloni and Pease, 2003). The current results were a novel addition to previous research as these comparisons point towards a gap between repeat victims across ethnicity, with the Logit models indicating significant protective effects of Asian and Black ethnics while the NB counterparts mitigate the effects of Black respondents in the 2006-07 timeline. Overall, proof of equity in relation to ethnicity across the crime-drop was evidenced. A note must be made in relation to past research, which presented similar findings for Black participants in overall violence examinations (Brennan et al, 2010). When broken down by Emergency Department (ED) treatments, Black participants where 160% more likely to need ED treatment than White respondents. This is indicatory of the necessity for deeper examination of trends with increased sample sizes in more recent sweeps.

Whether the differences between the negative binomial and the logistic regressions were due to dramatic changes in the routine activities of a victim was uncertain. If the hypothesis of increased social cohesion leading to social target hardening was true, then repeat victimisation opportunities lessened exponentially. While a variable assessing neighbourhood relationships existed, in recent years it became part of a module featuring a missing sample of 90%. As a result, higher level interactions were not feasible. Capturing the patterns amongst different ethnicities in recent years was also problematic with minorities comprising just 3-5% of the full sample size.

6.2.7 The Security Hypothesis in Assault

For sociodemographic characteristics, the picture remained as inequitable as it was earlier portrayed by Hunter and Tseloni (2016) in relation to burglary. Lone parents and individuals were at the highest likelihoods of victimisation. A distinctive and peculiar departure from their study is the effect of income on assault risk. In the case for burglary, the higher tiers of income noted exponentially lower likelihoods of victimisation relative to their counterparts. This was attributed to the security hypothesis in Hunter and Tseloni (2016). In this case, no effects are noted.

Those with lesser educational attainments were also found to be significantly less assaulted than their degree base. In this case they may have been working towards higher educational attainments. As mentioned in Justus et al (2015), students often moved in groups in public settings, which acts as social target hardening. Those who work on the other hand often commute to and from work alone, making them easier targets. In fact, only 37% of the workers in Census 2011 drove to work. The remaining majority used a type of public transport or went on foot (ONS, 2016), the ownership of vehicles by ethnic groups was also lower for ethnic minorities than white participants (Department for Transport, 2013). This could be a viable explanation for why lower educational attainments had at times significantly lower risks of victimisation than degree holders. The variation of the sampling between students and non-students could also affect the period-to-period levels of significance. Indeed, CSEW excluded private halls from its sampling process, most students in recent years reside in private halls for at least their first year of study, if not more (Greater London Authority, 2018; Student Accommodation Survey, 2019). As a result, a significant number of students were excluded from the survey compared to the earlier period prior to the crime-drop as student accommodation became a more popular choice. A summary of the overall findings for each period and their effects increasing (+), decreasing (-) or being insignificant towards victimisation risk and expected mean counts depending on the regression types were presented below (Tables 6.1;6.2)

Table 6.1. *Aggravating (+), Protective (-) and Non-Significant (N/S) predictors per period for the Negative Binomial Models. N/A indicates a period where the variable or category was not present.*

Summary of Predictors for Neg. Bin. Models			
	1990s	**2000s**	**2010s**
Age	(-)	(-)	(-)
Male	(+)	(+)	(+)
Immigrant	N/A	N/S	(-)
Black	N/S	N/S	N/S
Asian	(-)	(-)	(-)
Other	N/S	N/S	N/S
GCSE	(-)	N/S	N/S
A Levels	N/S	N/S	N/S
Other Qualifications	(+)	(+)	N/S
One Adult HH	(+)	(+)	(+)
Three Plus Adult HH	(+)	(+)	N/S
Social Rent	N/S	(+)	(+)
Private Rent	N/S	(+)	N/S
Other Accom	N/S	N/S	N/A
Lone Parent	(+)	(+)	N/S
Long lasting Illness	(+)	(+)	(+)
Pub Goer	(+)	(+)	N/S
Neighbourhood Assistance	(-)	N/A	N/A
No Neighbourhood Assistance	N/S	N/A	N/A
BAME X Lone Parent	(-)	N/S	N/S
BAME X 3 Plus Adult HH	(-)	N/S	N/S
BAME X Under a Year in the Area	N/S	(-)	N/S
BAME X Under £10,000	N/S	N/S	(+)

***Table 6.2**. Aggravating (+), Protective (-) and Non-Significant (N/S) predictors per period for the Logistic Regression Models. N/A indicates a period where the variable or category was not present.*

Summary of Predictors for Logistic Models			
	1990s	2000s	2010s
Age	(-)	(-)	(-)
Male	(+)	(+)	(+)
Immigrant	N/A	N/S	(-)
Area Diversity	(-)	N/S	N/S
Black	N/S	(-)	N/S
Asian	(-)	(-)	N/S
Other	N/S	N/S	N/S
One Adult HH	(+)	(+)	(+)
Three Plus Adult HH	(+)	(+)	N/S
Social Rent	(+)	(+)	(+)
Private Rent	N/S	(+)	N/S
Other Accom	N/S	N/S	N/A
One Car	N/A	(-)	(-)
Two Cars	N/A	(-)	N/S
Three Cars	N/A	N/S	N/S
Lone Parent	(+)	(+)	(+)
Long lasting Illness	(+)	(+)	(+)
Pub Goer	(+)	(+)	(+)
Neighbourhood Assistance	(-)	N/A	N/A
No Neighbourhood Assistance	N/S	N/A	N/A
Immigrant X 3 Plus Adult HH	N/A	(-)	N/S
Immigrant X Under a year in the Area	N/A	(-)	(-)
Immigrant X 1-2 Years in Area	N/A	N/S	(-)
Immigrant X 3-5 Years in Area	N/A	N/S	(-)
BAME X Single Adult HH	N/S	(+)	(+)
BAME X 3 Plus Adult HH	(-)	N/S	N/S
BAME X Social Renting	N/S	(-)	N/S

7.0 Conclusion, Limitations and Guidance for Future Research

7.1 Concluding Remarks on Trends and Patterns of Victimisation

7.1.1 The Trends of Crime-Drop & Ethnicity

The relationship between the crime-drop and immigration is multi-layered. This is in support of Portes's (2010) work, which considered the interwoven consequences of immigration across society, these were far from uniform in terms of positive or negative outcomes. The current findings in conjunction with previous evidence provided some indication for potential explanations. These ranged from lack of impactful social change on higher level geographies, such as the national level examined here, to small but cumulative drops in victimisation on neighbourhood levels that could have affected the national trajectories. In this case, the trends of immigration and victimisation were explicitly in opposition at national (and PFA, albeit insignificant) level, yet the exact mechanisms of how remain theoretical in principle. The latter have been previously discussed in E&W literature across different contexts. The varying impact on social structure was part of the framework set earlier (Portes, 2010). At an international level the results conformed with the USA, where immigration was found to either have an inverse or neutral relationship from both victimisation and crime rates perspective. Outside the US context, the results were in contrast with Spanish, Canadian and Dutch literature. These were indicatory of the differential impact immigration influxes could create. Nevertheless, the focus of the thesis was not an international examination of immigration on the crime drop.

Individuals of different ethnic groups and immigration status in this thesis faced similar victimisation risk, but varying levels of repeat victims and incidents. The findings contrasted with previous findings of inequity in relation to burglary and stranger violence falls in terms of equity, whilst aligning with the equitable acquaintance violence falls in E&W. The current findings showed equitable across ethnic

groups assault drop. This adds to both, the crime-drop literature and the sparse ethnicity and immigration literature which was available for E&W.

The study constituted the first empirical test of the effects of victimisation, immigration, and the crime-drop on assault as a standalone crime type in E&W rather than aggregated violence, explored to date. An array of separate theories surrounds specific crime types which were not often considered for aggregate 'property' or 'violent' crime categories; robbery and assault can both classify as violent crimes, yet the former is acquisitive, committed for material gain and thus related to burglary, whilst the latter is emotive and varies according to context (Tseloni et al, 2012) For example, the Code of the Street (Anderson, 1999) suggests the adoption of deviant behaviour as means of gaining respect in troubled neighbourhoods. Therefore, merging crime types under the banners of 'violent' or 'property' offences provides the user with an additional, yet less specific sample which may encourage false positives or negatives. Similar arguments were made earlier for the exclusion of IPV, which is often domestic in nature during the literature review; this was discussed further at the limitations section.

The current evidence built upon the current crime-drop literature on violent victimisation trends encouraging further investigation on the levels of equity within the falls of each crime type (Ganpat et al, 2020). Further literature has already identified inequitable distribution of benefits of the crime drop by offence type through the exploratory analysis of demographic characteristics (Ignatans & Pease, 2016).

7.1.2 Intra & Inter-Ethnic Victimisation Patterns

The different aspects of this thesis have contributed towards enhancing the literature on ethnicity and immigration, as well as the crime-drop. First, it was noted that different races exhibited different patterns of offender reports, establishing both inter and intra victimisation patterns depending on each ethnicity. The difference occurred mainly between White and ethnic minority victims. These patterns have remained relatively stable over time and were not representative of the ethnic proportions noted in previous reports on LA or national levels. The lack of significant shifts of inter and intra ethnic victimisation patterns throughout the crime-drop was especially peculiar taking in

consideration the shifts of the overall victimisation trajectories of each ethnicity. A variety of theories were employed to explain the overall inter and intra victimisation patterns as well as the slight shift towards interethnic victimisation over three decades. The notion of increased racial tensions and reduced social cohesion while present, received little support from past literature and was unlikely when considering other theoretical perspectives; Ethnic Conclaves, Self-Selection Residency, Crime Avoidance Behaviours and Immigration Revitalisation Theories were some of the more fitting paradigms within this context. Nevertheless, the empirical establishment or discreditation of each perspective was limited by the available data.

On the other hand, the analyses on the perception of racial motivation behind victimisation incidents showed that ethnic minority groups were ten times more likely in each period to consider their victimisation as racially motivated. At first glance, some support towards racial tensions was noted. However, this changed after careful consideration. First, around 1 in 2 violent incidents were reported to have taken place within a fifteen-minute walking distance form an individuals' home over the decades and no significant differences across ethnicity. Second, a lack of statistical significance in the differences between racial motivation perceptions and whether the incidents occurred within 15 minutes of one's home was noted. Hence the current evidence was inconclusive given the current data. Perhaps racial tensions existed in the broader area of residence of an individual, beyond the 15' walking limit. Or perhaps the perceptions were biased. Further examination of the accuracy on racially motivated crime perceptions is necessary to draw any reliable conclusions and I treated the current findings as a preliminary steppingstone towards this direction.

7.2 Concluding Thoughts on the impact of Ethnicity and Immigrant Status on Victimisation Risk and Incidence

7.2.1 The Role of Immigration on Assault Risk: Area and Individual Effects

The current study built on previous evidence by synthesizing two empirically established impactful factors on assault risk; Deprivation and Diversity within the context of the Crime-Drop in E&W. It was first established that immigrants and ethnic minorities were more likely to live within areas with large ethnic minorities in both prior and post crime-drop, with significant increases in the latter period. Diverse and Non-Diverse areas were then found to differ significantly in deprivation levels. The deprivation levels of which were most often correlated with increased victimisation risk in past literature as well as this study in relation to assault. This however was not the case when the comparison of diverse and non-diverse areas took place. Instead, no significant differences in victimisation risk were noted, despite the disparity in IMD scores.

In a similar paradox to the ones presented in the US, while diverse areas were worse off in deprivation levels, the same was not true for assault victimisation. Reciting past evidence, viable perspectives on how diverse areas may have avoided suffering from increased criminality were presented; (a) the ethnic enclave perspective with the proposition of diverse areas featuring increased social cohesion in turn; (b) stronger measures of informal control may have led to increased deterrence. The above could have had a direct impact on the crime-drop, with criminality being reduced in the most deprived areas through newly arrived immigrant waves.

In short, the analyses recorded a positive response in the differences of residential choices across Nationals and Immigrants, as well as different ethnicities. Furthermore, diverse areas being the most precarious in terms of deprivation. Finally, while the differences between diverse and non-diverse areas are non-significant in the 2010s, that was not the case in the 1990s, suggesting a possible larger, yet equitable drop in assault victimisation risk in diverse areas than their counterparts between the two periods, under the assumption that the definitions were similar.

7.2.2 Summary of the Statistical Models

Earlier evidence of the thesis noted that there are significant differences of residential choices across Nationals and Immigrants, as well as different ethnicities. Diverse areas were also the most precarious in terms of deprivation. While the differences between diverse and non-diverse areas were non-significant in the 2010s, that was not the case in the 1990s, suggesting a possible larger, yet equitable drop in assault victimisation risk in diverse areas than their counterparts between the two periods, under the assumption that the definitions were similar.

Furthermore, the current study aided in the extraction of two key themes in relation to ethnicity, immigration status and assault victimisation risk. First, the significant effects found within the main effect models regarding ethnicity and immigration status indicated that ethnic minorities and immigrants tend to, for the most part, be at lesser odds of victimisation and were assaulted less than their counterparts. Similarly, in higher level interactions the same hypotheses were confirmed, with certain caveats, such as when the length of residence tiers went up, the significance of the protective effect for the immigrants and for inhabitants of diverse areas went down. The lack of significance for a large part of the higher interaction terms was indicatory of a more passive exchange of impacts between ethnicity, immigration status and demographic factors. This was the case for every timeline. Nevertheless, cumulative evidence showed that the likelihood/incidence of victimisation in immigrants was either at decreased or equal odds of victimisation to nationals. When the former was true however, the gaps were vast.

The predictors showed sizeable fluctuations in the calculations of the effects between the mean estimates and the odd ratios of victimisation. Exceptions were present for previously established demographic predictors which remained steadfast. The fact that inhabitants of multicultural disadvantaged communities found themselves at lesser odds of victimisation than those in a more homogenous mix of areas was peculiar.

7.3 Linking the Findings to the Core Debate

What were the effects of the varying levels of immigration since the 1990s on assault victimisation across individuals and police force areas in England and Wales when compared to the 2010s? To appropriately conclude the investigation and respond to the core question it is necessary to recapitulate the set objectives.

First, was there any association between the immigration and assault trends? I have stablished that indeed, a negative association between immigration and the assault trends was present. By combining immigration data from various sources and the CSEW I noted that the trends were divergent, if only with some lag. As unprecedented immigration spiked over the years, a drop in crime followed. I conceptualised what drove this phenomenon, and in conjunction with past evidence, I formulated a hypothesis on the positive effects of immigration. the findings however were not replicated on PFA level. A probable explanation could be the level of geography examined being too wide to identify differences appropriately, as most immigration was targeted towards specific areas. The geographical level examined was a limitation to be discussed at a later point. As a follow up, I explored the trends of incidence and prevalence across ethnicity and immigration status throughout the crime decline, inquiring on the equity of the crime-drop. Strong evidence of equitable change was observed for the most severely victimised ethnic group, Black participants who were originally three times more likely to be victimised than white individuals. Contrary to past literature which found an inequitable crime-drop in burglary based on socioeconomic characteristics (Hunter and Tseloni, 2016), the drop from an ethnicity standpoint was indeed equitable. Guided by past studies, I continued by examining the victimisation patterns across ethnicity, and how the various ethnicities of the offender may hint towards bias in victim selection. Indeed, patterns of inter and intra ethnic victimisation were noted. Ethnic minority offenders were more likely to target ethnic minority victims but combined with the fourth objective, I concluded that such patterns were less likely to be due to offender bias and more probable to exist due to the diverse makeup of the

areas they lived in. The fourth objective noted significant differences in the areas ethnic minorities and Immigrant groups chose to reside in, falling within the 'Diverse' labels. An offender living in a diverse area would most likely offend against other ethnic minority individuals, as opposed to white individuals. On the contrary, the majority of white participants lived in non-diverse areas, which accounted for their lack of interethnic victimisation patterns.

In assessing diverse and non-diverse areas for objective five I inferred that, diverse areas scored significantly higher on deprivation indices than their counterparts in every period, which would account for increased victimisation within such areas. However, the sixth objective rejected the hypothesis. It was true that diverse areas had higher victimisation counts prior to the crime-drop. Per contra, they indicated no statistically significant different victimisation counts than their counterparts in later periods. I proceeded with the construction of the statistical models, where I noted mixed results of equity across socioeconomic status. As expected from the descriptives, strong indications of equity from an ethnicity standpoint were noted, while controlling for other factors. Finally, immigration remained a protective factor across the two periods it was available, but not at the same levels of statistical significance. With that, I also concluded that ethnicity and immigration status were effective predictors of assault victimisation, but of protective nature. The findings were mirrored in recent literature (Xie and Baumer, 2021), where foreign born individuals in the United States were at reduced likelihood of victimisation, adding to the protective effects of immigrants in English-speaking countries.

From the above, I deducted that immigration the influx, which has had substantial increments over the past 25 years, had positive effects, based on the analyses. The increments of immigration, and most non-white ethnic minorities falling under the immigrant label created ethnic enclaves. In turn, they led to increases in social cohesion and potential socioeconomic revitalisation over-time, based on past evidence. In addition, having noted the slowly diminishing protective benefits of immigration status as the years within the UK increase, I established that new, large waves of immigrants go

through a crime-avoiding routine activities phase which diminished with time. This has been noted in past evidence through various generations of immigrants from an offending perspective.

However, the analyses had several limitations which are necessary to be documented and addressed by future research. The first limitation was the sample size, which due to the investigation of the crime-drop the project was unable to utilise more datasets than those who were already pooled to remain within the specified periods. The sample size limited the analyses of less frequent, yet novel inquiries of crime types, such as Household Theft in this case. If further datasets were merged for an investigation outside the crime-drop, elements of trust and social cohesion could be explored through household theft from inside one's home in diverse and non-diverse areas. Another limitation is the definition of diverse and non-diverse areas, which were dependent on the ONS classifications across different periods. As such, and without appropriate definitions for every period by the data holders, it was likely that the included areas may have changed over-time, resulting to inconsistencies. Ideally, a sub-national level of investigation on a local authority or lower (e.g neighbourhood) level would be better suited for a comparison of diverse and non-diverse areas. The latter would also allow to identify differences in the minority groups for each area and, in doing so, the examination could identify whether the factors identified here are consistent across different diverse areas. Another area of improvement via increased sample is the inclusion of specific modules which were typically asked to a portion of the participants, as well access to secure data on substance misuse based on ethnic group and immigration status to further assess any crime-avoidance behaviours. A suggestion beyond the use of CSEW can be the use of longitudinal data to assess the over-time changes of routine activities of newly arrived immigrants, in relation to the protective, diminishing over-time effects noted here. Another suggestion would be the collection of data from various ethnic minority groups on their experiences in, and their selection of their areas of residence in conjunction with a standardised measure of social cohesion. By adding a control group of areas with similar socioeconomic characteristics but less diversity, comparisons can be made. To

validate the findings on the protective effects of immigration status, additional, large scale data sources replicating the results, similar to Moore et al (2020) are necessary.

To further examine the role of diversity in different contexts, the utilisation of police data could aid in assessing areas down to neighbourhood level. Combined with Census data to account for the broader socioeconomic and diversity of the neighbourhood, crime rates can be assessed over-time. In this case, problems can arise from the various reporting patterns of immigrants and ethnic minorities which have been proposed to demonstrate sizeable difference in the past, hence may provide inaccurate results.

The policy implications are explicit. First, it is important to evaluate and 'cocoon' socioeconomic groups which have consistently been on the higher end of victimisation incidence and risk throughout the crime-drop. It is also vital to maintain the drop in the vulnerable groups which have benefited from the crime decline. Further consideration is necessary for the groups of which the gap between their risk has widened significantly over time, taking the place of past vulnerable groups. the evidence lends support to notions of social cohesion, informal control and social organisation, all of which have received past support in different contexts across the globe in the past. If replicated and further validated within England and Wales, localised measures of building social capital could offer stronger crime-reducing effects than policing.

The current project fulfilled the original aims as it was the first extensive empirical investigation of the impact of immigration on the crime-drop by synthesising various data sources and interdisciplinary evidence. While past studies and reports have investigated unequal ethnic minority and immigration group outcomes in socioeconomic status, very few investigated equalities in victimisation in England and Wales. Such studies were often limited to descriptive analyses or single periods in time. Studies of the crime-drop did not previously investigate the potential role of immigration to the phenomenon and have focused on property crime types. The current thesis provided a conceptual framework for how immigration may have affected the crime-drop through

newly emerged as well as past evidence to validate. In addition, the above studies contributed to victimisation inequalities, the crime-drop, violent victimisation and, ethnicity and immigration literature using advanced quantitative methods.

7.4 Directions for Future Research

Potential avenues for future research include statistical modelling over socioeconomic individual and area characteristics to separate the effects of ethnicity and nativity on assault victimisation risk and repeat victimisation, focussing on residential areas featuring large immigrant concentration, these are some suggested next steps. While immigration has played a role in the assault crime-drop based on the evidence presented, at least in E&W, I do not assume that it has been the sole cause. In fact, it became clear that whilst the crime-drop occurred across an array of crime types, the differential amounts of lag in the drop as well as the variety of fitting theories revolving around each crime-type indicated a multi layered process. Further research should aim to integrate and compare intra and interethnic victimisation patterns in accordance with area diversity, preferably on sub-national geographical levels through sample pooling. Increased sample sizes for more reliable examinations and where possible, statistical modelling should be attempted to identify heightening and mitigating factors.

Previous literature on immigrants adopting protective behaviours can assist in potential explanations. As does the notion of increased social cohesion within ethnic enclaves and diverse communities. Regarding the latter, UK literature previously suggested that this may be the case of compatible cultures, yet dissimilar cultures may encounter adverse effects. In this case, longitudinal research amongst different types of diverse communities is also advised. Assessing the differences in social cohesion across diverse and non-diverse neighbourhoods would be a worthwhile pursuit in future studies to confirm or deny the notion of ethnic enclaves in the context of E&W, as it will be discussed in later sections.

Many of the limitations of the current project can be overcome and the generation of new insights can be gained from newly available data made available recently by the Ministry of Justice (Ministry of Justice, 2021). The Data First program offers linked data of previously isolated data sources. Examples of new avenues of future research in relation to immigration and the crime-drop can be the incorporation of ethnicity and court data, such examination would allow for the identification of crime-mix changes over the crime-drop in relation to ethnicity and immigration status. Similar data can be utilised from tribunals in relation to potential increases in immigration-related workplace crime trends such infringements of working rights, an increasingly important issue (Clark, Hunter, and Pickford, 2020). However, given the barriers the current project has faced in relation to accessing secure data, significant improvements are necessary for projects with shorter time-limits. Comparisons across jurisdictions would also be beneficial, given the differences in policing after reforms (Scotland Police and Fire Reform, 2012) and demographics across the UK, such as Scotland (UK Census, 2011). Akin to the current project, administrative data can inform research to be conducted at lower geographies for area-specific tailored policy implementations.

The CSEW and BCS child datasets can be further utilised to assess the differences in the adult and youth under 16 years of age in their experiences of victimisation by applying the theories tested here, such as RAT, Ethnic Enclaves and the effects of Social Cohesion the Guardianship element of RAT. An alternative data source for further research in ethnic minority and immigrant youth in the UK is the Offending, Crime and Justice Survey (OCJS; Home Office, 2009). The longitudinal datasets would aid in the broader examination of experiences of crime from immigrant and ethnic minority youth outside the context of the crime-drop.

7.5 Limitations

Regarding the examination of trends, there are various limitations due to the nature of the data used. First, the number of ethnic minority participants was limited. Coupled with small number of

Household Theft victims present in the survey even after pooling multiple sweeps, Household Theft was eventually excluded from any further analyses. Perhaps this could be addressed through pooling additional sweeps, however, this could not be done within the context of this study, as a clear division between pre and post-crime drop periods was necessary. The latter also impacted the reliability for examining ethnicities broken down by geographic origin after the crime-drop. Assault cases were reduced to below half within the first decade of the phenomenon. As a result, the number of cases per specific ethnicity (e.g Black Caribbean, Indian, and Pakistani people) would offer questionable statistical power (Cohen, 1992) and unreliable inferences. The latter could also be the potential cause of the removal of the variable from the more recent sweeps of the survey.

To this end the limitation cannot be addressed without contemporary sweeps breaking down ethnicities by geographical origin by increasing the number of ethnic minority participants. It must be noted that similarly to the first issue, such limitations can be bypassed by pooling additional sweeps, at the cost of period inaccuracies which the nature of this study could not afford to trade.

In relation to intra and interethnic victimisation the above are theory-based hypotheses; Unless multiple areas of different levels of diversity are examined, empirical evidence on why inter and intra victimisation patterns have continued to be stable is unlikely. Similar complications arise for any attempt to explain the stability of the patterns over the crime-drop; With the sample of victims being inadequate for complex statistical modelling over different time periods, explanations may only derive from datasets pooled over long periods of time irrespectively of pre, or post crime-drop periods. Additionally, the insignificant changes over time should be treated with caution; Type II errors are feasible with a sample size as small as the present (Sheskin, 2004). Further issues related to the small sample size in each period occurred within the examination between the Ethnicity of the Victims and Offenders. A large proportion of the examined cells had expected counts of below 5, violating the X^2 assumptions (McDonald, 2014). This was resolved via the examination of offender

reports by splitting the sample in white and ethnic minority victims which was supported by the previous analyses.

Due to data limitations, the comparison of the IMDs as featured in the post-crime drop data was and is out of the reach of analysing the CSEW. Additionally, the definitions of diversity across periods have not remained the same; the prior to the crime-drop dataset did not feature ONS Census classifications but did present areas with large ethnic minorities, the extent to which the definitions match is not known due to official statements on the earlier datasets being unavailable. Nevertheless, using related academic literature and with immigration being vastly concentrated in specific, often urban, and metropolitan environments, the assumption of the definitions being similar is feasible. Additional shortcomings were in the form of the necessity for further analyses in lower geographical units, potentially on neighbourhood level.

An often-omitted limitation of CSEW is the demographics responding to the questionnaire. While a 78% average response rate (Jansson, 2007) is significant, the remaining 22% of respondents not engaging with the questionnaire may have a significant impact when research targets specific groups; in this case, ethnic minorities, and immigrants. Assimilated ethnic minorities may refrain from engaging with governmental instruments due to mistrust, such as surveys. Despite the CSEW being more accurate than PRC, such limitations have not yet been overcome. Such points may also relate to immigrants if they hail from countries where governmental instruments are perceived with mistrust and are often avoided. This lack of engagement may carry over from their country of birth to their new country of residence. Such phenomena cannot be measured by users of the survey but are necessary to be considered when considering populations such as those that are examined here. Future documentation of the populations that do not engage with the survey would aid users to better interpret their results and offer solutions to improving the engagement of such groups with the survey. Alternatively, the imputation of individuals using administrative data would aid in providing a more complete picture than what is currently being offered.

A wider range of limitations to the CSEW beyond the specific context of this study are also present. The exclusion of students in private halls, given the large number of international students (22% in 2019-20 academic year) in higher education was a significant drawback in attaining a complete picture of the victimisation risk of immigrant individuals (Bolton and Hubble, 2021). Further limitations were the exclusion of the homeless, as well as any other individuals not in a household, all of which were discussed in further detail in the 'Methodology' chapter.

Another important limitation was the implicit meaning of violence in this project. The dependent variable contained violent incidents in line with assault victimisation whilst excluding domestic violence incidents. IPV, as noted in the literature review, which is often interchangeable with domestic violence has been found to be predominantly gendered (Wilcox et al, 2020) towards women. The exclusion of domestic violence affected the results presented as the reduced risk of violent victimisation noted in women may shift if domestic violence risk was part of the dependent variable. Immigrant women were previously at an especially higher risk of domestic violence than men, whilst factors such as ethnicity, and religiosity affects victimisation their likelihood (Ellison et al, 2007; Rai and Choi, 2018). The exclusion of domestic violence therefore omitted a large proportion of violence committed against women overall, and especially in under sampled minority groups, which requires further investigation in future research.

The studies encompassing this project were unable to touch upon domestic violence, as domestic violence differed greatly from non-domestic violent crimes; from offender motivation to measures of deterrence. In addition, domestic violence is a largely underestimated offence due to its' concealed nature. This was evidenced in the past for police recorded crime as it is for crime surveys (Walby & Allen, 2004) due to the significant distress victims undergo when questioned about such events within a household where the perpetrator could be present. The significant differences between domestic and non-domestic violence in the underlying theoretical principles would provide inaccurate results. For example, the evidence presented here noted that the risk factors of assault victimisation were

based on outside factor, such as the routine activities of the victim. Contrary to that, domestic violence risk in relevant research stemmed from within-household environment factors, such as partner substance abuse, employment status and educational attainments (Kyriacou, Anglin, & Taliaferro, 2007). Combining domestic and non-domestic crime types in one dependent variable would account for a larger proportion of women victims at the expense of accuracy, and consequently, the social policy implications of the project. Further evidence was provided in earlier sections of the literature review chapter where intimate partner violence (IPV) was discussed.

7.5 Contributions to Knowledge and Policy Implications

What does the data signify in relation to the first component of the analysis and how does it relate to the available literature? First, the trends highlighted an increased influx of immigration prior and during the assault drop. This was in line with the literature originating from the United States which suggested a similar trajectory (Stowell et al, 2009; Wadsworth, 2010). The second signature was that the trends of immigration and assault incidence were divergent; when immigration increased, assault decreased. The latter was especially interesting when I considered the third data signature; the immigration influx increases which preceded the falls in assault incidence. While the context and the origins of the immigration influxes varied greatly between E&W and the USA, the results were not dissimilar. The data signatures defied Farrell's (2011) tests for a crime-drop theory; while immigration may not entirely explain the crime-drop, it has had an explicit effect within this study in relation to assault. On a sub-national, PFA level the effects of immigration on assault became less clear as there was no evidence of positive or negative association between assault incidence and immigration influx. Yet when examining the sample by ONS defined diverse and non-diverse residential areas during the assault peaks, diverse areas were observed to score significantly higher in assault incidence than their counterparts. This ceased to be true in the rest of the examined periods. Similar findings at macro-levels were found in the US by Chouhy and Madero-Hernandez (2019). Nevertheless, the increases in immigration influx were significant in each PFA between the 1991 and 2011 Census. Previous literature has noted that the lack of significance at a macro-level examination masked otherwise significant effects on lower geographies (Meier & Miethe, 1993; Lehti, 2014). Further context and variation could be uncovered by taking the examinations on a neighbourhood level (Jones, 2000).

An important aspect that was necessary to ascertain to apply any further immigration and crime theories to the findings was whether immigrants in E&W followed a settlement pattern. According to Card (2001), such patterns were followed by immigrants arriving to a new country which settled in already diverse neighbourhoods. The theory was confirmed when the findings indicated that a

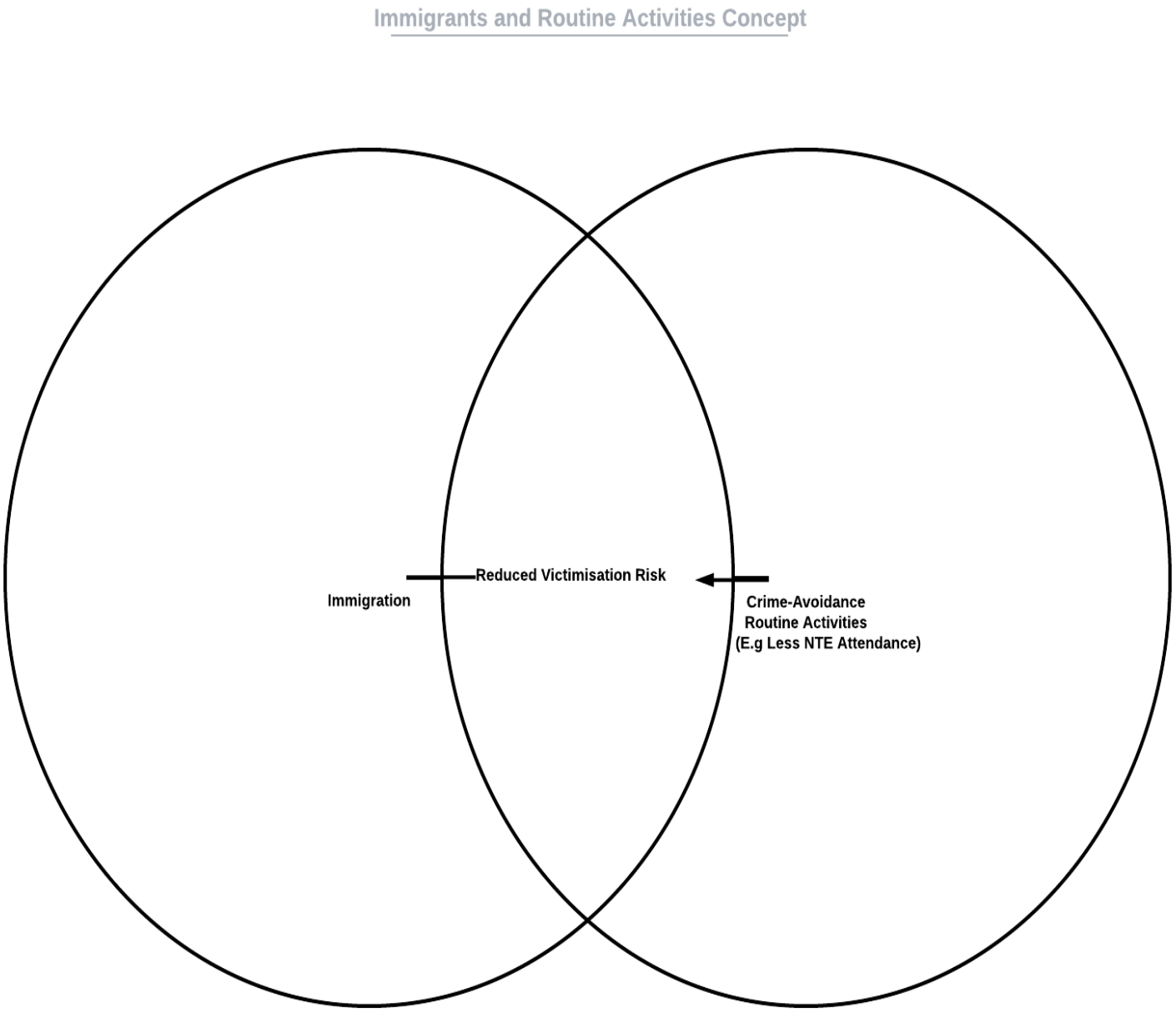
significantly higher number of ethnic minorities participants resided in ONS defined diverse areas, compared to non-diverse. On the contrary, white participants mainly resided in non-diverse areas. The application of theories such as Ethnic Enclaves and Immigration Revitalisation would be feasible. However, such neighbourhoods were also often in the top deciles of deprivation indices. Whether these areas were chosen due to the inhabitants being able to create social capital easier, or due to the accommodation affordability was not something that literature had determined. The current data did not allow for such examination either. Regardless of their reasoning, past literature explicitly noted the connection of deprivation and crime increasing and decreasing parallel to each other (Feldmeyer et al, 2018; Kubrin et al, 2012; Agnew, 1990). Diverse areas in every case prior and post the crime-drop were more deprived than their counterparts, and yet their differences in assault victimisation incidence were insignificant in later dates. Sampson's (2013) work found similar evidence in Latino neighbourhoods in the USA; the most deprived of neighbourhoods did not observe the expected incidence of crime, noting a missing element.

Further evidence from the current project in relation to self-selection residency can be taken from the heterogeneity of the offender ethnicities reported by ethnic minority participants. More specifically, ethnic minority participants over each examined period reported significantly higher amounts of victimisation by ethnic minority offenders than what white participants did. While previous literature argued for biased victim selection by the offenders (Broadhurst et al, 1994), I argued that this was a result of the area diversity where both offenders and victims lived. Since a significant part of White participants lived in non-diverse classified areas, their offender reports would mainly be white (9 out of 10). On the other side, since ethnic minorities lived mostly in diverse areas, the proportions of white offenders dropped (4 out of 10) to be replaced by other offender ethnicities. Regardless of area diversity, with E&W inhabited by mostly white individuals, the proportions of white offenders would remain somewhat high in either case, but the patterns were evidently distinct.

At this point, it was established that immigrants chose to live in already diverse areas when arriving in E&W, it was also established that similarly to the USA, diverse neighbourhoods did not observe the expected crime incidence. Ethnic minorities were more likely to reside in diverse areas than white participants. Previous governmental evidence also noted the differences in SES status between ethnic minority and white groups, with ethnic minorities more likely to not own their home, be in social housing and be facing financial hardships (Jivraj and Khan, 2013; BAME Housing Strategy, 2003; ONS, 2020). What made diverse areas that were more deprived on average than their non-diverse counterparts record a paradox in victimisation incidence? Three viable theories were identified in relation to the observed paradox; First, the Ethnic Enclaves (Chouhy and Madero-Hernandez, 2019) theory suggested that the social capital within diverse neighbourhoods was higher than the average, observing smaller percentages of divorces and lone parenthood as well as higher availability of support and kinship networks. Second, the immigrant revitalisation theory could take place in both, historical and newly found immigrant destinations. Ignatans and Zielinski (2015) found evidence of economic growth and reduction of crime levels over-time in areas which experienced high immigration influxes over the years between 1991 and 2011. Further research by Ignatans and Matthews (2017) supported the notion of area revitalisation through newly established immigrant residents. Such observations were unlikely to be made without considering the state of the areas prior to their arrival. Ignatans and Zielinski (2015) noted that diverse areas were already in a deprived state, which slowly recuperated over-time as immigrant presence increased. While signs of adversity were noted in areas where multiple cultural backgrounds with dissimilar norms were concentrated, the overall effects were found to be positive. The third viable theory which was linked to immigration influx during the crime-drop and less to settled ethnic minorities was the adoption of protective behaviours and routine activities by newly established immigrants. Evidence in favour of this for E&W is presented by Papadopoulos (2012) where significant differences in routine activities were noted between immigrants and nationals. Additional evidence in support of Papadopoulos were noted in the regression models, where ethnic minorities living in an area for under a year in the

2000s were also less likely to be assaulted than white participants. I have also found significant differences in NTE participation (pub and club going) between immigrants and nationals, with immigrants being on the lower end of NTE activity levels. NTE activity levels are important as they have been found to significantly affect the risk of victimisation in the past (Ganpat et al, 2016), and similar results were found in the regression models which will be discussed in due time. An illustration of the argument was illustrated in Diagram 7.1, where increased immigration in conjunction with crime-avoidance routine activities lead to reduced victimisation risk. In turn, victimisation overall would be reduced.

Diagram 7.1. *Venn Diagram of how the Routine Activities of Immigrants may alter victimisation risk.*

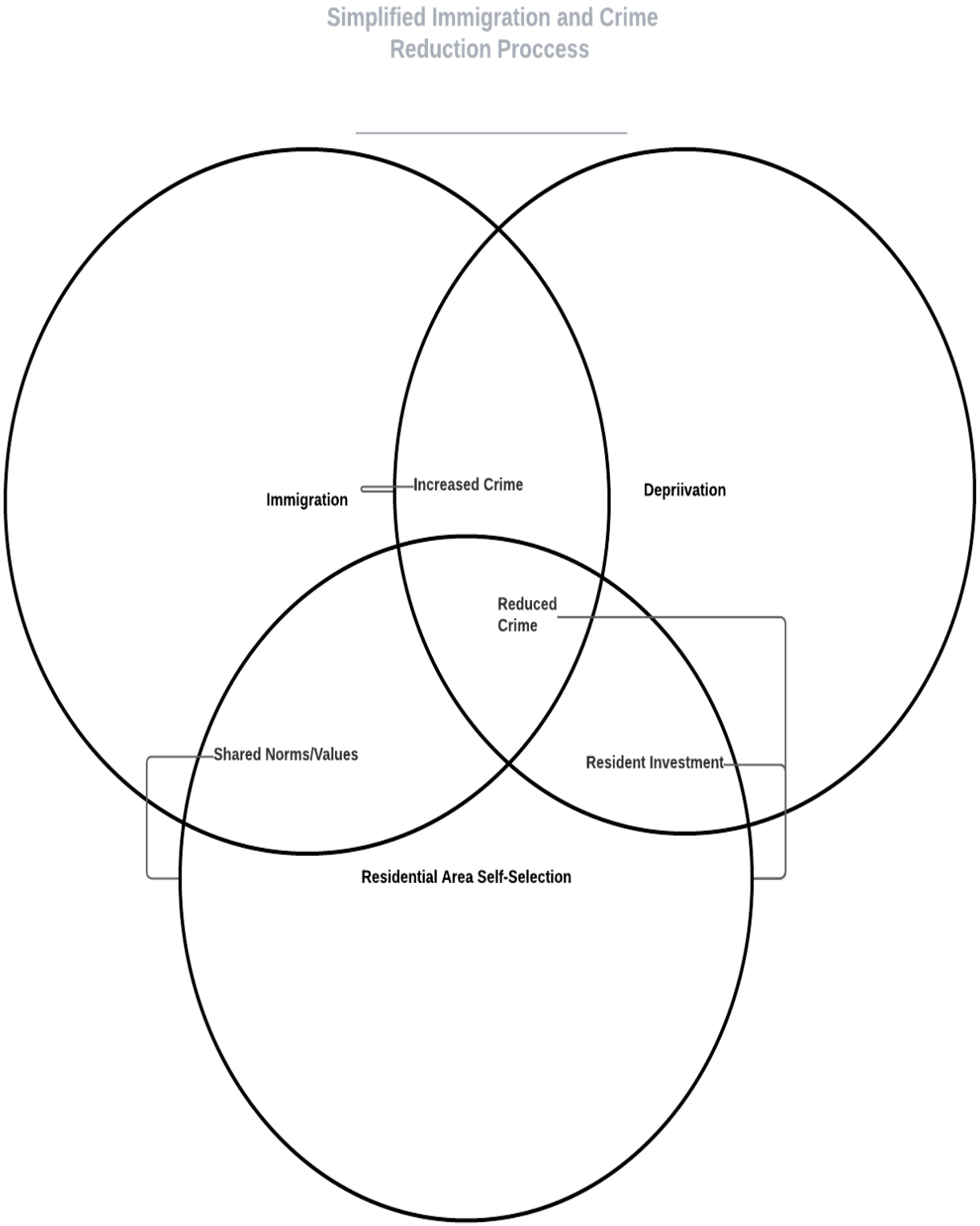


To this end, while defining immigrants as a single variable may be frowned upon due to cultural differences per origin, the similarity between USA and E&W findings can be used as proof of validity. Irrespective of cultural background, immigrants face similar obstacles and fears which can be mitigated by residing in a neighbourhood of somewhat familiar norms and culture (Knepper, 2012). Further analyses of ethnicities broken down by UK and non-UK origins were more alike than expected, supporting the above statement. In fact, over 65% of non-white ethnic minority groups were classified as immigrants where country of birth was available. Perhaps this could have aided in another observation during the examination of the assault trends by ethnicity; the significant drop of victimisation risk in Black participants, which during peak-years were the most likely ethnicity to be victimised. Especially considering the large influxes of Black immigrants during the Somalian civil war (Coleman & Rawthorn, 2002). This, of course would not have been the sole cause of such a sharp drop. Other, unobserved elements could also have been affecting the risk of assault. Victims perceiving assaults a hate crime during racial tensions at later times could have led to an artificial drop in assault victimisation and an increase in hate-crime victimisation as a result (Isal and Schmitz, 2011). In this case, the influence of the altered perceptions could also have affected the reports of offender race which were discussed earlier. With a large part of white on ethnic minority violence being reported as hate-crime as opposed to assault. Previous research indicated that migration status consistently increased the risk of hate-crime victimisation (Van Kesteren, 2016). An important next-step in immigration and ethnicity victimisation research would be the exploration of hate-crime patterns and their comparison with the findings presented here within the E&W context. Ideally, the comparisons would take place prior and post the Lawrence killing. If the drop was not artificial however, then an alternative theory could be an impactful social policy implementation by the government during those years. Nevertheless, as of now, the sharp drops of assault victimisation risk in Black individuals exhibited strong signs of equity, at least from an ethnicity standpoint. This was an observation which was especially positive for Black females, the victimisation risk of which was on par with White males at times.

From the regression models, further deductions were made in relation to immigration and ethnicity. the key findings indicated that; first, immigration status rose as a significant protective effect as time progressed, closely following the theory of improving odds of victimisation over-time. In this case, I considered viable theoretical perspectives such as social capital increasing via the Ethnic Enclaves theory described in earlier sections or continuous improvement of the overall conditions within immigrant settlements. The latter was not possible to establish with the current data. Second, Area Diversity remained insignificant in relation to victimisation incidence as it did in previous analyses on a national level. However, when it came to victimisation risk, an unusual paradox was presented; the risk of assault victimisation of victims within diverse areas was less than non-diverse areas in the 1990s. Paired with significantly increased victimisation means from earlier analyses, it was concluded that while victimisation risk in such areas was lower at that time, victimisation incidence was more concentrated. Hence, the diverse and non-diverse areas coming on equal grounds of risk at later points may also have led to smaller amounts of victimisation concentration. In relation to ethnic minority groups, it is important to be reminded that approximately 65% in the 2000s and 2010s periods were also classified as immigrants, the results of each period mirror the trend examinations. Asian participants were consistently on the lower end of victimisation risk and incidence compared to White participants. The interaction of ethnic minorities with other predictors revealed that ethnic minorities with incomes under £10,000 had higher incidence of victimisation compared to White participants. White individuals with under £10,000 income were often on pension, however, with 65% of ethnic minorities being classified as immigrants, an income under £10,000 for them may translate to unemployment or financial difficulties. In addition, early descriptive analyses indicated that White individuals were approximately 10 years older than ethnic minorities on average, while 2% more ethnic minorities were in the under £10,000 income band, supporting the previous statement. In earlier years lone parent ethnic minorities also were observed to have reduced victimisation risk compared to their White participant counterparts. A viable speculation could be that the levels of social guardianship within diverse areas increased due to the

increased social capital. In the same period, lower incidence of assault was observed in three or more adult households in which the respondents were classified as ethnic minorities. Perhaps the speculation on social guardianship could be applied in this case too. An alternative theory could be that 3+ Adult Households for ethnic minorities were being inhabited by immigrants for work purposes, which would incorporate the crime-avoiding behaviour adoption mentioned earlier by Knepper (2012). Extended families could also be part of such households, which would further induce the increased social guardianship theory and/or Braitwaite's Reintegrative Shaming (1981) in an ethnic household context. In this case, I suggested that while immigration and deprivation may result in increased criminal activity due to previously discussed theories of strain, immigration towards self-selected destination areas may have had the opposite effects as a result of further social processes (Diagram 7.2)

***Diagram 7.2**. Venn Diagram of how the different components may affect criminality/victimisation within diverse*



In relation to equity, some of the previously significant risk factors indicated a severe decrease in victimisation incidence, with the most important being lone parents. Despite the reduction in incidence, their risk of victimisation, provided in the logistic regressions remained significantly higher than their counterparts. As did the victimisation risk of pubgoers, which in relation to incidence the predictor lost its severity over time. Both of those categories can be speculated to have been affected by different policy and overall security changes respectively. For lone parents, research on welfare policy in E&W and their impact of victimisation was unavailable at that point, a worthwhile pursuit for future research initiatives. For NTE venues, previous literature has identified that the increase in security in NTE venues has reduced violent incidents taking place within them (Knight, 2012). As a result, the screening of night-time venue customers may have led to the re-composition of the venue patrons which was noted in Ganpat et al (2016). Unfortunately, other vulnerable groups, such as the chronically ill and lone adult households remained in a state of increased risk and incidence. A surprising additional risk factor was of those participants who lived in social housing. A speculation in relation to their case was a continuous area disinvestment and strain. In turn, it may have led to the development of delinquent subcultures and norms over long-periods of time as areas and their inhabitants become labelled as such (Chouhy and Madero-Hernandez, 2019; Feldmeyer et al, 2018; Sampson, 1987).

The implications of the current evidence are wide ranging. First, the necessity of further academic and governmental research in empirically establishing or denying the above speculations was identified. A first step would be identifying whether diverse and non-diverse neighbourhoods on micro-geography face less victimisation than their counter parts. This project was unable to conduct such analyses due to the rationale of the project. Examining such small geographic units for a single crime-type would lead to a lack of statistical power. Second, other data sources should be considered, more specifically police recorded crime, which is more widely available and easier to replicate. If the findings of this project were replicated at a lower geographical level, then the next step would be to identify why this is the case. Why did immigrant and BAME communities face less

violence? This would require extensive qualitative research in both, diverse and non-diverse neighbourhoods. The current project has made speculations on potential justifications for the lower victimisation risks, and these should be examined first, the differences in social capital and the differences in routine activities. Special attention should be paid to lone ethnic minority lone parents and ethnic minority multiple adult households. On individual level, a longitudinal project following the same individuals, both immigrants and/or ethnic minorities and nationals and/or White participants would also provide a better insight on their victimisation patterns and routine activities. Their reporting patterns and perceptions of inter/intra racial victimisation would also assist in ascertaining whether bias is present in categorising violent and hate-crime. In relation to equity, shedding light on why the impact of certain risk factors which were once severe has been sharply reduced is a priority. This is not just a novel academic pursuit; such research is crucial in aiding the continuing reduction of the victimisation risk and incidents in the most vulnerable groups.

If the speculations and the results of the current project are confirmed, replicated, and validated, social capital boosting policy implementation and perhaps further investments in the quality of life of vulnerable offending groups in order to minimise strain would also assist in minimising criminality, or at least violence. In fact, a project implemented in Nottinghamshire County and Nottingham focused on improving the quality of the life of young individuals. The post-project evaluation noted significant reductions (~50%) in the use of emergency response services, including the police (Bailey, De Motte, Nomikos & Mutale, 2020). The cost of the project was about half of the estimated cost of the services. This is indicatory not only of the social impact such policy may have, but also the resources that could be conserved or reallocated as a result.

Finally, project limitations were in the form of the sample size for ethnic minority groups and more specifically the number of victims. In turn, this made multi-level modelling an unreliable process, especially if they were to be divided by immigrant and national participants. Outside the context of the crime-drop, multi-level modelling of assault can be attempted by pooling datasets irrespective of

period or decade to draw reliable conclusions. However, due to the selected periods of examination this was not a viable analysis strategy in this case. Despite the latter, the null models indicated no significant variance on area level. Previous literature which has used multilevel modelling techniques examining personal victimisation has found that the majority of personal victimisation incidence was reliant on individual, as opposed to area characteristics (Tseloni and Pease, 2015). If that is the case, with Assault being a sub-type of personal victimisation, it is not unlikely for assault incidence to be dependent on just individual characteristics. This is a particularly viable perspective when I consider the limited number of assault incidents compared to the overall personal crime incidence. Perhaps, if neighbourhood-level geography was used, as it was suggested earlier, variance between hot spots could be identified (Ward, 2021), provided enough cases were present. As such, future research directives not investigating the crime-drop could also focus on pooling an appropriate number of sweeps to investigate assault victimisation on neighbourhood and individual levels. Given the current results, a summary of the proposed effects of immigration and consequently, diversity on crime and the crime-drop are illustrated in Diagram 7.3.

Diagram 7.3. *Spider Diagram of how Immigration has affected Assault based on current and previous empirical evidence.*

The current project was the first to empirically establish immigration theory as a contending theory for the assault crime-drop. In an era where immigration was synonymous with crime in the news media and public perception, evidence for the opposite was presented. While in non-English speaking countries, evidence varies, the case of England and Wales was similar to the evidence from the United States. A variety of questions were explored and resolved in order to reach the final conclusion; an array of new questions have been raised. The questions presented in relation to immigration were context specific for England and Wales while others, especially those related to equity and SES predictors can benefit policy makers internationally. While the assault crime-drop has been notably equitable for ethnic minority participants, similarly to previous Crime-Drop research the same cannot be said for different SES groups. The synthesized literature in addition with the current evidence argues that social inequalities led to crime and victimisation inequalities; formal policing may only temporarily deter the latter without the state and social welfare addressing the former.

8.0 Appendices

8.1 Definition of Dependent Variable by CSEW

DELIBVIO 22 **[ASK ALL]**

And again, [apart from anything you have already mentioned], since the first of [^DATE^] has anyone, including people you know well, DELIBERATELY hit you with their fists or with a weapon of any sort or kicked you or used force or violence in any other way?

1. Yes
2. No

NDELIBV **[ASK IF DELIBVIO = YES]**

How many times has this happened?

NOTE: 96 = MORE THAN 95

NOTE: 97 = TOO MANY TO REMEMBER.

USING CODES 96 OR 97 CAN CAUSE PROBLEMS IN SEPARATING SINGLE AND SERIES INCIDENTS, SO PROBE FOR BEST ESTIMATES WHERE POSSIBLE

1..95

96 More than 95
97 Too many to remember

HHLDVIOL 25 **[ASK IF NADULTS >1 OR ADULTHH = YES]**

PINK SHOW CARD M6
INTERVIEWER: DO NOT READ OUT

APART FROM ANYTHING YOU MAY HAVE ALREADY MENTIONED, DURING THE LAST 12 MONTHS, HAS ANY MEMBER OF YOUR HOUSEHOLD (AGED 16 OR OVER) DELIBERATELY HIT YOU WITH THEIR FISTS OR WITH A WEAPON OF ANY SORT, OR KICKED YOU, OR USED FORCE OR VIOLENCE ON YOU IN ANY OTHER WAY?

1. Yes
2. No

NHHLDVIO **[ASK IF HHLDVIOL = YES]**

How many times has this happened?

NOTE: 96 = MORE THAN 95

NOTE: 97 = TOO MANY TO REMEMBER.

USING CODES 96 OR 97 CAN CAUSE PROBLEMS IN SEPARATING SINGLE AND SERIES INCIDENTS, SO PROBE FOR BEST ESTIMATES WHERE POSSIBLE

1..95

96 More than 95
97 Too many to remember

Definition of Delibvio (and subsequently, NDelibv) Dependent Variable in CSEW. Household-based incidents are recorded within the Hhldviol question, excluding domestic incidents from Delibviol Source: Office for Natinal Statistics (2018).

In relation to the above, further information on the DV notes:

"Questions were designed to ensure that all incidents of crime within the scope of the CSEW, including relatively minor ones, were mentioned. The screener questions deliberately avoided using terms such as 'burglary', 'robbery', or 'assault', all of which have a precise definition that many respondents might not be expected to know. The wording of these questions has been kept consistent since the CSEW began to ensure comparability across years." *(*pp. 19, Office for National Statistics (2017): CSEW Technical Report 2016-17, Volume One*)*

"The questions are designed to ensure that the respondent does not mention the same incident more than once. At the end of the screener questions, the interviewer is shown a list of all incidents recorded and is asked to check with the respondent that all incidents have been recorded and nothing has been counted twice. If this is not the case, the respondent has an opportunity to correct the information before proceeding. Within the screener questions, there is a crucial distinction between household incidents and personal incidents." (pp. 19, Office for National Statistics (2017): CSEW Technical Report 2016-17, Volume One*)*

Further analyses were conducted to cross-reference the screener questions with their respective crime-codes:

8.2 Independent Variable Dummy Coding Strategy

The dummy coding strategy followed for categorical variables to be inserted within the regression models was k-1 categories. For this, I used the **RECODE** command. For example, the tenure variable, was coded as:

Recode Tenure (Sysmis=Sysmis) (1=1) (Else=0) into HOwners

Value Labels HOwners 1'Home Owner' 0'Not Home Owner'

Variable Labels HOwners Tenure Type – Home Owners

Recode Tenure (Sysmis=Sysmis) (2=1) (Else=0) into PrivRent

Value Labels PrivRent 1'In Private Rent' 0'Else'

Variable Labels PrivRent 'Tenure Type – Private Renting'

The process was repeated until all categories were covered, with the reference category being left out of the regression modelling process.

8.3 New Variable Construction Strategy

Where new variables were necessary to be constructed, the **COMPUTE** command was used, table of constructed variables follows:

For **PubClub**, I first made the Pub variable into a dichotomous Yes/No. Note I computed Pubyn as 99, to avoid coding missing values in the responses. A similar process was followed with the **Club** variable

Compute Pubyn = 99.
If (pub4=2) or (pub4=3) or (pub4=4) pubyn=1
Compute Clubyn = 99.
If (Club=2) or (Club=3) or (Club=4) Club= 1.
If (Club=1) Club = 0.
Freq
Pubyn
Club
Recode Pubyn (99=Sysmis) (else=copy) into Pubyn.
Compute Pubclub = 0.
If (pubyn=1) or (club=1) pubclub = 1.

Lone parenthood also had to be constructed:

```
compute children=0.
if (nchil2 ge 1) children=1.
Variable labels children "Are there children in the household or not?".
Value labels children 0 "No children" 1 "children".
compute lonepar=0.
if (children=1) and (nadults = 1) lonepar=1.
Variable labels lonepar "Whether respondent is a lone parent or not".
value labels lonepar 0 "Not a lone parent" 1 "Lone parent".
```

8.4 List of Harmonised & Recoded Variables Across Periods

1990s List of Significant/Theoretically Relevant Recoded Variables

Name	Original Categories	Value	New Value	Recoded Categories
ethnicid	White	1	1	White
	Black Carib.	2	2	Black
	Black Afr.	2	3	Asian
	Black Other	2	4	Chinese/Other
	Indian	3		
	Pakistani	3		
	Bangladeshi	3		
	Chinese	4		
	Other	4		

Educat2	Higher Degree	1	1	Degree/Equivalent
	Teaching Qual.	1	2	A Levels
	A Levels	2	3	O/GCSEs
	O Levels	3	4	Other Q
	CSE Graded	3	5	No Q.
	CSE Ungraded	3		
	Other Qual.	4		
	No Qual.	5		
Tothhinc	£0 - £2,500	1	1	Under £10,000
	£2,501 - £4,999	1	2	Up to £20,000
	£5,000 - £9,999	1	3	Up to £30,000
	£10,000 - £14,999	2	4	Above £30,000
	£15,000 - £19,999	2		
	£20,000 - £29,999	3		
	£30,000 Plus	4		

2000s & 2010s List of Significant/ Theoretically Relevant Recoded Variables				
Name	**Original Categories**	**Value**	**New Value**	**Recoded Categories**
Cry2	England	1	1	Native
	Scotland	1	0	Immigrant
	Wales	1		
	Northern Ireland	1		
	UK, Britain	1		
	Ireland	1		
	Other	0		
hhinc6a	Under £10,000	1	1	Under £10,000
	£10,000 - £14,999	2	2	Up to £20,000
	£15,000 - £19,999	2	3	Up to £30,000
	£20,000 - £29,999	3	4	£30,000 or More
	£30,000 or More	4		

Diverse Area Variable: 1990s				
Name	**Original Categories**	**Value**	**New Value**	**Recoded Categories**
Distclus	Accessible Amenity	1	0	Diverse
	Areas with Inn. City Ch.	1	1	Non-Diverse
	Areas with Large Ethn. Min.	0		
	Areas with Transient Pop.	1		
	Central London	0		
	Coastal Industry	1		
	Concentrations of Prosp.	1		
	Cosmop. Outter Boroughs	1		
	Established High Stat.	1		
	Established Serv. Centres	1		
	Former Mining Areas	1		
	Growth Corridors	1		
	Heritage Coast	1		
	Industrial Margins	1		
	Inner City Boroughs	1		
	Market Towns	1		
	Metrop. Overspill	1		
	Mining Industry	1		
	Mining and Services	1		
	New Expanding Towns	1		
	Newham and Tower Ham.	1		
	Pennine Towns	1		
	Remoter E&W	1		
	Satelite Towns	1		
	Scottish Towns	1		
	Smaller Seaside T.	1		
	Suburbs	1		
	Towns in Country	1		
	Traditional Seaside T.	1		
	University T.	1		
	Uplands & Agric.	1		

Diverse Area Variable: 2000s					
Name	**Original Categories**	**Value**	**New Value**	**Recoded Categories**	
wrdsupgp	Industrial Hint.	1		Diverse	0
	Trad. Manufacturing	1		Non-Diverse	1
	Built Up Areas	1			
	Prospering Metrop.	1			
	Student Comm.	1			
	Multicultural Metrop.	0			
	Suburbs & Small T.	1			
	Coastal Countryside	1			
	Accessible Countr.	1			

Diverse Area Variable: 2010s				
Name	**Original Categories**	**Value**	**New Value**	**Recoded Categories**
oa_sup11	Rural Residents	1	0	Diverse
	Cosmopolitans	1	1	Non-Diverse
	Ethnicity Centrals	0		
	Multicultural Metrop.	0		
	Urbanities	1		
	Suburbanities	1		
	Constrained City Dwel.	1		
	Hard Pressed Living	1		

8.5 Year on Year Incidence Consistency Examinations

Z-Score Values Across Years:

Household Theft Proportions Z-Values Between Years	
Years	Z-Values
1993-1995	
Repeat Victimisation	-0.410481
Overall Victimisation	0
1993-1997	
Repeat Victimisation	-0.2000503
Overall Victimisation	0
1995-1997	
Repeat Victimisation	0.1966542
Overall Victimisation	0

Assault Proportions Z-Values Between Years	
Years	Z-Values
1993-1995	
Repeat Victimisation	0.3971319
Overall Victimisation	0
1993-1997	
Repeat Victimisation	1.9472597
Overall Victimisation	0
1995-1997	
Repeat Victimisation	1.5794653
Overall Victimisation	0

Household Theft Proportions Z-Values Between Years			
Years:	1993-2017		
			Z-Values
Household Theft Repeat Victim			-0.5569884
Overall Household Theft Victims			-66.489071
Non-White Household Theft Victims			3.20173556
White Household Theft Victims			6.85894307
White Repeat Victims			33.5866328
Non-White Repeat Victims			-7.9715937
Black Household Theft Victims			1.62158676
Asian Household Theft Victims			0
Black Male Household Theft Victims			0.64354227
Black Female Household Theft Victims			1.01234024
Asian Male Household Theft Victims			0.40457083
Asian Female Household Theft Victims			0
Household Theft Incidence Z-Values Between Years			
Years:	1993-2017		Z-Values
Overall Household Theft Incidence			1.73985968

Household Theft Incidence Z-Values Between Years				
Years	Z-Values			
1993-1995				
Incidence	-0.962537			
1993-1997				
Incidence	1.3359563			
1995-1997				
Incidence	-12.923415			

Assault Proportions Z-Values Between Years			
Years:	1993-2017		
			Z-Values
Assault Repeat Victims			2.86974664
Overall Assault Victims			22.8622066
Non-White Assault Victims			9.76752492
White Assault Victims			26.3810814
White Repeat Victims			17.1251425
Non-White Repeat Victims			0.83838324
Black Assault Victims			5.41104919
Asian Assault Victims			6.73539567
Black Male Assault Victims			3.13433805
Black Female Assault Victims			3.54536073
Asian Male Assault Victims			4.89996711
Asian Female Assault Victims			2.79817061
Assault Incidence Z-Values Between Years			
Years:	1993-2017		Z-Values
Overall Assault Incidence			12.3947172

Assault Incidence Z-Values Between Years				
Years	Z-Values			
1993-1995				
Incidence	-0.6041597			
1993-1997				
Incidence	1.3204581			
1995-1997				
Incidence	1.9146546			

1993-1997 Repeat Incidents Proportions: Z-Values Between Black Nationalities	
Black - Black Caribbean	-2.0980818
Black - Black African	2.33316356
Black - Black Other	1.36554768
Black Carib - Black African	3.66411654
Black Carib - Black Other	2.41454494
Black Other - Black African	0.25027603

1993-1997 Repeat Incidents Proportions: Z-Values Between Asian Nationalities	
Asian – Pakistani	-1.0464547
Asian - Bangladeshi	1.00193589
Asian – Indian	0.4598545
Pakistani - Bangladeshi	1.51801108
Pakistani - Indian	1.27203886
Bangladeshi - Indian	-0.7169352

1993-1997 Repeat Incidents Proportions Between Black/Asian Nationalities	
Pakistani - Caribbean	0
Pakistani - African	2.4731019
Pakistani - Black Other	1.8615987
Bangladeshi - Caribbean	-1.7313753
Bangladeshi - African	0
Bangladeshi - Other Black	-0.1545903
Indian - Caribbean	-1.7999532
Indian - African	1.29887522
Indian - Black Other	0.80494731

1993-1997 Repeat Incidents Proportions: Z-Values Between Races	
Black - Asian	0
Black - White	-1.6075847
Black - Other	0.61555533
Asian - White	-1.0722778
Asian - Other	0.53661621
White - Other	1.61611516

8.6 Saturated Logit Models

1990s Saturated Main Effects Model	**S.E.**	**p-value**	**Exp(B)**
Age	0.002	0	0.937
Male	0.058	0	0.536
Area Diversity	0.094	0.012	0.79
Black	0.105	0.268	1.124
Asian	0.148	0	0.575
Chinese or Other	0.173	0.464	1.135
Social Renting	0.072	0.001	1.275
Private Renting	0.114	0.151	1.178
Other Tenure	0.166	0.057	1.373
Lone Parenthood	0.095	0	1.509
One Adult HH	0.071	0	1.995
Three Adult HH	0.077	0.003	1.253
No Education	0.081	0.776	1.023
GCSE	0.068	0.018	0.852
Other	0.156	0.63	1.078
Under £9,999	0.097	0.121	1.163
Between £10,000 and £19,999	0.091	0.515	1.061
Between £20,000 and £29,999	0.098	0.953	0.994
Long Standing Illness	0.061	0	1.554
Resident for Under 12 Months	0.094	0.685	0.963
Resident for 12 to 2 Years	0.108	0.097	0.836
Resident for 2 to 5 Years	0.079	0.273	0.917
Resident for 5 to 10 Years	0.076	0.706	0.972
Neighbours Help Each Other	0.084	0.004	0.784
Neighbours Go Their Own Way	0.068	0.427	1.055
Going out to the Pub or Club	0.061	0	1.316
Car Owner	0.162	0.001	0.587
Constant	0.182	0.001	0.537

***Table 8.1**. Saturated Main Effects 1990s Logit Model*

2000s **Saturated Main Effects Model**	**S.E.**	**p-value**	**Exp(B)**
Age	0.002	0	0.949
Male	0.06	0	1.848
Immigrant (No)	0.111	0.972	0.996
Area Diversity	0.137	0.819	1.032
Black	0.172	0.102	0.755
Asian	0.208	0.122	0.725
Chinese or Other	0.236	0.485	1.179
Intermediate	0.078	0.91	0.991
Manual	0.072	0.261	1.084
Unemployed	0.21	0.127	0.726
GCSE	0.072	0.498	0.952
A levels	0.075	0.166	0.901
Other Qualifications	0.138	0.259	0.855
1 Adult	0.077	0	1.625
3 Adults	0.083	0	1.526
Under £10,000	0.107	0.003	1.381
Between £10,000 - £19,999	0.093	0.743	1.031
Between £20,000 - £29,999	0.084	0.251	1.101
No Income Info	0.083	0.763	1.025
Urban	0.097	0.684	1.04
Rural	0.113	0.347	0.899
One Car	0.079	0.04	0.851
Two Cars	0.101	0.001	0.707
Three Cars	0.126	0.071	0.797
Private Rent	0.082	0.042	1.182
Social Rent	0.085	0	1.64
Other Accommodation	0.139	0.235	1.18
Lone Parent	0.101	0.001	1.38
Going to Pub	0.064	0	1.375
Under 12 Month Residency	0.096	0.286	1.108
One to Two Years Residency	0.107	0.811	1.026
Two to Five Years Residency	0.078	0.971	0.997
Five to Ten Years Residency	0.077	0.256	1.092
Constant	0.211	0	0.09

***Table 8.2**. Saturated Main Effects 2000s Logit Model*

2010s			
Saturated Main Effects Model	**S.E.**	**p-value**	**Exp(B)**
Age	0.003	0	0.959
Male	0.079	0	1.718
Born in the UK	0.137	0.015	0.717
Area Diversity	0.112	0.728	1.04
Black	0.228	0.668	1.103
Asian	0.23	0.094	0.681
Chinese or Other	0.237	0.927	0.979
Social Rent	0.112	0	1.712
Private Rent	0.099	0.087	1.185
Urban	0.159	0.088	1.312
Rural	0.135	0.094	1.254
Lone Parent	0.138	0.115	1.244
Longstanding Illness	0.086	0	1.871
Intermediate	0.101	0.405	1.087
Manual	0.098	0.677	1.042
Unemployed	0.212	0.872	1.035
GCSE	0.102	0.618	0.95
A Levels	0.096	0.327	1.099
Other Qualifications	0.183	0.865	1.032
1 Adult	0.101	0	1.567
3 Adults	0.116	0.118	1.199
One Car	0.103	0.13	0.856
Two Cars	0.134	0.016	0.724
Three Cars	0.169	0.674	0.932
Going out to the Pub	0.08	0.04	1.179
Under 12 Months Residency	0.136	0.395	1.123
One to Two Years Residency	0.155	0.345	0.864
Three to Five Years Residency	0.107	0.938	1.008
Five to Ten Years Residency	0.11	0.497	1.077
Constant	0.245	0	0.038

***Table 8.3**. Saturated Main Effects 2010s Logit Model*

8.7 Saturated Negative Binomial Models

Neg.Bin	Coeff.	S.E.	p-value
Fixed Part			
Constant	0.006	0.286	0.984
Age	-0.069	0.004	0
Male	0.511	0.087	0
Diverse Area	-0.069	0.162	0.671
Black	0.236	0.184	0.199
Asian	-0.727	0.217	0.001
Chinese or Other	0.041	0.303	0.893
Under 12 Months Residency	-0.024	0.166	0.886
One to Two Years Residency	-0.224	0.181	0.215
Two to Five Years Residency	-0.065	0.129	0.613
Five to Ten Years Residency	0.211	0.117	0.071
Social Rent	0.154	0.125	0.219
Private Rent	0.201	0.2	0.314
Other Tenure	0.161	0.319	0.614
Lone Parenthood	0.638	0.173	0
1 Adult	0.642	0.113	0
3 Adults	0.255	0.118	0.03
GCSE	-0.311	0.106	0.003
Other	-0.133	0.234	0.57
None other	-0.236	0.126	0.061
Pub Going	0.253	0.091	0.006
Under £10,000	0.1	0.147	0.497
Between £10,000 and £19,000	0.047	0.135	0.727
Between £20,000 to £29,999	-0.024	0.144	0.869
Helpful Neighbours	-0.312	0.123	0.011
Neighbours on their own	0.047	0.107	0.657
Illness	0.365	0.099	0

Table 8.4: Saturated Negative Binomial Model of 1990s Period.

Neg.Bin	Coeff.	S.E.	p-value
Fixed Part			
Constant	-1.478	0.375	0
Age	-0.06	0.004	0
Male	0.481	0.097	0
Immigrant (No)	-0.031	0.195	0.872
Area Diversity	-0.051	0.254	0.84
Black	-0.479	0.297	0.106
Asian	-0.617	0.371	0.096
Chinese or Other	0.362	0.432	0.402
One Car	-0.083	0.155	0.59
Two Cars	-0.332	0.184	0.071
Three or more cars	-0.133	0.228	0.559
One Adult	0.476	0.134	0
Three or More Adults	0.309	0.143	0.031
Under £10,000	0.044	0.198	0.823
Between £10,000 and £19,999	-0.234	0.158	0.138
Between £20,000 and £29,999	-0.04	0.141	0.775
No Income Information	-0.05	0.139	0.717
Social Rent	0.709	0.161	0
Private Rent	0.227	0.155	0.145
Other Tenure	0.092	0.29	0.75
Intermediate	-0.155	0.127	0.225
Manual	-0.151	0.123	0.22
Unemployed	-0.461	0.4	0.249
Lone parent	0.554	0.202	0.006
GCSE	0.12	0.122	0.325
A levels	-0.111	0.128	0.387
Other Quals	-0.209	0.228	0.358
Illness	0.397	0.121	0.001
Under 12 Months Residency	0.036	0.184	0.843
One to Two Years Residency	-0.081	0.2	0.686
Two to Five Years Residency	0.021	0.136	0.876
Five to Ten Years Residency	0.063	0.131	0.631
Pub Going	0.219	0.103	0.034
Rural	0.053	0.206	0.799
Urban	0.029	0.186	0.877

Table 8.5: Saturated Negative Binomial Model of 2000s Period.

2010s Neg.Bin	Coeff.	S.E.	p-value
Fixed Part			
Constant	-2.234	0.416	0
Age	-0.051	0.005	0
Male	0.434	0.126	0.001
1 Adult	0.473	0.17	0.005
3 Plus Adults	0.097	0.192	0.613
Illness	0.609	0.156	0
Under 12 Months Residency	-0.166	0.261	0.524
One to Two Years Residency	-0.095	0.263	0.719
Three to Five Years Residency	-0.112	0.186	0.548
Five to Ten Years Residency	-0.006	0.187	0.973
Immigrant	-0.408	0.218	0.061
GCSE	-0.184	0.169	0.277
A Levels	-0.225	0.167	0.178
Other Quals	-0.201	0.306	0.511
Lone parent	0.106	0.279	0.705
Black	-0.158	0.415	0.704
Asian	-0.509	0.341	0.135
Chinese or Other	0.018	0.415	0.966
One Car	-0.115	0.193	0.549
Two Cars	-0.106	0.231	0.648
Three Cars	0.013	0.294	0.965
Pub Going	0.131	0.131	0.318
Urban	0.309	0.267	0.247
Rural	0.063	0.232	0.787
Social Renting	0.53	0.206	0.01
Private Renting	0.174	0.174	0.316
Intermediate	-0.039	0.162	0.808
Manual	0.107	0.164	0.513
Unemployed	-0.025	0.427	0.953
Area Diversity	0.204	0.196	0.299

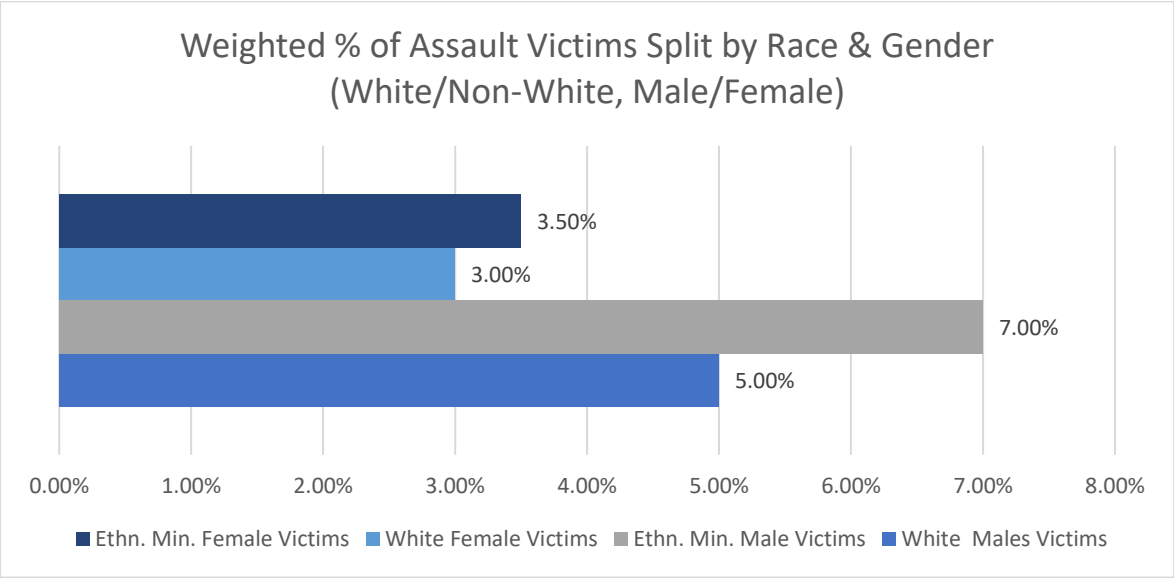
Table 8.6: Saturated Negative Binomial Model of 2010s Period.

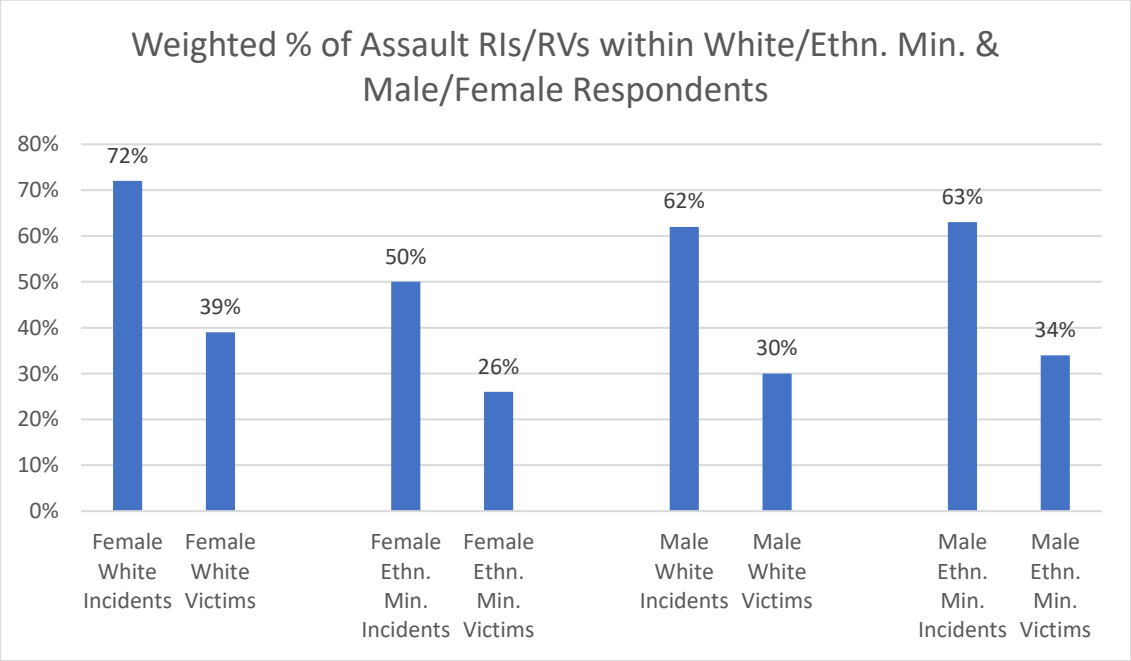
Note: I examined an array of other variables. Some of which can be used as indexes to social disorganisation (littering, drunk and drug issues in the area), however these had over 30% of their cases missing, which largely affected the calculations and statistical power when it comes to examining ethnic minorities.

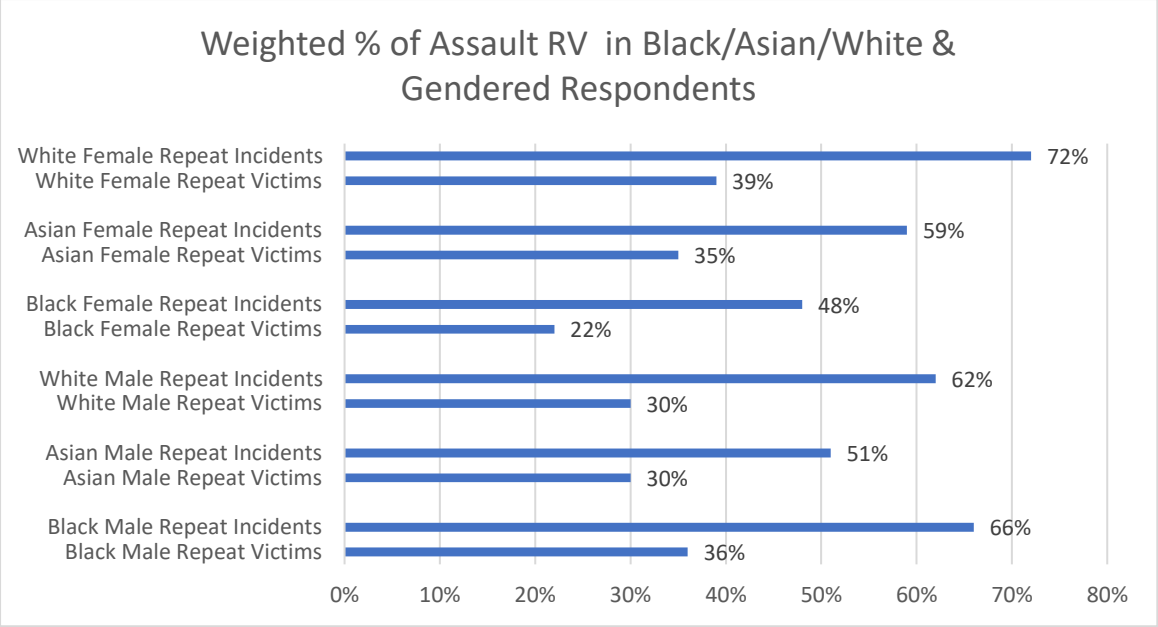
Another array of variables was in relation to ownership of transportation means outside car; however, these also featured high numbers of missing cases and were excluded as such.

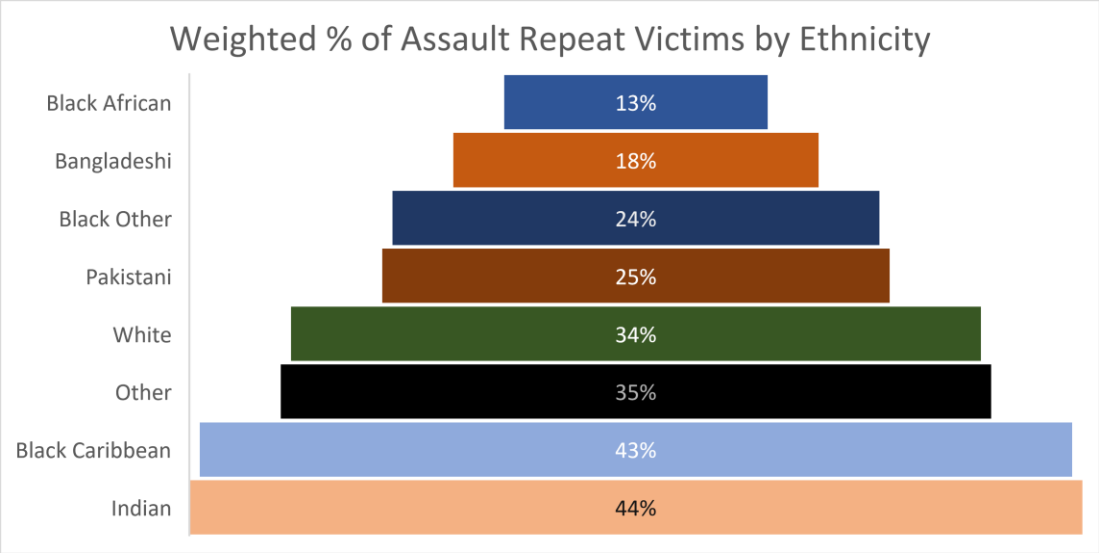
Dwelling types were originally included in the models; however, semi-detached building was found to be significant predictors of victimisation. Semi-detached buildings are often council houses and having council houses within the predictors already I decided I would avoid using the dwelling type due to the properties being similar in function.

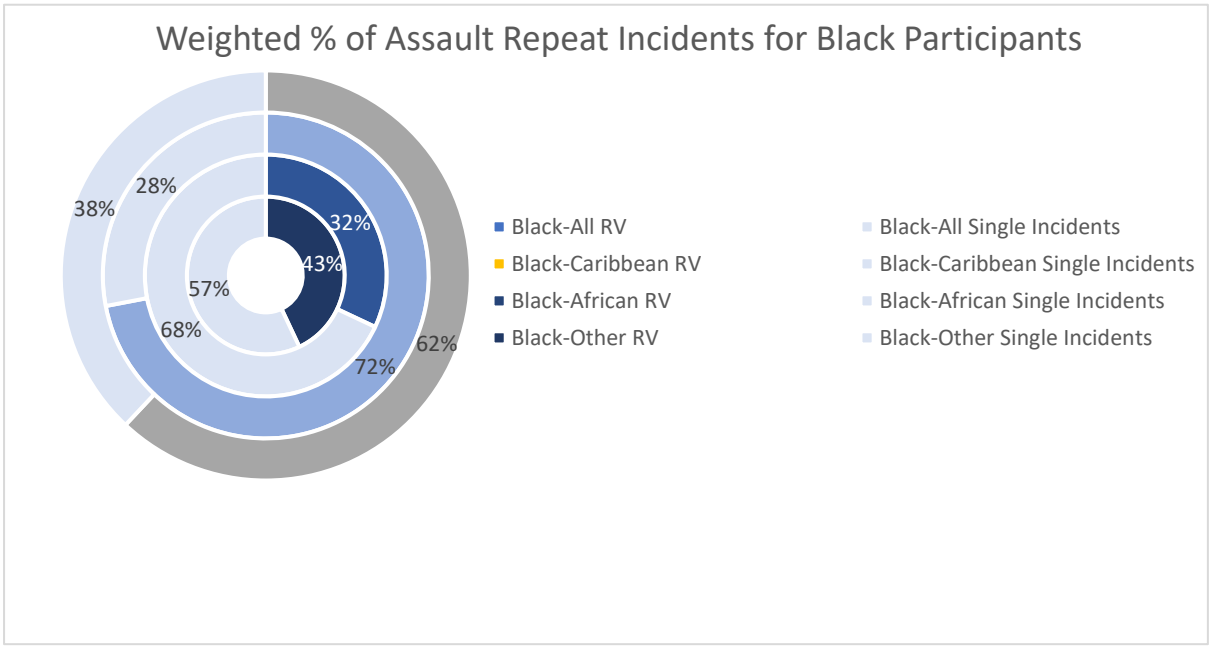
8.8 Weighted Analyses

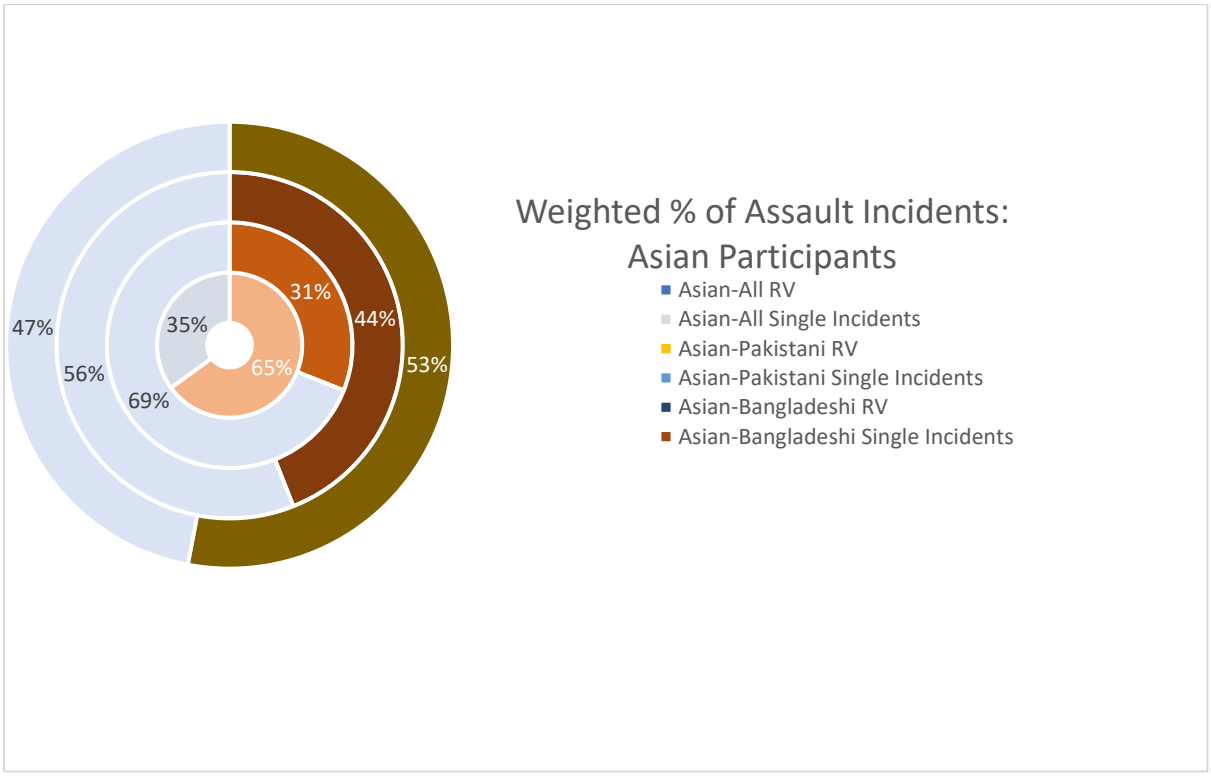


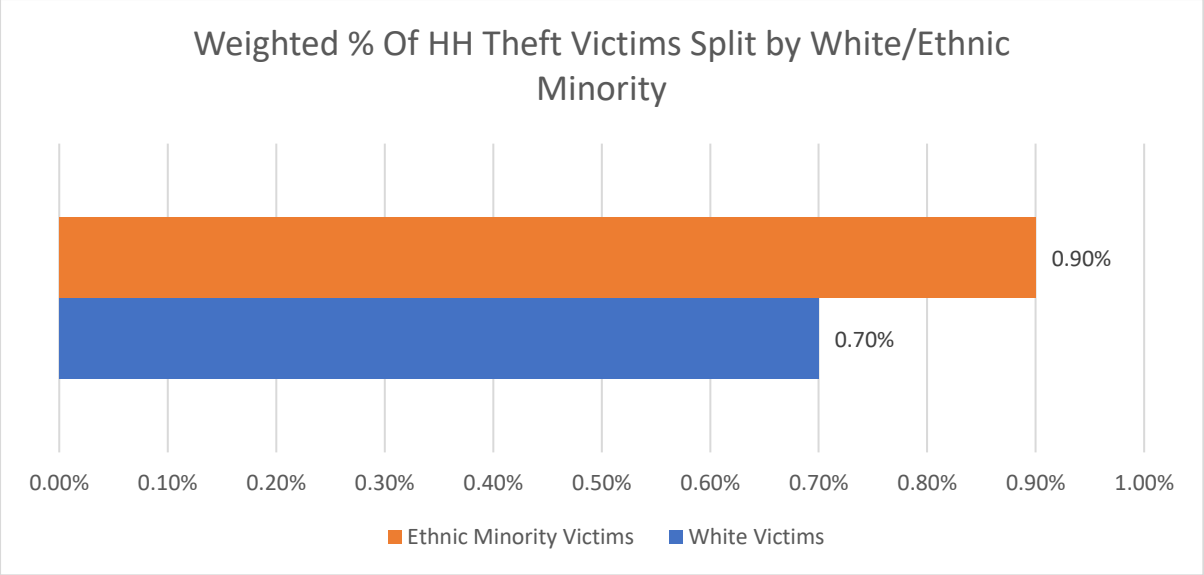


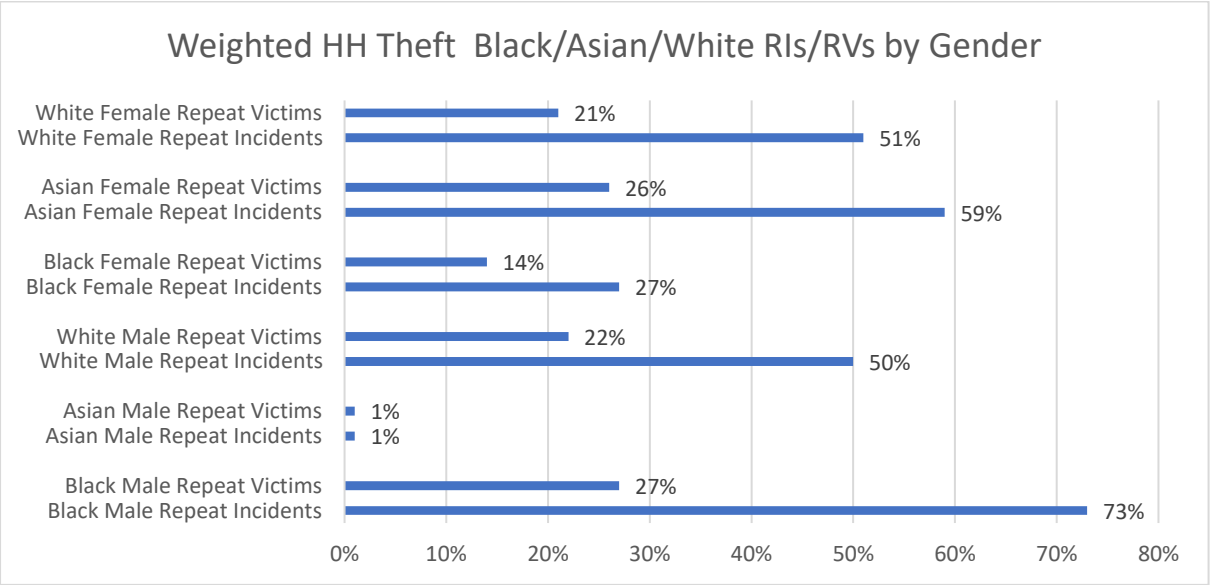

Weighted % of Assault RV in Black/Asian/White & Gendered Respondents
White Female Repeat Incidents
White Female Repeat Victims
72%
39%
Asian Female Repeat Incidents
Asian Female Repeat Victims
59%
35%
Black Female Repeat Incidents
Black Female Repeat Victims
48%
22%
White Male Repeat Incidents
White Male Repeat Victims
62%
30%
Asian Male Repeat Incidents
Asian Male Repeat Victims
51%
30%
Black Male Repeat Incidents
Black Male Repeat Victims
66%
36%
0%
10%
20%
30%
40%
50%
60%
70%
80%

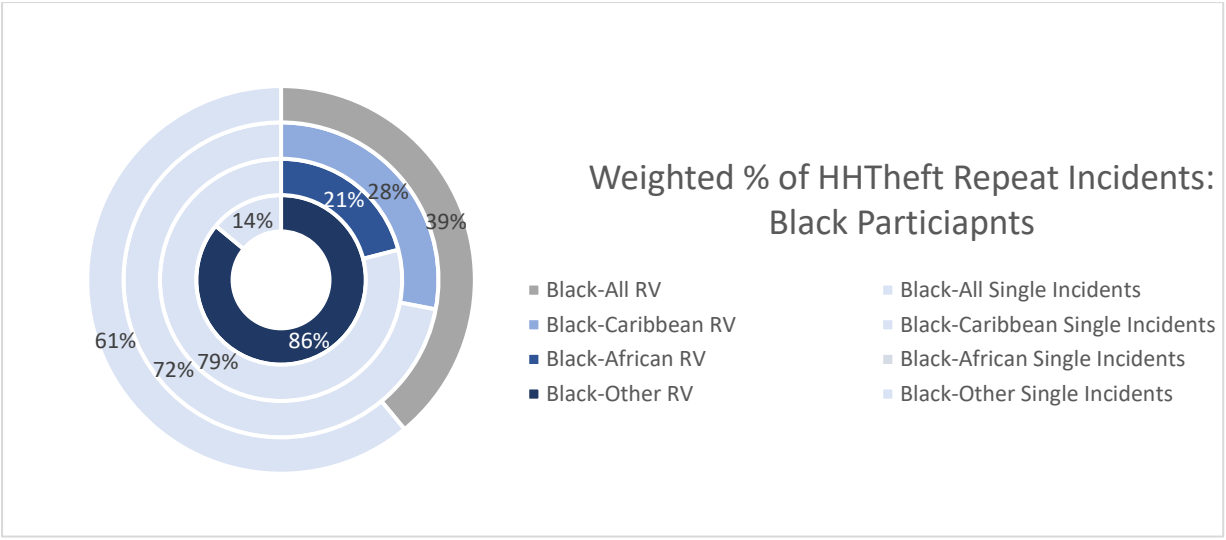

Weighted % of Assault Repeat Victims by Ethnicity
Black African
13%
Bangladeshi
18%
Black Other
24%
Pakistani
25%
White
34%
Other
35%
Black Caribbean
43%
Indian
44%

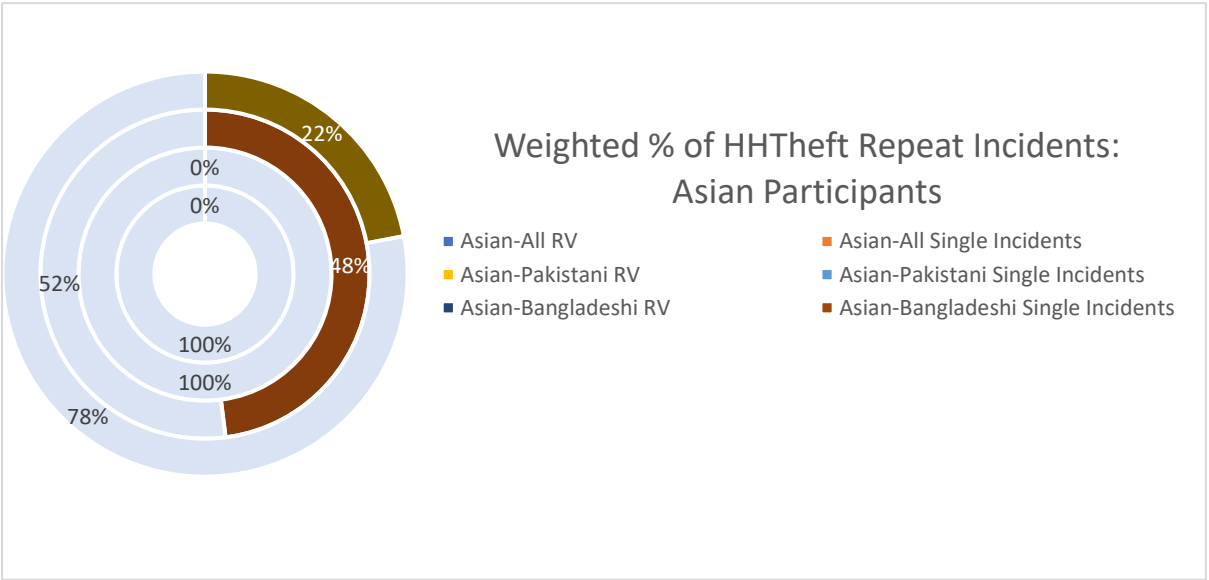

Weighted % of Assault Repeat Incidents for Black Participants
38%
28%
32%
43%
57%
68%
72%
62%
Black-All RV
Black-Caribbean RV
Black-African RV
Black-Other RV
Black-All Single Incidents
Black-Caribbean Single Incidents
Black-African Single Incidents
Black-Other Single Incidents

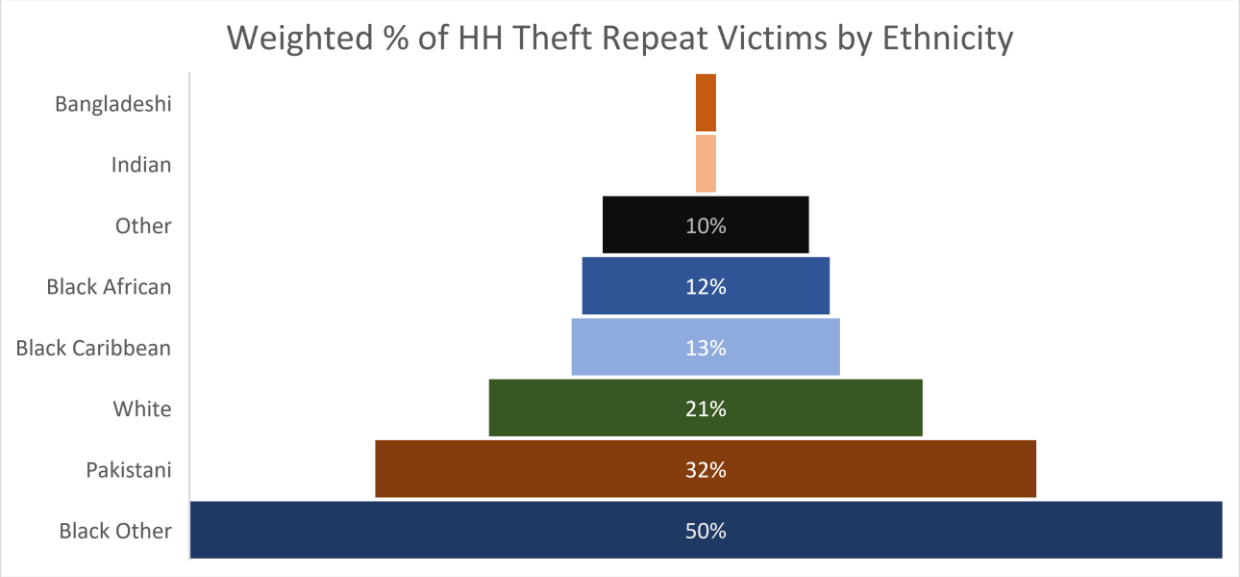

47%
56%
69%
35%
31%
44%
65%
53%
Weighted % of Assault Incidents:
Asian Participants
Asian-All RV
Asian-All Single Incidents
Asian-Pakistani RV
Asian-Pakistani Single Incidents
Asian-Bangladeshi RV
Asian-Bangladeshi Single Incidents


Weighted % Of HH Theft Victims Split by White/Ethnic Minority
0.90%
0.70%
0.00%
0.10%
0.20%
0.30%
0.40%
0.50%
0.60%
0.70%
0.80%
0.90%
1.00%
Ethnic Minority Victims
White Victims


Weighted HH Theft Black/Asian/White RIs/RVs by Gender
White Female Repeat Victims
21%
White Female Repeat Incidents
51%
Asian Female Repeat Victims
26%
Asian Female Repeat Incidents
59%
Black Female Repeat Victims
14%
Black Female Repeat Incidents
27%
White Male Repeat Victims
22%
White Male Repeat Incidents
50%
Asian Male Repeat Victims
1%
Asian Male Repeat Incidents
1%
Black Male Repeat Victims
27%
Black Male Repeat Incidents
73%
0%
10%
20%
30%
40%
50%
60%
70%
80%


Weighted % of HHTheft Repeat Incidents: Black Particiapnts
21%
28%
39%
14%
86%
61%
72%
79%
Black-All RV
Black-Caribbean RV
Black-African RV
Black-Other RV
Black-All Single Incidents
Black-Caribbean Single Incidents
Black-African Single Incidents
Black-Other Single Incidents


Weighted % of HHTheft Repeat Incidents: Asian Participants
22%
0%
0%
48%
52%
100%
100%
78%
Asian-All RV
Asian-Pakistani RV
Asian-Bangladeshi RV
Asian-All Single Incidents
Asian-Pakistani Single Incidents
Asian-Bangladeshi Single Incidents


Weighted % of HH Theft Repeat Victims by Ethnicity
Bangladeshi
Indian
Other
Black African
Black Caribbean
White
Pakistani
Black Other
10%
12%
13%
21%
32%
50%

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