Linking Offence Histories to Accidents Using OTS Data:

Report on Data Collected and Preliminary Findings by Loughborough University

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Shared Annex appended in June 2011 to provide comparison with associated activity by TRL Ltd.

vsrc

Vehicle Safety Research Centre

Loughborough University Enterprises Limited

THE QUEEN'S
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Awarded to the Vehicle Safety Research Centre

Approvals

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Quality Reviewed: Julian Hill

Please note: since completing this report, the VSRC has changed name to become the **Transport Safety Research Centre (TSRC)** to reflect the broad range of research conducted.

Although this research was commissioned by the Department for Transport, the findings and recommendations are those of the authors and do not necessarily represent the views of the DfT.

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on the spot accident research

EXECUTIVE SUMMARY

Study Objectives and Procedures

The core objective of this study was to collect offence history data for active road users involved in OTS investigated collisions in Nottinghamshire. In addition, work has been done to combine data from the Deprivation project (based on the conversion of home postcodes into Index of Multiple Deprivation scores). This additional data matching was initiated as part of the OTS Causation Study.

The offence history data is based on police searches for each active road user to identify PNC (Police National Computer) and DVLA (Driver and Vehicle Licensing Agency) records. These data are then linked to the OTS accident causation and deprivation data to create a unique anonymized dataset which allows links between accident causation and offending to be explored, taking account of road user characteristics and socio-demographics. Data were linked for offences relating to the both motoring and non-motoring offences, and relating to events recorded at any time, either before, during or after the collisions investigated.

The value of this data is in contributing to a better understanding of some of the complex human aspects of risk taking behaviour and road accident involvement. It is important to understand not only the mistakes that people make, but whether there are specific groups of people who are more likely to make certain types of mistake. Understanding behavioural patterns and related demographics that are common among collision involved road users could aid the future development of road safety policy and the targeting of awareness campaigns.

This report presents Phase 2 & 3 OTS data from the Vehicle Safety Research Centre (collected 2003-2010). Identity details necessary to collect offence and deprivation data were destroyed for all Phase 1 cases (2000-2003) prior to the commencement of these projects (in line with data protection obligations).

Data are presented mainly in descriptive form due to the many caveats that must be considered within this complex dataset. However where appropriate, Pearson's Chi Square significance results are included.

This Offence Histories research was undertaken on behalf of the Department for Transport, which also sponsored the core OTS data collection project.

Layout of the Document

- The first three sections of the main document introduce the Offence Histories Project, provide an overview of the methodology and identify some of the assumptions and data limitations.
- Section 4 presents descriptive data exploring the identified offence histories, and the relationship between offending and: age, gender, road user type, deprivation, collision severity, and collision fault. This section also includes further discussion of the complexities and limitations of the data.
- Section 5 provides some initial analysis on the links between collision causation types and offence types, focused on speed, licence and insurance convictions.

- Section 6 explores links between motoring and non-motoring convictions.
- Section 7 makes a comparison with the national offence data and presents Ministry of Justice figures on re-offending.
- The final sections of this document are the Discussion, Conclusions, and Recommendations, followed by the References, Acknowledgements, Technical Annex and Appendices.
- In addition, a Shared Annex provides comparison with associated activity in the Thames valley region as carried out by TRL Ltd.

Summary of Findings

All findings within the VSRC study are related to active road users involved in collisions within the Nottinghamshire area. The data presented here may not be nationally representative and should not be treated as such. This work demonstrates a methodology for linking collision data and offence data. It is recommended that all findings are reviewed in this context. Further work may be possible in the future to link this data, with comparable data collected by TRL in the Thames Valley region.

Links between Offending and Age, Gender, Road User Type and Deprivation

The data shows that males are more likely to have offence histories than females; this applies to both PNC and DVLA offences. Offending appears to be concentrated among younger age groups, particularly for PNC records, although further research is required to understand this finding, as there are a number of possible explanations that reflect the complexity of collecting and analysing these data. The highest proportion of identified offence histories is within the LGV (van) driver group, followed by motorcyclists, bus and HGV drivers. Further work is recommended to analyse road user groups in more detail, in particular those who can be identified as driving for work.

Overall the IMD (Index of Multiple Deprivation) distribution is not an even spread but is skewed towards greater levels of deprivation, this is particularly apparent when focusing on the at fault road users (those identified as the precipitating road user in an OTS investigated collision). Road users with 6 or more convictions (motoring and/or non-motoring) are identified mostly within the 1st quintile of deprivation (the most deprived group), with steadily decreasing numbers across the quintiles. Road users with 1-5 convictions do not show the same linear relationship with deprivation although the peak is still within the 1st quintile; the next greatest number is within the fourth quintile, which is the second least deprived group. It is likely that this reflects the large number of summary motoring convictions (including fixed penalties) which can be found across the sample. Road users with no identified convictions show a different pattern of deprivation again with peaks in the average 3rd quintile and the least deprived 5th quintile.

Collision Severity and Offence Histories

The highest proportion of road users with offence records were found in the fatal collisions group, with a relatively even spread between all other collision injury-severities. The peak for the fatal collisions group is seen in the PNC data, but not in the DVLA data. Looking at the cases where injury severity was known, there are proportional peaks within the Killed or Seriously Injured (KSI) groups for many of the more serious offences. Overall though, the

largest offence group - summary motoring - has a relatively even spread, which is especially visible for speed limit offences (the main summary motoring conviction). Further work is recommended to consider the impact of linked offences on these figures (i.e. convictions resulting directly from the collision).

Presence of Offence History between at Fault and Not at Fault Road Users

Initial exploration of the OTS offence data supports the theory that people who take risks by offending, may take greater risks as drivers, as evidenced by fault within the collision causation data. There is a clear proportional increase in collision fault (road users defined as precipitating) among those with offence histories, particularly PNC (Police National Computer) offence histories. For every top level offence category (e.g. violence against the person, criminal damage, summary motoring), a proportionately higher percentage of road users within the precipitating group (compared to the non-precipitating group) have at least one offence (with the sole exception of 'other indictable' – for which there is no difference). For every motoring offence category, a proportionately higher percentage of road users within the precipitating group (compared to the non-precipitating group) have at least one offence although the difference is comparatively small for speed limit and neglect of traffic direction offences. These tend to be camera based fixed penalties (neglect of traffic directions is commonly a traffic light offence) and having at least one instance of either of these offences on a road user's record, does not appear to increase likelihood of being at fault in an accident.

Links between Causation Types and Offence Types

The main links explored are between speed limit offences and speed related collisions, and predominant collision causation types for road users with offences for unlicensed and/or uninsured driving. Causation (that is to say the causes of accidents) is considered using three different systems within OTS: collision type, the OTS Causation system (precipitating and contributory factors), Contributory Factors 2005 (as used in STATS19). Data show that speed limit offenders are more likely to have caused a collision attributed with the OTS causation system factor excessive speed, compared to those without identified speed limit offences. Otherwise there were only minimal differences between road users with and without speed offence records. Exploration of precipitating factors found minimal differences in collision causation between those with and without licence/insurance offences. However there are stronger relationships within the factors contributing to the causes of accidents, such as impairment through alcohol. It is recommended that these are explored further in future analysis.

Motoring and Non-Motoring Offences - Correlation between Conviction Numbers

Most road users with 1-5 motoring convictions have no identified non-motoring convictions (68%). Road users with 6 or more motoring convictions are more likely to have other identified non-motoring convictions than none at all. Road users with any non-motoring convictions are more likely to have at least 1 identified motoring conviction than to have none. For every top level offence, there is an increase in the percentage of those convicted as the number of motoring offences increases. This increase is particularly notable within the ≥6 motoring convictions group (n=66). Differences in the types of motoring offences between the groups are explored. Those with 1-5 motoring convictions are most likely to have speed limit convictions. Those with 6 or more motoring convictions are most likely to

have vehicle insurance convictions. The typical member of the ≥6 motoring convictions group is young, male and from a deprived (1st IMD quintile) area.

Comparison with National Data

The VSRC have worked with the Ministry of Justice in exploring how national data can be used in the Offence Histories project. It is important to understand how well the sample of OTS offence histories represents the national data, and this can only be done if the two sets of data can be made compatible. The national data has been a challenge, especially as published data tends to count offences rather than offenders, but a bespoke dataset has been collated by the Ministry of Justice to enable a first examination of the national and OTS offence history datasets together. For nearly all offence types (motoring and non-motoring) with available national data, the proportion of OTS road users with an offence identified is higher, much higher in many cases, than the national data for the period of 1999 to 2008. However, the comparison between OTS and the national figures highlights a lack of commonality between the datasets, especially regarding offences that are dealt with by the courts, which are not included in the available national data. Further work on harmonization of these datasets is recommended alongside the exploration of additional national data availability. It is also suggested that Offence Histories results from both the VSRC and TRL study regions should be combined and analysis conducted on the extent to which this collective data is nationally representative.

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GLOSSARY OF DEFINITIONS, ABBREVIATIONS AND TERMS

Used in this Report	Refers to:
ACPO	Association of Chief Police Officers
Active road user (ARU)	A person in charge of their own movement (to include drivers, motorcycle riders, cyclists and pedestrians but excluding all passengers and pillion riders). All ARUs in this report were selected due to their involvement in an OTS investigated road traffic collision.
At fault road user	This is the road user who has been attributed with the precipitating action in the collision. Whilst others in the collision may also have contributed to the collision this road user is primarily at fault.
Bus	Includes minibuses, local service buses and coaches
Car	Used as a generic term to incorporate, passenger cars, sports cars, multi-purpose vehicles (MPV's) and sport utility vehicles (SUV's)
Cyclist	Person in charge of pedal cycle
DfT	Department for Transport
DVLA	Driver and Vehicle Licensing Agency
HGV	Heavy goods vehicle (over 3.5 tonnes maximum gross weight)
HOCR	Home Office Counting Rules
Identity Matched / ID Matched	A road user whose identity details as provided to the OTS Project have been confirmed within one or more police accessed databases (PNC, DVLA, Voters)
IMD	Index of Multiple Deprivation
Indictable Offences	Offences which are triable at Crown Court (these offences are considered to be the most serious).
KSI	Killed or Seriously Injured
LGV	Light goods vehicle (up to 3.5 tonnes maximum gross weight)
Locate Trace	Locate Trace is a tag applied to a PNC record to indicate that a person is wanted in relation to a crime. Such an individual may have no other offence history (no arrests or convictions recorded).
MoJ	Ministry of Justice
Motorcycle	Includes motorcycles, mopeds, scooter or motor cycle combinations
Motorcyclist	Person in charge of motorcycle

OTS	On The Spot – an in-depth, on-scene road traffic collision investigation project sponsored by the Department for Transport and the Highways Agency.
OTS Causation System	OTS Precipitating and Contributory Factors System (Presented under the Accident Causation Tab of the Scene section of the OTS database browser)
PNC	Police National Computer
PSV	Public Service Vehicle
PTW	Powered two wheeler, same definition as motorcycle
Skeleton (PNC) Record	A skeleton record is a blank PNC record that has been created for an individual, but the offences have been deleted after time or are not available to users at lower security levels. A skeleton record identifies that there is therefore an unobtainable offence history.
SOA	Super Output Area
STATS19	National road collision data for Great Britain
Summary Offences	Offences which can usually be dealt with by a Magistrates Court or by Fixed Penalty. In certain circumstances, a summary offence may be referred up to the Crown Court.
TRL	TRL Limited, Berkshire
Top Level Offence	Offences are coded into one of 12 'top level' categories. A range of more detailed codes are found within each top level category. Motoring offences are presented at this more detailed level.
Voters Database	Police version of the full electoral roll
VSRC	Vehicle Safety Research Centre at Loughborough University

1. INTRODUCTION

The On The Spot Project (OTS) had a primary aim of identifying the causes of road traffic collisions (RTCs). Investigating collisions in Nottinghamshire, the Vehicle Safety Research Centre (VSRC) were focused on understanding the range of elements of each case, including the human factors. It is important to understand the mistakes that people make, but then in terms of forming policy and targeting awareness campaigns, it is vital to also understand whether there are specific groups of people who are more likely to make certain types of mistake.   One possible group would be people who have committed criminal offences (which in turn may be linked to specific socio-demographic profiles).

The Vehicle Safety Research Centre (VSRC) conducted a feasibility study in 2006-2007[1] to see whether it was possible to match a sample of crash involved road users, identified from the On The Spot Project (OTS), to Police National Computer (PNC) and Driver Vehicle Licensing Agency (DVLA) records.

The feasibility study was successful, and the VSRC started a follow on project in 2008, with the aim of collecting offence data for all OTS Phase 2 and 3 active road users (collisions since 29th September 2003) for whom there are sufficient personal details recorded to match their identities with PNC and DVLA records. Active road users are those who are responsible for their own movements within a collision, so this excludes all passengers, but includes pedestrians and cyclists. We are interested in all active road users because of the potential links between risk taking and offence histories, regardless of the mode of transport.

Following the success of the VSRC's project to link OTS and offence histories, TRL were commissioned to undertake similar work for OTS cases in their area (the Thames Valley region). The VSRC methodology and data are presented here. This report provides an initial overview of the convictions identified, their frequency and how they may be linked to both road user data and collision causation data.

All findings within the VSRC study are related to active road users involved in collisions within the Nottinghamshire area. The data presented here may not be nationally representative and should not be treated as such. This work demonstrates a methodology for linking collision data and offence data. It is recommended that all findings are reviewed in this context. Further work may be possible in the future to link this data, with comparable data collected by TRL in the Thames Valley region. Future linking of data from the two OTS regions should yield results broadly representative of the national road collision data, because the overall OTS study was designed to allow data to be used in that way.

This Offence Histories research was undertaken on behalf of the Department for Transport, which also sponsored the core OTS data collection project.

1.1. On The Spot (OTS)

The On the Spot Project (OTS) was commissioned by the Department for Transport and the Highways Agency to collect independent, on-scene, in-depth data on the causes and

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[1] Dodson, E. & Hill, J. (2007). On The Spot accident data collection Phase II: Offence histories feasibility report. Unpublished study for the Department for Transport (PPAD 9/31/120).

consequences of road traffic collisions (RTCs). This project was undertaken by two organizations, the Vehicle Safety Research Centre (VSRC) and the Transport Research Laboratory (TRL). The VSRC collected data in Nottinghamshire and TRL in Thames Valley, with the exact sample areas chosen to broadly reflect national road casualty statistics.

The work was commissioned to collect a total of 500 cases per year for three Phases: 2000-2003 (Phase 1)[2], 2003-2006 (Phase 2)[3] and 2006-2010 (Phase 3). It is believed that a new format, in-depth accident investigation activity is under development for possible continuation of both on-scene and retrospective collision investigations from 2010.

On-scene investigation provides a unique perspective on the causes of RTCs as it allows the collection of 'perishable' data, which is the information only available in the immediate aftermath, such as vehicle positions, trace marks and debris, use of child restraints and protective clothing, weather, traffic conditions and temporary sight obstructions. It also allows investigators to speak to witnesses and involved road users, and in more serious collisions to have seen the initial vehicle damage before secondary damage is caused by casualty extraction or vehicle removal (without causing any delays to the vital work of the emergency services).

To reach collisions while these data were still available, the VSRC operated an immediate response system, employing skilled police drivers and using a dedicated police vehicle. Where collisions were identified by the emergency service control team as being potentially life threatening, the VSRC OTS team were able to respond under blue light conditions to provide early support at the scene.

OTS investigations covered highways, vehicles, road user behaviour and injuries, with all information collated into a bespoke database with over 3,000 fields. All personal identity data are stored securely and separately, and are destroyed, typically within 5 years after collection.

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[2] Hill J.R. & Cuerden R.W. (2005). Development and Implementation of the UK On the Spot Data Collection Study – Phase 1. Department for Transport Road Safety Research Report No. 59.

[3] Cuerden, R., Pittman M., Dodson, E. and Hill, J. (2008). The UK On The Spot Accident Data Collection Study – Phase II Report. Department for Transport Road Safety Research Report No. 73.

(For both reports see: http://www.dft.gov.uk/pgr/roadsafety/research/rsrr/theme5/)

2. METHOD

2.1. Offence Histories Data Collection Methodology

When the OTS team attended collisions, they requested personal details (name, address and date of birth) from road users at the scene. These details enabled the team to identify the age of road users for the database, to calculate IMD (Index of Multiple Deprivation) scores based on each home address and to send follow-up questionnaires.

For the offence histories project, all active road users were identified and their personal details were also entered onto data request forms. These forms were passed by hand to a designated police officer at Nottinghamshire Police. Police personnel then searched the PNC and DVLA databases for any record of these road users. All data were entered onto individual spreadsheets that were returned to a designated senior researcher at the VSRC. These spreadsheets contain a case number and accident date, but no personal identity details. At no time do the researchers involved have access to the corresponding identity records.

Raw data with case numbers attached was stored securely by the senior researcher. Analysed data was stripped of case numbers, which broke the final link to the OTS database. Therefore all identities were protected and confidentiality maintained. This process (see Figure 1) was based on a detailed data sharing agreement which was established with Nottinghamshire Police (NP) specifically for this project.
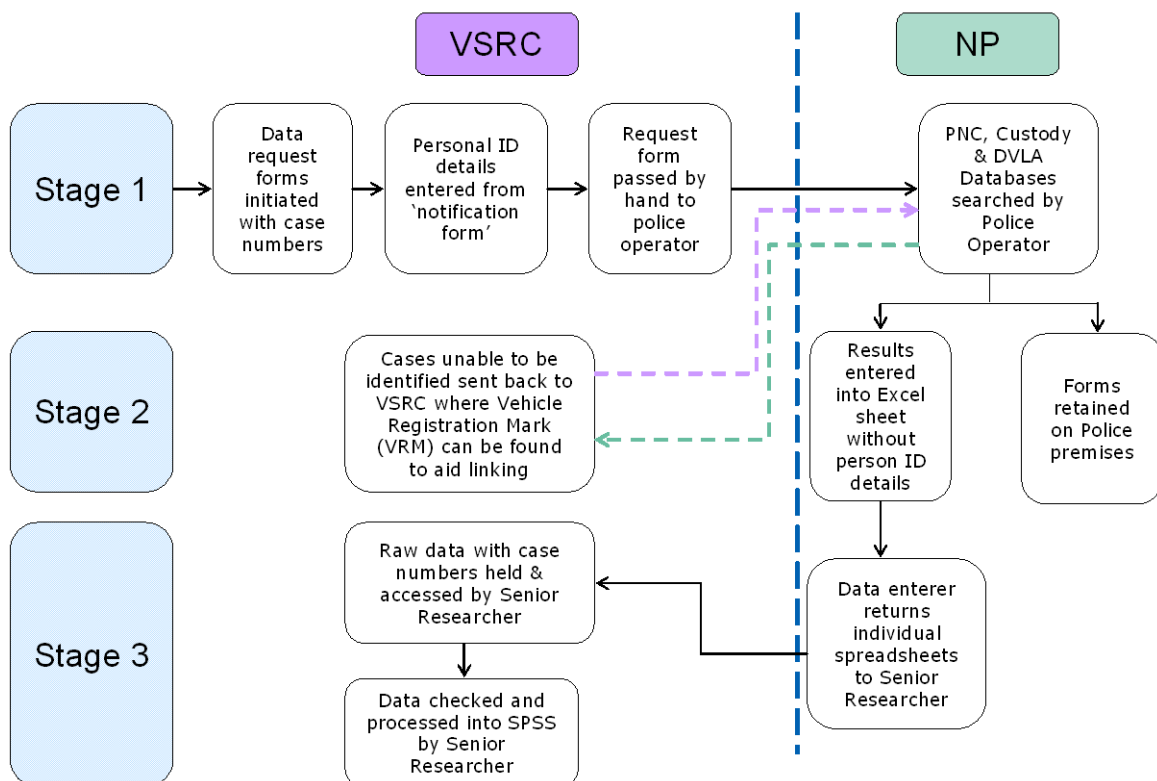
Figure 1: Data sharing methodology for VSRC and Nottinghamshire Police

No data were matched from Phase 1 of OTS (2000-2003) as these identity records were destroyed in line with a strict data protection timescale. Data collection therefore started

with Phase 2 (2003-2006) and Phase 3 data collection (2006-2010) began in 2009. Within Phase 2 there are 1365 active road users; within Phase 3 there are 1517 active road users. That gave a total VSRC sample of 2882 active road users.

2.1.1. Data Sources

This project utilised six separate data sources.

- **The OTS database** – this holds detailed electronic information on the causes and injury outcomes of independently investigated road traffic collisions. Core fields were copied from this database to link with the separate offence data.

- **Securely held OTS identity data** – these paper files were used to create individual offence history data requests for every Phase 2 & 3 active road user for whom identity details were available. Use of anonymous case numbers allowed a link to be established between returned offence data and core fields from the OTS database within a new OTS offence histories dataset – accessible only to named researchers security checked to a high level.

- **The Police National Computer (PNC)** – is a system used by all police forces in England, Wales, Scotland and Northern Ireland. It holds police conviction data, with arrest data also included from April 2005. It covers all non-motoring offences, and also holds information on motoring offences where there is police involvement. It does not include comprehensive records of minor traffic offences such as automatic penalties generated from safety camera data. All available offence data from this system for the identified ARUs were recorded.

- **The Driver and Vehicle Licensing Agency (DVLA) Database** – is a system that contains data only on motoring offences and it is accessible through the police network. It is more difficult to match people on the DVLA database than on the PNC database as a DVLA search requires an exact full name (with date of birth), otherwise a null return is likely. With common names, there may be multiple returns and the current address is required to make a definite match. There is some overlap in the recording of motoring offences between PNC and DVLA – but care was taken to ensure that each offence was only recorded once in the reported offence data. The DVLA database additionally provided details of minor traffic offences not included on PNC, licence status and endorsements.

- **The Voters database** – is a police version of the full electoral roll. Where the data coders could not identify an ARU on either the PNC or DVLA database, their identity details were checked on the Voters database. This provided confirmation of name and address, and could indicate an alternative spelling or unrecorded middle name. Any corrections allowed the data coders to recheck PNC and DVLA.

- **The Deprivation database** – was designed by TRL to convert home postcodes of OTS collision involved ARUs into deprivation rankings. Both the VSRC and TRL populated this database from the securely held identity data at each centre. These deprivation rankings were mapped into the VSRC offence histories dataset to supplement the core OTS demographic data for each active road user.

2.1.2. Coding and Categorization of Offences

Police data coders were asked to identify whether any identity match had been made (including a match on the Voters database). They indicated whether any PNC or DVLA offence record had been found (including both arrests and convictions). Where a DVLA match was made (with or without an offence history), details were given of driving licence entitlements, the date a full licence was first held, licence status at the date of check and licence status at the date of the OTS investigated road traffic collision (RTC).

Data were collected on any offences identified on either the PNC or DVLA databases (with some motoring offences found on both systems). Both arrests and convictions were recorded. This enabled analysis to be conducted at two levels, broad indications of the presence of any offence history (including arrest records), and more detailed analysis focused on conviction data for specific offence types.

In line with the police data sharing agreement, data were recorded at a category level (see Table 1 and Table 2) rather than with details of individual offences. Additionally data were collated into 'packets' for each offence type and the year committed (for example, a person may be listed as having 4 arrests and 3 convictions for burglary in 2003). It was stated within each 'packet' whether the convictions were prior, linked or subsequent to the RTC.

For the purposes of this project the team looked very broadly at general offences and then more specifically at motoring offences. The classification of these offences was based on published data to allow future comparison.

In May 2007, responsibility for sentencing policy, probation, prisons and prevention of re-offending in England and Wales was transferred from the Home Office to the newly formed Ministry of Justice (MoJ).

At present, statistics on offences (motoring and non-motoring) are prepared and reported on by the Criminal Justice Evidence and Analysis Unit, which is based at the Office for Criminal Justice Reform within the Ministry of Justice. These statistics are based on data obtained from the 43 police force areas and criminal courts within England and Wales by the Home Office Data Collection Group, Science and Research Support Group. Information on penalty charge notices is supplied by London Boroughs and other local authorities.

This transfer of responsibility has seen a number of changes to the categories used for reporting offence data and it was important to reflect this in the OTS Offence Histories project.

In April 2008 a number of changes were published to the Home Office Counting Rules (HOCR) for recorded crime. These changes included the addition of new offence classifications and splitting individual classifications into multiple separate classifications.

As motoring offences are no longer listed as a separate category in recent Home Office documents, but are of particular interest in this study, an adapted version of the scheme has been created, based on the statistics presented by the Ministry of Justice in the November

2007 report, Criminal Statistics 2006: England and Wales[4]. All offences are coded at a top level:

Offence Group	Top Level Offence Type
I)	Violence against the person
II)	Sexual offences
III)	Burglary
IV)	Robbery
V)	Theft and handling stolen goods
VI)	Fraud and forgery
VII)	Criminal damage
VIII)	Drug offences
IX)	Other indictable (excluding motoring offences)
X)	Other summary (excluding motoring offences)
XI)	Indictable motoring
XII)	Summary motoring

Table 1: Top level offence codes

Indictable offences are those which are triable at Crown Court (i.e. considered to be the most serious). Summary offences can usually be dealt with by a Magistrates Court or by Fixed Penalty.

When the Ministry of Justice was created and took responsibility for publishing crime statistics, new motoring offence categories were used, that better reflect entries on the PNC. Of particular note, April 2008 saw the Ministry of Justice publication of "Offences relating to motor vehicles England and Wales 2006"[5].   This utilizes an updated grouping of motoring offences. These categories (Table 2) were used by the project to code all motoring offences a second time in greater detail. Note – category 8 is absent on the original document from which these classifications are taken, and the VSRC were informed that it is not used by the MOJ.

It should be noted that not all motoring offences can be coded at the top level as indictable or summary motoring, for example, unauthorised taking or theft of a motor vehicle could be coded at the top level as either 'theft and handling stolen goods', or as 'other summary'. The choice of top level offence was based on the detail of the individual offence, which was available to the police data coder at the time of the offence checks.

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[4] Ministry of Justice (2007). Criminal Statistics 2006: England and Wales. November 2007. Accessed February 2010: http://www.justice.gov.uk/docs/crim-stats-2006-tag.pdf

[5] Fiti, R., Perry, D. Giraud, W. & Ayres, M. (2008). Offences relating to motor vehicles England and Wales 2006.   Ministry of Justice, April 2008. Accessed February 2010: http://www.justice.gov.uk/about/docs/offences-relating-to-motor-vehicles-2006-ii.pdf

Motoring Offence Group	Motoring Offence Type
1	Causing death or bodily harm
2	Dangerous driving
3	Driving etc. after consuming alcohol or taking drugs
4	Careless driving
5	Accident offences
6	Unauthorised taking or theft of motor vehicle
7	Driving licence related offences
9	Vehicle insurance offences
10	Vehicle registration and excise licence offences
11	Work record and employment offences
12	Operator's licence offences
13	Vehicle test offences
14	Fraud, forgery etc., associated with vehicle or driver records
15	Vehicle or part in dangerous or defective condition
16	Speed limit offences
17	Motorway offences (other than speeding)
18	Neglect of traffic directions
19	Neglect of pedestrian rights
20	Obstruction, waiting and parking offences
21	Lighting offences
22	Noise offences
23	Load offences
24	Offences peculiar to motorcycles
25	Miscellaneous motoring offences

Table 2: Motoring offence codes

To provide a clearer overview of the data sharing process between the VSRC and Nottinghamshire Police, and the way in which data were coded and presented, an appendix of materials used has been included (see Appendix I to V), including the mapping of motoring offences onto the top level offence categories.

2.1.3. Data Checking

The VSRC designed a rigorous data checking procedure during the feasibility study that was continued for the main offence histories project. This included checking that all motoring offences had appropriate corresponding records coded at both the top level and at the detailed motoring level; that if ARUs were identified as having offence histories, that the individual offences were recorded; that individuals found on the DVLA database had all available licence details shown and that the licence date was appropriate to the age of the person.

3. DATA AVAILABILITY, ASSUMPTIONS AND LIMITATIONS

3.1. Offence Histories Data Availability

No data were matched from Phase 1 of OTS (2000-2003) as these identity records were destroyed in line with a strict data protection timescale.   Data collection included OTS Phases 2 and 3 (2003-2010).

Of the VSRC OTS road traffic collisions from Phase 2, 2003-2006 (1365 active road users), 1051 ARUs (77%) had their identity confirmed (i.e. sufficient accurate personal details available to match on at least one police accessible database: PNC, DVLA or Voters – which is an electronic version of the full electoral roll).

Of the VSRC OTS road traffic collisions from Phase 3, 2006-2010 (1517 active road users), 1193 ARUs (79%) had their identity confirmed

These figures are based on all active road user recorded in the OTS database. Offence history data requests were actually submitted for 2530 of the total 2882 active road users (88%). The remaining 352 ARUs did not have sufficient available identity data to complete a request form.   A total of 2244 ARUs had their identity confirmed by the police data coders, which as a proportion of the data requests sent, is an ID matching rate of 89%.

It should be noted that additional work on identity matching continues, and these figures may be revised upwards as a consequence in future reports.

However as a cautionary note, the identity match is based on details given by the road user at the scene. It is possible that a small number of road users will have given the identity details of another person, especially if they were not licensed at the time of the collision. The identity match confirms that a person of those details exists but it is impossible to absolutely confirm that this was the accident involved road user.

3.2. Offence Histories Data Limitations

There were a number of challenges for collecting and analysing this project data. Primarily linking the OTS identity data to external databases was not a straightforward process. Also there are a number of caveats that need to be considered with regards to the completeness of offence records.

3.2.1. Identity Matching Issues

The project relied on identity data provided by active road users at OTS collision scenes. Any inaccuracies or omissions in this data can prevent successful matching, as can changes to details, particularly with regards to the DVLA database which requires very exact search criteria. The following list provides an overview of some of the main issues identified with the road user identity data:

- Searches on the identity data raised the issue of false data being provided, as a small number of addresses were shown not to exist.

- Some road users provided a non-UK address, a business address, or a temporary address (e.g. university halls of residence).

- If names were given or recorded inaccurately then searches (particularly DVLA) were likely to give a null return. This included road users providing their preferred rather than given name, not highlighting unusual spellings or failing to provide any middle names. Without details of middle names, the police data coders were likely to either get a null return or multiple returns.

    o For DVLA null returns it was difficult to establish whether the road user had never applied for a UK driving licence or whether the police data coder did not have full/accurate identity details.

    o For DVLA multiple returns, the name, date of birth and postcode could be checked for a match. Where there was no exact match it is likely that the road user had simply changed address. A number of the addresses given now show on the Voters database as empty properties. As OTS Phase 2 data collection started in 2003, the length of time since identity details were given is likely to have exacerbated this issue.

- If a person was not registered to vote, had never held a UK driving licence and did not have a recorded offence history, then identity matching was impossible.

- Children and other non-motorists were more difficult to identity match.

- Not all identity data was complete therefore some offence history request forms were missing either the date of birth or the full address. This extended the data search time and reduced the likelihood of making a match

3.2.2. Limitations of Offence Records

With regards to limitations of the offence data collected, it can of course only provide a snapshot of crimes committed. Both arrest and conviction data were collected, but it is recommended that detailed analysis focuses on the convictions only as the arrest data does not confirm offending. Arrest numbers are intended as behavioural indicators only. However it should be noted that less than 2% of those with any recorded offence history had arrest only data, and most of these were still pending conviction.

The data only identifies offences that were known to the police and/or to the DVLA, recorded at the time of the offence, and remained on record at the time of the data check. Work based on the British Crime Survey has suggested that the majority of crime goes unrecorded (Grant, Harvey, Bolling & Clemens, 2006[6]; Walker, Kershaw & Nicholas, 2006[7]). The data reported therefore provides a minimum count of crimes committed and road users with no offence record cannot be assumed to have committed no offences.

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[6] Grant, C., Harvey, A., Bolling, K. & Clemens, S. (2006). 2004/05 British Crime Survey (England & Wales) Technical Report. London: BMRB.

[7] Walker, A., Kershaw, C. & Nicholas, S. (2006). Home Office Statistical Bulletin: Crime in England and Wales 2005/06. London: Research Development and Statistics Directorate, Home Office. (http://www.homeoffice.gov.uk/rds/pdfs06/hosb1206.pdf)

Guidelines on retention of offence data are complex and have changed over time. Records may have been deleted for older road users but retained for younger road users as a reflection of shifts in law and policy. Further details of data retention and deletion are given in a technical annex at the end of this report.

No individual offence check can be assumed to include a record of every offence ever committed, but this project used the best data that were available at the time. Despite the apparent limitations, this work provides the opportunity to develop a unique insight into the relationship between offending and accident involvement.

4. OFFENDING HISTORIES AMONG OTS ROAD USERS

There are a total of 2882 active road users in the VRSC OTS Phase 2 & 3 database. This includes records of people for whom no identity details were available (e.g. people who drove off immediately after their collision). Table 3 shows the source of all identity matches.

All ARUs	DVLA & PNC Match	DVLA only Match	PNC only Match	Voters only Match	No identity match made
2882	601	1547	14	82	638

Table 3: Source of identity data

1207 of those identity matched had no offence record. Within Table 3, DVLA matches include driving licence details and PNC matches include shotgun licences. Voters matching is only indicated where no other identity match was found.

For the rest of this report, all data is based on the identity matched group only (n=2244), unless specifically indicated otherwise.

1037 active road users were found to have an offence record and an additional 5 were known to be driving without a licence at the time of their collision. The source of this offence data is shown in Table 4.

Number of ID matched ARUs	DVLA & PNC	DVLA only	PNC only	No Offence History Found
2244	364	434	239	1207

Table 4: Source of offence history data

Where the presence of an offence history is indicated, for completeness this includes 18 active road users with arrests only (<2% of offence histories), however these are mainly for recent offences pending conviction. Any analysis at the more detailed level of offence type, uses conviction data only. It should be noted that the 'no offence history' group includes 85 ARUs with no DVLA match.

Presence specifically of a PNC offence record, includes 13 skeleton records and 2 locate trace records. A skeleton record is a blank PNC record that has been created for an individual, but the offences have been deleted after time or are not available to users at lower security levels. A skeleton record identifies that there is therefore an unobtainable offence history. Locate trace is a tag applied to a PNC record to indicate that a person is wanted in relation to a crime. One locate trace was for a person wanted for theft, but with no other recorded offence history, the other was for a person wanted for motoring offences, again with no recorded history, but the corresponding DVLA records indicated that this road user was driving a HGV without any driving licence at the time of the collision.

The most common offence type within the data was summary motoring, with records found for 826 ARUs (37%). Details of all top level offences are shown in Table 5, which identifies the number of individual records where at least one offence within a category was found, however it should be noted that individuals may have multiple convictions within the same offence category.

Offence Group	Top Level Offence Type	Number of ARUs with Any Offence	Percentage of ID Matched ARUs
I)	Violence against the person	275	12%
II)	Sexual offences	31	1%
III)	Burglary	97	4%
IV)	Robbery	21	1%
V)	Theft and handling stolen goods	210	9%
VI)	Fraud and forgery	56	2%
VII)	Criminal damage	138	6%
VIII)	Drug offences	106	5%
IX)	Other indictable (excluding motoring offences)	24	1%
X)	Other summary (excluding motoring offences)	176	8%
XI)	Indictable motoring	43	2%
XII)	Summary motoring	826	37%

Table 5: Number of active road users with any top level conviction by type

Table 5 shows that after 'summary motoring' the VSRC OTS offence records most commonly contained convictions for 'violence against the person' and 'theft and handling'. Full details of the frequency of convictions for each 'top level' offence type can be found in Appendix VI.

Table 6 presents an equivalent overview specifically of motoring offences, at the more detailed category level. The most common type of motoring conviction found was speed limit offences (22% of ID matched ARUs). This was followed by 'driving etc. after consuming alcohol or taking drugs' (7%), 'vehicle insurance offences' (6%) and 'driving licence related offences (6%).

Motoring Offence Group	Motoring Offence Type	Number of ARUs With Any Offence	Percentage of ID Matched ARUs
1	Causing death or bodily harm	7	0%
2	Dangerous driving	28	1%
3	Driving etc. after consuming alcohol or taking drugs	150	7%
4	Careless driving	85	4%
5	Accident offences	34	2%
6	Unauthorised taking or theft of motor vehicle	69	3%
7	Driving licence related offences	127	6%
9	Vehicle insurance offences	144	6%
10	Vehicle registration and excise licence offences	8	0%
11	Work record and employment offences	0	0%
12	Operator's licence offences	1	0%
13	Vehicle test offences	12	1%
14	Fraud, forgery etc., associated with vehicle or driver records	18	1%
15	Vehicle or part in dangerous or defective condition	14	1%
16	Speed limit offences	493	22%
17	Motorway offences (other than speeding)	1	0%
18	Neglect of traffic directions	119	5%
19	Neglect of pedestrian rights	2	0%
20	Obstruction, waiting and parking offences	1	0%
21	Lighting offences	0	0%
22	Noise offences	0	0%
23	Load offences	1	0%
24	Offences peculiar to motorcycles	1	0%
25	Miscellaneous motoring offences	73	3%

Table 6: Number of active road users with any motoring conviction by type

Full details of the frequency of convictions for each motoring offence type can be found in Appendix VII.

4.1. Links between Offending and Demographic Profile

This section identifies the characteristics of the ID matched sample in terms of age, gender, and road user type. The identity matching rate for each group is shown (based on the complete VSRC OTS Phase 2 & 3 dataset) followed by details of offending in terms of:

- Presence of any offence history
- Presence of PNC offence history
- Presence of DVLA offence history

Additionally, this section provides an overview of deprivation levels across the sample.

4.1.1. Age and Offence Histories

Age within this report is defined as road user age at the date of collision. Figure 2 illustrates the distribution of age by age group for the complete active road user and ID matched samples.
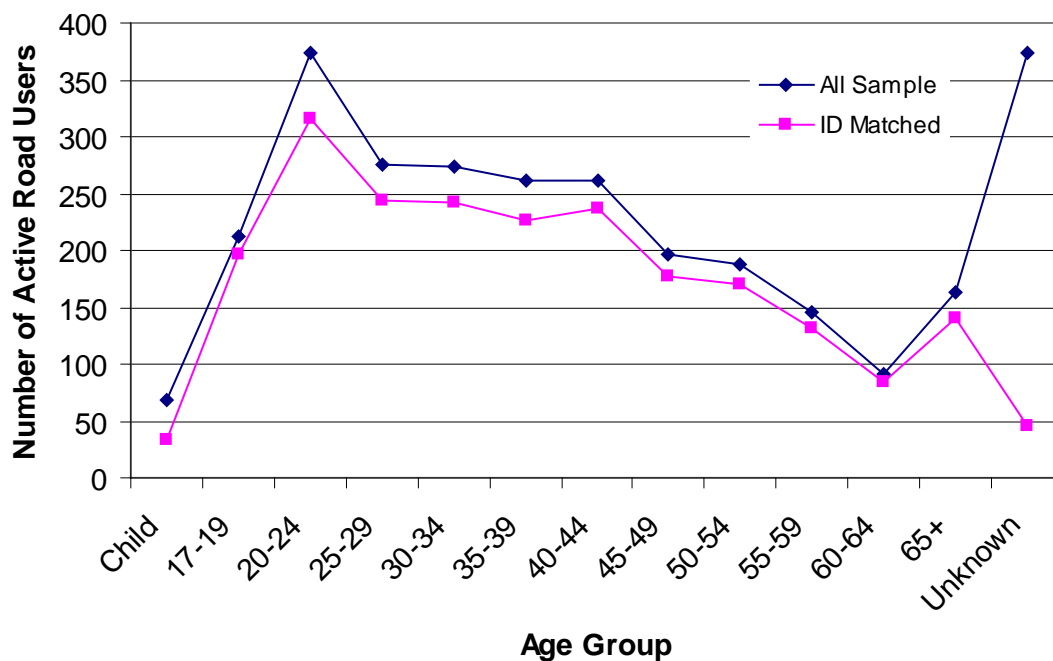
Figure 2: Age distribution of all VSRC Phase 2 and 3 active road users compared to the identity matched sample

The age distribution of the ID matched sample mirrors the age distribution of the complete active road user sample. However a large proportion of road users of unknown age remain unmatched, in many cases because broader identity details are also unavailable for these individuals so data request forms could not be completed.

An offence history is broadly defined within this report as any arrest or conviction. The tables presented throughout reflect the complexity of the offence data. For tables exploring the presence of any type of offence history (such as Table 7), 'No DVLA Match' indicates that although no offence history was found, it was not possible to match the person on the DVLA database, which may indicate that the person had no licence, but this cannot be confirmed. 'Driving No Licence' indicates that the person was a driver without an arrest/conviction

offence history, but that data searches confirmed that the person did not hold a valid licence at the time of the collision. There are 5 such cases.

Considering age group and offending (Table 7), the peak is for the child group (16 and under), although this is likely to be in part a reflection of the ID matching process. A person who is too young to be found on the electoral roll, may be found on the PNC system, therefore the ID match can be solely as a result of that person committing an offence. This will of course affect the balance of reported offending for this age group. The results therefore cannot be assumed to be indicative of the wider child population.

Age Group	Offence History Found				Total	% Offence Found (inc No Licence)
	Yes	Driving No Licence	No	No DVLA Match		
Child	24	0	6	3	33	73%
17-19	103	1	89	4	197	53%
20-24	163	0	146	7	316	52%
25-29	126	0	112	5	243	52%
30-34	117	0	117	8	242	48%
35-39	112	0	105	10	227	49%
40-44	120	0	107	9	236	51%
45-49	83	1	88	6	178	47%
50-54	65	2	96	7	170	39%
55-59	47	0	78	7	132	36%
60-64	30	0	53	1	84	36%
65+	24	1	105	11	141	18%
Unknown	23	0	18	4	45	51%
Total	1037	5	1120	82	2244	46%

Table 7: Presence of offence histories for identity matched active road users, by age group

Disregarding the child group, offending does still appear to be concentrated among younger age groups. There are three possible explanations; the first is a generational difference in the propensity to offend between younger and older age groups, the second is that the older group may have had a similar conviction rate when younger, but that their records have since been cleared (the issue of recency), the third is that changes to the legal infrastructure mean that the same behaviour as occurred in the past, may now be measured and recorded in a different way (e.g. the widespread introduction of speed cameras has increased the number of speeding convictions, reckless driving was repealed as an offence in 1991 as it was difficult to prosecute - due to the legal definition of recklessness - and was replaced with dangerous driving which is easier to establish). In addition, as new laws are passed, new offences are created every year.

Bearing in mind these caveats, age data are also presented specifically for PNC offences (Table 8) and DVLA offences (Table 9).

Age Group	PNC OH Yes	Skeleton Record	Locate Trace	Total PNC Trace	Total ID Matched	% PNC OH Trace
Child	24	0	0	24	33	73%
17-19	78	0	0	78	197	40%
20-24	107	0	1	108	315	34%
25-29	70	1	0	71	243	29%
30-34	67	0	0	67	242	28%
35-39	61	0	0	61	226	27%
40-44	73	0	1	74	236	31%
45-49	37	1	0	38	178	21%
50-54	20	4	0	24	170	14%
55-59	16	3	0	19	132	14%
60-64	14	1	0	15	84	18%
65+	8	2	0	10	141	7%
Unknown	13	1	0	14	47	30%
Total	588	13	2	603	2244	27%

Table 8: Presence of PNC histories for identity matched active road users, by age group

Age Group	DVLA Offence Record Found			Total ID Matched	% +ve DVLA History Found
	Yes	No	No DVLA Match		
Child	8	20	5	33	24%
17-19	69	121	7	197	35%
20-24	123	185	7	315	39%
25-29	103	133	7	243	42%
30-34	95	137	10	242	39%
35-39	88	127	11	226	39%
40-44	90	135	11	236	38%
45-49	64	107	7	178	36%
50-54	55	107	8	170	32%
55-59	40	84	8	132	30%
60-64	26	57	1	84	31%
65+	17	112	12	141	12%
Unknown	20	23	4	47	43%
Total	798	1348	98	2244	36%

Table 9: Presence of DVLA histories for identity matched active road users, by age group

As with the general offence history search the younger age groups have a higher proportion of identified PNC records whereas DVLA offence histories are much more evenly spread across the age groups.

4.1.2. Gender and Offence Histories

There are a total of 2882 active road users in the VSRC Phase 2 and 3 OTS dataset. The gender distribution is;

- 2022 (70%) Male
- 764 (27%) Female
- 96 (3%) Unknown (mainly absent from scene)

Of the 2022 males, 1627 have had their identity confirmed (80%), along with 617 out of the 764 females (81%). There was insufficient identity data to match any of the 96 active road users for whom gender was unknown.
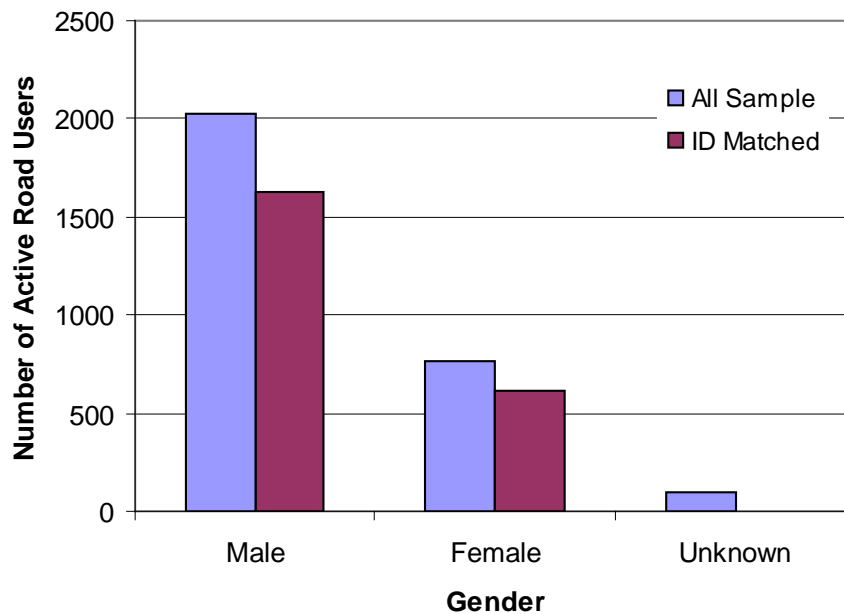
Figure 3: Gender distribution of all VSRC Phase 2 and 3 active road users compared to the identity matched sample

Table 10 summarizes the gender distribution for the ID matched sample and the presence of offence histories. Overall a greater proportion of offence records were identified for males than for females.

Gender	Offence History Found				Total	% Offence Found
	Yes	Driving No Licence	No	No DVLA Match		
Male	862	3	708	54	1627	53%
Female	175	2	412	28	617	29%
Total	1037	5	1120	82	2244	46%

Table 10: Presence of offence histories of identity matched active road users, by gender

Looking specifically at PNC offence histories, Table 11 again compares males and females.

Gender	PNC Offence Record Found				Total	% PNC History Found
	Yes	Skeleton	Locate Trace	No		
Male	530	12	2	1074	1627	33%
Female	58	1	0	557	617	10%
Total	588	13	2	1631	2244	27%

Table 11: Presence of PNC offence histories for identity matched active road users, by gender

In addition to the figures presented here, 3 of those with no PNC offence history had a flag on the PNC for a shotgun licence. They therefore had a PNC record, but not specifically an offence record.

Combining the full PNC offence records, skeleton records and locate trace records (but not the shotgun licence only records), 35% of ID matched males and 10% of ID matched females had an identified PNC record.

Table 12 shows DVLA offence records for males and females, indicating a much narrower gender gap than for PNC offence records (Table 11).

Gender	DVLA Offence Record Found			Total	% +ve DVLA History Found
	Yes	No	No DVLA Match		
Male	643	919	65	1627	40%
Female	155	429	33	617	25%
Total	798	1348	98	2244	36%

Table 12: Presence of DVLA offence histories for identity matched active road users, by gender

4.1.3. Road User Type and Offence Histories

The most common road user type in the sample is car drivers. There are 2162 car drivers in the VSRC Phase 2 and 3 OTS data of which 1691 were successfully identity matched (78%) within the offence histories project.

Figure 4 shows the distribution and ID matching of the other active road user types.
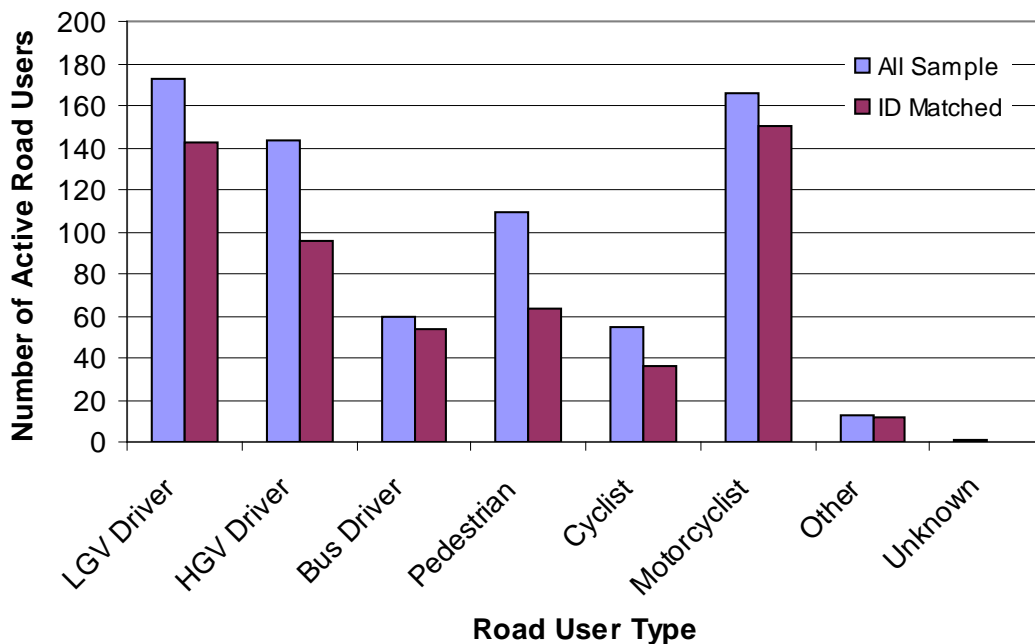
Figure 4: Road user type distribution of all VSRC Phase 2 and 3 active road users except car drivers, compared to the identity matched sample

Some professional drivers were more difficult to identify because they were not UK citizens and/or gave only a business address at the scene of the accident. Some pedestrians and cyclists were more difficult to identity match because they were less likely to be registered on the DVLA database (as some will be non-drivers). Also this group of non-motorists was more likely to include children as no age groups were excluded from the checks.

Table 13 presents the offence history distribution for different road user types. The highest proportion of identified offence histories is within the LGV (van) driver group, followed by motorcyclists, bus and HGV drivers. Generally the drivers of goods vehicles and public service vehicles (PSVs/buses) can broadly be assumed to be mainly driving for work.

| Road User Type | Offence History Found | | | | Total | % Offence Found |
	Yes	Driving No Licence	No	No DVLA Match		
Car Driver	734	2	888	67	1691	44%
LGV Driver	92	0	47	3	142	65%
HGV Driver	51	1	43	1	96	54%
Bus Driver	29	0	25	0	54	54%
Pedestrian	23	0	33	7	63	37%
Cyclist	18	0	16	2	36	50%
Motorcyclist	86	2	61	1	150	59%
Other	4	0	7	1	12	33%
Total	1037	5	1120	82	2244	46%

Table 13: Presence of offence histories for identity matched active road users, by road user type

Looking specifically at PNC histories, the focus moves to the vulnerable road users.

Road User Type	PNC OH Yes	Skeleton Record	Locate Trace	Total PNC Trace	Total ID Matched	% PNC OH Trace
Car Driver	391	7	1	399	1691	24%
LGV Driver	52	2	0	54	142	38%
HGV Driver	32	2	1	35	96	36%
Bus Driver	14	0	0	14	54	26%
Pedestrian	20	0	0	20	63	32%
Cyclist	16	0	0	16	36	44%
Motorcyclist	62	1	0	63	150	42%
Other	1	1	0	2	12	17%
Total	588	13	2	603	2244	27%

Table 14: PNC histories of identity matched active road users

The highest proportions are seen for cyclists and motorcyclists. It should however be remembered that a smaller proportion of cyclists (and pedestrians) were successfully ID matched. If they had never been registered with the DVLA, then the chances of obtaining a successful match increased if an offence had been recorded on PNC. These results may not therefore reflect a true difference.

Although caution must be exercised in interpreting the cyclist (and pedestrian) results, motorcyclists are still identified as proportionately more likely to offend than users of other motor vehicles. This raises interesting questions about who this accident involved motorcyclist group actually represents as it cannot automatically be assumed to represent the wider motorcycling community. Early analysis suggests that overall, the offending motorcyclists identified by this report are typically young males from high deprivation areas. Further detailed profiling work is recommended across all demographic data for offending road users.

Looking at the DVLA offence histories (Table 15) the peak is for LGV drivers, followed by HGV drivers, bus drivers and motorcyclists. These DVLA results better define the overall peak for offending within these road user groups. It is suggested that future research could further explore potential links between driving for work and motoring offences, looking at LGV, bus and HGV drivers. It is recommended that such work would additionally extract taxi drivers, motorcycle couriers and other business drivers from the accident data (which can be done using the OTS database). It would also be important to consider the likely proportion of LGVs not owned for work purposes (which could potentially be established through OTS questionnaire data). It should be noted that HGV drivers were another group that was more difficult to identity match. This group included a number of non-UK residents and drivers who gave only a commercial address.

Road User Type	DVLA Offence Record Found			Total	% +ve DVLA History Found
	Yes	No	No DVLA Match		
Car Driver	591	1024	76	1691	35%
LGV Driver	76	62	4	142	54%
HGV Driver	38	55	3	96	40%
Bus Driver	21	33	0	54	39%
Pedestrian	9	46	8	63	14%
Cyclist	3	29	4	36	8%
Motorcyclist	58	90	2	150	39%
Other	2	9	1	12	17%
Total	798	1348	98	2244	36%

Table 15: Presence of DVLA histories for identity matched active road users, by road user type

Although not within the remit of this study to look at every offence individually, Table 16 presents one of the most common offence types, 'Violence Against the Person' as an

example. The peak here is for LGV drivers and motorcyclists. Again further work could be done to profile the specific demographics of these offending groups, and potential limitations of the data for comparing road user types should be borne in mind, as discussed earlier in this section.

Road User Type	Total PNC Trace	Violence Against the Person	Total ID Matched	% with Violence Offences
Car Driver	399 (24%)	173	1691	10%
LGV Driver	54 (38%)	30	142	21%
HGV Driver	35 (36%)	16	96	17%
Bus Driver	14 (26%)	8	54	15%
Pedestrian	20 (32%)	10	63	16%
Cyclist	16 (44%)	5	36	14%
Motorcyclist	63 (42%)	32	150	21%
Other	2 (17%)	1	12	8%
Total	603 (27%)	275	2244	12%

Table 16: Violence against the person convictions for ID matched active road users

4.1.4. Deprivation and Offence Histories

The Index of Multiple Deprivation (IMD) 2004 is a summary measure of area-level deprivation in England that combines weighted scores in seven deprivation domains. England and Wales are split into 32,482 Super Output Areas (SOAs) that are ranked for deprivation. Analysis traditionally splits these ranks using quintiles (5 groups) or deciles (10 groups), where Group 1 is the most deprived. The data in this section has been prepared utilising quintiles, but deciles will also be referred to later in the report. IMD scores were identified for active road users based on their home postcode, using a conversion database developed at TRL. Further details of the Deprivation Project can be found in a Technical Annex at the end of this report.

The IMD scores are unknown for 460 active road users in the complete VSRC Phase 2 & 3 road user group (16%) usually because valid postcode data was not available. This includes unidentified road users who left the scene before the OTS team arrived.

It should be noted that VSRC OTS data was gathered in the Nottingham area. Nottingham has consistently been ranked as one of the 20 most deprived authorities in England (out of 354). Future analysis should explore sample area effects, especially if the VSRC (Nottinghamshire) and TRL (Thames Valley) deprivation datasets are analysed together.

Table 17 summarizes the distribution of IMD scores amongst all active road users (ARUs) in the VSRC Phase 2 & 3 OTS data. In addition, data is added on numbers identified as precipitating or not (i.e. the person identified as predominantly at fault).

Distribution of IMD Quintiles	Frequency	Percent		Precipitating ARU	Not Precip. ARU
1st Quintile (most deprived)	598	21%		341	257
2nd Quintile	487	17%		265	222
3rd Quintile	445	15%		231	214
4th Quintile	471	16%		241	230
5th Quintile (least deprived)	421	15%		232	189
Unknown	460	16%		313	147
Total	2882	100%		1623	1259

Table 17: Distribution of IMD deprivation ranks for all VSRC OTS Phase 2 & 3 active road users

Overall the distribution is not an even spread but is skewed towards greater levels of deprivation, this is particularly apparent when focusing on the precipitating road users. There are a large proportion of unknown deprivation rankings for this group (16%). This is a reflection of the number of road users for whom no address details were obtained (e.g. road users who did not stop following their collision).

Looking specifically at the ID matched road users in Table 18, there are still a group of unknown deprivation rankings, even where a partial address is known. The conversion of postcodes to IMD rankings is done through a static database. A small proportion of postcodes are not recognised by this software, which may in part be due to postcodes being changed or created over time.

Distribution of IMD Quintiles	Frequency	Percent		Precipitating ARU	Not Precip. ARU
1st Quintile (most deprived)	500	22%		278	222
2nd Quintile	431	19%		228	203
3rd Quintile	387	17%		202	185
4th Quintile	417	19%		215	202
5th Quintile (least deprived)	378	17%		202	176
Unknown	131	6%		75	56
Total	2244	100%		1200	1044

Table 18: Distribution of IMD deprivation ranks for ID matched VSRC OTS Phase 2 & 3 active road users

The ID matched group has a similar distribution of deprivation rankings to the complete Phase 2 & 3 population, again with higher levels of deprivation being predominant,

particularly for the precipitating road users. This is better visualized by referring to the graph below (Figure 5).
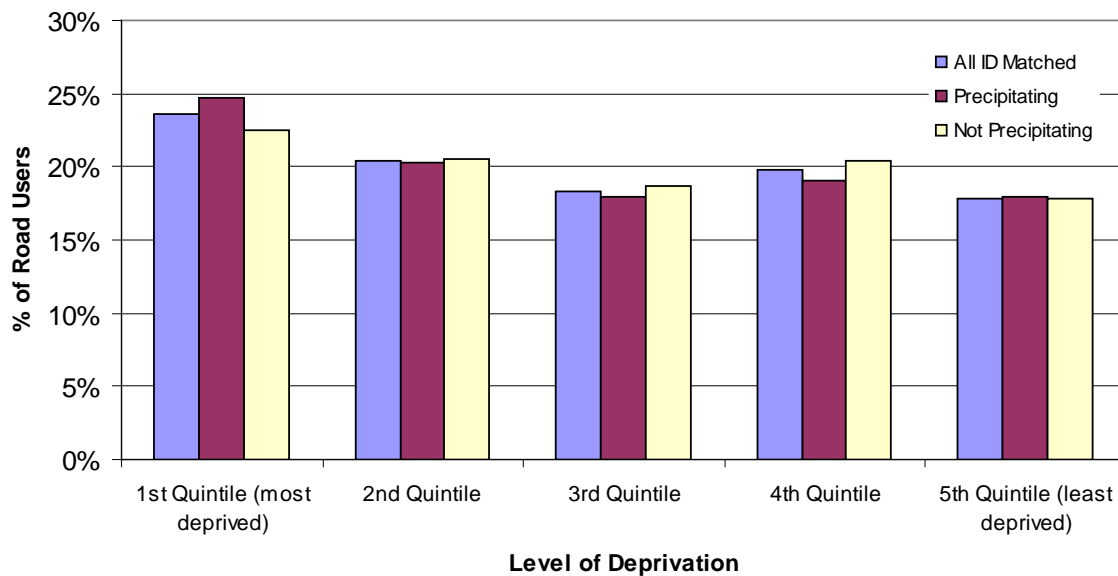
Figure 5: Distribution of known IMD deprivation ranks for ID matched VSRC OTS Phase 2 & 3 active road Users (n=2113)

Having determined the overall picture of deprivation for this group, the pertinent question within this section, is how that relates to level of offending.
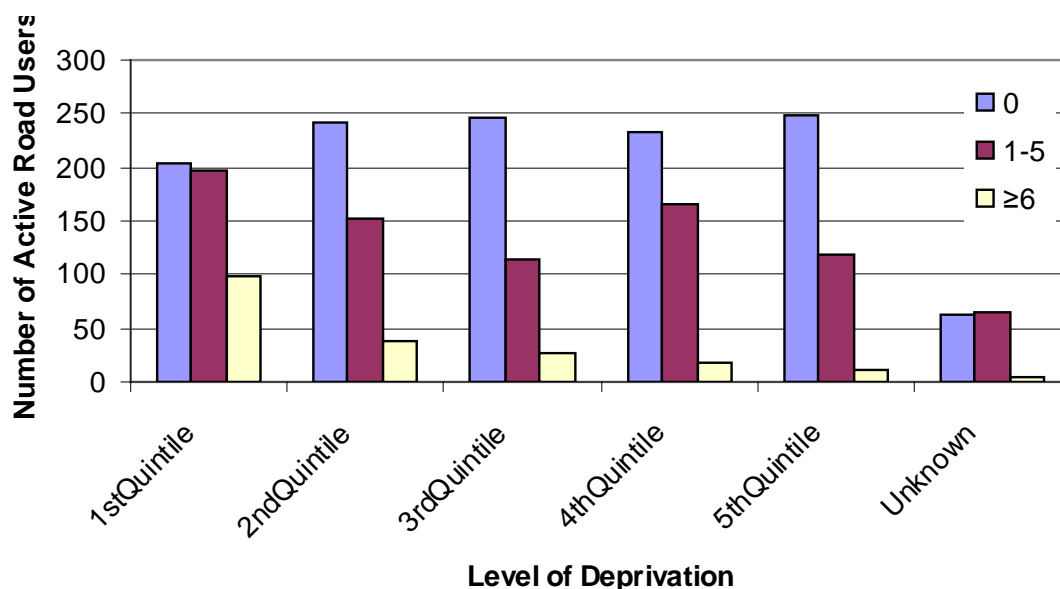
Figure 6: Deprivation and number of convictions for all ID matched active road users (n=2244)

Figure 6 shows the deprivation level of road users according to the number of convictions found on their PNC and DVLA records. This illustrates a more complex picture. Road users

with 6 or more convictions are identified mostly within the 1st quintile of deprivation (the most deprived group), with steadily decreasing numbers across the quintiles.

Road users with 1-5 convictions do not show the same linear relationship although the peak is still within the 1st quintile; the next greatest number is within the fourth quintile, which is the second least deprived group. It is likely that this reflects the large number of summary motoring convictions (including fixed penalties) which can be found across the sample (37% of all ID matched road users). This is the most common type of conviction and when mapped against deprivation (Figure 7) shows a very similar pattern to the 1-5 convictions group.

Completing the review of Figure 6, it should be emphasized again that road users with no identified convictions cannot be defined as having not committed any offences; particularly as not all conviction data stays permanently on record. However this group shows a different pattern of deprivation again with peaks in the average 3rd quintile and the lowest deprivation 5th quintile.
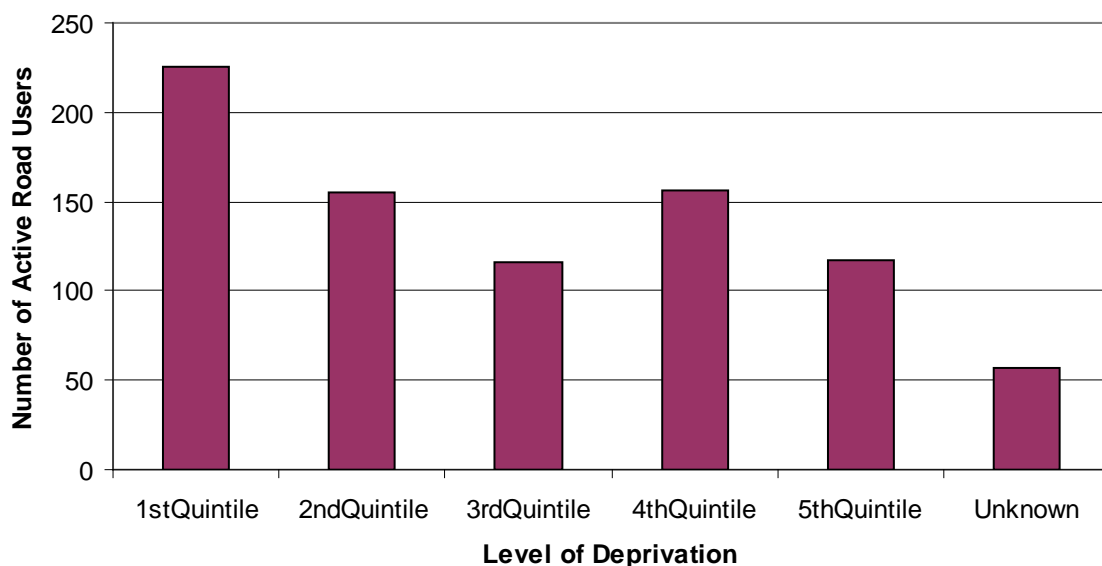
Figure 7: Deprivation levels of road users with identified summary motoring convictions (including fixed penalties) (n=826)

Having considered the link between level of deprivation and level of offending, it is perhaps also useful to look broadly at other distinctions within the deprivation groupings. This is because distributions vary according to gender, age and road user type so deprivation cannot be considered as an entirely independent factor.
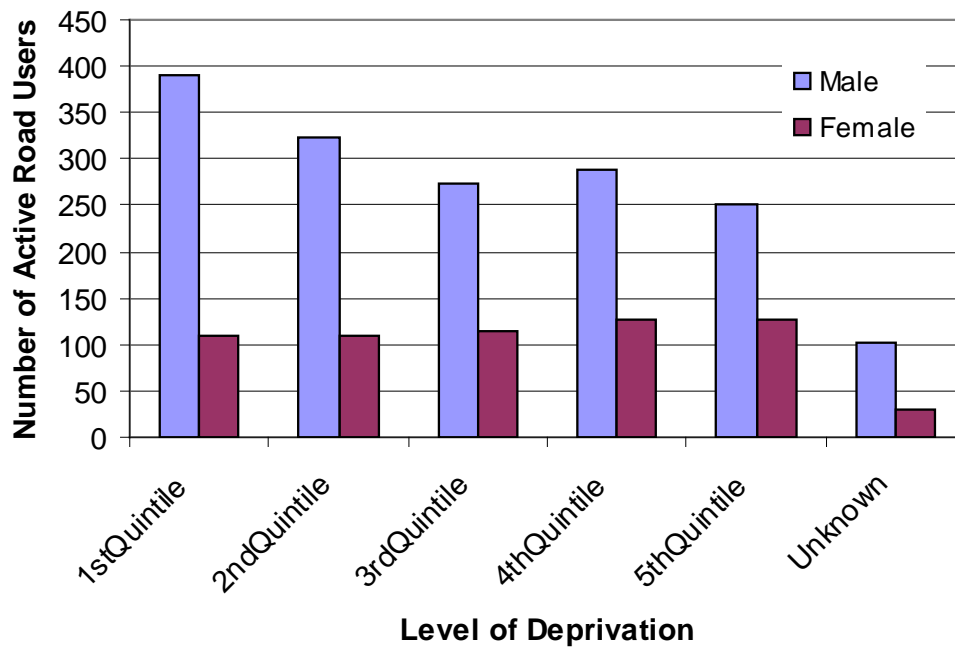
Figure 8: Gender and deprivation (n=2244)

Figure 8 illustrates that the overall trend towards higher levels of deprivation is a feature of the male population whereas the female population is more evenly spread across the quintiles, with a tendency towards lower deprivation. Within the ID matched group, approximately half of both the male and female subgroups were the precipitating road user so the gender deprivation difference does not represent a difference in fault.
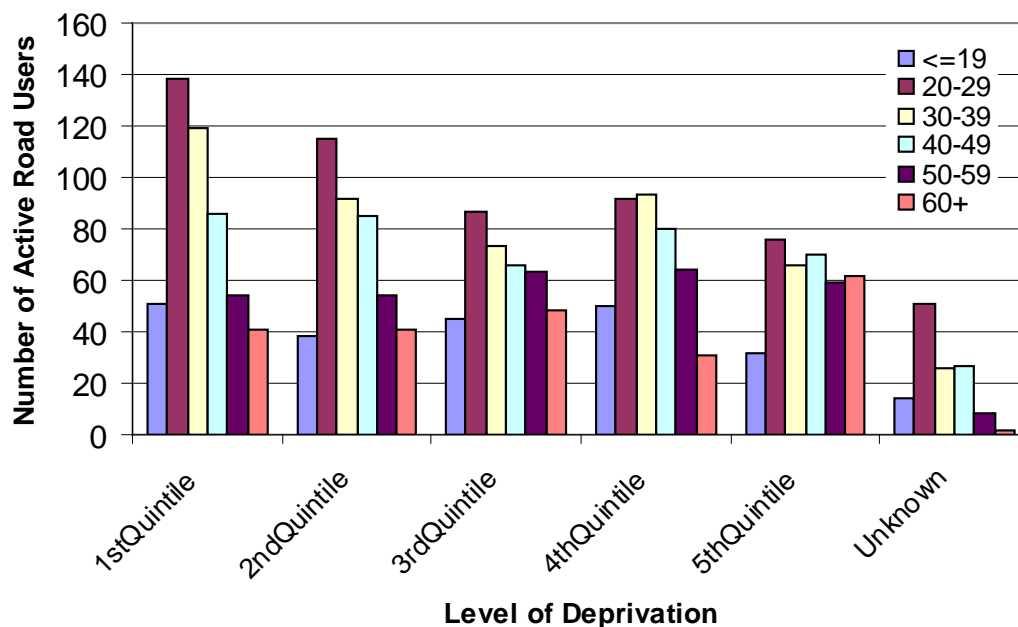
Figure 9: Age and deprivation (ID matched, known age n=2199)

Considering the age spread across the deprivation quintiles, Figure 9 shows much variation. However understanding the trend within each age group is easier if the graph is reconfigured (Figure 10).
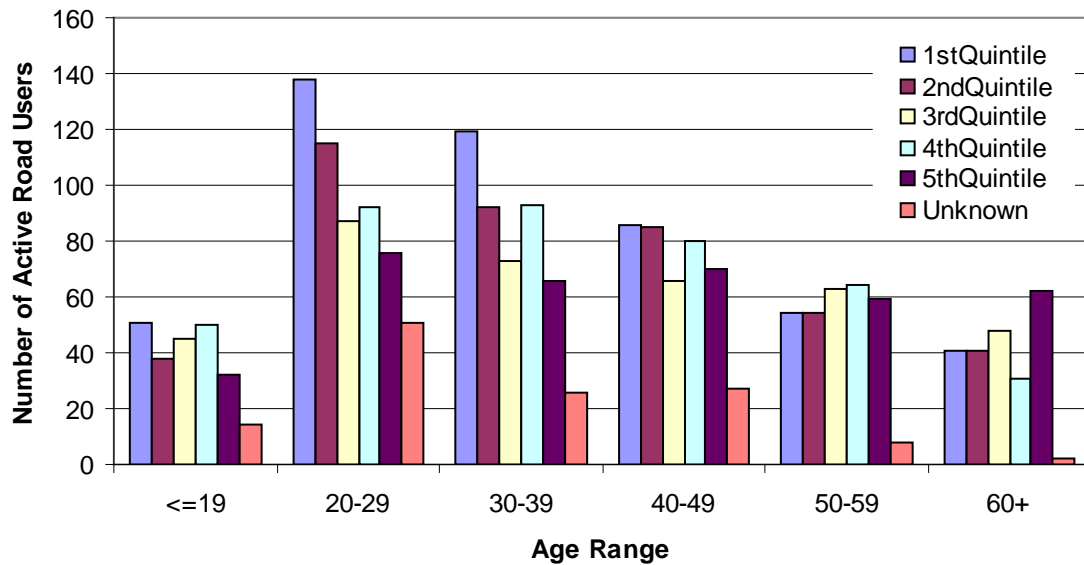
Figure 10: Age and deprivation reconfigured (ID matched, known age n=2199)

The 20-29 year old group shows the clearest overall pattern of a peak in numbers within quintile 1 (high deprivation) decreasing towards the 5th quintile (low deprivation), although there is a drop at the 3rd quintile. The 30-39 group has a similar relationship with deprivation (peaking within the 1st quintile) also with an out of trend drop at the 3rd quintile. Other age groups show very different patterns, with a particular contrast seen for the oldest road users (60+) who are most often found within the 5th quintile (least deprived).

Finally, Figure 11 and Figure 12 show road user type within each deprivation quintile. Looking at the actual numbers as displayed within Figure 11, the car driver group is proportionally so large that it overshadows the other results. However the motorcyclist and LGV driver groups show a particularly strong relationship with deprivation, with a decrease in numbers from the 1st to 5th quintile. This is interesting given the higher proportion of offending reported within these two groups.
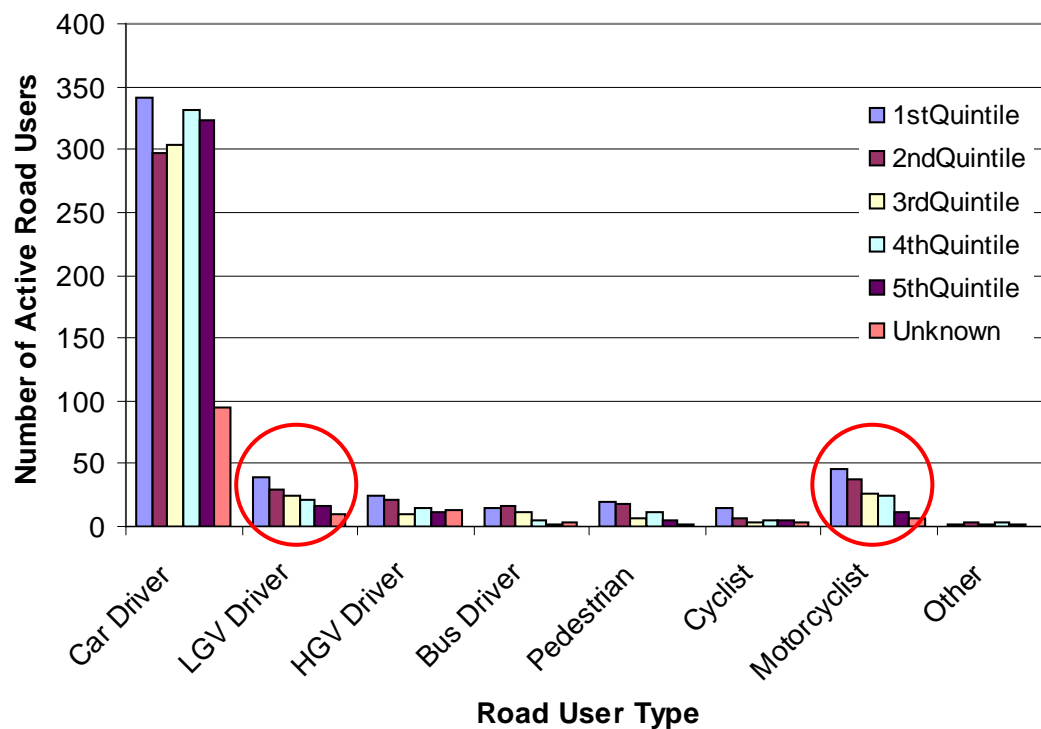
Figure 11: IMD quintiles by road user type (n=2244)

To take out the dominance of the car driver group and make the results of the other road user groups clearer, the previous graph is re-presented in Figure 12, as percentages within each road user group. This makes peaks in deprivation much clearer within the smaller groups. It is clear that the numbers in these road user groups are relatively low but it is useful to start to look at emerging trends. Total numbers of identity matched road users from VSRC OTS Phases 2 and 3 are shown in Table 19.

Car Driver	LGV Driver	HGV Driver	Bus Driver	Pedestrian	Cyclist	Motorcyclist	Other	Total
1691	142	96	54	63	36	150	12	2244

Table 19: Number of identity matched active road users, by type

Pedestrians and cyclists have clear peaks within the first and second quintiles which is likely to relate to the geographical investigation area. These road user groups are likely to travel comparatively shorter distances from home and the Nottingham area has relatively high levels of deprivation. Therefore caution should be exercised when considering how these results might reflect road user deprivation patterns across the country.

With the greater distances covered by LGV and HGV drivers, the 1st quintile peak within these groups is more likely to be an accurate reflection of the national picture. The motorcyclist peak raises questions about who these specific motorcyclists are (in terms of age, gender, bike type etc.) as for instance younger moped riders may travel shorter distances, therefore deprivation may reflect a more local trend.
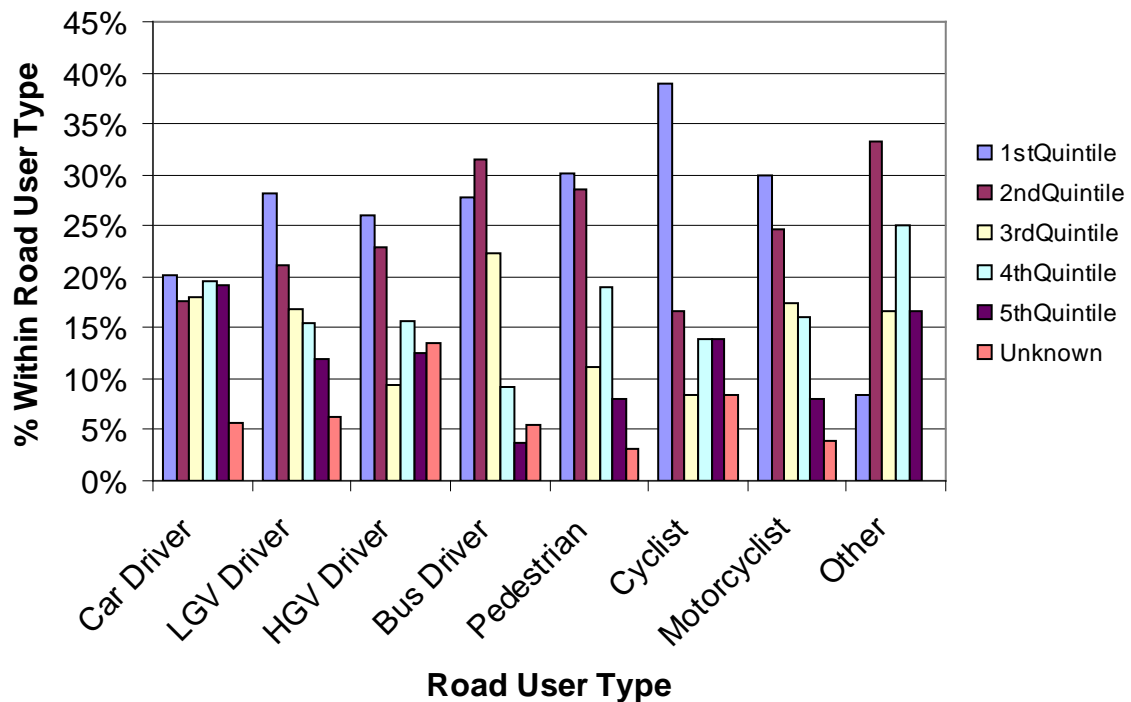
Figure 12: IMD quintiles by road user type (percentages within type) (n=2244)

This section has explored links between deprivation (as indicated by IMD score) and level of offending, also looking broadly at the spread of deprivation ranks among the road user sample group.

Recent research into deprivation and road traffic fatalities (Clarke, Ward, Truman & Bartle, 2009)[8] found that driving at excessive speed, driver intoxication, driver/passenger failure to wear seat-belts, and unlicensed/uninsured driving were most prevalent for road users in the most deprived IMD quintiles. It is recommended that further work is undertaken to explore links between deprivation, specific offence categories and accident causation using the OTS offence dataset.

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[8] Clarke, D.D, Ward, P., Truman, W. & Bartle, C. (2009). A poor way to die: social deprivation and road traffic fatalities. DfT Road Safety Research Report (Theme 5: Statistical Analysis, Accident Causation and Policy Monitoring). Accessed February 2010:
http://www.dft.gov.uk/pgr/roadsafety/research/rsrr/theme5/poorwaytodie.pdf

4.2. Collision Severity and Offence Histories

OTS data was collected at road traffic collisions of all severity levels, from non-injury to fatal (this is a key difference between OTS and national police reported data – which represents only injury cases).

Within the complete VSRC OTS Phase 2 & 3 dataset, there were 50 active road users involved in fatal collisions, 300 in serious collisions, 1365 in slight collisions and 1111 in non-injury collisions. At the time of completing this report there were also 56 records of active road users involved in collisions of unknown severity. There are two main reasons for this, either the road users absconded and therefore injury levels could not be recorded, or the case was still awaiting final injury data.

It should be noted that the collision severity refers to the most severe injury within the entire event and not to the injuries of every individual involved. There are however detailed injury records available at an individual level, and further analysis might usefully explore this. Within the identity matched group there were 5 collisions of 'unknown severity', involving a total of 6 ARUs. Three of these were collisions where the road user fled the scene but was later identified, a further one was a driver arrested for drink driving at the scene. The final unknown severity collision involved a car and a cyclist. The cyclist was injured but full details of these injuries were not available. Official (police) collision severity was not determined but it was estimated by the OTS team to be slight.

Focusing on the 2244 identity matched ARUs, the following tables compare collision severity with the presence of offence histories. Table 20 shows that, disregarding the small number of collisions where severity was unknown (n=6), the highest proportion of road users with offence records were found in the fatal collisions group, with a relatively even spread between all other collision severities. The peak for the fatal collisions group is seen again in the PNC data, as shown in Table 21.

Collision Severity	Offence History Found				Total	% Offence Found
	Yes	Driving No Licence	No	No DVLA Match		
Fatal	25	0	20	0	45	56%
Serious	115	2	129	10	256	46%
Slight	535	2	570	40	1147	47%
Non-Injury	357	1	400	32	790	45%
Unknown	5	0	1	0	6	83%
Total	1037	5	1120	82	2244	46%

Table 20: Presence of offence histories for identity matched active road users, by severity

Collision Severity	PNC OH Yes	Skeleton Record	Locate Trace	Total PNC Trace	Total ID Matched	% PNC OH Trace
Fatal	18	1	0	19	45	42%
Serious	78	0	0	78	256	30%
Slight	297	8	1	306	1147	27%
Non-Injury	191	4	1	196	790	25%
Unknown	4	0	0	4	6	67%
Total	588	13	2	603	2244	27%

Table 21: PNC histories of identity matched active road users, by severity

The PNC data shows a gradual downwards trend in offending as the severity of the collision decreases. By comparison, Table 22 shows a greater proportion of DVLA offence records with the slight and non-injury collision groups.

Collision Severity	DVLA Offence Record Found			Total	% +ve DVLA History Found
	Yes	No	No DVLA Match		
Fatal	15	30	0	45	33%
Serious	77	166	13	256	30%
Slight	416	682	49	1147	36%
Non-Injury	286	468	36	790	36%
Unknown	4	2	0	6	67%
Total	798	1348	98	2244	36%

Table 22: Presence of DVLA histories for identity matched active road users, by severity

Table 23 and Table 24 break offences down by category, using conviction data. Raw numbers are presented alongside the percentages to illustrate where data are limited.

Top Level Offence Type	Fatal (n=45)		Serious (n=256)		Slight (n=1147)		Non-Injury (n=790)		Unknown (n=6)		Total (n=2244)	
	n	%	N	%	n	%	n	%	n	%	n	%
Violence against the person	12	**27**	38	**15**	143	**12**	82	**10**	1	**17**	276	**12**
Sexual offences	2	**4**	6	**2**	16	**1**	7	**1**	0	**0**	31	**1**
Burglary	5	**11**	19	**7**	45	**4**	27	**3**	1	**17**	97	**4**
Robbery	0	**0**	5	**2**	10	**1**	6	**1**	0	**0**	21	**1**
Theft and handling stolen goods	8	**18**	34	**13**	97	**8**	69	**9**	2	**33**	210	**9**
Fraud and forgery	1	**2**	8	**3**	24	**2**	22	**3**	1	**17**	56	**2**
Criminal damage	4	**9**	20	**8**	69	**6**	44	**6**	1	**17**	138	**6**
Drug offences	4	**9**	15	**6**	57	**5**	30	**4**	0	**0**	106	**5**
Other indictable (excluding motoring offences)	3	**7**	2	**1**	13	**1**	6	**1**	0	**0**	24	**1**
Other summary (excluding motoring offences)	7	**16**	24	**9**	86	**7**	57	**7**	2	**33**	176	**8**
Indictable motoring	2	**4**	9	**4**	19	**2**	13	**2**	0	**0**	43	**2**
Summary motoring	16	**36**	84	**33**	428	**37**	294	**37**	4	**67**	826	**37**

Table 23: Accident severity and presence of any top level offences, by category (ID matched road users)

Motoring Offence Type	Fatal (n=45)		Serious (n=256)		Slight (n=1147)		Non-Injury (n=790)		Unknown (n=6)		Total (n=2244)	
	n	%	n	%	n	%	n	%	N	%	n	%
Causing death or bodily harm	3	**7**	1	**0**	0	**0**	3	**0**	0	**0**	7	**0**
Dangerous driving	1	**2**	9	**4**	14	**1**	4	**1**	0	**0**	28	**1**
Driving etc. after consuming alcohol or taking drugs	5	**11**	17	**7**	67	**6**	58	**7**	3	**50**	150	**7**
Careless driving	3	**7**	13	**5**	43	**4**	25	**3**	1	**17**	85	**4**
Accident offences	2	**4**	3	**1**	16	**1**	13	**2**	0	**0**	34	**2**
Unauthorised taking or theft of motor vehicle	3	**7**	13	**5**	29	**3**	23	**3**	1	**17**	69	**3**
Driving licence related offences	7	**16**	15	**6**	65	**6**	40	**5**	0	**0**	127	**6**
Vehicle insurance offences	5	**11**	16	**6**	72	**6**	51	**6**	0	**0**	144	**6**
Vehicle registration and excise licence offences	0	**0**	2	**1**	4	**0**	2	**0**	0	**0**	8	**0**
Operator's licence offences	0	**0**	0	**0**	0	**0**	1	**0**	0	**0**	1	**0**
Vehicle test offences	1	**2**	1	**0**	8	**1**	2	**0**	0	**0**	12	**1**
Fraud, forgery associated with vehicle or driver records	0	**0**	1	**0**	6	**1**	11	**1**	0	**0**	18	**1**
Vehicle or part in dangerous or defective condition	0	**0**	3	**1**	7	**1**	4	**1**	0	**0**	14	**1**
Speed limit offences	4	**9**	43	**17**	269	**23**	176	**22**	1	**17**	493	**22**
Motorway offences (other than speeding)	0	**0**	0	**0**	1	**0**	0	**0**	0	**0**	1	**0**
Neglect of traffic directions	1	**2**	11	**4**	62	**5**	44	**6**	1	**17**	119	**5**
Neglect of pedestrian rights	0	**0**	0	**0**	2	**0**	0	**0**	0	**0**	2	**0**
Obstruction, waiting & parking offences	0	**0**	1	**0**	0	**0**	0	**0**	0	**0**	1	**0**
Load offences	0	**0**	0	**0**	1	**0**	0	**0**	0	**0**	1	**0**
Offences peculiar to motorcycles	0	**0**	0	**0**	1	**0**	0	**0**	0	**0**	1	**0**
Miscellaneous motoring offences	3	**7**	9	**4**	36	**3**	24	**3**	1	**17**	73	**3**

Table 24: Accident severity and presence of any motoring offences, by category

Note - the following categories were excluded from Table 24 as there were no convictions recorded: Work record and employment offences, Lighting offences, Noise offences. Although the unknown severity cases are included for completeness, the numbers are too small to consider in any analysis. Looking at the known severity cases, there are proportional peaks within the KSI groups across both tables for many of the more serious offences. Overall though, the largest offence group - summary motoring - has a relatively even spread within Table 23, which is, to some extent, explained by the spread of the main summary motoring conviction – speed limit offences – as shown in Table 24. Although the detail of these tables could be discussed at length, further work is recommended to consider the impact of linked offences on these figures (i.e. convictions resulting directly from the collision). For example, this is likely to explain the peak in 'causing death or bodily harm' within the fatal cases, which in turn is usually coded as a 'violence against the person' offence.

4.3. Collision Fault and Offence Histories

It has been suggested many times that there may be links between offending behaviour and road traffic collision involvement (Elander, West & French, 1993[9]; Junger & Tremblay, 1999[10]; Junger, West & Timman, 2001[11]). This section sets out to briefly explore RTC involvement and fault and how these may link to the presence of offence histories.

At its most basic level we can consider fault in terms of who was attributed the precipitating factor in any given accident. By definition, this can only ever be attributed to one person per case and therefore it indicates the person assumed to be most at fault.

Here, "fault" indicates road users who took actions that directly precipitated collisions, whether the road user committed an offence or not. The precipitating event may have been an offence in itself or it may be related to another offence by the road user in question (for example, driving under the influence of alcohol). Alternatively, the precipitating road user may not have committed any offence. For example, a pedestrian may have precipitated a collision by stepping off the kerb and into the path of a vehicle. While not committing an offence, the pedestrian may, for instance, have misjudged the speed of traffic or been distracted by a mobile phone. If the oncoming vehicle would have been unable to stop in time, driving up to the posted speed limit, then at the most basic level, that accident can be said to be the pedestrian's fault.

It should also be recognised that accidents can be caused by complex factor combinations and interactions between road users, which have also been routinely reported on the OTS database, and these are touched on in Section 5. Here, however, accidents are examined at the most basic level to identify who was at fault by directly precipitating the collision. These

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[9] Elander, J.,West, R., & French, D. (1993). Behavioral correlates of individual differences in road–traffic crash risk: An examination of methods and findings. Psychological Bulletin, 113(2), 279–294.

[10] Junger, M. & Tremblay, R.E. (1999). Self-Control, Accidents, and Crime. Criminal Justice and Behavior, Vol. 26, No. 4, 485-501.

[11] Junger, M., West, R. & Timman, R. (2001). Crime and Risky Behavior in Traffic: An Example of Cross-Situational Consistency. Journal of Research in Crime and Delinquency, Vol. 38, No. 4, 439-459.

are the road users who were fundamentally involved in the main precipitating events; it is useful to examine their offence histories for insights into their offending behaviour and how this might relate to their collision involvement.

4.3.1. Fault and Precipitating Road Users

Looking at the spread of fault within the VSRC Phase 2 & 3 OTS dataset:

- Of the 2882 active road users, 1623 (56%) had the precipitating factor attributed to them (i.e. they were identified as being predominantly at fault in the collision).
- Of the 2244 road users successfully ID matched (i.e. including people with and without offence histories), 1200 (54%) had the precipitating factor attributed to them.
- 1037 road users had a recorded offence history, of which 638 were precipitating (62%)
- A total of 42 offence histories related solely to the accident (4% of offence histories). 40 of these road users were identified as precipitating.
- 603 road users had a PNC offence record, of which 409 were precipitating (68%).
- 798 road users had a DVLA offence record of which 479 (60%) were precipitating.

The comparisons between precipitating and not precipitating active road users are presented visually in Figure 13 and Figure 14.
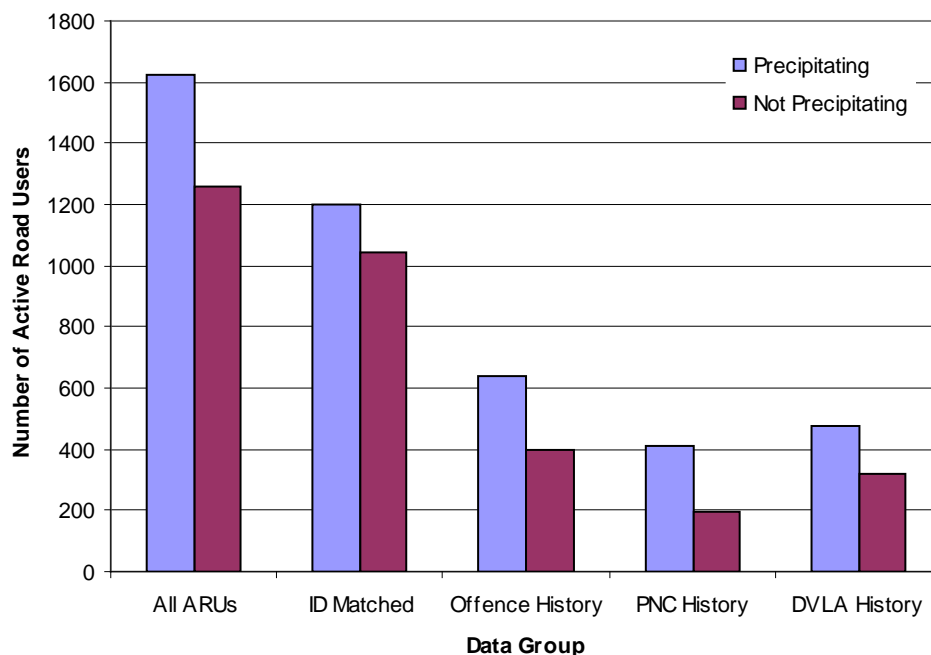
Figure 13: Fault in terms of precipitating factor for different data groups

Presenting actual numbers of people, as in Figure 13, shows a greater number of precipitating road users than non-precipitating within every group. Note - offence history, PNC history and DVLA history comparisons refer only to ID matched road users. Proportional differences are seen more clearly in Figure 14 as percentages within each group.
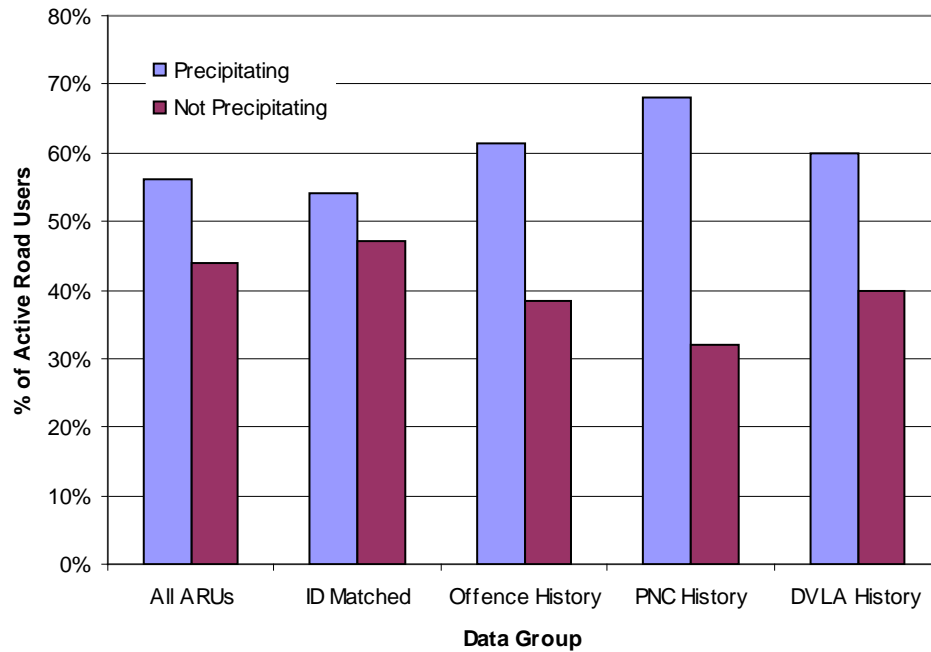
Figure 14: Fault in terms of precipitating factor for different data groups (percentages within each group)

In particular, Figure 14 shows a strong proportional increase in precipitating road users among those with PNC offence histories.

4.3.2. Fault and Gender

As an example of how fault can be explored with reference to the demographic data, this section explores fault and gender. Table 25 splits the gender and offence history data from Table 10 to identify fault by indicating whether road users were attributed with the precipitating factor in the OTS accident.

Precipitating Active Road User	Offence History Found	Gender		Total
		Male ▼	Female ▼	
Yes	Yes	524	114	638
	Yes (no licence)	2	1	3
	No	329	189	518
	No - DVLA	29	12	41
	Total	884 (54%)	316 (51%)	1200 (53%)
No	Yes	338	61	399
	Yes (no licence)	1	1	2
	No	379	223	602
	No - DVLA	25	16	41
	Total	743 (46%)	301 (49%)	1044 (47%)
Total		1627	617	2244

Table 25: Presence of offence histories for identity matched active road users, by gender and fault (attribution of precipitating factor)

Adding together those with offence histories and those with confirmation of no licence, 60% of precipitating (at fault) males and 46% of non-precipitating males had identified offences. By contrast, 36% of precipitating females and 21% of non-precipitating females had identified offences.

Table 26 breaks the gender and PNC data from Table 11 further down by fault.

Precipitating Active Road User	PNC History Found	Gender		Total
		Male ▼	Female ▼	
Yes	Yes	357	43	400
	No	518	273	791
	Skeleton	8	0	8
	Locate Trace	1	0	1
	Total	884 (54%)	316 (51%)	1200 (53%)
No	Yes	173	15	188
	No	565	285	850
	Skeleton	4	1	5
	Locate Trace	1	0	1
	Total	743 (46%)	301 (49%)	1044 (47%)
Total		1627	617	2244

Table 26: Presence of PNC offence histories for identity matched active road users, by gender and fault (attribution of precipitating factor)

Including skeleton and locate trace markers, 41% of precipitating (at fault) males, had an identified PNC offence record, compared to 24% of non-precipitating males By contrast, 14% of precipitating females and 5% of non-precipitating females had an identified PNC offence record. However, this suggests that females with a PNC record are nearly three times more likely to precipitate a RTC.

Table 27 breaks the gender and DVLA offence data from Table 12 down further by fault.

Precipitating Active Road User	DVLA History Found	Gender		Total
		Male ▼	Female ▼	
Yes	Yes	380	99	479
	No	467	202	669
	No DVLA Match	37	15	52
	Total	884 (54%)	316 (51%)	1200 (53%)
No	Yes	263	56	319
	No	452	227	679
	No DVLA Match	28	18	46
	Total	743 (46%)	301 (49%)	1044 (47%)
Total		1627	617	2244

Table 27: Presence of DVLA offence histories of identity matched active road users, by gender and fault (attribution of precipitating factor)

43% of precipitating (at fault) males had an identified DVLA offence record, compared to 35% of non-precipitating males. By contrast, 31% of precipitating females and 19% of non-precipitating females had an identified DVLA offence record.

4.3.3. Fault and Offence Type

Taking the approach of looking for any conviction (rather than total number of convictions), Figure 15 shows a higher percentage of offending for every offence type when comparing precipitating with not-precipitating road users (with the sole exception of 'other indictable' – for which there is no difference). These are within group percentages (precipitating and not-precipitating) so the differences are not simply a reflection of the greater number of precipitating road users.
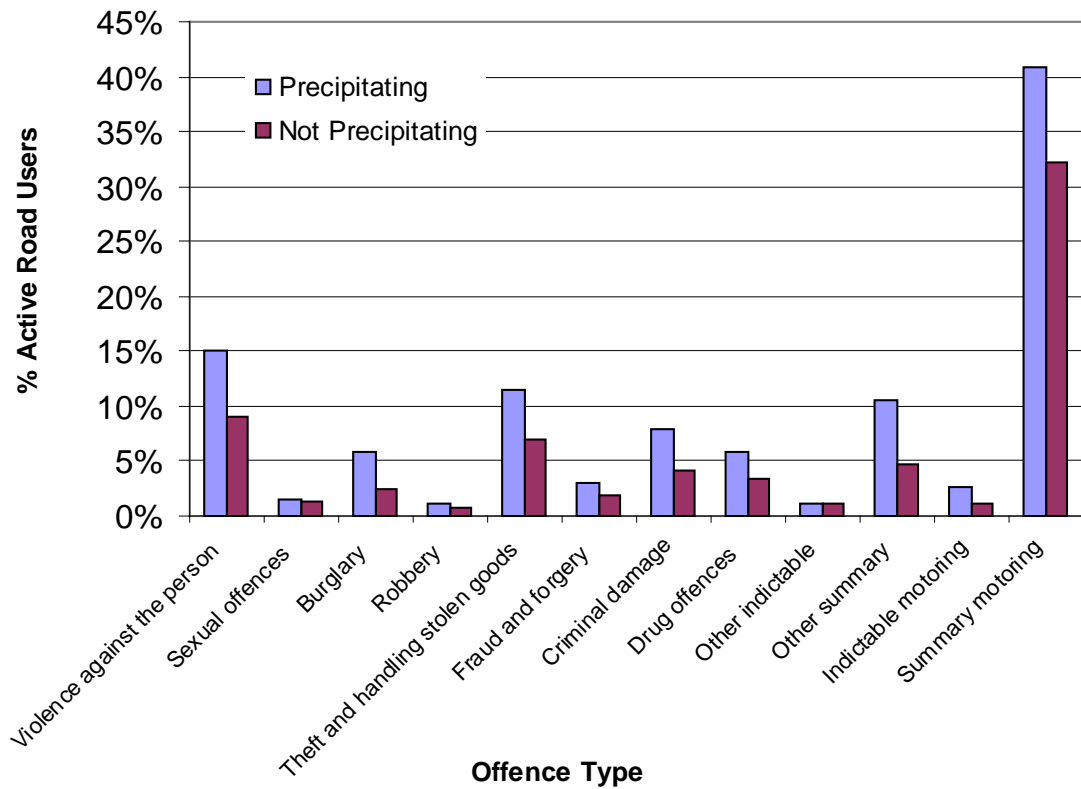
Figure 15: Comparing the percentage of identity matched precipitating (n=1200) and not-precipitating (n=1044) road users with any conviction for each offence type

Figure 16 shows the same comparison for motoring offences:
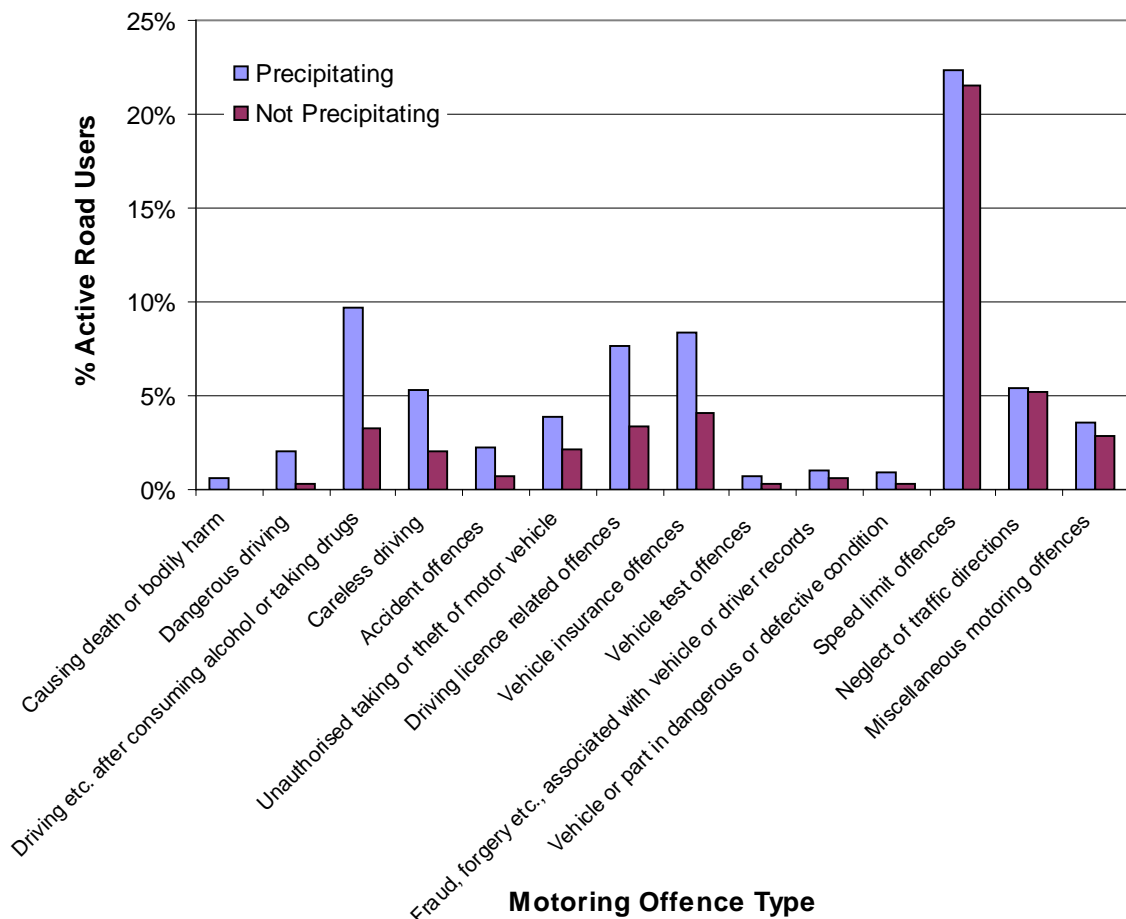
Figure 16: Comparing the percentage of identity matched precipitating (n=1200) and not-precipitating (n=1044) road users with any conviction for each common motoring offence type (excluding all <1%)

Figure 16 also shows a higher percentage of offenders within the precipitating group for every offence type, although the difference is comparatively small for speed limit and neglect of traffic direction offences. These tend to be camera based fixed penalties (neglect of traffic directions is commonly a traffic light offence) and having at least one instance of either of these offences on a road user's record, does not appear to significantly increase likelihood of being at fault in an accident in this dataset.

Overall using the precipitating road user to indicate fault, there does appear to be a link between the presence of an offence history and being at fault within a road accident (as measured against the accidents attended by the OTS team). What is not known is a complete accident history for each road user, however this would be very difficult to establish (for example, not all accidents are notified to insurers and not all road users are insured, so even insurance records, if obtained, would not provide full histories).

Remembering that caveat, with the available data the strongest link between accident causation and presence of an offence record is for those with a PNC record. This police national computer data includes a range of serious offences where there is intent to cause harm. By contrast, the DVLA offence data (particularly fixed penalties) could be described to more often reflect errors of judgement. Although these driving offences may have serious or even fatal consequences, the risks may not be as clearly understood by the majority of individuals involved. The data show that a proportionately higher number of precipitating

than not precipitating road users have a DVLA offence history, but the link is not as strong as for those with a PNC history. Looking at the detail of the motoring offence histories (some of which are recorded on PNC), there is a very small increase in accident fault for the common (and usually fixed penalty) speed limit and neglect of traffic direction (typically red light camera) offences, but there is a more discernable increase for less socially acceptable motoring offences such as drink/drug driving, vehicle theft and driving without a licence or insurance.

Links between crime and accidents are often considered in relation to self-control and social control (Junger & Tremblay, 1999[12]; Junger, van der Heijden & Keane, 2001[13]). Specific work looking at people involved in road accidents has shown that people who display risky traffic behaviour (as noted in police accident descriptions) are more likely to have police records for certain crimes (odds ratio of 2.6 for violent crime, 2.5 for vandalism, 1.5 for property crime and 5.3 for traffic crime). That research suggested that there may be some underlying trait, representing a general disregard for negative long term consequences, which could be labelled as impulsiveness, risk taking or lack of self control (Junger, West & Timman, 2001[14]).

Initial exploration of the OTS offence data supports the theory that people who take risks by offending, may take greater risks as drivers, as evidenced by fault within the accident causation data.

Early data are presented on the differences across offence categories showing percentages within each group (precipitating and not-precipitating). It is suggested that future analysis explores these differences in more detail.

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[12] Junger, M. & Tremblay, R.E. (1999). Self-Control, Accidents, and Crime. Criminal Justice and Behavior, Vol. 26, No. 4, 485-501.

[13] Junger, M., van der Heijden, P. & Keane, C. (2001). Interrelated harms: Examining the associations between victimization, accidents, and criminal behaviour. Injury Control and Safety Promotion, Vol. 8, No. 1, 13-28.

[14] Junger, M., West, R. & Timman, R. (2001). Crime and Risky Behavior in Traffic: An Example of Cross-Situational Consistency. Journal of Research in Crime and Delinquency, Vol. 38, No. 4, 439-459.

5. LINKS BETWEEN CAUSATION TYPES AND OFFENCE TYPES

A study of the links between causation types and offence types has the potential to be very lengthy and detailed. Within this report an initial exploration of speed offenders and licence/insurance offenders is presented. Additional data cross-tabulating the presence of convictions by category against the precipitating factor for each collision, can be found in the appendix.

It is useful to start this exploration by looking generally at the accident data in terms of collision types, OTS accident causation (precipitating factors)[15] and Contributory Factors 2005[16], which are all systems used within the main OTS database.
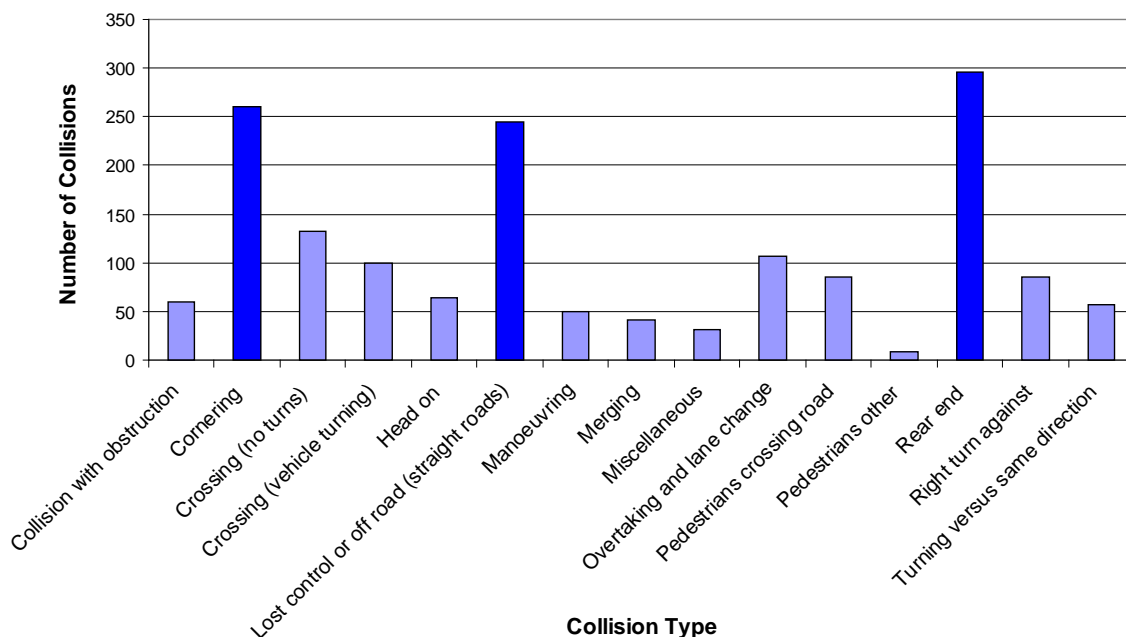
Figure 17: Collision type for all precipitating road users (n=1623)

The collision type is a code given to best represent the circumstances of the whole accident. As can be seen in Figure 17, the most common collision types for VSRC OTS Phase 2 and 3 precipitating road users are rear end, lost control/off road (straight roads) and cornering. Although technically not a causation system, the collision type is closely linked to cause, for example loss of control is also present as a causation factor in both the OTS accident causation (precipitating factors) system and the Contributory Factors 2005 system. The rear end collision type is often associated with the precipitating factor 'Failed to stop' and with the Contributory Factor, 'Following too close' and the cornering collision type has links to both speed factors and loss of control. .

These reports form the original basis for the main causation systems used within OTS:

[15] Broughton, J., Markey, K. and Supt. Rowe, D. (1998) A New System for Recording Contributory Factors in Road Accidents. TRL Report 323.

[16] Hickford, A.J. and Hall, R.D. (2003). Review of the Contributory Factors System. Report to the Department for Transport. Contract Number: PPAD 9/31/97.

The OTS causation system assigns one precipitating factor to each case and identifies the road user responsible for this factor.
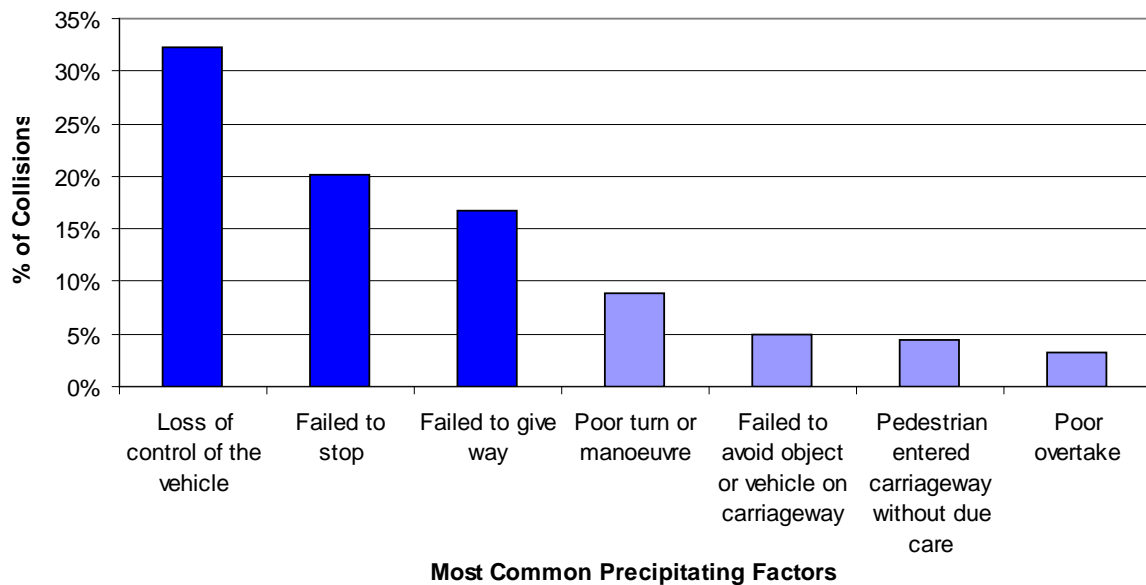
Figure 18: Most common 'definite' and 'probable' precipitating factors in VSRC OTS Phase 2 and 3 collisions for all precipitating road users (n=1623)

The most common precipitating factors for VSRC Phase 2 and 3 (precipitating) road users were loss of control, failed to stop and failed to give way (Figure 18). Here, cases have been put forward where OTS investigators judged factors to be "definitely" or "probably" precipitating. Other cases coded "possibly" or "not causative" are not included.

The Contributory Factors 2005 system (as also used by the police to gather national STATS19 data) allows any road user to be assigned a causative factor (not just the precipitating road users). This is perhaps a more balanced approach given the complexities of fault within road accidents; however as this report uses the precipitating road user as the main indicator of fault, Figure 19 shows just road users who have been attributed with the precipitating factor by the OTS investigator. Investigators code factors to "very likely" or "possible".
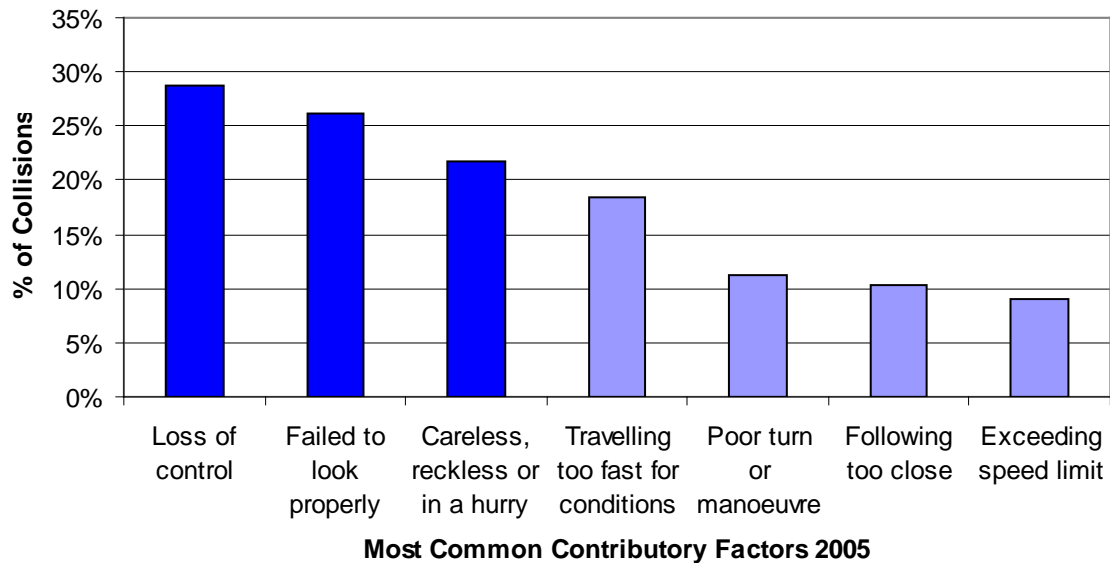
Figure 19: Most common 'very likely' Contributory Factors 2005 for all precipitating road users (n=1623)

The most common (very likely) Contributory Factors 2005 for VSRC OTS Phase 2 (precipitating) road users were loss of control, failed to look properly and careless, reckless or in a hurry. By contrast, the most common (very likely) Contributory Factors 2005 for non-precipitating road users (n=1259) were sudden braking (2%), swerved (1%), slippery road due to weather (1%) and failed to look properly (1%).

It is suggested that future analysis should compare offence distributions for the most common causation factors. However within the remit of this report, the remains of this section will focus on the relationship between speed offences and speed related accidents, followed by an overview of collision causation for unlicensed/uninsured drivers.

5.1. Speed Related Collisions and Speeding Offences

5.1.1. Speed Collision Factors

Focusing on speed related accidents, two types of speeding may be considered, illegal and inappropriate. These are covered respectively within the Contributory Factors 2005 system as exceeding speed limit (Factor 306) and travelling too fast for conditions (Factor 307). There is naturally some overlap between the use of these codes as shown in Table 28, although strictly if exceeding speed limit is recorded then travelling too fast for conditions should not be. Throughout this volume, use of Contributory Factors 2005 will only refer to factors coded as 'Very Likely'.

Exceeding Speed Limit (Factor 306)	Travelling Too Fast For Conditions (Factor 307)		Total
	Yes	No	
Yes	84	62	146 (9%)
No	215	1262	1477
Total	299 (18%)	1324	1623

Table 28: Relationship between speed factors for all precipitating road users

The alternative OTS Causation System does not allow speed as a precipitating factor, instead every case indicates contributory factors that should relate to the specific precipitating factor, and one of these contributory factors is 'Excessive speed'. As this relates to the precipitating road user only (n=1623), it should only be presented within this context. All factors within this system are presented with a level of confidence, "definite", "probable" or "possible".

Excessive speed was coded as definite for 101 (6%) precipitating road users, probable for 165 (10%) and possible for 184 (11%). Therefore, over all confidence levels, this factor was coded for 450 precipitating road users (28%).

Another relevant contributory factor is 'In a hurry'. This can of course be coded for any road user type. Within the precipitating road user group, 'In a hurry' was coded as definite for 49 (3%) precipitating road users, probable for 295 (18%) and possible for 496 (31%). Therefore disregarding confidence levels, this factor was coded in total for 840 precipitating road users (52%). As with the Contributory Factors 2005 speed codes, there is some overlap in the use of the OTS Causation System codes (Table 29).

Accident Causation: Excessive Speed	Accident Causation: In a Hurry				Total
	Definitely causative	Probably causative	Possibly causative	Not present	
Definitely causative	19	27	32	23	101
Probably causative	13	65	52	35	165
Possibly causative	3	46	79	56	184
Not causative	0	0	0	1	1
Not present	14	157	333	668	1172
Total	49	295	496	783	1623

Table 29: Relationship between OTS Causation System variables "In a Hurry" and "Excessive Speed" for all precipitating road users

5.1.2. Speeding Convictions

A total of 493 ID matched active road users (VSRC OTS Phase 2 & 3 ID matched, n=2244) had at least 1 speeding conviction identified (22%). By comparison an identical proportion of precipitating road users (268/1200) had at least 1 speeding conviction identified (22%).

Complex coding was completed to group offences for individual road users, separated by when they were committed (prior, subsequent or linked to the RTC). This data is presented in Table 30.

Number of Convictions for Relative Time	Time of Speeding Convictions Relative to Collision		
	Prior	Linked	Subsequent
0	2017	2242	1952
1	192	2	228
2	32	0	58
3	3	0	5
4	0	0	1
Total	2244	2244	2244

Table 30: Road users with prior, linked and subsequent speeding convictions – ID matched only

227 people were found with prior speeding convictions, however 190 of these were found within the Phase 3 data. Examining these results therefore raises the issue of recency. Certain types of motoring offence are not permanently recorded on the DVLA system and this project began in 2008, collecting data from accidents up to 5 years earlier. Therefore many prior motoring offences will have been wiped before data collection began, which is particularly relevant if analysing recent (in relation to the RTC) offences for the older Phase 2 road users.

By comparison, 204 of the 292 ARUs with a subsequent speeding offence were found in the Phase 2 data, with this difference again reflecting the greater amount of time passed between collision and offence checks for the present study.

Just 2 road users had linked speed convictions; it is likely that this is in part because the retrospective measurement of speed is a specialist skill. Within the police force, training in this is restricted mainly to small collision investigation teams, who attend only the most serious incidents. Even when the attending officers are trained in collision reconstruction, sufficient evidence may not be available, it may not be possible to state without doubt that the person was driving significantly above the speed limit (as only a speed range can be determined – not an exact figure), or focus may be given to other more serious offences, such as dangerous driving, which is indictable.

Table 31 shows the overall picture of speeding records, linking together prior and subsequent convictions. The two road users with speeding convictions linked to the accident had no prior or subsequent speeding convictions listed.

Subsequent Speeding Convictions	Prior Speeding Convictions				Total
	0	**1**	**2**	**3**	
0	1753	166	30	3	1952
1	201	25	2	0	228
2	57	1	0	0	58
3	5	0	0	0	5
4	1	0	0	0	1
Total	2017	192	32	3	2244

Table 31: Cross tabulation of total prior and subsequent speeding convictions – ID matched only

Figure 20 shows the distribution of speed offence records across road user types, as percentages within each precipitating and not-precipitating group. It should be noted that the pedestrian and cyclist groups will include a number of people of all ages who do not hold a driving licence.
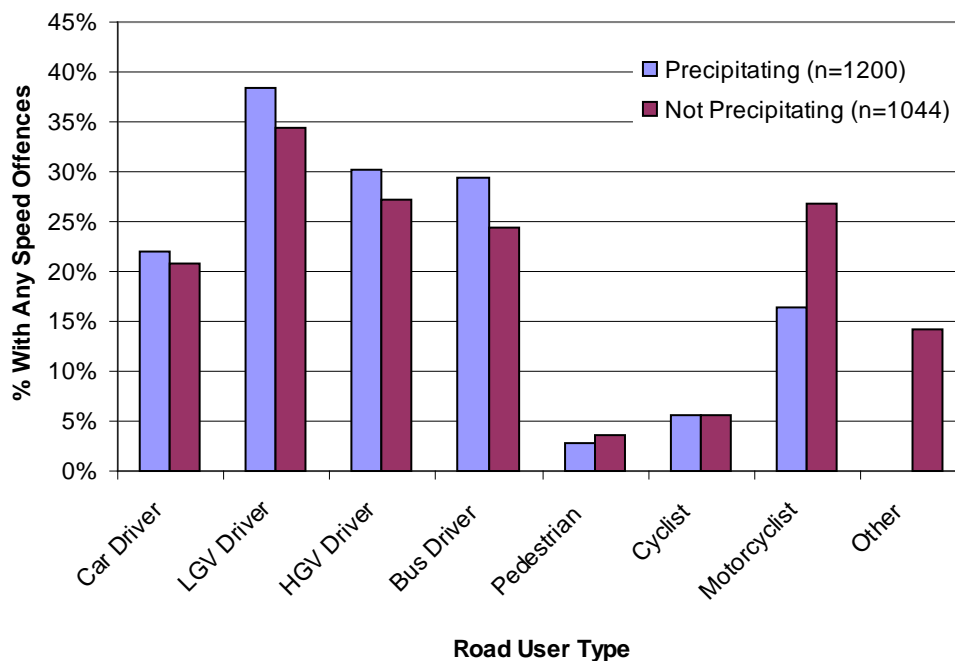
Figure 20: Road user type and any known history of a speed offence

LGV drivers have the highest percentage of a speed offence records, with a small increase for those at fault. For car drivers there is little difference between precipitating and not-precipitating road users in terms of presence of a speed offence record. It is important to remember that the predominant road user group within the sample is car drivers. (1691 out of 2244 ID matched road users – 75%).

Linking the offence data to the OTS causation data, it is appropriate to focus on ID matched precipitating road users.   As stated at the beginning of this section, there are two speed factors within the Contributory Factors 2005 system, 'Exceeding Speed Limit' and 'Travelling Too Fast For Conditions'.

Table 32 and Table 33 present the links between these factors and the presence of speed offences.

Exceeding Speed Limit	Any Speed Limit Offences		Total
	Yes	No	
Yes	21 (8%)	68 (7%)	89 (7%)
No	247 (92%)	864 (93%)	1111 (93%)
Total	268 (100%)	932 (100%)	1200 (100%)

Table 32: Relationship between speed limit offences and (very likely) exceeding speed limit contributory factor (p=0.766)

Travelling Too Fast For Conditions	Any Speed Limit Offences		Total
	Yes	No	
Yes	55 (21%)	160 (17%)	215 (18%)
No	213 (79%)	772 (83%)	985 (82%)
Total	268 (100%)	932 (100%)	1200 (100%)

Table 33: Relationship between speed limit offences and (very likely) too fast for conditions contributory factor (p=0.207)

In both tables, those with speed limit offences appear proportionately more likely to have caused an accident with a very likely speed causation factor (based on Contributory Factors 2005), however this is not a statistically significant result. Placing these figures in context, Figure 21 illustrates the most common Contributory Factors 2005 codes for precipitating road users with a speed offence history (with comparative figures for those without an identified speed offence history).
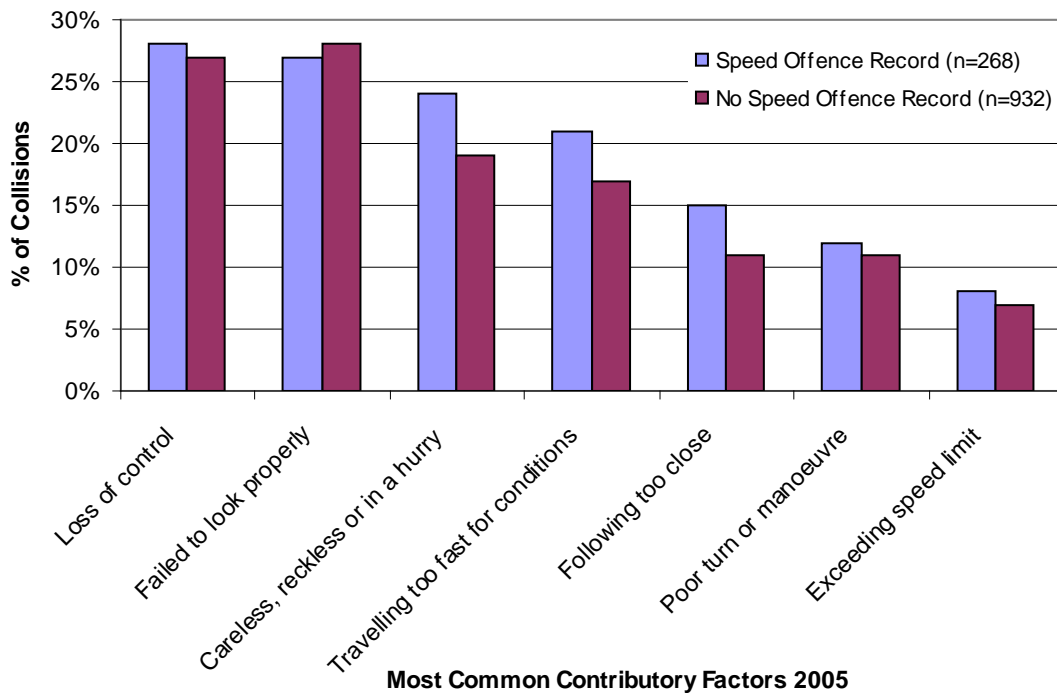
Figure 21: Most common 'very likely' Contributory Factors 2005 for precipitating road users with and without at least one identified speeding conviction

Comparing Figure 21 (for road users with a speed offence record) to Figure 19 (for all precipitating road users), although it is the same top seven factors, 'Failed to look' and 'Poor turn or manoeuvre' have swapped rank order for identified speed offenders.

Figure 22: Comparison of collision types for ID matched precipitating road users with and without identified speeding offences

Looking at collision type (Figure 22), the same three peaks as shown in Figure 17 (for all precipitating road users) can be seen respectively for Rear End, Loss of Control and Cornering.

Comparing the top precipitating factors (those coded as definite or probable) in Figure 23 with those in Figure 18 (for all precipitating road users), the most common four remain as Loss of control, Failed to stop, Failed to give way and Poor turn or manoeuvre.
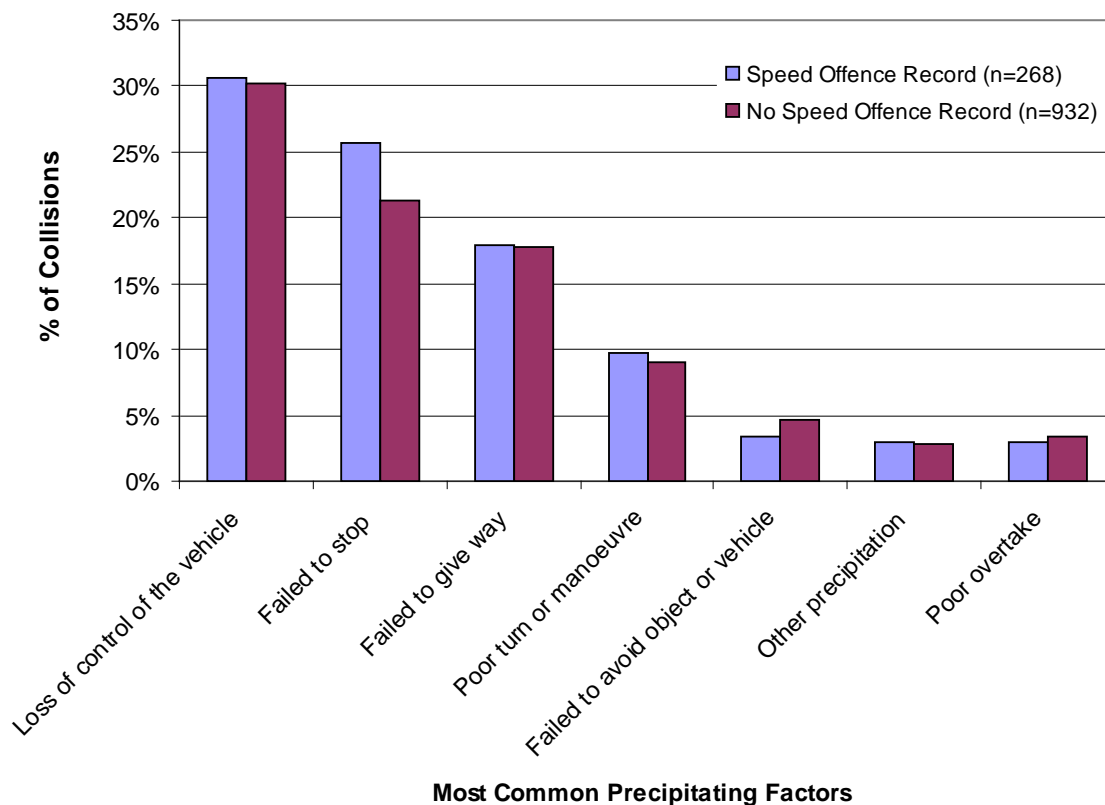
Figure 23: Comparison of most common 'definite' and 'probable' precipitating factors for ID matched precipitating road users with and without identified speeding offences

Related to these precipitating factors are the contributory factors within the OTS causation system. The following tables show the relationship between speed offenders and the contributory factors 'in a hurry' and 'excessive speed'.

Accident Causation: In a Hurry	Any Speed Limit Offences		Total
	Yes	No	
Definitely causative	3	23	26
Probably causative	63	158	221
Possibly causative	83	294	377
No [tick box not checked]	119	457	576
Total	268	932	1200

Table 34: Relationship between accident variable "In a Hurry" and speed limit offences

Combining all confidence levels, 56% of those with an identified speed limit offence were attributed with the accident contributory factor 'In a Hurry', compared to 51% of those with no identified speed limit offences (Not significant: $p=0.181$).

Accident Causation: Excessive Speed	Any Speed Limit Offences		Total
	Yes	No	
Definitely causative	12	46	58
Probably causative	25	90	115
Possibly causative	51	100	151
Not causative	1	0	1
No [tick box not checked]	179	696	875
Total	268	932	1200

Table 35: Relationship between accident variable "Excessive Speed" and speed limit offences

Combining all confidence levels, 33% of those with an identified speed limit offence were attributed with the accident contributory factor 'Excessive Speed', compared to 25% of those with no identified speed limit offences (Significant: $p=0.015$). If the 2 speed convictions that were linked to OTS investigated collisions are disregarded, the result remains significant ($p=0.026$).

5.2. Typical Accidents for Road Users with History of Driving Unlicensed/Uninsured

This sub-section is concerned with data on road users with a history of driving unlicensed and/or uninsured. It should be noted that although a small number of unlicensed drivers without convictions were potentially identified through the offences histories study (n=5), the focus here is on recorded offence histories.

Figure 24 provides an overview of these recorded offence histories, indicating the number of convictions to demonstrate reoffending.
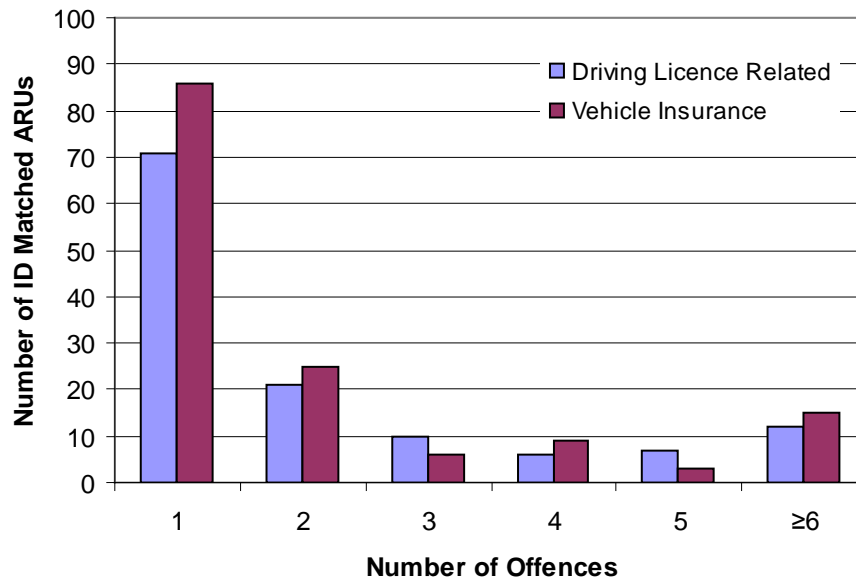
Figure 24: Total driving licence/vehicle insurance offences

There are 168 road users with identified driving licence and/or vehicle insurance offences. Within this group there are 148 males (88%) and 20 females (12%). These two offence types are often found in combination (as shown in Table 36) as a person driving without a valid licence cannot be legally insured to drive.

Any Driving Licence Related Offences	Any Vehicle Insurance Offences		Total
	Yes	**No**	
Yes	103	24	127
No	41	2076	2117
Total	144	2100	2244

Table 36: Relationship between vehicle insurance and driving licence offences

Table 37 splits the data in Table 15 between precipitating (at fault) and not precipitating road users.

Precipitating Road User	Any Driving Licence Related Offences	Any Vehicle Insurance Offences		Total
		Yes	No	
Yes	Yes	76	16	92
	No	25	1083	1108
	Total	101	1099	1200
No	Yes	27	8	35
	No	16	993	1009
	Total	43	1001	1044

Table 37: Relationship between vehicle insurance and driving licence offences for precipitating and non-precipitating road users

There are 117 precipitating road users with identified driving licence and/or vehicle insurance offences, compared to 51 non-precipitating road users.

Figure 25 shows the distributions of the all active road users and license/insurance offenders groups across road users age ranges.

Figure 25: Distribution across the age range of ID matched road users with and without identified driving licence/vehicle insurance offence histories

Looking at the age range of the identified licence/insurance offenders, Figure 25 shows peaks within each age group for younger road users (age 17-34). Even though the youngest age range is labelled child it includes road users up to and including 16 years of age.

An initial exploration of the deprivation data for people with the specific offences, "Driving Without Insurance" and "Licence Offences" found that 71% were identified within the two most deprived quintiles (50% 1st quintile; 21% 2nd quintile). By comparison 39% of road users without records for either of these offences, were identified within the two most deprived quintiles (20% 1st quintile; 19% 2nd quintile). It is possible that this difference is linked to the relative cost of obtaining a licence and insurance for road users from lower income families.

The Department for Transport have previously published research reports (2003[17]; 2007[18]) indicating that young men from disadvantaged backgrounds are more likely to be found driving without a license or insurance than their more affluent peers. With particular regard to unlicensed drivers, they suggest that their road accidents are more frequent and more likely to be serious.

However further interpretation of the VSRC OTS findings must be done with care to fully understand the role played by deprivation, especially given that the study area was considered highly deprived. Nevertheless, where peaks are seen for certain types of offence, or for certain road user profiles, the deprivation data provides a useful additional dimension.

Looking specifically at collision causation, Figure 26 shows the most common 'very likely' contributory factors, coded for precipitating road users with and without licence/insurance convictions. Notable peaks for the licence/insurance offenders are seen within the categories 'careless, reckless or in a hurry' and 'exceeding speed limit'. At the same time there are less 'failed to look properly' and 'poor turn or manoeuvre' factors within the licence/insurance offender group (compared to those without these offences).

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[17] Knox, D, Turner, B., Silcock, D., Silcock, B.R., Beuret, K & Metha, J. (2003) Research into Unlicensed Driving: Final Report. Road Safety Research Report No. 48. London: Department for Transport. Accessed in February 2010:
http://www.dft.gov.uk/pgr/roadsafety/research/rsrr/theme2/researchintounlicensedreport.pdf

[18] Ward. H., Christie, N., Lyons, R., Broughton, J., Clarke, D. & Ward, P. (2007) Trends in Fatal Car-occupant Accidents. Road Safety Research Report No. 76. London: Department for Transport. Accessed in February 2010:
http://www.dft.gov.uk/pgr/roadsafety/research/rsrr/theme5/trendsfatalcar76.pdf

Most Common Contributory Factors 2005
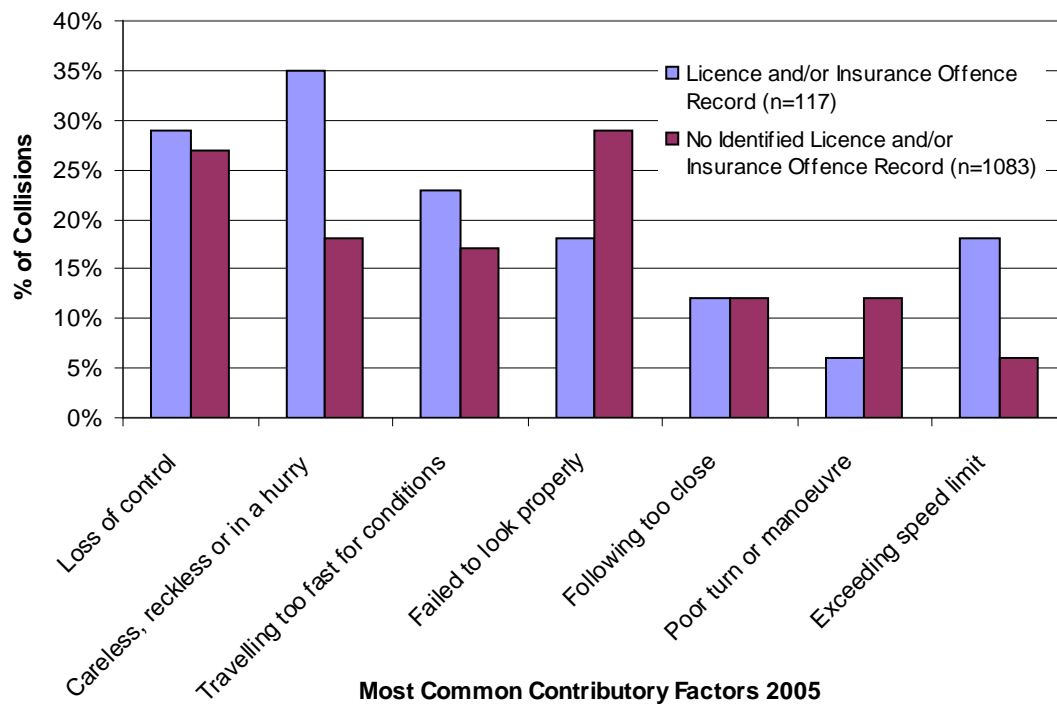
Figure 26: Most common 'very likely' Contributory Factors 2005 for precipitating road users with and without at least one identified licence and or insurance conviction

A full breakdown of the most common precipitating factors is shown in Figure 27, which shows minimal differences between those with and without identified licence/insurance offences.

Most Common Precipitating Factors
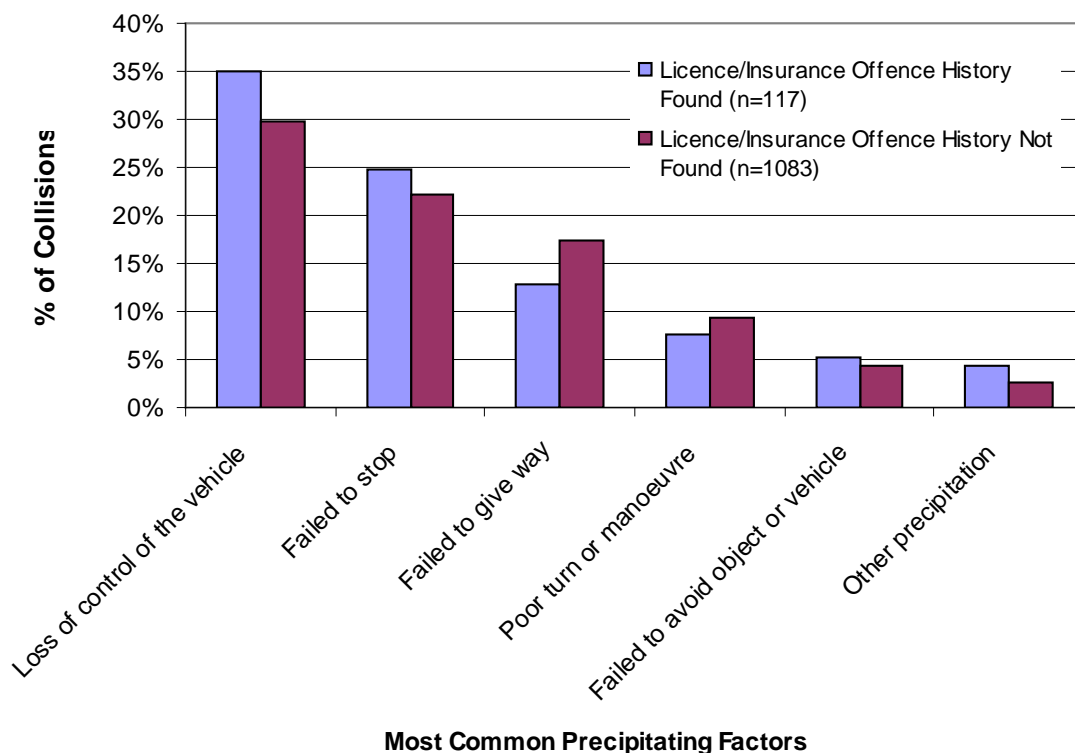
Figure 27: Comparison of 'probable' and 'definite' precipitating factors for ID matched precipitating road users with and without identified licence and/or insurance offences

However, there are stronger relationships for contributory factors such as impairment through alcohol (Table 38).

Impairment through alcohol	ID matched precipitating active road users (ARUs)	Any Licence/ Insurance Offences	Percentage of ID matched group
Definite	40	18	45%
Probable	29	7	24%
Possible	31	8	26%

Table 38: Comparison of 'Impairment through alcohol' contributory factor for sample group and identified licence/insurance offenders

A large proportion of those recorded as having had an accident due to alcohol impairment were found to have licence/insurance offences. The numbers involved within this sample are low but this suggests a possible link with repeat drink driving.

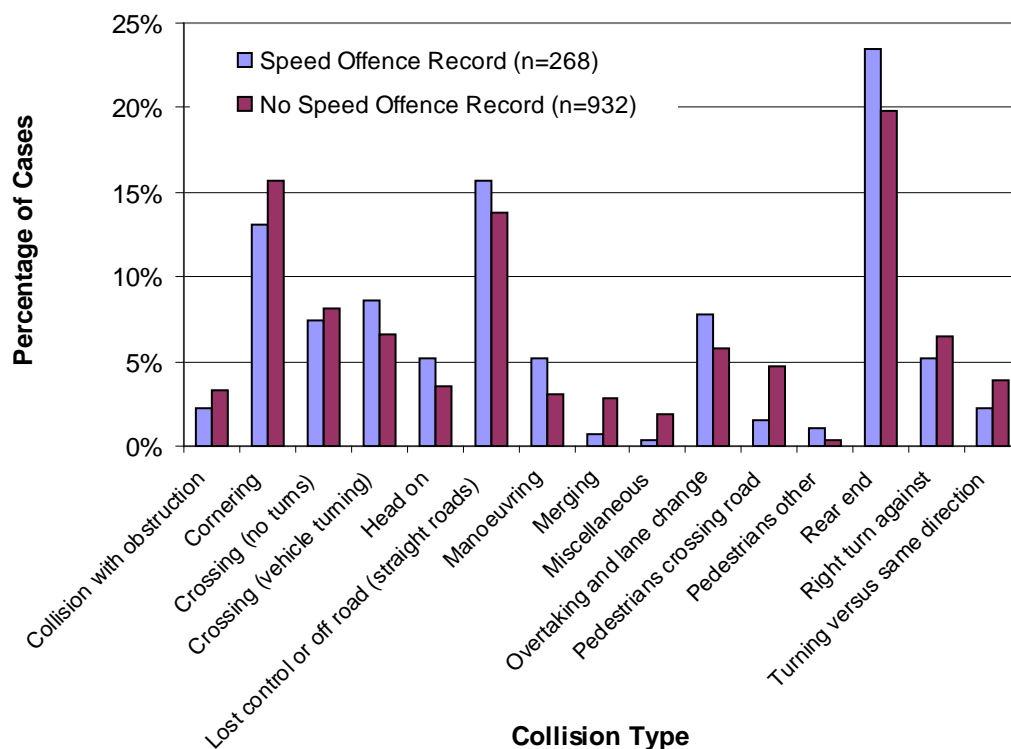Figure 28 gives the distribution of collision types for road users with and without identified licence/insurance offences.
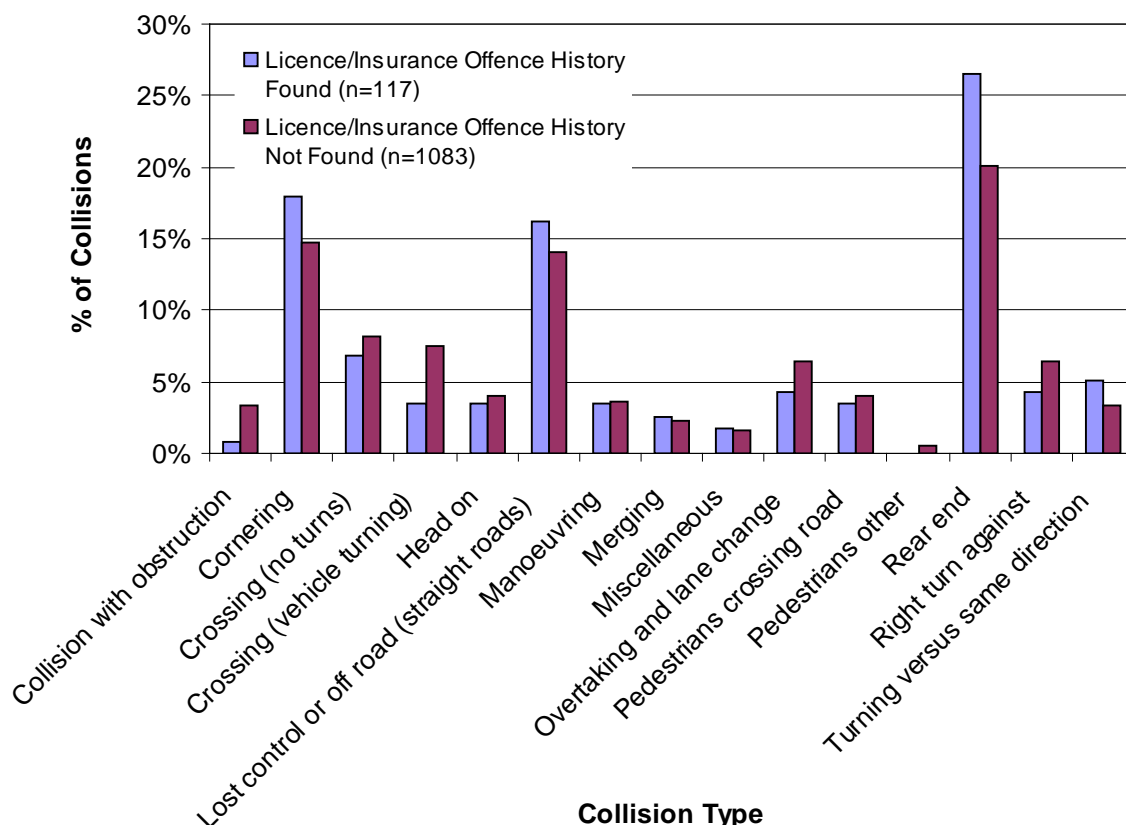
Figure 28: Comparison of collision types for ID matched precipitating road users with and without identified licence and/or insurance offences

Figure 28 shows an increased peak for rear end accidents for the licence/insurance offenders group, with the other collision types having only small differences. Future analysis could explore the detail of these particular collisions.

6. LINKS BETWEEN MOTORING AND NON-MOTORING CONVICTIONS

The Home Office have reported that serious traffic offenders are more likely than the general population to have previous criminal convictions (Rose, 2000)[19]. This is further supported by Broughton (2003)[20] who found that drivers who have committed several non-motoring offences are far more likely than non-offenders to commit certain driving offences, including drink driving and dangerous driving. Specific examples include men with at least 4 non-motoring convictions being 40-50 times more likely to be convicted of dangerous driving than men without any non-motoring convictions – with women in the same category being almost 100 times more likely. Broughton also showed that drivers with at least 4 convictions for vehicle theft committed on average 25 times as many serious motoring offences as people with no vehicle theft convictions. It is perhaps only a small leap to suggest that these individuals are more likely to be involved in road accidents.

This section will provide an overview of how the number of motoring convictions relates to the presence of other conviction types, with a particular focus on road users with 6 or more motoring convictions. However, first a quick overview of the issue of driving licence data will be provided.

6.1. Results from Driving Licence Checks

If police attended the RTC and completed standard licence checks then it should be reflected in the offence data if a road user did not hold a valid licence. However many of the accidents attended by OTS involve only slight, or even no injuries. In these circumstances, it is less likely that licence checks will have been completed.

46 car drivers, 18 motorcyclists, 4 van drivers and 2 HGV drivers were identified in the DVLA data as driving without a valid licence at the time of the OTS investigated collision. Of these, 5 had no recorded offences identified but were established as non-licence holders through the DVLA database.

However it is possible that a larger number were driving without a valid licence. The DVLA database requires an exact name and date of birth in order to produce a match. Where middle names are unknown, names are misspelt or name changes have not been updated, they will be very difficult to identify. Also where a name is very common (e.g. John Smith) there may be more that one possible match and it may be difficult to determine the correct link.

98 identity matched active road users (found on PNC and/or the Voters database) could not be matched on the DVLA database, of which 85 were drivers in the OTS attended collision (76 car, 4 van, 3 HGV, 2 motorcycle). It is possible that some of this number had never

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[19] Rose, G. (2000). The criminal histories of serious traffic offenders. Home Office Research Study 206. Research Development and Statistics Directorate: Home Office.

[20] Broughton, J. (2003). The Number of Motoring and Non-Motoring Offences.   TRL Report TRL562.

registered for a UK licence but this could not be firmly established due to the complexities of matching people to the DVLA system.

6.2. Numbers of Motoring and Non-Motoring Convictions

The purpose of this subsection is to demonstrate how motoring convictions map onto non-motoring convictions within the offence histories project. However to re-outline the core offence figures, within the VSRC Phase 2 & 3 OTS dataset there are 1037 active road users with an identified offence history (46% of ID matched group: n=2244). The offence history relates solely to the OTS investigated collision for 42 road users (4%).

The maximum number of convictions attributed to one person is 173 and the maximum number of motoring convictions is 89. The most common offences (in terms of number of individuals with at least 1 conviction, at the top level) are summary motoring, violence against the person and theft & handling. The most common motoring offences (in terms of number of individuals with at least 1 conviction) are speed limit offences, driving etc. after consuming alcohol or taking drugs and vehicle insurance offences.

Table 39 illustrates how the total conviction numbers cross-tabulate.

Number of Motoring Convictions	Number of Non Motoring Convictions				Total
	0	1-5	6-10	11+	
0	1234	137	19	7	1397
1-5	532	188	29	32	781
6-10	2	18	11	6	37
11+	0	3	2	24	29
Total	1768	346	61	69	2244

Table 39: Cross-tabulation between conviction numbers for motoring and non-motoring offences

As always, zero convictions means that no offences were identified within the searches; this is not a definitive statement that no offences have ever been committed. The table shows that many ID matched OTS road users with 1-5 motoring convictions do not have non-motoring convictions identified (68%), but that people with 6 or more motoring convictions are more likely to have other identified non-motoring convictions than none at all. People with any non-motoring convictions are more likely to have at least 1 identified motoring conviction than to have none.

6.2.1. Number of Motoring Convictions and Top Level Offence Types

Having demonstrated that there appears to be a relationship between higher levels of motoring offences and the presence of non-motoring offences, Table 40 breaks this relationship down further by separating the top level offence categories.

Reading this table vertically, the presence of top level offences such as violence against the person can be seen for three different groups; those with no motoring convictions identified, those with one to five motoring convictions identified and those with six or more motoring convictions. For every top level offence, there is an increase in the percentage of those convicted as the number of motoring offences increases. This increase is particularly notable within the ≥6 motoring convictions group.

Top Level Offence Type	Any Convictions for Top Level Category (%)		
	No Motoring Convictions (n=1397) ▼	1-5 Motoring Convictions (n=781) ▼	≥6 Motoring Convictions (n=66) ▼
Violence against the person	**6%**	**19%**	**62%**
Sexual offences	1%	1%	9%
Burglary	1%	7%	38%
Robbery	0%	2%	8%
Theft and handling stolen goods	**3%**	**15%**	**80%**
Fraud and forgery	1%	4%	23%
Criminal damage	2%	10%	47%
Drug offences	2%	6%	42%
Other indictable (excluding motoring offences)	0%	2%	11%
Other summary (excluding motoring offences)	**3%**	**12%**	**76%**
Indictable motoring	0%	2%	36%
Summary motoring	0%	97%	100%

Table 40: Relationship between top level offence history and number of motoring convictions

It should be noted that the ≥6 motoring convictions group is a relatively small sample (n=66).

Less than 100% of the 1-5 motoring convictions group have indictable and/or summary motoring offences. This can be explained as not all motoring convictions are coded as indictable or summary motoring. For example, theft of a motor vehicle is a 'theft and handling' or 'other summary' offence and causing death by dangerous driving is a 'violence against the person' offence.

Excluding summary motoring, the most common offence types for all groups are (as shown in bold) violence against the person, theft and handling stolen goods and other summary, however the order varies between the motoring conviction groups.

It is of course possible to look at the relationship between individual offences, however this goes beyond the remit of this study. An example is provided in Table 41, as this may be an appropriate task within future analysis work.

Total Violence Convictions	Total Summary Motoring Convictions			Total
	0	1-5	≥6	
0	1329	620	20	1969
1-5	86	141	27	254
≥6	3	11	7	21
Total	1418	772	54	2244

Table 41: Cross-tabulation between number of identified summary motoring convictions and number of identified violence against the person convictions

For OTS ID matched road users with 1-5 violence against the person convictions, 66% have at least one summary motoring conviction. Of those with no identified violence convictions, this proportion is halved to 33%.

6.2.2. Number of Motoring Convictions and Motoring Offence Types

Returning to the broader data presentation, Table 40 illustrates a clear difference between the 0, 1-5 and ≥6 motoring conviction groups in relation to 'top level' convictions. To follow this, Table 42 presents the breakdown of motoring offence types for the two groups with motoring convictions (1-5 and ≥6). The most frequent offences for the two motoring offender groups are highlighted in bold.

Motoring Offence Type	Any Convictions for Category (%)	
	1-5 Motoring Convictions (n=781) ▼	≥6 Motoring Convictions (n=66) ▼
Causing death or bodily harm	0%	8%
Dangerous driving	1%	26%
Driving etc. after consuming alcohol or taking drugs	**14%**	56%
Careless driving	10%	15%
Accident offences	2%	33%
Unauthorised taking or theft of motor vehicle	4%	52%
Driving licence related offences	9%	**88%**
Vehicle insurance offences	11%	**91%**
Vehicle registration and excise licence offences	1%	3%
Work record and employment offences	0%	0%
Operator's licence offences	0%	0%
Vehicle test offences	1%	11%
Fraud, forgery etc., associated with vehicle or driver records	1%	18%
Vehicle or part in dangerous or defective condition	2%	3%
Speed limit offences	**61%**	24%
Motorway offences (other than speeding)	0%	0%
Neglect of traffic directions	**14%**	12%
Neglect of pedestrian rights	0%	0%
Obstruction, waiting and parking offences	0%	0%
Lighting offences	0%	0%
Noise offences	0%	0%
Load offences	0%	0%
Offences peculiar to motorcycles	0%	0%
Miscellaneous motoring offences	6%	44%

Table 42: Relationship between motoring offence history and number of motoring convictions

The most frequent motoring offence within the 1-5 motoring convictions group is speeding, with 61% of the group having at least one identified speed limit conviction. The joint second motoring offences within this group are 'driving etc. after consuming alcohol or taking drugs' ("etc." refers mainly to intent to drive) and neglect of traffic directions, both at 14%..

By comparison the most common motoring offences in the ≥6 group are 'driving licence related' and 'vehicle insurance' at 88% and 91% respectively. This illustrates the issues of repeat motoring offenders continuing to drive without a licence (and therefore without insurance). Although a relatively small group, they are likely to be high risk. Over 50% have vehicle theft convictions and over 50% drink/drug driving convictions.

6.2.3. The ≥6 Motoring Offences Group

The rest of this sub-section will provide a brief overview of the ≥6 motoring offences group, starting with the spread of road user types in Figure 29.
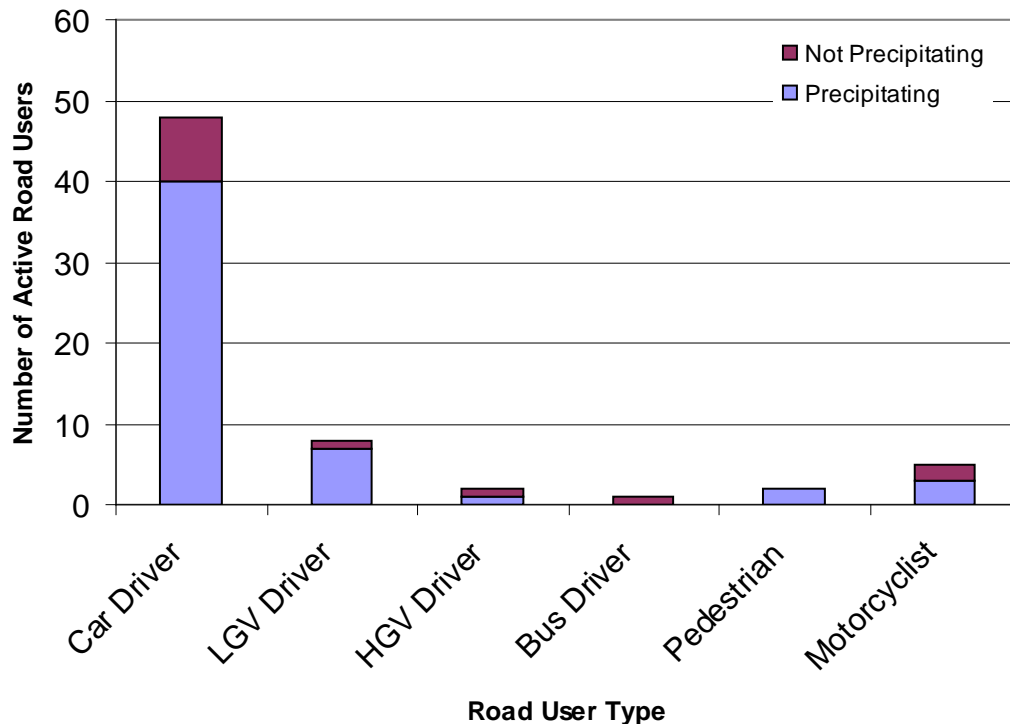
Figure 29: Road user type and fault distribution of people with ≥6 identified motoring offences (n=66)

As with the complete OTS dataset, car drivers are the predominant group. It is clear though that there is a much higher predominance of precipitating road users overall.

Figure 30 shows the distribution of gender and whether road users were precipitating or not precipitating for the ≥6 identified motoring offences group.
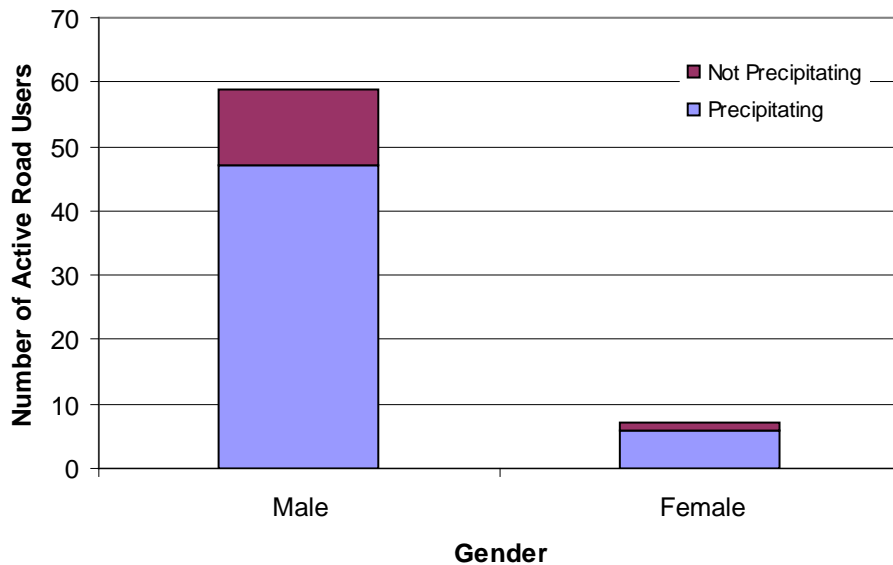
Figure 30: Gender and fault distribution of road users with ≥6 identified motoring offences (n=66)

In this group there is a much higher proportion of male road users. Most of the females in this group were attributed with the precipitating factor in the OTS collision that they were involved in, although the numbers are low.

Figure 31 shows the distribution of age and whether road users were precipitating or not precipitating for the ≥6 identified motoring offences group.
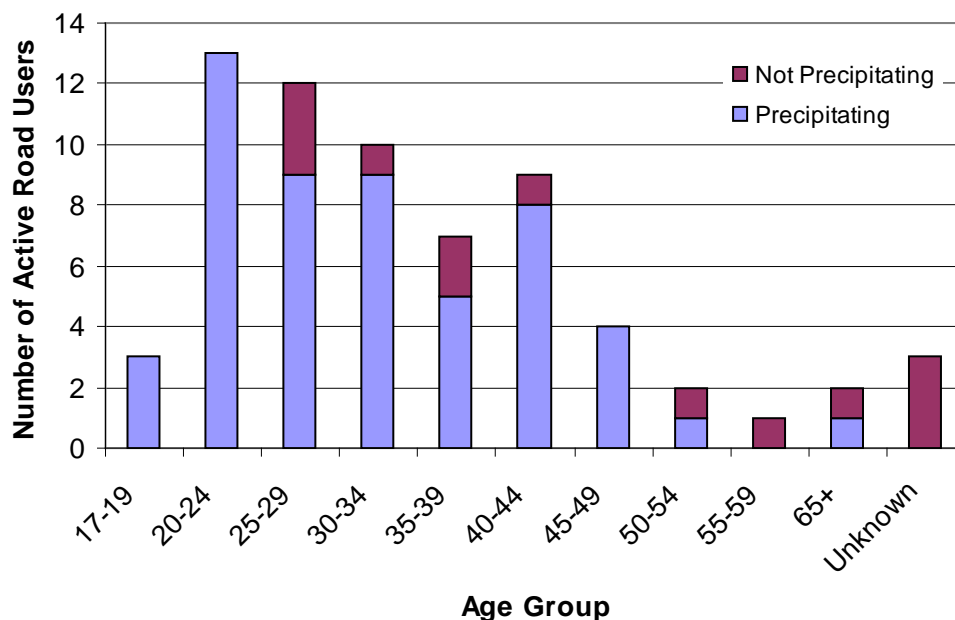
Figure 31: Age and fault distribution of road users with ≥6 identified motoring offences (n=66)

The peak within this group is age 20-24, which combined with 17-19 group contains only road users who were identified as at fault.

Figure 32 shows the distribution of collision injury-severity and whether road users were precipitating or not precipitating for the ≥6 identified motoring offences group.
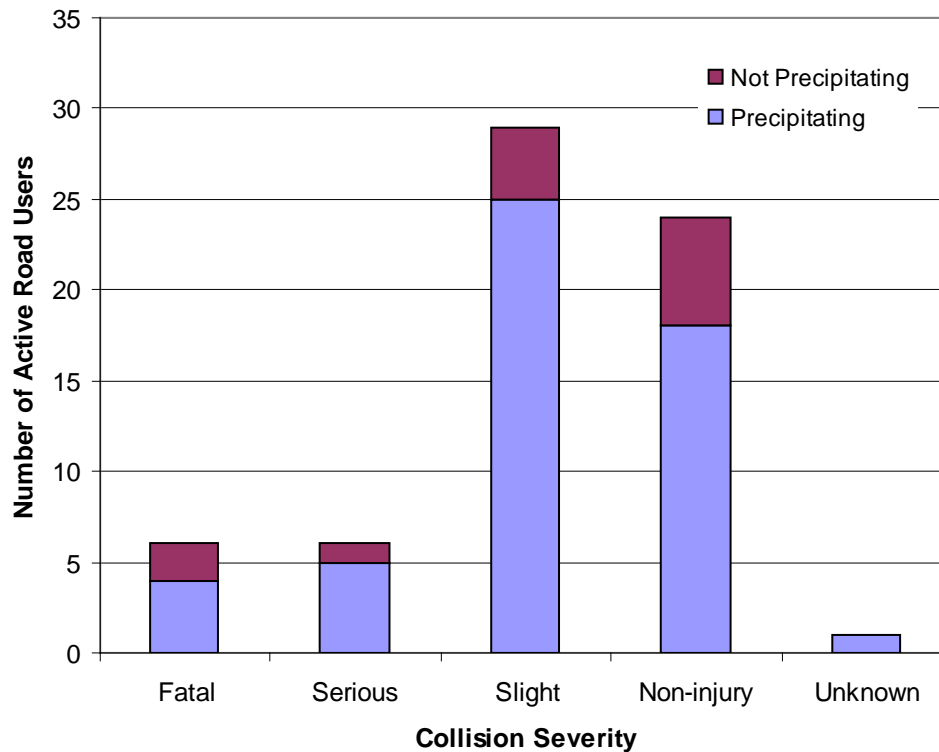
Figure 32: Collision severity and fault distribution of road users with ≥6 identified motoring offences (n=66)

There is a higher proportion of KSI collisions (18%) compared to the complete ID matched sample (13%), and a lower proportion of slight collisions (44% compared to 51%).

Figure 33 shows the distribution of level of deprivation and whether road users are precipitating or not precipitating for the ≥6 identified motoring offences group.
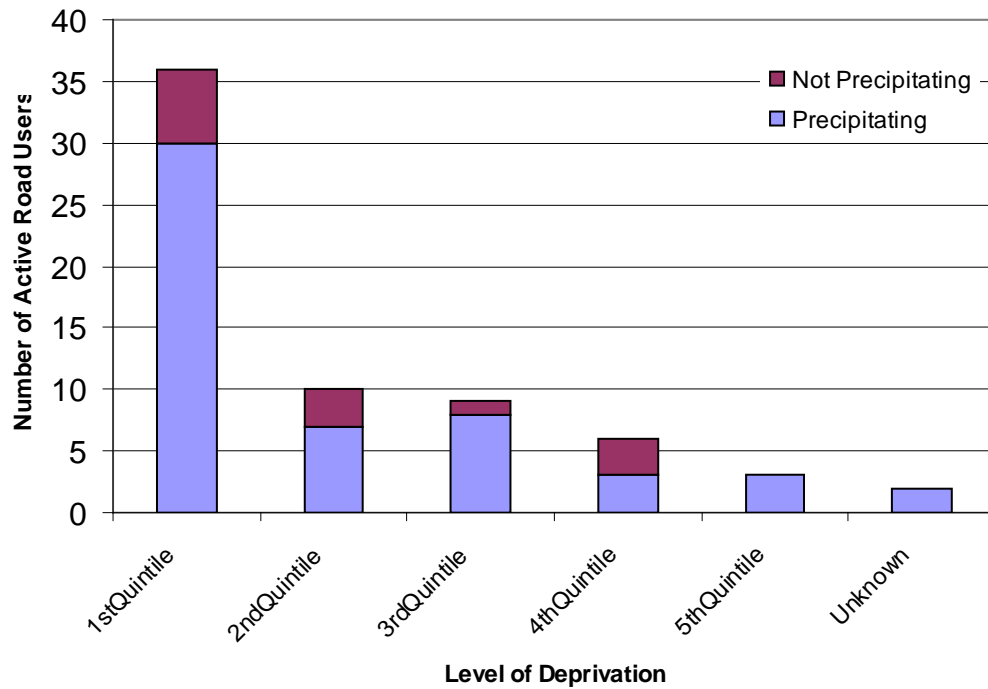
Figure 33: Deprivation and fault distribution of road users with ≥6 identified motoring offences (n=66)

The majority of this group are shown within the first (most deprived) quintile (55%). Only 5% are identified as being in the fifth (least deprived) quintile.

Overall, the most frequently observed members of the ≥6 motoring convictions group are young males, from deprived (1st IMD quintile) areas.

7. COMPARISON WITH NATIONAL DATA

7.1. Available Data

The primary source of national offence data is currently the Ministry of Justice, which publishes annual criminal statistics for England and Wales and separate data on offences relating to motor vehicles.

These published data show the number of offences committed by category for a particular year, but do not take account of re-offending; therefore the true number of offenders cannot be determined. It is challenging to disaggregate the data to this level, however the Ministry of Justice have been able to provide a bespoke national re-offending dataset for 1999-2008 at the request of the VSRC. It is recommended that future analysis might also consider regional data for the geographical areas covered by the OTS project; however, some of the road users involved in accidents within these areas have travelled from other areas.

National data has been made available to the VSRC for all top level offence types, but is unavailable for the following motoring offence categories:

- Careless driving
- Vehicle registration and excise licence offences
- Work record and employment offences
- Operator's licence offences
- Vehicle test offences
- Vehicle or part in dangerous or defective condition
- Speed limit offences
- Motorway offences (other than speeding)
- Neglect of traffic directions
- Neglect of pedestrian rights
- Obstruction, waiting and parking offences
- Lighting offences
- Noise offences
- Load offences
- Offences peculiar to motorcycles
- Miscellaneous motoring offences

These are unavailable as the Ministry of Justice has suppressed figures in categories which contain largely non recordable offences because the results are incomplete on the Police National Computer and therefore would be unrepresentative. It is recommended that the availability of national motoring offence data is further explored with the Driver and Vehicle Licensing Agency.

7.2. National Data on Re-Offending 1999-2008

Table 43 shows the total number of offenders who have been convicted at least once over a 10 year period (1999-2008), by top level offence category and total number of offences. Only offences committed by offenders aged 18 or over at the time of sentencing are included and it has been advised that the earliest data (1999) may be incomplete on the Police National Computer.

Top Level Offence Type	Total Offences	Total Offenders	Re-offending Rate
Violence against the person	479,641	332,211	1.44
Sexual offences	84,625	36,717	2.30
Burglary	270,380	124,021	2.18
Robbery	63,973	42,881	1.49
Theft and handling stolen goods	1,656,891	447,872	3.70
Fraud and forgery	510,760	199,934	2.55
Criminal damage	141,644	107,192	1.32
Drug offences	725,485	342,302	2.12
Other indictable (excluding motoring offences)	1,152,480	468,170	2.46
Other summary (excluding motoring offences)	94,212	81,148	1.16
Indictable motoring	2,170,591	956,128	2.27
Summary motoring	2,523,099	990,836	2.55

Table 43: National data for top level offences 1999-2008 combined (MoJ data – England and Wales)

Summary motoring offences are the most frequent top level offence type with a high re-offending rate (in the 10 year period available). Only the category of theft and handling stolen goods has a higher re-offending rate. Indictable motoring is the second most frequent top level offence type with a similarly high re-offending rate.

Table 44 shows the total number of offenders who have been convicted at least once over 10 years (1999-2008), by motoring offence category and total number of offences.

Note, the total number of indictable and summary motoring offences (Table 43) does not sum up to the total number of motoring type offences (Table 44) as it includes some offences in other categories, such as violence, theft etc.

Motoring Offence Type	Total Offences	Total Offenders	Re-offending Rate
Causing death or bodily harm	27,121	23,370	1.16
Dangerous driving	49,711	45,224	1.10
Driving etc. after consuming alcohol or taking drugs	892,546	753,992	1.18
Accident offences	128,564	89,022	1.44
Unauthorised taking or theft of motor vehicle	112,490	75,877	1.48
Driving licence related offences	597,237	317,585	1.88
Vehicle insurance offences	675,470	381,667	1.77
Fraud, forgery etc., associated with vehicle or driver records	42,973	36,171	1.19
Total	2,757,431	1,921,143	1.44

Table 44: National data for motoring offences 1999-2008 combined
(MoJ data – England and Wales)

Table 43 and Table 44 both show that levels of re-offending vary considerably between different offence types. This is expected as for each offence type there are variations in detection and level of punishment (a prison sentence or driving ban may reduce the possibilities for re-offending) in addition to personal factors such as addiction.

Of the motoring offences available in the national data, driving etc. after consuming alcohol or taking drugs is the most frequent offence type, although the re-offending rate is one of the lowest. Driving licence related offences have the highest re-offending rate.

A detailed breakdown of the numbers convicted for top level and motoring offences by year is included in the appendix.

7.3. National Data on Number of Previous Convictions Over 10 Years

The following table shows national figures for the number of offenders, convicted in 2008, against the number of previous same category top level offences in the previous 10 year period (1999 to 2008).

Number of convictions:	0	1-3	4-6	7-9	10+
Violence against the person	21,793	6,561	782	244	302
	73.4%	22.1%	2.6%	0.8%	1.0%
Sexual offences	1,947	596	143	62	49
	69.6%	21.3%	5.1%	2.2%	1.8%
Burglary	5,010	3,458	1,435	612	495
	45.5%	31.4%	13.0%	5.6%	4.5%
Robbery	2,941	700	78	21	9
	78.4%	18.7%	2.1%	0.6%	0.2%
Theft and handling stolen goods	16,951	13,199	5,576	3,427	10,357
	34.2%	26.7%	11.3%	6.9%	20.9%
Fraud and forgery	7,420	2,675	755	314	401
	64.2%	23.1%	6.5%	2.7%	3.5%
Criminal damage	3,982	651	36	7	8
	85.0%	13.9%	0.8%	0.1%	0.2%
Drug offences	18,634	11,390	2,996	943	644
	53.8%	32.9%	8.7%	2.7%	1.9%
Other indictable (excluding motoring offences)	21,473	13,659	4,110	1,630	1,559
	50.6%	32.2%	9.7%	3.8%	3.7%
Other summary (excluding motoring offences)	55,706	37,009	10,674	4,126	4,276
	49.8%	33.1%	9.5%	3.7%	3.8%
Indictable motoring	3,072	369	15	2	4
	88.7%	10.7%	0.4%	0.1%	0.1%
Summary motoring	63,963	17,448	4,500	1,853	2,300
	71.0%	19.4%	5.0%	2.1%	2.6%

Table 45: National data for top level offences – number of previous same category offences (over 10 years) for offenders convicted in 2008 (MoJ data – England and Wales)

In order to count previous criminal histories the figures represent only the last occasion (the index offence) when each offender was convicted during 2008, and the offender is classified according to the top level offence type of the last offence. When the figures for each offence type are summed they are therefore smaller than in Table 43. The index offence date for these data is the latest date in 2008.

In Table 45, burglary and theft with handling stolen goods both have over 20% of offenders with 4+ previous convictions in the 10 year period (23% and 39%). Of indictable motoring offenders, 89% have no previous convictions in the 10 year period and this figure is 71% for summary motoring offenders.

Table 46 shows the same data for national motoring offences.

Number of convictions:	0	1-3	4-6	7-9	10+
Causing death or bodily harm	1,570	189	6	-	-
	89.0%	10.7%	0.3%	-	-
Dangerous driving	3,171	359	7	-	-
	89.7%	10.1%	0.2%	-	-
Driving etc. after consuming alcohol or taking drugs	58,484	14,130	290	29	3
	80.2%	19.4%	0.4%	0.0%	0.0%
Accident offences	4,982	117	4	-	-
	97.6%	2.3%	0.1%	-	-
Unauthorised taking or theft of motor vehicle	4,425	1,347	222	68	53
	72.4%	22.0%	3.6%	1.1%	0.9%
Driving licence related offences	6,035	5,973	1,619	570	475
	41.1%	40.7%	11.0%	3.9%	3.2%
Vehicle insurance offences	7,283	2,491	306	73	34
	71.5%	24.5%	3.0%	0.7%	0.3%
Fraud, forgery etc., associated with vehicle or driver records	561	62	6	2	4
	88.3%	9.8%	0.9%	0.3%	0.6%

Table 46: National data for motoring offences – number of previous same category offences (over 10 years) for offenders convicted in 2008 (MoJ data – England and Wales)

The motoring offenders with the highest percentage of no previous convictions (in the 10 year period) are those with an accident offences conviction, with 98% having no previous conviction. The highest proportions of previous convictions are seen for driving licence related offenders.

7.4. Comparison with OTS Data

Caveats for interpretation of the OTS offence history data are stated elsewhere in this study and of course they are still relevant to the OTS data re-presented here for comparison with available national data. Likewise the caveats of the national data that has been made available to the VSRC are given in previous sections of this chapter. When comparing the datasets it is useful though to identify particular points.

The OTS offence history data includes offences that are processed outside the courts, whilst the national data only includes cases processed in the courts. This will give higher levels of offending in the OTS data.

The OTS data includes some road users under 18 years of age, whilst the available national data only includes offences committed by offenders aged 18 or over at the time of sentence. This will give slightly higher levels of offending in the OTS data.

At a given time (the date that the record check is made) the OTS offence history process examines an individual (active road user) and records whether in the past a particular offence has been committed by them, which is still available to be identified in the records

system. This offence is recorded as being prior to, after, or as part of the OTS attended crash. It is therefore possible to state how many active road users out of the total number with matched ID records in OTS have a conviction for a certain offence.

The national data that has been made available to the VSRC gives the total number of offenders for certain offences in a 10 year period (1999 to 2008) (OTS offence history data collection was not restricted to any specific time period – all available records were collected). By comparing this number with the population aged 18 or over in 2008 it is therefore possible to say that in 2008 a certain percentage of the population (aged 18 and over) had committed a certain offence within the 10 year period from 1999 to 2008. Although this does not take into account individuals who have committed an offence but then died before 2008.

The OTS offence history study has been carried out by VSRC in Nottinghamshire which may have different offence related statistics than are observed nationally. Nottingham has consistently been ranked as one of the 20 most deprived authorities in England, and that might be expected to result in higher levels of crime. The British Crime Survey for 2007 to 2008, for example, indicated that Nottinghamshire had 1164 incidents of personal crime per 10,000 households compared to 848 incidents per household over England and Wales[21].

Considering these issues it is felt by the authors that in their current forms the datasets are not directly comparable but it is interesting to show the proportions for each offence in the two datasets, especially to inform future needs. It is clear that it would be useful to try and harmonise this comparison as much as possible, through further manipulation of the OTS data and also further discussions with the Ministry of Justice on national data availability (although the data that the Ministry have been able to compile for this study is greatly appreciated by the VSRC and the complexities of compiling national offence data are understood).

Table 47 gives the numbers of people who committed top level offences during the period 1999 to 2008 and gives these figures as a proportion of the 18 year old and over population as of mid 2008 (England and Wales). No adjustment is made for mortality (some of these offenders will have died before 2008). Extra information is also given regarding the proportion of the population in 2008 who committed particular offences in 2008. Percentages are given to 2 decimal places to reflect that the frequencies for some offence types are small.

The population figure available from the Office of National Statistics[22] (ONS) for England and Wales for mid 2008 is 54,439,700. If only those aged 18 or over are included the figure is 42,797,500.

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[21] Kershaw, C., Nicholas, S. and Walker, A. (Eds) (2008). Crime in England and Wales 2007/08: Findings from the British Crime Survey and police recorded crime. Home Office Statistical Bulletin.

[22] Population Estimates for UK, England and Wales, Scotland and Northern Ireland, Office for National Statistics (ONS) http://www.statistics.gov.uk

	Top Level Offence Type	National Data 1999 to 2008 combined		National Data 2008	
		Number of Offenders	% of Pop*.	Number of Offenders	% of Pop*.
I)	Violence against the person	332,211	0.78%	42,242	0.10%
II)	Sexual offences	36,717	0.09%	3,404	0.01%
III)	Burglary	124,021	0.29%	17,730	0.04%
IV)	Robbery	42,881	0.10%	4,971	0.01%
V)	Theft and handling stolen goods	447,872	1.05%	74,323	0.17%
VI)	Fraud and forgery	199,934	0.47%	16,701	0.04%
VII)	Criminal damage	107,192	0.25%	8,051	0.02%
VIII)	Drug offences	342,302	0.80%	49,751	0.12%
IX)	Other indictable (excluding motoring offences)	468,170	1.09%	64,641	0.15%
X)	Other summary (excluding motoring offences)	81,148	0.19%	5,306	0.01%
XI)	Indictable motoring	956,128	2.23%	156,966	0.37%
XII)	Summary motoring	990,836	2.32%	112,552	0.26%

Table 47: Number of Offenders aged 18 or over - National data for top level offences (MoJ data – England and Wales)

* Population of England and Wales, aged 18 and over, mid 2008 (ONS)

Table 48 gives the proportion of ID matched active road users in the OTS dataset (2244 in total) who have committed top level offences that were available in the records when checking took place.

	Top Level Offence Type	OTS Data	
		Number of Offenders	% of ID Matched ARUs (N=2244)
I)	Violence against the person	275	12.25%
II)	Sexual offences	31	1.38%
III)	Burglary	97	4.32%
IV)	Robbery	21	0.94%
V)	Theft and handling stolen goods	210	9.36%
VI)	Fraud and forgery	56	2.50%
VII)	Criminal damage	138	6.15%
VIII)	Drug offences	106	4.72%
IX)	Other indictable (excluding motoring offences)	24	1.07%
X)	Other summary (excluding motoring offences)	176	7.84%
XI)	Indictable motoring	43	1.92%
XII)	Summary motoring	826	36.81%

Table 48: Number of Offenders – OTS ID Matched ARU data for top level offences

Comparing the combined national data for 1999 to 2008 (Table 47) with the OTS data (Table 48) it is clear that for nearly every top level offence the proportion in the OTS data is much higher. The exceptions are other indictable (excluding motoring offences) and indictable motoring, where the proportions are similar. The likely reasons for this are given above, at the start of this section, but the differences for indictable and summary motoring offences are worthy of mention as they highlight a particular difference in the datasets. The national data does not record offences that do not go to court but the OTS offence history data does. The more serious indictable offences will be dealt with in court but the summary offences may not, hence here the comparison between indictable offences is similar but the proportion for summary offences in the OTS dataset is 16 times higher.

Regarding the frequencies of top level offence types, summary motoring is the most frequent in both datasets. The second most frequent offence type in the OTS data is violence against the person but this is the 6th most frequent offence type in the national data for 1999 to 2008. Again this is likely to be due to the offences recorded in the datasets, with the OTS data including less serious violence against the person offences, for example 'use of threatening, abusive or insulting words or behaviour', that are not necessarily dealt with by the courts. Indictable motoring is the second most frequent offence type in the national data but 9th in the OTS data for the same reason.

Similarly Table 49 and Table 50 give the figures by motoring offence category.

	Motoring Offence Type	National Data 1999 to 2008 combined		National Data 2008	
		Number of Offenders	% of Pop*.	Number of Offenders	% of Pop*.
1	Causing death or bodily harm	23,370	0.05%	2,021	0.00%
2	Dangerous driving	45,224	0.11%	3,983	0.01%
3	Driving etc. after consuming alcohol or taking drugs	753,992	1.76%	77,453	0.18%
5	Accident offences	89,022	0.21%	8,554	0.02%
6	Unauthorised taking or theft of motor vehicle	75,877	0.18%	8,857	0.02%
7	Driving licence related offences	317,585	0.74%	37,145	0.09%
9	Vehicle insurance offences	381,667	0.89%	43,578	0.10%
14	Fraud, forgery etc., associated with vehicle or driver records	36,171	0.08%	933	0.00%

Table 49: Number of Offenders aged 18 or over - National data for motoring offences (MoJ data – England and Wales)

* Population of England and Wales, aged 18 and over, mid 2008 (ONS)

	Motoring Offence Type	OTS Data	
		Number of Offenders	% of ID Matched ARUs (N=2244)
1	Causing death or bodily harm	7	0.31%
2	Dangerous driving	28	1.25%
3	Driving etc. after consuming alcohol or taking drugs	150	6.68%
4	Careless driving	85	3.79%
5	Accident offences	34	1.52%
6	Unauthorised taking or theft of motor vehicle	69	3.07%
7	Driving licence related offences	127	5.66%
9	Vehicle insurance offences	144	6.42%
10	Vehicle registration and excise licence offences	8	0.36%
11	Work record and employment offences	0	0.00%
12	Operator's licence offences	1	0.04%
13	Vehicle test offences	12	0.53%
14	Fraud, forgery etc., associated with vehicle or driver records	18	0.80%
15	Vehicle or part in dangerous or defective condition	14	0.62%
16	Speed limit offences	493	21.97%
17	Motorway offences (other than speeding)	1	0.04%
18	Neglect of traffic directions	119	5.30%
19	Neglect of pedestrian rights	2	0.09%
20	Obstruction, waiting and parking offences	1	0.04%
21	Lighting offences	0	0.00%
22	Noise offences	0	0.00%
23	Load offences	1	0.04%
24	Offences peculiar to motorcycles	1	0.04%
25	Miscellaneous motoring offences	73	3.25%

Table 50: Number of Offenders – OTS ID Matched ARU data for motoring offences

For the motoring offence types where comparison between the national data (1999 to 2008) and OTS is possible, the proportions in OTS are far higher than in the national data.

The points discussed previously regarding the comparability of the datasets are of course still relevant but an extra element here is that of course the OTS data represents individuals who have been involved in an OTS investigated crash. For a number of these collisions, there were linked convictions which will feature here.

Regarding the frequencies of motoring offences the ranking of the motoring offences is nearly the same for both datasets, the only difference is that in the OTS data accident

offences are 4th most frequent and in the national data 5th – interchanging with unauthorised taking or theft of motor vehicle. Driving etc. after consuming alcohol or taking drugs (1st), vehicle insurance offences (2nd) and driving licence related offences (3rd) form the top three motoring offences in each dataset. The least frequent motoring offence in both datasets is causing death or bodily harm.

7.5. Discussion of National Data

The Offence Histories project has been innovative in collecting and analysing offence history data for those involved in OTS investigated crashes. As described elsewhere in this report this has presented many detailed challenges in data collection, processing and analyses. The next step of comparison with national data has also provided many challenges. It is clear from the first comparisons undertaken here that whilst simple comparisons are possible (with the benefit of bespoke data from the Ministry of Justice) further work alongside the Ministry of Justice is required to harmonise the levels of offending that are being identified in the two datasets. It is also recommended that the availability of national motoring offence data is further explored with the Driver and Vehicle Licensing Agency, especially to provide national data on the motoring offences that the Ministry of Justice has not been able to provide.

For the majority of offence groups the proportion of ID matched OTS active road users with an offence is higher, in some cases much higher, than in the national data for the 1999 to 2008 period (compared to the relevant population measure). In the future the comparison would benefit from some manipulation of the OTS data, for example, a 10 year offence cut off and matching the road-user age selection of the national data, but the largest challenge is to harmonise the offences being identified in the two datasets. The data here on indictable and summary offences points to the inclusion of non-court offences in the national data, or the exclusion of these offences in the OTS data, as a particularly important step in increasing the validity of the comparison. The data on indictable offences gives a similar comparison whilst summary offences are very different between the two datasets.

Regional data for the geographical areas covered by the OTS project would also be an interesting and valuable step, although the analysis would need to consider those road users travelling into the areas of the OTS data collection.

8. DISCUSSION

The VSRC offence histories project has successfully met the challenges of linking offence data to detailed collision data. Key findings from this report are highlighted here.

8.1. Links between Offending and Age, Gender, Road User Type and Deprivation

1. Offending appears to be concentrated among younger age groups, although results for the child (16 and under) group should be treated with caution, as discussed below. There are three possible explanations; the first is a generational difference in the propensity to offend between younger and older age groups, the second is that the older group may have had a similar conviction rate when younger, but that their records have since been cleared (the issue of recency again), the third is that changes to the legal infrastructure mean that the same behaviour as occurred in the past, may now be measured and recorded in a different way (e.g. the widespread introduction of speed cameras has increased the number of speeding convictions, reckless driving was repealed as an offence in 1991 as it was difficult to prosecute (due to the legal definition of recklessness) and was replaced with dangerous driving which is easier to establish).

2. The peak offence rate was seen for the child group (16 and under), although this is likely to be in part a reflection of the ID matching process. A person who is too young to be found on the electoral roll, may be found on the PNC system, therefore the ID match can be solely as a result of that person committing an offence. This will of course affect the balance of reported offending for this age group. The results therefore cannot be assumed to be indicative of the wider child population. This is a good example of how complex the accurate interpretation of this data can sometimes be.

3. More specifically, the younger age groups have a higher proportion of identified PNC records, but DVLA offence histories are much more evenly spread across the age groups.

4. Overall a greater proportion of offence records were identified for males (53%) than for females (29%). This is mirrored in both the PNC and the DVLA data. 33% of males and 10% of females had a PNC offence record. 40% of males and 25% of females had a DVLA offence record.

5. Results suggest that females with a PNC record are nearly three times more likely to precipitate a RTC.

6. The highest proportion of identified offence histories is within the LGV (van) driver group, followed by motorcyclists, bus and HGV drivers. Generally the drivers of goods vehicles and public service vehicles (PSVs/buses) can broadly be assumed to be mainly driving for work.

7. The highest proportion of PNC offence histories are seen for cyclists and motorcyclists. As shown on Figure 12, these are two of the most deprived road user groups. This may be a sample specific effect as the investigation area has large pockets of deprivation and these road user groups are likely to travel smaller distances from home (40% of the motorcyclists with PNC records were aged 19 years old or younger, so should be riding

relatively low powered motorcycles and scooters). It should however be remembered that a smaller proportion of cyclists were successfully ID matched and if they have never been registered with the DVLA, then the chances of obtaining a successful match particularly increase if an offence has been recorded on PNC. These results may not therefore reflect a true difference.

8. Early analysis suggests that overall, the offending motorcyclists are typically young males from high deprivation areas. Further detailed profiling work is recommended across all demographic data for offending road users

9. Looking at the DVLA offence histories the peak is for LGV drivers, followed by HGV drivers, bus drivers and motorcyclists. This better defines the overall peak for offending within these road user groups. It is suggested that future research could further explore potential links between driving for work and motoring offences, looking at LGV, bus and HGV drivers. It is recommended that such work would additionally extract taxi drivers, motorcycle couriers and other business drivers from the accident data. It would also be important to consider the likely proportion of LGVs not owned for work purposes (which could potentially be established through questionnaire data).

10. Overall the IMD distribution for active road users in VSRC Phase 2 and 3 OTS data is not an even spread but is skewed towards greater levels of deprivation, this is particularly apparent when focusing on the at fault road users (those identified as the precipitating road user in an OTS investigated collision).

11. Road users with 6 or more convictions (motoring and/or non-motoring) are identified mostly within the 1st quintile of deprivation (the most deprived group), with steadily decreasing numbers across the remaining quintiles.

12. Road users with 1-5 convictions do not show the same linear relationship with deprivation although the peak is still within the 1st quintile; the next greatest number is within the fourth quintile, which is the second least deprived group. It is likely that this reflects the large number of summary motoring convictions (including fixed penalties) which can be found across the sample.

13. Road users with no identified convictions* shows a different pattern of deprivation again with peaks in the average 3rd quintile and the lowest deprivation 5th quintile.

* This group cannot be defined as having not committed any offences, particularly as not all conviction data stays permanently on record.

8.2. Collision Severity and Offence Histories

14. The highest proportion of road users with offence records were found in the fatal collisions group, with a relatively even spread between all other collision severities. The peak for the fatal collisions group is seen again in the PNC data, but not in the DVLA data.

15. Looking at the known severity cases, there are proportional peaks within the KSI groups for many of the more serious offences. Overall though, the largest offence group - summary motoring - has a relatively even spread which is reflected in the spread of the main summary motoring conviction – speed limit offences.

16. Further work is recommended to consider the impact of linked offences on these figures (i.e. convictions resulting directly from the collision).

8.3. Collision Fault and Offence Histories

1. Initial exploration of the OTS offence data supports the theory that people who take risks by offending, may take greater risks as drivers, as evidenced by fault within the accident causation data. Early data is presented on the differences across offence categories showing percentages within each group (precipitating and not-precipitating).

2. There is a clear proportional increase in accident fault (road users defined as precipitating) among those with offence histories, particularly PNC offence histories.

3. This police national computer data includes a range of serious offences where there is intent to cause harm. By contrast, the DVLA offence data (particularly fixed penalties) could be described to more often reflect errors of judgement. Although these driving offences may have serious or even fatal consequences, the risks may not be as clearly understood by the majority of individuals involved.

4. Adding together those with offence histories and those with confirmation of no licence, 60% of precipitating (at fault) males and 46% of non-precipitating males had identified offences. By contrast, 36% of precipitating females and 21% of non-precipitating females had identified offences.

5. Including skeleton and locate trace markers, 41% of precipitating (at fault) males, had an identified PNC offence record, compared to 24% of non-precipitating males By contrast, 14% of precipitating females and 5% of non-precipitating females had an identified PNC offence record.

6. 43% of precipitating (at fault) males had an identified DVLA offence record, compared to 35% of non-precipitating males. By contrast, 31% of precipitating females and 19% of non-precipitating females had an identified DVLA offence record.

7. For every top level offence category (e.g. violence against the person, criminal damage, summary motoring), a proportionately higher percentage of road users within the precipitating group (compared to the non-precipitating group) have at least one offence (with the sole exception of 'other indictable' – for which there is no difference).

8. For every motoring offence category, a proportionately higher percentage of road users within the precipitating group (compared to the non-precipitating group) have at least one offence although the difference is comparatively small for speed limit and neglect of traffic direction offences. These tend to be camera based fixed penalties (neglect of traffic directions is commonly a traffic light offence) and having at least one instance of either of these offences on a road user's record, does not appear to increase likelihood of being at fault in an accident.

8.4. Links between Causation Types and Offence Types

9. The main links explored are between speed limit offences and speed related collisions, and predominant collision causation types for road users with offences for unlicensed and/or uninsured driving. Causation is considered using three different systems within

OTS: collision type, the OTS causation system (precipitating and contributory factors), Contributory Factors 2005.

10. A total of 493 ID matched active road users (VSRC OTS Phase 2 & 3 ID matched, n=2244) had at least 1 speeding conviction identified (22%). Two of these road users only had a speeding conviction that was linked to their OTS investigated collision. There were no other linked speeding convictions; it is likely that this is in part because the retrospective measurement of speed is a specialist skill. Within the police force, training in this is restricted mainly to small collision investigation teams, who attend only the most serious incidents. Even when the attending officers are trained in collision reconstruction, sufficient evidence may not be available, it may not be possible to state without doubt that the person was driving significantly above the speed limit (as only a speed range can be determined – not an exact figure), or focus may be given to other more serious offences, such as dangerous driving, which is indictable.

11. 227 people were found with prior speeding convictions however 190 of these were found within the more recent Phase 3 data. Examining these results therefore raises the issue of recency. Certain types of motoring offence are not permanently recorded on the DVLA system and this project began in 2008, collecting data from accidents up to 5 years earlier. Therefore many prior motoring offences will have been wiped before data collection began, which is particularly relevant if analysing recent (in relation to the RTC) offences for earlier Phase 2 road users.

12. By comparison, 204 of the 292 ARUs with a subsequent speeding offence were found in the Phase 2 data, with this difference again reflecting the greater amount of time passed between collision and offence checks.

13. LGV drivers have the highest percentage of a speed offence records, with a small increase for those at fault. For car drivers there is little difference between precipitating and not-precipitating road users in terms of presence of a speed offence record. It is important to remember that the predominant road user group within the sample is car drivers. (1691 out of 2244 ID matched road users – 75%).

14. There is a relatively even spread of speed limit offenders across the deprivation scale, reflecting this offence type as common and widely distributed.

15. Focusing on ID matched, at fault (precipitating) road users, those with speed limit offences appear proportionately more likely to have caused an accident with a very likely speed causation factor (based on Contributory Factors 2005), however this is not a statistically significant result.

16. The 3 predominant collision types for identified speed offenders are the same as those for the whole OTS sample: rear end, loss of control and cornering.

17. Using the OTS Causation System, and combining all confidence levels (definitely, probably and possibly causative), 58% of those with an identified speed limit offence were attributed with the accident contributory factor 'In a Hurry', compared to 51% of those with no identified speed limit offences (not significant). 33% of those with an identified speed limit offence were attributed with the accident contributory factor 'Excessive Speed', compared to 25% of those with no identified speed limit offences (significant).

18. There are 168 road users with identified driving licence and/or vehicle insurance offences. Within this group there are 148 males (88%) and 20 females (12%). These two offence types are often found in combination (n=103) as a person driving without a valid licence cannot be legally insured to drive.

19. As a percentage within the deprivation groups, there are strong peaks for recorded licence/insurance convictions among road users from higher deprivation areas. It is possible that this is linked to the relative cost of obtaining a licence and insurance for road users from lower income families.

20. Of the 168 active road users with driving licence and/or vehicle insurance offences, 117 were identified as at fault (precipitating) in an OTS investigated collision. With regards to collision type, there is a peak for rear end accidents within this group.

21. Using the OTS Causation System, a full breakdown of precipitating factors shows minimal differences between those with and without identified licence/insurance offences. However there are stronger relationships within the contributory factors, such as impairment through alcohol. It is recommended that these are explored further in future analysis.

8.5. Links Between Motoring and Non-Motoring Convictions

22. Most road users with 1-5 motoring convictions have no identified non-motoring convictions (68%), whilst those with 6 or more motoring convictions are more likely to have other identified non-motoring convictions than none at all.

23. Road users with any non-motoring convictions are more likely to have at least 1 identified motoring conviction than to have none.

24. For every top level offence, there is an increase in the percentage of those convicted as the number of motoring offences increases. This increase is particularly notable within the ≥6 motoring convictions group (n=66).

25. The most common motoring offence within the 1-5 motoring convictions group is speeding, with 61% of the group having at least one identified speed limit conviction. The joint second motoring offences within this group are 'driving etc. after consuming alcohol or taking drugs' ("etc." refers mainly to intent to drive) and neglect of traffic directions, both at 14%.

26. By comparison the most common motoring offences in the ≥6 motoring convictions group are 'driving licence related' and 'vehicle insurance' at 88% and 91% respectively. This illustrates the issues of repeat motoring offenders continuing to drive without a licence (and therefore without insurance). Although a relatively small group, they are likely to be high risk. Over 50% have vehicle theft convictions and over 50% drink/drug driving convictions.

27. The typical member of the ≥6 motoring convictions group is young, male and from a deprived (1st IMD quintile) area.

8.6. Comparison with National Data

28. It will be important to understand how results relate to the national situation and official statistics before all findings can be fully evaluated with confidence. The datasets and methodologies are complex with differences at the local and national level, and with further differences between the process for OTS related and official statistics.

29. The VSRC have worked with the Ministry of Justice in exploring how national data can be used in the Offence Histories project. This has been a challenge but national data has been collated by the Ministry of Justice that has enabled a first examination of the national and OTS offence history datasets together.

30. For nearly all top level offence types and the more specific motoring offences (where available in the national data), the proportion of ID matched OTS ARUs with an offence identified is higher, much higher in many cases, than the national data for the period of 1999 to 2008 compared to the population in mid 2008.

31. The comparison between the datasets highlights a lack of commonality between the datasets, especially regarding offences that are dealt with by the courts, which are not included in the national data available. The comparison would benefit from future work in bringing both datasets together and it is recognised that further input from the Ministry of Justice would be important to the success of this activity. It would also be important to explore the possibility of national data from the DVLA, especially for the motoring offences that the Ministry of Justice has not been able to provide.

9. CONCLUSIONS AND RECOMMENDATIONS

The offence histories project has successfully demonstrated a way to link in-depth data on the causes of collisions, with data on the offence histories of the active road users involved. This report has demonstrated a useful set of initial findings, as outlined in the discussion, and the potential for further use of this data.

It should however be re-emphasized at this point that all findings within the VSRC study are related to active road users involved in collisions within the Nottinghamshire area. The data presented here may not be nationally representative and should not be treated as such. This work demonstrates a methodology for linking collision data and offence data, and the depth and potential of the new data now available for analysis once it has been fully validated against other OTS and national sources of data. It is recommended that all findings are reviewed in this context.

Further work may be possible in the future to link this data, with comparable data collected by TRL in the Thames Valley region. Together, the Nottinghamshire and Thames Valley regions contribute to the full OTS sample plan which has been designed to provide in-depth accident data that is broadly representative of the national picture. Future work could very usefully combine offence history data with the accident data for both OTS regions which might in turn be compared with suitably prepared national data. In that way it would be possible to best understand this in-depth data, its strengths and limitations, and the national implications.

While this report is primarily intended to demonstrate the depth of new data now available for further validation, the data presented do provide useful indications for further work in this area, highlighting issues such as:

- Peaks in offending amongst young collision involved road users

- Links between deprivation and precipitating a road traffic collision

- The relationship between deprivation and driving without a licence and/or insurance

- Offending among people driving for work

- Identification of offending sub-groups within specific road users types

- Differences in offending between road users involved in KSI collisions, compared to slight and non-injury

- Gender differences in the link between offending and precipitating a road traffic collision

- Differences in offence types between road users with different levels of repeat offending

- Links between specific offence types and specific precipitating factors

- Potential over-representation of offending amongst collision involved road users, compared to the national data

9.1. Recommendations

The VSRC are keen to conduct further detailed analysis on the offence histories data, beyond the remit of this current project or the OTS Accident Causation Study. This is a new and unique set of data that will allow insights into many specific aspects of offending in relation to road accidents. Example topics include studies focusing on specific offences such as drink driving or driving without insurance. The VSRC would welcome discussion with the Department to explore how additional analyses can best provide the evidence needed in support of policy development in this area.

It is recommended that one of the next steps in analysis would be to conduct a detailed comparison of the VSRC and TRL results, and to assess whether combined data would provide a more representative sample of the national picture. Further to this, continued work is recommended developing comparisons with national data, including further collaboration with the Ministry of Justice, and an exploration of what national data the Driver and Vehicle Licensing Agency might additionally be able to provide.

In addition, further detailed profiling work is recommended across all demographic data for offending road users to identify those most at risk of causing road traffic collisions. Detailed analysis could also usefully explore the relationship between collision severity and offending in greater depth, considering individual road user injury records rather than the overall collision severity.

It is also suggested that future research could further explore potential links between driving for work and motoring offences, looking at LGV, bus and HGV drivers. It is recommended that such work would additionally extract taxi drivers, motorcycle couriers and other business drivers from the accident data. It would also be important to consider the likely proportion of LGVs not owned for work purposes (which could potentially be established through additional OTS data which has been routinely gathered via postal questionnaires).

While the OTS project ended in March 2010, it is understood that a new in-depth accident investigation programme is currently under development. It is recommended that the opportunity to continue collecting offence data should be considered as a part of any future in-depth accident data collection activity. An ongoing study would have the benefit that data could be collected shortly after the occurrence of each accident, which would remove the recency issue demonstrated in this retrospectively gathered data. However, if subsequent offence data may also be of interest, then a longitudinal approach may also be necessary.

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ACKNOWLEDGEMENTS

TECHNICAL ANNEX I: OFFENCE DATA RETENTION AND DELETION

Police National Computer

Convictions recorded on the Police National Computer are not automatically deleted after becoming 'spent'. However, in response to the Rehabilitation of Offenders Act 1974[23], guidelines from the Association of Chief Police Officers (ACPO) indicated that details of recordable offences (offences which can be tried in the Crown Court, whether or not they are) should be deleted after 10 years, unless the individual offender:

- has 3 or more convictions for recordable offences, in which case the record should be kept for 20 years,
- has been given custodial sentences, in which case the record should be kept for life,
- has been convicted of indecency, sexual offences, violence, possession of Class A drugs, or trafficking in, importing of or supply of any drug, in which case the record will be kept for life,
- has been found unfit to plead by reason of insanity, or has been sentenced under the Mental Health Acts, in which case the record will be kept for life,
- has been convicted of an offence involving a child or vulnerable adult where the modus operandi indicates that the person deliberately targets such people, in which case the record will be kept for life.

Individual Chief Constables are not bound by the ACPO guidelines so policy and practice will vary between police forces.

Cautions, reprimands and final warnings are not technically criminal convictions and were not covered by the Rehabilitation of Offenders Act 1974 until a change in the law in December 2008[24]. Historically, records of cautions should generally have been deleted after five years if there were no convictions on the record. (Although in practice, some police forces may have retained records of cautions for much longer). Now simple cautions, reprimands and warnings become 'spent' immediately and conditional cautions become 'spent' after 3 months, however the policy on deletion has changed.

In 2006, ACPO published new PNC retention guidelines[25], incorporating the Step Down Model whereby access to PNC data is restricted after strict time periods (when it is considered spent) rather than deleted. Where an individual is subject to an enhanced CRB

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[23] Rehabilitation of Offender Act 1974. Published by the Office of Public Sector Information (part of the National Archives). Accessed February 2010:
http://www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1974/cukpga_19740053_en_1

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http://www.acpo.police.uk/asp/policies/Data/Retention%20of%20Records06.pdf

(Criminal Records Bureau) check, data that has been stepped down can be assessed, but only disclosed if determined as relevant and authorised by the Chief Officer. The time limit for 'step down' is based on a combination of the following criteria:

- the age of the subject,
- the final outcome,
- the sentence imposed,
- the offence category.

As there is no admission of guilt, Fixed Penalty Notices and Penalty Notices for Disorder do not form part of a person's criminal record (and are therefore not covered by the Rehabilitation of Offenders Act 1974). However they are searchable and therefore are included within the offence records gathered for this project.

Driver and Vehicle Licensing Agency

With regards to motoring convictions, the DVLA has produced guidelines on how long endorsements must stay on an individual's driving licence (as published on Directgov[26]). Eleven years from date of conviction if the offence is:

- drinking or drugs and driving - shown on the licence as DR10, DR20, DR30 and DR80,
- causing death by careless driving while under the influence of drink or drugs – shown on the licence as CD40, CD50 and CD60,
- causing death by careless driving, then failing to provide a specimen for analysis – shown on the licence as CD70.

Four years from the date of conviction if the offence is for:

- reckless/dangerous driving - shown on the licence as DD40, DD60 and DD80,
- offences resulting in disqualification,
- disqualified from holding a full driving licence until a driving test has been passed.

Four years from the date of offence:

- In all other cases.

When removed from the driving licence, the offence should also be removed from the DVLA database.

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[26] Directgov website. Endorsements and penalty points. Accessed February 2010:
http://www.direct.gov.uk/en/Motoring/DriverLicensing/EndorsementsAndDisqualifications/DG_4022550

TECHNICAL ANNEX II: DEPRIVATION

Deprivation Data Collection Methodology

The Index of Multiple Deprivation (IMD) 2004[27] is a summary measure of area-level deprivation in England that combines weighted scores in seven deprivation domains. England and Wales are split into 32,482 Super Output Areas (SOAs) that are ranked for deprivation (with the most deprived scoring 1 and the least deprived scoring 32,482). IMD scores are identified for active road users using their home postcode, using a conversion database developed at TRL.

Deprivation Data Availability

Collecting deprivation data requires information on home addresses of the OTS accident involved road users. As this is personal identity data, its use and storage are subject to strict guidelines. In line with data protection, Phase 1 OTS identity data (2000-2003) was destroyed, before the start of the deprivation project. Deprivation data is therefore only available for road users from Phases 2 and 3 (2003-2010).

Also, it is not possible to collect identity data for every road user. Occasionally people refuse to provide these details, and there are multiple cases where road users have left the scene immediately after the collision (non-stops) or as soon as details have been exchanged. It is not possible to accurately calculate the impact of this on the dataset.

There is one additional limitation on availability in that the conversion database uses a fixed set of postcodes, but new housing developments create new postcodes and can change surrounding postcodes (these can also be changed by local demolition work). This means that not all postcodes are recognised by the fixed database.

Deprivation Data Limitations

The TRL database uses the 2004 Index of Multiple Deprivation (IMD). The IMD was updated in 2007[28], using largely the same methodology but with some small changes to the underlying indicators (particularly in relation to the income domain) and of course real relative changes to the deprivations ranks.

The Super Output Areas (SOAs) are required to cover the whole of England and Wales, each with a minimum 1000 people and 400 households. The size of these areas can of

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[27] Noble, M., Wright, G., Dibben, C., Smith, G.A.N., McLennan, D., Anttila, C., Barnes, H., Mokhtar, C., Noble, S., Avenell, D., Gardner, J., Covizzi, I., & Lloyd, M. (2004). The English Indices of Deprivation 2004 (revised). Office of the Deputy Prime Minister: Neighbourhood Renewal Unit: London. Accessed February 2010: http://www.communities.gov.uk/documents/communities/pdf/131209.pdf

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course sometimes mask small pockets of deprivation or affluence. Also as these areas do not exclude agricultural and commercial/industrial land, a large area of deprivation may actually represent relatively few people compared to a much smaller solely residential area in which deprivation is more concentrated.

Although area classifications provide useful discriminators, it is clear that person or household specific classifications should provide a more accurate measure of deprivation and affluence. It is therefore recommended that further comparative analysis should be conducted, using Mosaic data (developed by Experian), as used within the MAST (Market Analysis and Segmentation Tools) database.

APPENDICES

MATERIALS

Appendix I   VSRCOH2a Data Request Form

Appendix II   VSRCOH2b Request Authorization

Appendix III   Data Collection Sheet

Appendix IV   Crib Sheet for Data Operators, to Assist with Identifying General Offence Categories from Specific Crimes Recorded on PNC

Appendix V   Crib Sheet for Data Operators, to Assist with Identifying Motoring Offence Categories from Specific Crimes Recorded on PNC

SUPPLEMENTARY TABLES

Appendix VI   Frequency of 'top level' convictions for all VSRC ID matched OTS active road users

Appendix VII   Frequency of motoring convictions for all VSRC ID matched OTS active road users

Appendix VIII Cross-tabulation between the presence of any 'top level' convictions (by category) and the precipitating factor (definite or probable) in each VSRC Phase 2 & 3 OTS collision (for ID matched precipitating active road users only).

Appendix IX   Cross-tabulation between the presence of any motoring convictions (by category) and the precipitating factor (definite or probable) in each VSRC Phase 2 & 3 OTS collision (for ID matched precipitating active road users only).

Appendix X   National data: Total convictions and offenders who have been convicted at least once during 10 years, by offence category and year, 1999-2003

Appendix XI   National data: Total convictions and offenders who have been convicted at least once during 10 years, by offence category and year, 2004-2008

Appendix XII   Notes on the national data

Appendix I – VSRCOH2 Data Request Form

esri

Loughborough University

In accordance with the data processing agreement between the Ergonomics & Safety Research Institute at Loughborough University and Nottinghamshire Police, offence history data is requested on the following person:

Name: _____

Date of Birth: _____

Last Known Address: _____

_____

_____

_____

_____

Any sensitive or personal data likely to identify any individual concerned must be redacted and all information must be fully sanitised before forwarding this data to the On The Spot (OTS) team.

This redacted and sanitised data should be entered into a spreadsheet provided by Loughborough University, listing the number of offences recorded against this person and the year each offence was committed (in respect of the categories outlined in the Process Documentation).

Within the spreadsheet, this person will be identified by the following case number only:

Date of OTS investigated Road Traffic Collision _____

This request is authorised by Julian Hill, the Nominated Officer at ESRI

Appendix II – VSRCOH2 Request Authorization

In accordance with the data processing agreement between the Ergonomics & Safety Research Institute (ESRI) at Loughborough University and Nottinghamshire Police, offence history data is requested on all active road users involved in accidents investigated by the On The Spot team since 29th September 2003.

ESRI will provide Nottinghamshire Police with the name, date of birth and last known address, where available, for each of the above mentioned road users.

The date of the accident investigated will also be provided, in order that the data operative can identify whether offences were committed before, after, and/or in relation to this specific road traffic collision.

The data operatives from Nottinghamshire Police will be instructed that any sensitive or personal data likely to identify any individual concerned must be redacted and all information must be fully sanitised before forwarding this data to the On The Spot (OTS) team.

This redacted and sanitised data should be entered into a spreadsheet provided by Loughborough University, listing the number of offences recorded against this person and the year each offence was committed (in respect of the categories outlined in the Process Documentation).

Within the spreadsheet, this person will be identified by an 8 figure case number only. Data request forms containing personal details must be retained by Nottinghamshire Police and will not be returned to ESRI.

This request is authorised by the Nominated Officer at ESRI

Signed: _____

Julian Hill, Manager (On-Scene Crash Research)

Appendix III – Data Collection Sheet

Categories marked with a ✷ can include offences related to driving which should then be duplicated in the detailed motoring offences list

Please note - detailed information that would allow identification should NOT be included

Road User ID	
Date of Collision	
Date of Check	
Completed By (Initials)	

Identity Match Found (Yes/No)	
DVLA Offender History Found (Yes/No)	
PNC Offender History Found (Yes/No)	

Driving Licence Entitlements	
Provisional	
Full	
Date Licence Issued	
Valid Licence Type at Time of RTC	

Please insert a new line in the spreadsheet whenever recording additional instances of the same offence	Police Data						
	Number of offences		Year committed	Prior/Subsequent to OTS Crash	Linked to OTS crash	Data source	Additional notes
	Arrests	Convictions					
All Offences							
✷ I) Violence against the person							
II) Sexual offences							
III) Burglary							
IV) Robbery							
✷ V) Theft and handling stolen goods							
VI) Fraud and forgery							
VII) Criminal damage							
VIII) Drug offences							
IX) Other indictable (ex. motoring offences)							
✷ X) Other summary (ex. motoring offences)							
✷ XI) Indictable motoring							
✷ XII) Summary motoring							

Motoring Offences						Additional Notes & Please indicate general offence category	
1) Causing death or bodily harm						✷	I, V
2) Dangerous driving							XI
3) Driving etc. after consuming alcohol or taking drugs							XII
4) Careless driving							XII
5) Accident offences							XII
6) Unauthorised taking or theft of motor vehicle							V, X
7) Driving licence related offences							XI, XII
9) Vehicle insurance offences						✷	XI, XII
10) Vehicle registration and excise licence offences						✷	X, XI, XII
11) Work record and employment offences						✷	XI, XII
12) Operator's licence offences							XII
13) Vehicle test offences							XII
14) Fraud, forgery etc., associated with vehicle or driver records							XI
15) Vehicle or part in dangerous or defective condition							XII
16) Speed limit offences							XII
17) Motorway offences (other than speeding)							XII
18) Neglect of traffic directions							XII
19) Neglect of pedestrian rights							XII
20) Obstruction, waiting and parking offences						✷	XI, XII
21) Lighting offences							XII
22) Noise offences							XII
23) Load offences							XII
24) Offences peculiar to motorcycles							XII
25) Miscellaneous motoring offences						✷	XI, XII

Appendix IV – Crib Sheet for Data Operators, to Assist with Identifying General Offence Categories from Specific Crimes Recorded on PNC

Violence against the Person

1 Murder

2 Attempted Murder

3 No longer used (Threat or Conspiracy to Murder)

3A Conspiracy to Murder

3B Threats to Kill

4/1 Manslaughter

4/2 Infanticide

4/3 Intentional Destruction of a Viable Unborn Child

4/4 Causing Death by Dangerous Driving

4/6 Causing Death by Careless Driving under Influence of Drink or Drugs

4/7 Causing or Allowing Death of Child or Vulnerable Person

4/8 Causing Death by Careless or Inconsiderate Driving

4/9 Causing Death by Driving: Unlicensed, Disqualified or Uninsured Drivers

4/10 Corporate Manslaughter

5 No longer used (Wounding or Other Act Endangering Life)

5A Wounding or carrying out an act Endangering Life

5B Use of Substance or Object to Endanger Life

5C Possession of Items to Endanger Life

6 Endangering Railway Passengers

7 Endangering Life at Sea

8A No longer used (Other Wounding)

8B No longer used (Possession of Weapons)

8C No longer used (Harassment)

8D No longer used (Racially or Religiously Aggravated Other Wounding)

8E No longer used (Racially or Religiously Aggravated Harassment)

8F Inflicting Grievous Bodily Harm without Intent

8G Actual Bodily Harm and other Injury

8H Racially or Religiously Aggravated Inflicting Grievous Bodily Harm without Intent

8J Racially or Religiously Aggravated Actual Bodily Harm and other Injury

8K Poisoning or Female Genital Mutilation

8L Harassment

8M Racially or Religiously Aggravated Harassment

9A Public Fear, Alarm or Distress

9B Racially or Religiously Aggravated Public Fear, Alarm or Distress

10A Possession of Firearms with Intent

10B* Possession of Firearms Offences

*Classification 10B has been included in Violence Against the Person for ease of reference but the Home Office will count these offences in the "Other Offences"

category.

10C Possession of Other Weapons

10D Possession of Article with Blade or Point

11 Cruelty to and Neglect of Children

12 Abandoning Child Under Two Years

13 Child Abduction

14 Procuring Illegal Abortion

15 Concealment of Birth (Re-named and moved to

Other Offences on 1 April 2008)

37/1 Causing Death by Aggravated Vehicle Taking

104 Assault without Injury on a Constable

105A Assault without Injury

105B Racially or Religiously Aggravated Assault without Injury

Sexual Offences

16 Buggery – repealed wef May 2004

17 Indecent Assault on a Male – wef May 2004 split into:

17A Sexual Assault on a Male aged 13 and over

17B Sexual Assault on a Male Child under 13

18 Gross Indecency between Males – repealed wef May 2004

19A Rape of a Female - wef May 2004 split into:

19C Rape of a Female aged 16 and over

19D Rape of a Female Child under 16

19E Rape of a Female Child under 13

19B Rape of a Male – wef May 2004 split into:

19F Rape of a Male aged 16 and over

19G Rape of a Male Child under 16

19H Rape of a Male Child under 13

20 Indecent Assault on a Female – wef May 2004 split into:

20A Sexual Assault on a Female aged 13 and over

20B Sexual Assault on a Female Child under 13

21 Sexual Activity involving a Child under 13 – wef May 2004

22 Unlawful Sexual Intercourse with Girl under 16 – repealed wef May 2004

22A Causing Sexual Activity without Consent – wef May 2004

22B Sexual Activity involving a Child under 16 – wef May 2004

23 Incest or Familial Sexual Offences (previously titled Incest)

24 Exploitation of Prostitution – wef May 2004

25 Abduction of female – repealed wef May 2004

26 Bigamy (moved to Other Offences on 1 April 2008)

27 Soliciting for the Purpose of Prostitution – wef May 2004

70 Sexual Activity etc with a Person with a Mental Disorder – wef May 2004

71 Abuse of Children through Prostitution and Pornography – wef May 2004

72 Trafficking for Sexual Exploitation – wef May 2004

73 Abuse of Position of Trust of a Sexual Nature – wef May 2004

74 Gross Indecency with a Child– repealed wef May 2004

88A Sexual Grooming – wef May 2004

88B No longer in use (Other Miscellaneous Sexual Offences)

88C Other Miscellaneous Sexual Offences

88D Unnatural Sexual Offences

88E Exposure and Voyeurism

Robbery

34A Robbery of Business Property

34B Robbery of Personal Property

Burglary

Theft & Handling Stolen Goods

Fraud and Forgery

53H Making or Supplying Articles for use in Fraud

53J Possession of articles for use in Fraud

55 Bankruptcy and Insolvency

60 Forgery or use of Drug Prescription

61 Other Forgery

61A Possession of False Documents

814 Fraud, Forgery etc associated with Vehicle or Driver Records

Criminal Damage

56 No longer used (Arson)

56A Arson Endangering Life

56B Arson not Endangering Life

58A Criminal Damage to a Dwelling

58B Criminal Damage to a Building other than a Dwelling

58C Criminal Damage to a Vehicle

58D Other Criminal Damage

58E Racially or Religiously Aggravated Criminal Damage to a Dwelling

58F Racially or Religiously Aggravated Criminal Damage to a Building other than a Dwelling

58G Racially or Religiously Aggravated Criminal Damage to a Vehicle

58H Racially or Religiously Aggravated Other Criminal Damage

59 Threat or Possession with Intent to Commit Criminal Damage

Drug Offences

92A Trafficking in Controlled Drugs

92B Not valid for offences recorded from April 2004 (Possession of controlled Drugs)

92C Other Drug Offences

92D Possession of Controlled Drugs (excluding Cannabis)

92E Possession of Controlled Drugs (Cannabis)

Other Offences

15 Concealing an Infant Death Close to Birth

26 Bigamy

33 Going Equipped for Stealing etc

35 Blackmail

36 Kidnapping

62 Treason

63 Treason-Felony

64 Riot

65 Violent Disorder

66 Other Offences against the State or Public Order

67 Perjury

68 Libel

75 Betting, Gaming and Lotteries

76 Aiding Suicide

78 Immigration Acts

79 Perverting the Course Justice

80 Absconding from Lawful Custody

81 Other Firearms Offences

82 Customs and Revenue Offences

83 Bail Offences

84 Trade Descriptions etc

85 Health and Safety Offences

86 Obscene Publications etc

87 Protection from Eviction

89 Adulteration of Food

90 Other Knives Offences

91 Public Health Offences

94 Planning Laws

95 Disclosure, Obstruction, False or Misleading Statements etc

98,99 Other Notifiable Offences

802 Dangerous Driving

Appendix V – Crib Sheet for Data Operators, to Assist with Identifying Motoring Offence Categories from Specific Crimes Recorded on PNC

Motoring Offence Group		
1 Causing death or bodily harm		Feeds into Criminal Statistics offence group
Manslaughter.	Common Law. Offences against the Person Act 1861 Sec 10, Sec 5, Sec 9.	Violence against the Person
Causing death by dangerous driving.	Road Traffic Act 1988 Sec 1 as amended by the Road Traffic Act 1991 Sec 1 and CJA 1993 Sec 67.	Violence against the Person
Causing death by careless driving when under the influence of drink or drugs.	Road Traffic Act 1988 Sec 3A as added by the Road Traffic Act 1991 Sec 3 and amended by CJA 1993, Sec 67.	Violence against the Person
Causing danger by causing anything to be on a road, interferring with a vehicle or traffic equipment.	Road Traffic Act 1988 Sec.22A as added by the Road Traffic Act 1991 Sec.6.	Violence against the Person
Causing bodily harm by furious driving.	Offences against the Person Act 1861 Sec 35.	Violence against the Person
Aggravated taking where, owing to the driving of the vehicle, an accident occurs causing the death of any person.	Theft Act 1968, Sec.12A as added by the Aggravated Vehicle-Taking Act 1992 Sec1.	Violence against the Person
Aggravated taking where: (a) the vehicle was driven dangerously on a road or other public place, (b) owing to the driving of the vehicle, an accident occurred causing injury to any person or damage to any property other than the vehicle, or (c) damage wa	Theft Act 1968, Sec.12A as added by the Aggravated Vehicle-Taking Act 1992, Sec 1.	Theft
2 Dangerous driving		
Dangerous driving.	Road Traffic Act 1988 Sec 2 as amended by the Road Traffic Act 1991 Sec 2 .	Indictable Motoring
3 Driving etc. after consuming alcohol or taking drugs		
Driving or attempting to drive a motor vehicle whilst unfit through drink or drugs (impairment) only to be used where it is unclear whether it is drink or drugs- see 803/09 or 803/10	Road Traffic Act 1988 S.4(1)	Summary Motoring
Driving or attempting to drive a motor vehicle while having a breath, blood or urine alcohol concentration in excess of the prescribed limit.	Road Traffic Act 1988 Sec 5(1)(a).	Summary Motoring
Driving or attempting to drive a motor vehicle and failing to without reasonable excuse provide a specimen for a laboratory test or 2 specimens for analysis of breath.	Road Traffic Act 1988 Sec 7(6).	Summary Motoring
Being in charge of a mechanically propelled vehicle whilst unfit to drive through drink or drugs. (impairment) only to be used where it is unclear whether it is drink or drugs- see 803/11 or 803/12	Road Traffic Act 1988 S.4(2)	Summary Motoring
In charge of a motor vehicle while having a breath, blood or urine alcohol concentration in excess of the prescribed limit.	Road Traffic Act 1988 Sec 5(1)(b).	Summary Motoring
In charge of a motor vehicle and failing without reasonable excuse to provide a specimen for a laboratory test or two specimens for analysis of breath.	Road Traffic Act 1988 Sec 7(6).	Summary Motoring
Failing without reasonable excuse to provide a specimen of breath for a preliminary test .	Road Traffic Act 1988 Sec 6(4).	Summary Motoring
Failing to allow specimen of blood to be subjected to laboratory test.	Road Traffic Act 1988 S.7A as added by Police Reform Act 2002 S.56, S.57. Transport and Works Act 1992 S.31A as added by Police Reform Act 2002 S.58(4).	Summary Motoring
Driving or attempting to drive a motor vehicle whilst unfit through drink or drugs (impairment) Drink	Road Traffic Act 1988 S.4(2)	Summary Motoring
Driving or attempting to drive a motor vehicle whilst unfit through drink or drugs (impairment) Drugs	Road Traffic Act 1988 S.4(1)	Summary Motoring
Being in charge of a mechanically propelled vehicle whilst unfit to drive through drink or drugs. (impairment) Drink	Road Traffic Act 1988 S.4(2)	Summary Motoring
Being in charge of a mechanically propelled vehicle whilst unfit to drive through drink or drugs. (impairment) Drugs	Road Traffic Act 1988 S.4(2)	Summary Motoring

4	Careless driving			
	Careless driving - driving without due care and attention.	Road Traffic Act 1988 Sec 3 .	Summary Motoring	
	Failure to comply with an order to stop a moving vehicle.	Police Reform Act 2002 S.59(3)(a) & (6).	Summary Motoring	
	Use of hand held mobile phone while driving	Road Vehicles (Construction & Use) Regs 1986. Reg 110 (1)	Summary Motoring	
	Cause the use of a mobile phone while driving a motor vehicle.	Road Vehicles (Construction & Use) Regs 1986. Reg 110 (2)	Summary Motoring	
	Use a mobile phone while supervising the holder of a provisional driving licence to drive a motor vehicle on the road.	Road Vehicles (Construction & Use) Regs 1986. Reg 110(3)	Summary Motoring	
	Other careless driving: Driver/passenger holding on to another vehicle for the purpose of being towed. Unauthorised motor vehicle trial on footpaths or bridleways. Racing on the highway. Television sets. Application of brakes of trailers. Driver's control	Road Traffic Act 1988 Sec.26(2), Sec.33(3), Secs 12(1) and 168. Road Vehicles (Construction and Use) Regs 1986, Reg 109, Reg 19, Regs 104-107.	Summary Motoring	
5	Accident offences			
	Failing to stop after accident.	Road Traffic Act 1988 Sec 170(4).	Summary Motoring	
	Failing to report accident within 24 hours.	Road Traffic Act 1988 Sec 170(4) & (7).	Summary Motoring	
	Failing to give name and address after an accident.	Road Traffic Act 1988 Sec 170(4)	Summary Motoring	
6	Unauthorised taking or theft of motor vehicle			
	Theft of motor vehicle.	Theft Act 1968 Sec 1.	Theft	
	Unauthorised taking of motor vehicle.	Theft Act 1968 S. 12(1) as amended by CJA 1988 S.37.	Summary Non-motoring	
	Unauthorised taking of conveyance other than motor vehicles or pedal cycle.	Theft Act 1968 S. 12(1) as amended by CJA 1988.	Summary Non-motoring	
	Being carried knowing vehicle to have been taken or driven away.	Theft Act 1968 S. 12(1) as amended by CJA 1988.	Summary Non-motoring	
	Aggravated Taking where the only aggravating factor is Criminal Damage of £5,000 or under.	Theft Act 1968, Sec 12A as added by the Aggravated Vehicle-Taking Act 1992, Sec 2.	Summary Non-motoring	
7	Driving licence related offences			
	Driving while disqualified.	Road Traffic Act 1988 Sec103(1).	Summary Motoring	
	Driving, causing or permitting a person to drive other than in accordance with a licence (full or provisional) (except HGV).	Road Traffic Act 1988 Sec 87(1),(2) as amended by the Road Traffic Act 1991 Sec 17.	Summary Motoring	
	Failing to produce driving licence.	Road Traffic Act 1988 Sec 164(1), 164(6) Road Traffic Act 1988 Sec 164(6).	Summary Motoring	
	Driving after false declaration as to physical fitness; Driving after failing to declare; Driving after refusal or revocation.	Road Traffic Act 1988 Sec92 and 94 as amended by the Road Traffic Act 1991 Sec18.	Summary Motoring	
	Making false statements to obtain or failure to produce revoked licence	Road Traffic Act 1988 S.174(1)	Indictable Motoring	
	Other driving licence offences: Failure to sign licence. Failing to state date of birth or failure to furnish evidence of date of birth or name at time of birth. Driving heavy goods vehicle without HGV licence. Making a false statement to obtain or failur	Motor Vehicles (Driving Licences) Regs 1987 Reg 12, 26. Public Passenger Vehicles Act 1981 Sec 66(a). Road Traffic Act 1988 Sec 110(1), 164(6), 174(1), 94(3), 96(1) and (3), 99, 103(1), 110(2), 112(6) and (7), 117(4). Road Traffic Offenders Act 1988 Sec 2	Summary Motoring	
9	Vehicle insurance offences			
	Using motor vehicle uninsured against third party risks.	Road Traffic Act 1988 Sec 143(2).	Summary Motoring	
	Making false statement or with- holding material information in order to obtain the issue of a certificate of insurance	Road Traffic Act 1988 S.174(5)	Indictable Motoring	
	Other vehicle insurance offences: Insurer failing to supply police with particulars and other offences under the regulations. Failing to surrender insurance certificate or make statutory declaration of loss. Failing to give information about insurance on	Motor Vehicles (Third Party Risks) Regs 1972. Road Traffic Act 1988 Secs 147(5), 154(2), 165(3),170(7),171(2), 174(5).	Summary Motoring	

10	Vehicle registration and excise licence offences			
	Keeping a motor vehicle on highway without a current vehicle excise licence.	Vehicle Excise and Registration Act 1994 S.29.	Summary Non-motoring	
	Motor vehicle licence obscured or not affixed.	Road Vehicles (Registration & Licensing) Regs 1971, Reg 16. Road Vehicles (Registration & Licensing) Regs 2002 Regs.6. Vehicle Excise and Registration Act 1994 S.33.	Summary Motoring	
	Making false statement or produces false Evidence for the purposes of Regs under 66(1) of this Act (applying for a licence under Vehicles (Excise) Act 1971)	Road Traffic Act 1988 S.174(3)	Indictable Motoring	
	Disclose any information obtained from the register of vehicles held under s.21 of the Vehicle Excise & Registration Act 1994	End-of-Life Vehicles Regs 2003 Reg 35	Indictable Motoring	
	Other registration and licence offences: Driving with excess passengers when vehicle used under trade licence. Other motor vehicle licence, trade licence, registration mark, trade plate and registration book offences. Unlawful use of trade plates/licences	Road Vehicles (Registration & Licensing) Regs 2002 Sch.6 Para.9. Road Vehicles (Registration and Licensing) Regs 1971, Reg 40. Vehicle Excise and Registration Act 1994 S.34, 35, 37, 42, 43, 46, 59. Vehicle Excise Duty (Immobilisation, Removal & Disposal o	Summary Motoring	
11	Work record and employment offences			
	Installation and use of recording equipment. Driver or employer failing to keep proper records. Failure to produce records for inspection.	Transport Act 1968 Sec 97(1) and 97A(1), (2), 98, 99 (4)(a).	Summary Motoring	
	Failure to observe limits on hours of duty or rest requirements.	Transport Act 1968 Sec 96 (11A) .	Summary Motoring	
	TEW offences	Passenger and Goods Vehicles Regulations 2006	Indictable Motoring	
	Summary offences	Passenger and Goods Vehicles Regulations 2006	Summary Motoring	
	Obstructing inspection of records by authorised officer.	Transport Act 1968 Sec 99 (4)(b).	Summary Motoring	
12	Operator's licence offences			
	Operator's licence offences: Contravention of licence conditions. Refusal of entry to premises for inspection of maintenance facilities. Contravention of regulations and orders made under this Act. Application for licence when disqualified. Using a goods	Goods Vehicles (Licensing of Operator's) Act 1995 Secs 22, 23, 40, 57, 28, 2, 3, 7, 9. Goods Vehicles (Operator's Licences, Qualifications & Fees) Regs 1984 Regs 26, 30, 25(3), 27, 28, 29(1)(3). Public Passenger Vehicles Act 1981 Sec 66(a).	Summary Motoring	
13	Vehicle test offences			
	Vehicle test offences: Driver of a prescribed vehicle being absent without permission during examination of the vehicle. Any person who refuses, neglects or otherwise fails to comply within a reasonable time with a direction given under sec.1(4) . Failing	Goods Vehicles (Plating and Testing Regulations 1971 Reg.8 RTA 1972 Sec 45(7). Road Traffic (Foreign Vehicles) Act 1972 Sec 3(1)(c). Road Traffic Act 1988 Sec 165(3), Sec 175, Sec 47(1), Sec 76(8), Secs 51(2), 53(1)(2)(3), 63(1)(2), 67(9). Road Vehicles (	Summary Motoring	
14	Fraud, forgery etc., associated with vehicle or driver records			
	Driver's Licence (forgery and misuse). With intent to deceive, forging etc licence, or making document resembling.	Public Passenger Vehicles Act 1981 Sec 65(1)(a) and (2). Road Traffic Act 1988 Sec 173(1).	Indictable Motoring	
	With intent to deceive, forging etc certificate of insurance.	Road Traffic Act 1988 Sec 173(1).	Indictable Motoring	
	Fraud, forgery etc. associated with registration and licensing documents.	Vehicle Excise and Registration Act 1994 S.44;45.	Indictable Motoring	
	Falsification of records with intent to deceive.	Transport Act 1968 Sec 99(5).	Indictable Motoring	
	Fraud, forgery etc. associated with operators licence.	Goods Vehicles (Licensing of Operators) Act 1995 S.38. Public Passenger Vehicles Act 1981 Sec 65(1)(a) and (2). Road Traffic Act 1988 Sec 173(1).	Indictable Motoring	
	Test certificate - fraudulently using, lending, altering .	Road Traffic Act 1988 Sec 173(1) .	Indictable Motoring	
	Mishandling or faking parking documents	Road Traffic Regulation Act 1984 Sec 115(1)	Indictable Motoring	
	Making false statement or produces ,provides, sends or otherwise makes use of a document which he knows to be false for purposes of either s.53-60& 63 of RTA 88 or of Regs made under S.49-51 , 61,62& 66(3)	Road Traffic Act 1988 S.174(2)	Indictable Motoring	
	Wilfully, or with intent to deceive, makes a false entry in any record required to be made or kept by regulations under s.74 (Operators duty to inspect,& keep records of inspections of, goods vehicles)	Road Traffic Act 1988 S.174(4)	Indictable Motoring	

15	Vehicle or part in dangerous or defective condition			
	Brakes defective.	Road Traffic Act 1988 Sec 41A as added by the Road Traffic Act 1991 Sec 8. Road Vehicles (Construction & Use) Regs 1986, Regs16,18 &Sch3.	Summary Motoring	
	Steering gear defective. Maintenance of steering gear.	Road Traffic Act 1988 Sec 41A as added by the Road Traffic Act 1991 Sec 8. Road Vehicles (Construction and Use) Regs 1986, Reg 29.	Summary Motoring	
	Tyres defective.	Road Traffic Act 1988 Sec 41A as added by the Road Traffic Act 1991 Sec 8. Road Vehicles (Construction and Use) Regs 1986, Reg 25-27.	Summary Motoring	
	Using vehicle in dangerous condition etc.	Road Traffic Act 1988 Sec 40A as added by Road Traffic Act 1991 Sec 8.	Summary Motoring	
	Breach of legal exhaust emissions.	Road Vehicles (Construction and Use) Regs 1986, Reg 61(10A).	Summary Motoring	
	Other offences relating to vehicles in dangerous or defective condition (excl exceeding specified limits for exhaust emissions and defective breaks, steering and tyres).	Road Traffic Act 1988 Sec 42 as added by the Road Traffic Act 1991 Sec 8. Road Vehicles (Construction and Use) Regs 1986, Regs 7,8,11,22-24,30-39, 45-48,61 (excl 10A), 63, 71 and 100.	Summary Motoring	
16	Speed limit offences			
	Speeding offences not detected by camera devices: Vehicles subject to speed limits on motorways. Speeding in parks. Speeding - Goods, Passenger carrying or other vehicle. Contravention of temporary speed limit on roads.	Motor Vehicles (Speed Limits on Motorways) Regs 1973. Parks Regulation (Amendment) Act 1926. Road Traffic Regulation Act 1984 Sec 81, 84, 88 and 89, 86, 16.	Summary Motoring	
	Speeding offences detected by camera devices. Speeding offences detected by camera devices. Speeding offences detected by camera devices. Contravention of temporary speed limit on roads. (offences detected by camera devices).	Road Traffic Regulation Act 1984 Secs 16, 81, 84, 86, 88 and 89.	Summary Motoring	
17	Motorway offences (other than speeding)			
	Motor offences other than speeding: Motor user failing to keep animal under control. Various offences - driving, stopping etc vehicles - on motorways. Excluded traffic using motorway.	Motorways Traffic (England & Wales) Regs 1982 Reg 14, 5-12. Road Traffic Regulation Act 1984 Sec 17(4).	Summary Motoring	
18	Neglect of traffic directions			
	Failure to comply with signals/signs - not detected by camera.	Road Traffic Act 1988 Sec.35 (1).	Summary Motoring	
	Contravention of prohibition or restriction for roads of certain classes. Contravention of traffic regulation order - other than parking offences. Contravention of temporary prohibition of traffic on roads.	Road Traffic Regulation Act 1984 Sec 5(1), 16, 20.	Summary Motoring	
	Offences detected by camera devices.	Road Traffic Act 1988 Sec 36(1).	Summary Motoring	
	Other offences of neglecting traffic directions: Failing to stop vehicle when directed by community support officer. Driving vehicle and failing to proceed as directed by community support officer. Failing to stop when required by police officer in unifor	Police Reform Act 2002 Sch.4 Para.12 (Road Traffic Act 1988 SS.35 & 37). Road Traffic Act 1988 Sec 163(3), Sec 35(1), (2), Sec 36(1). Road Traffic Regulation Act 1984 Sec 17(4), 18, 28(3).	Summary Motoring	
19	Neglect of pedestrian rights			
	Neglect of pedestrian rights: Failing to obey traffic lights - at pedestrian light controlled crossing. Failing to observe regs. By moving vehicle: Failing to accord precedence to foot passengers. Driving in a playstreet. Other contravention of street pla	Controlled Areas (Ped.) Regs 1965 Reg 7, 8 & 9. Pelican Ped Crossing Regs and General Directions 1987, Regs 12 - 14, 16 - 19. Road Traffic Regulation Act 1984 Sec 25(5), Secs 29-30. Zebra Pelican and Puffin. Pedestrian Crossings Regulations 1997 Regs. 17,	Summary Motoring	
	Driving on footway.	Highway Act,1835 Sec 72. Metropolitan Police Act 1839 Sec 54(7). Road Traffic Act 1988 Sec.34(1).	Summary Motoring	

20	Obstruction, waiting and parking offences			
	Leaving vehicles in dangerous positions.	Road Traffic Act 1988 Sec.22.	Summary Motoring	
	Interferes with charging equipment etc or obscures registration plate to avoid payment of, or being identified as having failed to pay a charge made under, a charging scheme.	Transport Act 2000 S.173(5).	Summary Motoring	
	Makes or uses any false document with intent to avoid payment of or being identified as having failed to pay a charge made under a charging scheme.	Transport Act 2000 S.173(6).	Summary Motoring	
	Removal of a notice of a charging scheme penalty charge which has been fixed to a motor vehicle.	Transport Act 2000 S.173(7).	Summary Motoring	
	Obstructing a person exercising any power conferred on him by a charging scheme.	Transport Act 2000 S.174(3).	Summary Motoring	
	Removing or interfering with an immobilisation notice fixed to a motor vehicle (provision included in charging scheme).	Transport Act 2000 S.175(2).	Summary Motoring	
	Removing or attempting to remove an immobilisation device fitted to a motor vehicle (provision included in charging scheme).	Transport Act 2000 S.175(3).	Summary Motoring	
	Intentionally obstructing a person exercising any power conferred on him (immobilisation etc. under charging scheme).	Transport Act 2000 S.175(4).	Summary Motoring	
	Obstructing a person exercising any power conferred on him (enforcement of licensing schemes).	Transport Act 2000 S.190.	Indictable Motoring	
	Contravention of regulations made under sections 78, 79 & 82 in connection with penalty charges	Traffic Management Act 2004 SS.78, 79 & 82	Summary Motoring	
	Other obstruction, waiting and parking offences: Wilful or unnecessary obstruction by motor vehicles. Repairing or cleaning vehicle on roadway. Prohibition of parking of heavy commercial vehicles on verges and footways. Driving or parking on cycle track.	Highway Act,1835 Sec 72 (As amended) and 78. Highways Act, 1980 Sec 137 (1). Metropolitan Police Act 1839 Sec 54(1). Road Traffic Act 1988 Sec 19(1), 21. Road Traffic Regulation Act 1984 Sec 5(1), Sec 8 and Sch 9, Secs 32-36, Secs 45-53. Road Vehicles (Co	Summary Motoring	
21	Lighting offences			
	All lighting offences & all rear marking offences in respect of motor vehicles.	Road Traffic Act 1988 Sec 42. Road Vehicle Lighting Regs 1989. Road Vehicles (Registration and Licensing) Regs 1971. Reg.19.	Summary Motoring	
22	Noise offences			
	Noise offences. Silencers; noise limits.	Road Vehicles (Construction and Use) Regs 1986, Regs 97-99, 54-58.	Summary Motoring	
23	Load offences			
	Overloading a goods vehicle, motor vehicle or trailer adapted to carry more than 8 passengers. Dangerous loads or number of persons carried.	Road Traffic Act 1988 Sec 41B as added by the Road Traffic Act 1991 Sec8. Road Vehicles (Construction and Use) Regs 1986, Reg 100.	Summary Motoring	
	Exceeding gross weight or axle weight.	Road Traffic Act 1988 Sec.41B as added by the Road Traffic Act 1991 Sec 8. Road Vehicles (Construction and Use) Regs 1986 Regs 75-80.	Summary Motoring	
	Other load offences. Exceeding weight limit on specified road or bridge. Dimensions of laden vehicles.	Road Traffic Act 1988 Sec.41B as added by the Road Traffic Act 1991 Sec 8. Road Traffic Regulation Act 1984 Sec 20. Road Vehicles (Construction and Use) Regs 1986 Regs 81, 82 & Sch 12, Reg 62.	Summary Motoring	
24	Offences peculiar to motorcycles			
	Driving or riding on a motor bicycle without wearing protective headgear.	Motor Cycle (Protective Helmets) Regs 1998. Road Traffic Act 1988 Sec 16(4).	Summary Motoring	
	Unlawful pillion riding.	Road Traffic Act 1988 Sec.23(3). Road Vehicles (Construction and Use) Regs 1986, Reg 102.	Summary Motoring	

25	Miscellaneous motoring offences			
	Non-compliance with notice to owner (fixed penalty). Non-compliance with notice (excess charge).	Road Traffic Regulation Act 1984 Sch 12 para 6(2), Sec 108(2).	Summary Motoring	
	Driving/riding in motor vehicle not wearing a seat belt. Driving motor vehicle with child not wearing seat belt.	Road Traffic Act 1988 Sec 14(3), 15(2) and (4).	Summary Motoring	
	Driver or person accompanying holder of provisional licence failing to give his or owner's name and address to police officer on demand. Failing to give name and address or give false name and address when alleged to have been driving recklessly/dangerous	Road Traffic Act 1988 Sec 165(3), 165(6), 168(a), 170(4).	Summary Motoring	
	Failure to comply with prohibition imposed under S.99A(1).	Transport Act 1968 S.99C as amended by Transport Act 2000 S.266.	Summary Motoring	
	Regulation of motor salvage operators and registration plate suppliers.	Vehicles (Crime) Act 2001.	Summary Motoring	
	Tampering with motor vehicle	Road Traffic Act 1988 S.25	Summary Motoring	
	Triable Either Way offences	End-of-Life Vehicles Regs 2003 Reg 6,38(1), 42	Indictable Motoring	
	Keeper of vehicle or other person failing to supply information as to driver's identity	Road Traffic Act 1988 S.172	Summary Motoring	
	Driving a goods vehicle while a prohibition operative. Giving paid instruction when not a registered or licensed person. Promoting or taking part in an unauthorised rally. Falsely claiming to be a registered driving instructor. Failing to produce goods ve	Road Traffic (Foreign Vehicles) Act 1972 Sec 3(1)(a) and (b) . Road Traffic Act 1988 Secs 123(4), 13(1), 135(2), 165(3), 17(2), 18(4), 172(3), 172(4), 177, 34 (1), 71(1), 75(5), 76(1, 3), 83, 25. Road Traffic Regulation Act 1984 Sch 12 para 3(5), Secs 104	Summary Motoring	
	Any other offences where a motor vehicle is involved and the Regulation or Act and Section are not mentioned above		Summary Motoring	

Appendix VI – Frequency of 'top level' convictions for all VSRC ID matched OTS active road users

No. Conv.	Top Level Offence Groups (see Key 1)											
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
1	149	19	53	17	93	32	90	59	18	86	33	454
2	55	8	19	1	43	15	20	20	2	29	4	212
3	24	2	7	1	24	5	11	8	1	12	2	71
4	15	1	4		13	2	8	4	1	11	3	21
5	11		5	1	8		7	5	1	9		14
6	3		5		6			3		9		9
7	7		1		2			1	1	5	1	6
8	6		1		3			2		2		5
9			1		2		1					4
10					1	1				2		6
11			1	1	1			1		1		3
12	2					1	1			1		4
13	1				2							3
14					1							2
15	1									1		1
16		1			1					2		
17					1					2		3
18	1				1			2		1		1
19					2							1
20					1							
21					3							1
22												1
23					1					1		
24												
25												
26												1
27												1
28								1				
29												
30										1		
36					1							
39										1		
46												1
65												1
Total ARUs	275	31	97	21	210	56	138	106	24	176	43	826

I) Violence against the person	VII) Criminal damage
II) Sexual offences	VIII) Drug offences
III) Burglary	IX) Other indictable (ex. motoring offences)
IV) Robbery	X) Other summary (ex. motoring offences)
V) Theft and handling stolen goods	XI) Indictable motoring
VI) Fraud and forgery	XII) Summary motoring

Key 1: Top level offences

Appendix VII - Frequency of motoring convictions for all VSRC ID matched OTS active road users

No. Con	Motoring Offence Groups (see Key 2)																				
	1	2	3	4	5	6	7	9	10	12	13	14	15	16	17	18	19	20	23	24	25
1	4	24	122	80	20	41	71	86	6		11	13	13	369	1	109	2	1	1	1	57
2	3	1	19	5	13	16	21	25	1	1	1	4	1	112		9					7
3		2	4		1	4	10	6				1		11		1					4
4		1	3			4	6	9						1							
5			1			2	7	3													1
6							5	7													2
7								1													
8			1				1														
9						1	2	4													1
10							2	1	1												
13																					1
18							1	1													
20						1															
22								1													
25							1														
Total ARUs	7	28	150	85	34	69	127	144	8	1	12	18	14	493	1	119	2	1	1	1	73

1	Causing death or bodily harm	14	Fraud, forgery etc., associated with vehicle or driver records
2	Dangerous driving	15	Vehicle or part in dangerous or defective condition
3	Driving etc. after consuming alcohol or taking drugs	16	Speed limit offences
4	Careless driving	17	Motorway offences (other than speeding)
5	Accident offences	18	Neglect of traffic directions
6	Unauthorised taking or theft of motor vehicle	19	Neglect of pedestrian rights
7	Driving licence related offences	20	Obstruction, waiting and parking offences
9	Vehicle insurance offences	21	Lighting offences
10	Vehicle registration and excise licence offences	22	Noise offences
11	Work record and employment offences	23	Load offences
12	Operator's licence offences	24	Offences peculiar to motorcycles
13	Vehicle test offences	25	Miscellaneous motoring offences

Key 2: Motoring offences

(There were no recorded offences within the shaded categories.)

Appendix VIII – Cross-tabulation between the presence of any 'top level' convictions (by category) and the precipitating factor (definite or probable) in each VSRC Phase 2 & 3 OTS collision (for ID matched precipitating active road users only).

Precipitating factor	Offence Groups (see Key 1)											
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Failed to stop	40	5	16	2	32	9	19	15	2	23	9	114
Failed to give way	17	3	5	1	14	4	7	11	3	14	4	81
Failed to avoid pedestrian (pedestrian not to blame)	4		1		1	1	1	1		2		8
Failed to avoid object or vehicle on carriageway	9		2		6	3	4	1		7	2	22
Failure to signal or gave misleading signal												
Loss of control of vehicle	65	3	23	6	46	12	40	24	6	45	11	171
Pedestrian entered carriageway without due care (driver not to blame)	7	1	5		8	1	3	5		6		7
Pedestrian fell in road			1						1			
Swerved to avoid object on carriageway	3				1		1					6
Sudden braking								1				5
Poor turn or manoeuvre	11	3	5		10	4	7	9	1	12	1	42
Poor overtake	9	1	4	2	8	2	6	2		9	4	12
Drove wrong way	1		1	1	1		1			1	1	1
Opened door carelessly												
Other precipitation	10	1	5		5	1	5	2		5		12
Total precipitating ARUs with each offence type	**180**	**18**	**71**	**14**	**137**	**37**	**95**	**71**	**13**	**126**	**32**	**490**

Appendix IX – Cross-tabulation between the presence of any motoring convictions (by category) and the precipitating factor (definite or probable) in each VSRC Phase 2 & 3 OTS collision (for ID matched precipitating active road users only).

Precipitating factor	Motoring Offence Groups (see Key 2)																	
	1	2	3	4	5	6	7	9	10	13	14	15	16	18	20	23	24	25
Failed to stop	1	7	10	19	6	9	22	21	3	3	4	2	70	22				10
Failed to give way	1	2	9	14	4	4	13	12			2	1	48	9	1	1	1	5
Failed to avoid pedestrian (pedestrian not to blame)	1		3	1	1		1	1				1	6	1				1
Failed to avoid object or vehicle on carriageway		1	7	3		2	3	5			1		9	3				
Failure to signal or gave misleading signal													1					
Loss of control of vehicle	3	9	64	17	10	22	31	39	1	3	4	7	82	20				18
Pedestrian entered carriageway without due care (driver not to blame)			2		2	1	3	3			1		1	1				2
Pedestrian fell in road																		
Swerved to avoid object on carriageway			3	2			1	1					3	2				1
Sudden braking				1			1						2					2
Poor turn or manoeuvre		1	9	3	2	2	8	9		2	1		26	6				3
Poor overtake		4	3	2		3	3	3					8					1
Drove wrong way	1	1	1		1	1	1	1										
Opened door carelessly																		
Other precipitation			2	2		2	4	4					8					
Total precipitating ARUs with each offence type	7	25	116	64	27	47	92	101	4	9	12	11	268	65	1	1	1	43

Appendix X – National data: Total convictions and offenders who have been convicted at least once during 10 years, by offence category and year, 1999 – 2003

	1999		2000		2001		2002		2003	
	Offences	Offenders	Offences	Offenders	Offences	Offenders	Offences	Offenders	Offences	Offenders
All Offences										
Violence against the person	40,945	35,192	39,520	33,863	41,570	35,553	45,799	38,876	47,284	39,698
Sexual offences	9,183	4,801	8,374	4,382	8,368	4,582	8,213	4,629	8,249	4,602
Burglary	31,917	21,616	28,418	19,345	29,394	19,671	30,650	20,452	29,538	19,961
Robbery	5,319	3,999	5,558	4,059	6,668	4,784	7,482	5,349	6,761	4,943
Theft and handling stolen goods	185,601	92,293	181,980	88,804	189,028	90,004	188,635	89,417	178,058	85,611
Fraud and forgery	60,255	29,265	56,685	27,155	57,096	28,595	57,613	28,821	61,925	31,112
Criminal damage	19,284	16,263	17,407	14,574	15,595	13,122	15,733	13,287	15,292	12,861
Drug offences	75,474	49,023	68,703	46,036	72,213	48,069	79,493	52,164	80,315	53,184
Other indictable (excluding motoring offences)	109,597	71,096	97,901	65,314	112,173	71,814	132,608	81,210	140,378	84,930
Indictable motoring	10,825	9,851	9,950	9,243	10,691	9,948	11,984	10,914	11,969	11,063
Other summary (excluding. motoring offences)	193,555	131,841	191,288	129,709	193,608	131,201	212,674	142,802	225,972	151,909
Summary motoring	236,338	118,704	241,374	120,115	255,423	125,101	276,927	133,521	293,831	139,787
Motoring Offence Type										
Causing death or bodily harm	3,456	3,201	3,026	2,787	2,956	2,746	3,052	2,855	2,845	2,675
Dangerous driving	4,596	4,435	4,427	4,311	5,070	4,913	5,773	5,589	6,002	5,848
Driving etc. after consuming alcohol or taking drugs	84,657	80,266	85,806	81,757	87,504	83,294	91,971	87,403	93,966	89,679
Accident offences	9,516	6,418	11,171	7,606	12,569	8,607	14,497	10,122	14,764	10,442
Unauthorised taking or theft of motor vehicle	13,123	10,404	11,790	9,432	12,237	9,741	13,004	10,422	11,882	9,637
Driving licence related offences	55,375	41,465	56,497	43,105	61,144	46,470	67,924	51,488	74,577	56,753
Vehicle insurance offences	61,751	47,782	63,263	50,034	68,697	54,084	75,629	59,321	82,734	64,804
Fraud, forgery etc., associated with vehicle or driver records	6,210	5,490	5,505	4,966	5,613	5,087	6,192	5,390	5,922	5,244
Total	263,394	220,510	266,339	225,884	281,479	237,547	305,118	256,437	320,636	270,065

Appendix XI – National data: Total convictions and offenders who have been convicted at least once during 10 years, by offence category and year, 2004 – 2008

	2004		2005		2006		2007		2008	
	Offences	Offenders	Offences	Offenders	Offences	Offenders	Offences	Offenders	Offences	Offenders
All Offences										
Violence against the person	49,975	40,815	55,392	44,253	54,183	43,302	51,863	41,087	53,110	42,242
Sexual offences	10,751	5,369	9,533	5,068	8,439	4,606	7,649	4,216	5,866	3,404
Burglary	24,326	17,017	23,740	16,754	23,533	16,957	24,109	17,196	24,755	17,730
Robbery	6,019	4,452	6,228	4,615	6,701	4,884	6,673	4,974	6,564	4,971
Theft and handling stolen goods	158,150	79,838	147,378	75,010	138,491	71,371	139,639	71,228	149,931	74,323
Fraud and forgery	57,384	28,713	50,034	25,344	39,960	20,607	38,025	19,719	31,783	16,701
Criminal damage	14,237	12,108	12,910	11,013	12,007	10,218	9,768	8,381	9,411	8,051
Drug offences	64,382	40,702	66,655	41,793	67,327	42,025	72,741	45,389	78,182	49,751
Other indictable (excluding motoring offences)	128,563	80,662	118,436	75,650	110,353	71,565	107,955	69,529	94,516	64,641
Indictable motoring	9,827	9,095	8,285	7,763	8,112	7,114	6,915	6,103	5,654	5,306
Other summary (excluding. motoring offences)	225,604	150,526	221,178	147,325	226,639	148,683	235,581	152,558	244,492	156,966
Summary motoring	282,127	139,349	266,313	136,090	247,810	132,625	225,787	125,010	197,169	112,552
Motoring Offence Type										
Causing death or bodily harm	2,596	2,456	2,282	2,165	2,483	2,360	2,298	2,198	2,127	2,021
Dangerous driving	5,592	5,443	4,979	4,873	4,784	4,686	4,411	4,322	4,077	3,983
Driving etc. after consuming alcohol or taking drugs	95,455	91,362	93,385	89,961	92,188	89,172	87,882	85,299	79,732	77,453
Accident offences	14,440	10,286	13,704	9,780	13,239	9,470	12,825	9,174	11,839	8,554
Unauthorised taking or theft of motor vehicle	10,306	8,651	9,861	8,408	10,039	8,652	10,223	8,831	10,025	8,857
Driving licence related offences	69,210	54,629	63,720	51,654	56,631	47,742	49,841	43,058	42,318	37,145
Vehicle insurance offences	78,094	63,259	72,738	60,302	65,709	56,513	57,896	50,857	48,959	43,578
Fraud, forgery etc., associated with vehicle or driver records	4,107	3,590	3,113	2,765	3,041	2,225	2,126	1,477	1,144	933
Total	304,895	262,545	286,801	251,122	268,478	239,995	245,272	222,047	215,019	196,656

Appendix XII – Notes on the national data

(1) All offences were committed by offenders aged 18 or over at sentence;

(2) Year refers to the time which an offence was committed;

(3) Data includes non recordable offences;

(4) The MoJ have suppressed figures in categories which are largely non recordable offences as results are incomplete on the PNC and therefore unrepresentative;

(5) Total number of indictable and summary motoring offences does not sum up to the total number of motoring type offences as it included some offences in other categories, such as violence, theft etc.;

(6) The data for 1999 may be incomplete on the PNC and caution should be taken when using figures for 1999 presented in the table

SHARED ANNEX

LINKING OFFENCE HISTORIES TO ACCIDENT CAUSATION USING OTS DATA: THE VSRC AND TRL FINDINGS

Dr Elizabeth Dodson & Julian Hill (VSRC)
Rebecca Cookson & Jenny Stannard (TRL)

1.1   Background

The Vehicle Safety Research Centre (VSRC) conducted a feasibility study in 2006-2007[1] to see whether it was possible to match a sample of crash involved road users, identified from the On The Spot Project (OTS), to Police National Computer (PNC) and Driver Vehicle Licensing Agency (DVLA) records.

The feasibility study was successful, and the VSRC started a follow on project in 2008, with the aim of collecting offence data for all VSRC OTS Phase 2 and 3 active road users (accidents since 29th September 2003) for whom there were sufficient personal details to match their identities with PNC and DVLA records.

Following the success of the VSRC's project to link OTS and offence histories, TRL were commissioned to undertake similar work for OTS cases in their area (the Thames Valley region), and began data collection in August 2009. Each centre reported individually, to provide an initial overview of the convictions identified, their frequency and how they may be linked to both road user data and collision causation data.

All findings within the Offence Histories study are related to active road users (ARUs) involved in collisions within the Nottinghamshire or Thames Valley regions. The data and findings presented here may not be nationally representative and should not be treated as such. This work demonstrates a methodology for linking collision data and offence data. It is recommended that all findings are reviewed in this context. Further work may be possible in the future to link the results from the two OTS regions, which were chosen, in combination, to be broadly representative of the national road collision data. This shared annex makes some initial broad comparisons between these two datasets, then details some of the key findings from both reports.

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[1] Dodson, E. & Hill, J. (2007). On The Spot accident data collection Phase II: Offence histories feasibility report. Unpublished study for the Department for Transport (PPAD 9/31/120).

1.2   Core Data and Results

This section provides a summary of data collection and key results from the draft VSRC and TRL Offence History reports. Further work is recommended to explore the regional differences and the potential to combine these results.

The VSRC and TRL submitted 4,639 data requests in total. The breakdown of these requests is illustrated in **Table x-1**:

Table x-1: Offence history data requests as a percentage of the total OTS Phase 2 & 3 active road users

Research Centre	Total Active Road Users	Offence History Data Requests Submitted	Insufficient Identity Data to Complete Request Form
VSRC	2882 (100%)	2530 (88%)	352 (12%)
TRL	3041 (100%)	2109 (69%)	932 (31%)

The VSRC submitted a total of 2,530 data requests, of which 2,244 had their identity confirmed by the project data coders at Nottinghamshire police. As a proportion of the data requests sent, this gave an ID matching rate of 89%.

TRL submitted a total of 2,109 data requests, of which 1,845 had their identity confirmed by the project data coders at Thames Valley police. As a proportion of the data requests sent, this gave an ID matching rate of 87%.

Identity matches were based on the name and address of the road user being confirmed on any of the police accessible databases (PNC, DVLA, Voters).

The breakdown of the type of match obtained for these active road users is shown in **Table x-2.**

Table x-2. Breakdown of level of matching for the active road users

Research Centre	All ARUs	DVLA & PNC Match	DVLA only Match	PNC only Match	Voters only Match	No identity match made
VSRC	2882	601	1547	14	82	638
TRL	3041	368	1451	11	15	1196

Within the VSRC data, DVLA and PNC matches were found for 601 of the active road users; the majority (69%) of the matched active road users were matched with DVLA data only.

Within the TRL data, DVLA and PNC matches were found for 368 of the active road users; the majority (79%) of the matched active road users were matched with DVLA data only.

The breakdown of the matched active road users with respect to offence history presence and data source is shown in **Table x-3**.

Table x-3. Number of Matching ARUs with offence histories

Research Centre	Number of matched ARUs	DVLA & PNC	DVLA only	PNC only	No Offence History
VSRC	2244	364	434	239	1207
TRL	1845	82	479	312	972

Within the VSRC data 46% of the identity matched active road users were found to have an offence record (n=1037). By comparison, within the TRL data 47% of the identity matched active road users were found to have an offence record (n=873).

The most common offence type within both datasets was summary motoring. The VSRC found summary motoring offence records for 826 ARUs (37% of all ID matched, 80% of all identified offenders). TRL found summary motoring offence records for 578 ARUs (31% of all ID matched, 66% of identified offenders)

The next most frequently identified offence group in both datasets were violence against the person, followed by theft and handling stolen goods. Within the VSRC data, these were associated with 275 and 210 of the active road users respectively. Within the TRL data these were associated with 148 and 122 of the active road users respectively.

Both datasets showed speed limit offences to be the most commonly recorded motoring conviction. The VSRC data included speed offence records for 493 ARUs (22% of all ID matched), by comparison the TRL data included speed offence records for 324 ARUs (18%).

The next most common motoring offences in both datasets were 'driving etc. after consuming alcohol or taking drugs' (VSRC 150 ARUs: 7% of all ID matched, TRL 91 ARUs: 5% of all ID matched), and 'vehicle insurance offences' (VSRC 144 ARUs: 6% of all ID matched, TRL 96 ARUs: 5% of all ID matched).

Since all road users in this study were involved in a collision, investigation of links between offending and road traffic collisions divided the sample into two groups. This division was based on whether or not each individual was attributed with the precipitating factor by the OTS team and was therefore considered predominantly "at fault" or not in the collision.

Tables x-4 and **x-5** show these two groups split by the presence of DVLA offences and matches.

Table x-4: Number of at fault and not at fault drivers in the collision linked with presence of DVLA offence history (VSRC Data)

	DVLA offence history	No DVLA offence history	No DVLA Match	Total ID Matched	% DVLA OH
Fault (precipitating road user)	479	669	52	1200	40%
Not Fault (not precipitating road user)	319	679	46	1044	31%

$\chi^2 < 0.01$

Table x-4 shows the VSRC data, where of the active road users who were considered to be at fault in the accident, 40% were found to have an offence history compared to 31% of

those not at fault. **Table x-5** shows the equivalent TRL data to have identical percentages. Using a Chi square test between presence of DVLA offence history and No DVLA offence history or no DVLA match, evidence was found of a significant difference in both datasets.

Table x-5: Number of at fault and not at fault drivers in the collision linked with presence of DVLA offence history (TRL Data)

	DVLA offence history	No DVLA offence history	No DVLA Match	Total ID Matched	% DVLA OH
Fault (precipitating road user)	552	826	11	1389	40%
Not Fault (not precipitating road user)	143	306	5	454	31%

$\chi^2 < 0.01$

Tables x-6 and **x-7** show whether the road user was considered to be predominantly at fault or not in the collision and whether they had a general (including motoring) offence linked to them for the PNC data.

Table x-6: Number of at fault and not at fault drivers in the collision linked with presence of PNC offence history (VSRC Data)

	PNC OH Yes	PNC OH No	Total ID Matched	% PNC OH Found
Fault (precipitating road user)	409	791	1200	34%
Not Fault (not precipitating road user)	194	850	1044	19%

$\chi^2 < 0.01$

These results also showed a higher percentage of offences found for those who were recorded as being at fault for the accident and again, Chi square tests showed these differences to be significant in both datasets.

Table x-7: Number of at fault and not at fault drivers in the collision linked with presence of PNC offence history (TRL Data)

	PNC OH Yes	PNC OH No	Total ID Matched	% PNC OH Found
Fault (precipitating road user)	321	1068	1389	23%
Not Fault (not precipitating road user)	57	397	454	13%

$\chi^2 < 0.01$

Table x-8 develops this further to correlate fault and offending with gender, comparing the two regions and data sources. The results from the two separate datasets are closely aligned across all fields.

Table x-8. Comparison of precipitating active road user by gender between the Thames Valley and Nottinghamshire data

Offence data source	Precipitating active road user	Percentage of offenders in group			
		Nottinghamshire		Thames Valley	
		Male	Female	Male	Female
DVLA	Yes	43	31	47	24
	No	35	19	37	21
PNC	Yes	41	14	42	11
	No	24	5	20	5

Looking at age and the identification of offence histories, both the DVLA (**Table x-9**) and PNC (**Table x-10**) data show peaks among younger road users. However there are many complexities in the age data – including the fact that some older offences may not be retained on the police databases (potentially driving down recorded offence levels for older road users who offended in their youth), and some younger people (particularly children) may be over-represented as only small numbers were identity matched, and that match in some cases was due solely to the presence of an offence record.

Table x-9: Presence of DVLA offence histories for identity matched active road users, by age group

Age Group	VSRC % DVLA Offence History Found	TRL % DVLA Offence History Found
Child	24%	43%
17-19	35%	35%
20-24	39%	46%
25-29	42%	43%
30-34	39%	41%
35-39	39%	37%
40-44	38%	36%
45-49	36%	42%
50-54	32%	31%
55-59	30%	28%
60-64	31%	23%
65+	12%	27%
Unknown	43%	39%
Total	36%	38%

Table x-10: Presence of PNC histories for identity matched active road users, by age group

Age Group	VSRC % PNC Offence History Found	TRL % PNC Offence History Found
Child	73%	38%
17-19	40%	25%
20-24	34%	26%
25-29	29%	23%
30-34	28%	22%
35-39	27%	19%
40-44	31%	22%
45-49	21%	23%
50-54	14%	14%
55-59	14%	13%
60-64	18%	10%
65+	7%	9%
Unknown	30%	17%
Total	27%	20%

Tables x-11 and **x-12** compare the regional results by road user type for DVLA and PNC offence history data.

Table x-11: Presence of DVLA offence histories for identity matched active road users, by road user type

Road User Type	VSRC % DVLA Offence History Found	TRL % DVLA Offence History Found
Car Driver	35%	36%
LGV Driver	54%	57%
HGV Driver	40%	62%
Bus Driver	39%	40%
Pedestrian	14%	28%
Cyclist	8%	24%
Motorcyclist	39%	38%
Other	17%	-
Total	36%	38%

Table x-12: Presence of PNC offence histories for identity matched active road users, by road user type

Road User Type	VSRC % PNC Offence History Found	TRL % PNC Offence History Found
Car Driver	24%	18%
LGV Driver	38%	31%
HGV Driver	36%	48%
Bus Driver	26%	20%
Pedestrian	32%	28%
Cyclist	44%	24%
Motorcyclist	42%	21%
Other	17%	0%
Total	27%	20%

HGV and LGV drivers were the most frequent offenders in the TRL Thames Valley region, accounting for 48% and 31% of the offenders respectively for the PNC data and 62% and 57% for the DVLA data. Within the VSRC Nottinghamshire region HGV (40%) and LGV (54%) drivers were also the most frequently identified DVLA offenders. However, in the PNC data, the most frequent road user type among the offenders was cyclists (44%) and motorcyclists (42%), with HGV and LGV drivers following these (36% and 38% respectively).

The VSRC and TRL research reports cover many more findings than are compared in this brief annex. Each team produced a core of comparable tables and figures, but also completed their own individual exploration of their regional datasets. The next section illustrates how the figures and tables relate to each other and where data was presented by one research team only.

1.3   Comparison of Figures and Tables Included in the Separate Reports

The following tables show how the tables and figures in the two independent reports relate to each other, to identify where it is possible to compare the separate results.

Table x-13 Comparison of equivalent VSRC and TRL figures

	VSRC Figures		TRL Figures
1	Data sharing methodology for VSRC and Nottinghamshire Police	2-1 2-2	Methodology Part A Methodology Part B
2	Age distribution of all VSRC Phase 2 and 3 active road users compared to the identity matched sample	4-1	Age distribution of all Active Road Users compared to the identity matched sample
3	Gender distribution of all VSRC Phase 2 and 3 active road users compared to the identity matched sample		
4	Road user type distribution of all VSRC Phase 2 and 3 active road users except car drivers, compared to the identity matched sample		
5	Distribution of known IMD deprivation ranks for ID matched VSRC OTS Phase 2 & 3 active road Users (n=2113)		
6	Deprivation and number of convictions for all ID matched active road users (n=2244)		
7	Deprivation levels of road users with identified summary motoring convictions (including fixed penalties) (n=826)		
8	Gender and deprivation (n=2244)		
9	Age and deprivation (ID matched, known age n=2199)		
10	Age and deprivation reconfigured (ID matched, known age n=2199)		
11	IMD quintiles by road user type (n=2244)		
12	IMD quintiles by road user type (percentages within type) (n=2244)		
13	Fault in terms of precipitating factor for different data groups		See tables 4-7 and 4-8
14	Fault in terms of precipitating factor for different data groups (percentages within each group)		
15	Comparing the percentage of identity matched precipitating (n=1200) and not-precipitating (n=1044) road users with any conviction for each offence type		

16	Comparing the percentage of identity matched precipitating (n=1200) and not-precipitating (n=1044) road users with any conviction for each common motoring offence type (excluding all <1%)		
17	Collision type for all precipitating road users (n=1623)	4-2	Collision type for all precipitating road users
18	Most common 'definite' and 'probable' precipitating factors in VSRC OTS Phase 2 and 3 collisions for all precipitating road users (n=1623)	4-3	Most common precipitating factors (precipitating only n=1389)
19	Most common 'very likely' Contributory Factors 2005 for all precipitating road users (n=1623)	4-4	Most common 'very likely' Contributory Factors 2005 (precipitating only n=762)
20	Road user type and any known history of a speed offence		
21	Most common 'very likely' Contributory Factors 2005 for precipitating road users with and without at least one identified speeding conviction		
22	Comparison of collision types for ID matched precipitating road users with and without identified speeding offences		
23	Comparison of most common 'definite' and 'probable' precipitating factors for ID matched precipitating road users with and without identified speeding offences		
24	Total driving licence/vehicle insurance offences		
25	Distribution across the age range of ID matched road users with and without identified driving licence/vehicle insurance offence histories		
26	Most common 'very likely' Contributory Factors 2005 for precipitating road users with and without at least one identified licence and or insurance conviction		
27	Comparison of 'probable' and 'definite' precipitating factors for ID matched precipitating road users with and without identified licence and/or insurance offences		
28	Comparison of collision types for ID matched precipitating road users with and without identified licence and/or insurance offences		
29	Road user type and fault distribution of people with ≥6 identified motoring offences (n=66)		
30	Gender and fault distribution of road users with ≥6 identified motoring offences (n=66)		

31	Age and fault distribution of road users with ≥6 identified motoring offences (n=66)		
32	Collision severity and fault distribution of road users with ≥6 identified motoring offences (n=66)		
33	Deprivation and fault distribution of road users with ≥6 identified motoring offences (n=66)		

Table x-14 Comparison of equivalent VSRC and TRL tables

	VSRC Tables		TRL Tables
1	Top level offence codes	B1	List of offences to be recorded under general offences
2	Motoring offence codes	B2	Motoring offences linked to general offences
3	Source of identity data	4-1	Breakdown of level of matching for the Active Road Users
4	Source of offence history data	4-2	Number of Matching ARUs with offence histories
5	Number of active road users with any top level conviction by type	D1	Number of Each General (Top Level) Conviction
6	Number of active road users with any motoring conviction by type	D2	Number of each motoring conviction
7	Presence of offence histories for identity matched active road users, by age group		
8	Presence of PNC histories for identity matched active road users, by age group	4-4	Presence of PNC histories for identity matched active road users, by age group
9	Presence of DVLA histories for identity matched active road users, by age group	4-3	Presence of DVLA offence histories for identity matched active road users, by age group
10	Presence of offence histories of identity matched active road users, by gender		
11	Presence of PNC offence histories for identity matched active road users, by gender	4-6	Presence of PNC offence histories for identity matched active road users, by gender
12	Presence of DVLA offence histories for identity matched active road users, by gender	4-5	Presence of DVLA offence histories for identity matched active road users, by gender
13	Presence of offence histories for identity matched active road users, by road user type	4-13	Presence of offence histories for identity matched active road users, by road user type
14	PNC histories of identity matched active road users	4-14	PNC histories of identity matched active road users

15	Presence of DVLA histories for identity matched active road users, by road user type		
16	Violence against the person convictions for ID matched active road users		
17	Distribution of IMD deprivation ranks for all VSRC OTS Phase 2 & 3 active road users		
18	Distribution of IMD deprivation ranks for ID matched VSRC OTS Phase 2 & 3 active road users		
19	Number of identity matched active road users, by type		
20	Presence of offence histories for identity matched active road users, by severity		
21	PNC histories of identity matched active road users, by severity		
22	Presence of DVLA histories for identity matched active road users, by severity		
23	Accident severity and presence of any top level offences, by category (ID matched road users)	4-11	Accident severity and presence of any top level offences, by category
24	Accident severity and presence of any motoring offences, by category	4-12	Accident severity and presence of any motoring offences, by category
25	Presence of offence histories for identity matched active road users, by gender and fault (attribution of precipitating factor)		
26	Presence of PNC offence histories for identity matched active road users, by gender and fault (attribution of precipitating factor)	4-10	Presence of PNC offence histories for identity matched active road users, by gender and fault (attribution of precipitating factor)
27	Presence of DVLA offence histories of identity matched active road users, by gender and fault (attribution of precipitating factor)	4-9	Presence of DVLA offence histories for identity matched active road users, by gender and fault (attribution of precipitating factor)
	See Figure 13	4-7	Number of at fault and not at fault drivers in the collision linked with presence of DVLA offence history
	See Figure 13	4-8	Number of at fault and not at fault drivers in the collision linked with presence of PNC offence history
28	Relationship between speed factors for all precipitating road users		
29	Relationship between OTS Causation System variables "In a Hurry" and "Excessive Speed" for all precipitating road users		
30	Road users with prior, linked and subsequent speeding convictions – ID matched only		

31	Cross tabulation of total prior and subsequent speeding convictions – ID matched only		
32	Relationship between speed limit offences and (very likely) exceeding speed limit contributory factor (p=0.766)		
33	Relationship between speed limit offences and (very likely) too fast for conditions contributory factor (p=0.207)		
34	Relationship between accident variable "In a Hurry" and speed limit offences		
35	Relationship between accident variable "Excessive Speed" and speed limit offences		
		4-28	Exceeding the speed limit or travelling too fast for the conditions as a contributory factor and presence of offence history
		4-29	Exceeding the speed limit or travelling too fast for the conditions as a contributory factor and presence of offence code I (violence against the person)
		4-30	Exceeding the speed limit or travelling too fast for the conditions as a contributory factor and presence of offence codes III, IV or V (burglary, robbery or theft and handling stolen goods)
		4-31	Exceeding the speed limit or travelling too fast for the conditions as a contributory factor and presence of offence code VII (criminal damage)
		4-32	Exceeding the speed limit or travelling too fast for the conditions as a contributory factor and presence of offence code VIII (drugs offences)
36	Relationship between vehicle insurance and driving licence offences		
37	Relationship between vehicle insurance and driving licence offences for precipitating and non-precipitating road users		
38	Comparison of 'Impairment through alcohol' contributory factor for sample group and identified licence/insurance offenders		
		4-15	Presence of offence code VIII (drugs offences) and fault of active road user
		4-16	Presence of offence code 3 (driving etc. after consuming alcohol or taking drugs) and fault of driver
		4-17	Presence of offence code I (violence against the person) and fault of driver

		4-18	Drink or drug driving as a contributory factor and presence of offence history
		4-19	Drink or drug driving as a contributory factor and presence of offence code I (violence against the person)
		4-20	Drink or drug driving as a contributory factor and presence of offence codes III, IV or V (burglary, robbery, theft and handling stolen goods)
		4-21	Drink or drug driving as a contributory factor and presence of offence code VII (criminal damage)
		4-22	Drink or drug driving as a contributory factor and presence of offence code VIII (drug offences)
		4-23	Aggressive driving or careless, reckless or in a hurry as a contributory factor and presence of offence history
		4-24	Aggressive driving or careless, reckless or in a hurry as a contributory factor and presence of offence code I (violence against the person)
		4-25	Aggressive driving or careless, reckless or in a hurry as a contributory factor and presence of offence codes III, IV or V (burglary, robbery pr theft and handling stolen goods)
		4-26	Aggressive driving or careless, reckless or in a hurry as a contributory factor and presence of offence code VII (criminal damage)
		4-27	Aggressive driving or careless, reckless or in a hurry as a contributory factor and presence of offence code VIII (drugs offences)
39	Cross-tabulation between conviction numbers for motoring and non-motoring offences		
40	Relationship between top level offence history and number of motoring convictions		
41	Cross-tabulation between number of identified summary motoring convictions and number of identified violence against the person convictions		
42	Relationship between motoring offence history and number of motoring convictions		
43	National data for top level offences 1999-2008 combined (MoJ data – England and Wales)		

44	National data for motoring offences 1999-2008 combined (MoJ data – England and Wales)		
45	National data for top level offences – number of previous same category offences (over 10 years) for offenders convicted in 2008 (MoJ data – England and Wales)		
46	National data for motoring offences – number of previous same category offences (over 10 years) for offenders convicted in 2008 (MoJ data – England and Wales)		
47	Number of Offenders aged 18 or over - National data for top level offences (MoJ data – England and Wales)		
48	Number of Offenders – OTS ID Matched ARU data for top level offences	4-33	Comparison of the TRL sample with national data for general offences
49	Number of Offenders aged 18 or over - National data for motoring offences (MoJ data – England and Wales)		
50	Number of Offenders – OTS ID Matched ARU data for motoring offences	4-34	Comparison of the TRL sample with national data for motoring offences

1.4   Discussion Points

The VSRC and TRL data both showed that males were more likely to have offence histories than females; this applied to both PNC and DVLA offences. Offending appeared to be concentrated among younger age groups, particularly for PNC records, although further research is required to understand this finding, as there are a number of possible explanations that reflect the complexity of collecting and analysing these data.

The highest proportion of identified DVLA offence histories was within the LGV (van) and HGV driver groups for both regions. However there were clear differences in the highest offending groups when looking at the PNC data, with cyclists and motorcyclists featuring more heavily in the VSRC than the TRL results. Further work is recommended to analyse road user groups in more detail, in particular those who can be identified as driving for work. Also further work is recommended to investigate differences in the peak road user types with PNC records, in particular the regional impact of age and deprivation levels.

The VSRC data showed that the highest proportion of road users with offence records were found in the fatal collisions group, with a relatively even spread between all other collision injury-severities. The peak for the fatal collisions group was seen in the PNC data, but not in the DVLA data. Looking at the cases where injury severity was known, there were proportional peaks within the Killed or Seriously Injured (KSI) groups for many of the more serious offences. Overall though, the largest offence group - summary motoring - had a relatively even spread, which was especially visible for speed limit offences (the main summary motoring conviction). Further work is recommended to consider the impact of linked offences on these figures (i.e. convictions resulting directly from the collision).

The TRL data focused on at-fault drivers only with regards to severity, where indictable motoring offences were found to be the general offence type with which the highest proportion of fatal accidents were associated, and this was also the case for serious accidents. When looking specifically at motoring offences, driving licence-related and vehicle insurance offences were found to have the highest proportion of KSI-involved precipitating road users.

Initial exploration of the VSRC and TRL OTS offence data supported the theory that people who take risks by offending, may take greater risks as drivers, as evidenced by fault within the collision causation data. There was a clear proportional increase in collision fault (road users defined as precipitating) among those with offence histories, particularly PNC (Police National Computer) offence histories.

The VSRC and TRL data showed that for every top level offence category (e.g. violence against the person, criminal damage, summary motoring), a proportionately higher percentage of road users within the precipitating group (compared to the non-precipitating group) had at least one offence (with the sole exception of 'other indictable' – for which there was no difference). For every motoring offence category, a proportionately higher percentage of road users within the precipitating group (compared to the non-precipitating group) had at least one offence although the difference was comparatively small for speed limit and neglect of traffic direction offences. These tend to be camera based fixed penalties (neglect of traffic directions is commonly a traffic light offence) and having at least one instance of either of these offences on a road user's record, did not appear to increase the likelihood of being at fault in an accident.

Both teams conducted an initial exploratory analysis of links between specific offence types and causation factors. This limited analysis focused on potential links suggested by the individual teams. TRL reported on these analyses more extensively than the VSRC but identified few significant results. Specifically, TRL identified a significant difference between the presence of an offence code relating to drug offences and the presence of drink or drug driving as a contributory factor where the offence could have been obtained prior to, linked, or subsequent to the collision. Contrary to expected. the presence of drug offences was *more* likely where there was no presence of contributory factors relating to drink or drug driving linked to that ARU. However, the small sample size could be a factor in these results, and should be borne in mind with all of the findings of these reports. A significant difference was also found between contributory factors relating to exceeding the speed limit or travelling too fast for the conditions and the presence of an offence for violence against the person. Finally, TRL reported that active road users who had a violence against the person offence were more likely to be at fault in the collision than those where no such offence was found. This supports previous research by Bina, Graziano & Bonino (2006)[2].

Data from both establishments showed that speed limit offenders (with offences linked to the collision excluded) were more likely to have caused a collision attributed with the OTS causation system factor excessive speed, compared to those without identified speed limit offences. Otherwise there were only minimal differences between road users with and without speed offence records. Exploration of precipitating factors found minimal differences in collision causation between those with and without licence/insurance offences. However there were stronger relationships within the factors contributing to the causes of accidents, such as impairment through alcohol. It is recommended that these are explored further in future analysis.

The VSRC conducted additional analysis to look at multiple offending. Most road users with one to five motoring convictions had no identified non-motoring convictions (68%). Road users with six or more motoring convictions were more likely to have other identified non-motoring convictions than none at all. Road users with any non-motoring convictions were more likely to have at least 1 identified motoring conviction than to have none. For every top level offence, there was an increase in the percentage of those convicted as the number of motoring offences increased. This increase was particularly notable within the six or more motoring convictions group (n=66). Those with one to five motoring convictions were most likely to have speed limit convictions. Those with six or more motoring convictions were most likely to have vehicle insurance convictions. The typical member of the six or more motoring convictions group was young, male and from a deprived (1st IMD quintile) area. This additional work was not replicated by the TRL team.

The VSRC worked with the Ministry of Justice to explore how national data could be used in the Offence Histories project. It is important to understand how well the sample of OTS offence histories represents the national data, and this can only be done if the data (OTS and national) can be made compatible. The national data comparison was challenging, especially as published data tends to count offences rather than offenders, but a bespoke dataset was collated by the Ministry of Justice to enable a first examination of the national and OTS offence history datasets together. This national dataset was shared with TRL and both establishments carried out some high level comparisons.

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[2] Bina, M., Graziano, F., & Bonino, S. (2006). Risky driving and lifestyles in adolescence. *Accident Analysis and Prevention 38 (3)* 472-481.

For nearly all offence types (motoring and non-motoring) with available national data, the proportion of OTS road users with an offence identified was higher, much higher in many cases, than the national data for the period of 1999 to 2008. This was shown in analyses by both research centres. However, the comparison between OTS and the national figures highlighted a lack of commonality between the datasets, especially regarding offences that were not dealt with by the courts, which were not included in the available national data. Further work on harmonization of these datasets is recommended alongside the exploration of additional national data availability. It is also suggested that Offence Histories results from both the VSRC and TRL study regions should be combined and analysis conducted on the extent to which this collective data is nationally representative.

The VSRC also mapped postcode based deprivation data into their offence histories dataset. Overall the IMD (Index of Multiple Deprivation) distribution was not an even spread but was skewed towards greater levels of deprivation, this being particularly apparent when focusing on the at fault road users (those identified as the precipitating road user in an OTS investigated collision). Road users with six or more convictions (motoring and/or non-motoring) were identified mostly within the 1st quintile of deprivation (the most deprived group), with steadily decreasing numbers across the quintiles. Road users with one to five convictions did not show the same linear relationship with deprivation although the peak was still within the 1st quintile; the next greatest number was within the fourth quintile, which is the second least deprived group. It is likely that this reflects the large number of summary motoring convictions (including fixed penalties) which could be found across the sample. Road users with no identified convictions showed a different pattern of deprivation again with peaks in the average 3rd quintile and the least deprived 5th quintile. This additional work was not replicated by the TRL team.

1.5   Overall Summary

The offence histories project successfully demonstrated a way to link in-depth data on the causes of collisions with data on the offence histories of the active road users involved. The project reports each demonstrated a useful set of initial findings and the potential for further use of this data.

It should however be re-emphasized at this point that all findings within the study are related to active road users involved in collisions within the Nottinghamshire and Thames Valley regions. The data and findings presented may not be nationally representative and should not be treated as such. This work demonstrates a methodology for linking collision data and offence data, and the depth and potential of the new data now available for analysis once it has been fully validated against other OTS and national sources of data. It is recommended that all findings are reviewed in this context.

Further work may be possible in the future to link the VSRC and TRL results. Together, the Nottinghamshire and Thames Valley regions contribute to the full OTS sample plan which has been designed to provide in-depth accident data that is broadly representative of the national picture. Future work could very usefully combine offence history data with the accident data for both OTS regions which might in turn be compared with suitably prepared national data. In that way it would be possible to understand better this in-depth data, its strengths and limitations, and the national implications.

While the reports were primarily intended to demonstrate the depth of new data now available for further validation, the data presented do provide useful indications for further work in this area, highlighting issues such as:

- Peaks in offending amongst young collision involved road users

- Links between deprivation and precipitating a road traffic collision

- The relationship between deprivation and driving without a licence and/or insurance

- Offending among people driving for work

- Identification of offending sub-groups within specific road users types

- Differences in offending between road users involved in KSI collisions, compared to slight and non-injury

- Gender differences in the link between offending and precipitating a road traffic collision

- Differences in offence types between road users with different levels of repeat offending

- Links between specific offence types and specific precipitating factors

- Potential over-representation of offending amongst collision involved road users, compared to the national data