Understanding Young Riders: Research for the National Young Rider Forum

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RESEARCH
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Disclaimer:

Executive Summary

The National Young Rider Forum (NYRF) is a group of road safety professionals which includes representatives from MCIA, MAG, local authority road safety teams, police forces, fire & rescue and road safety partnerships from across the country. Before developing or delivering any new interventions targeting young riders, the Forum decided to commission research to understand the attitudes, behaviours, needs and preferred methods of communication of young riders. The aim of this research project is to inform, inspire and drive appropriate road safety activities and to assist practitioners to deliver effective, consistent interventions.

The research is multi-phased, combining an understanding of the problem through analysis of collision data with insights from young riders themselves. The latter feedback was collected through an online survey and virtual interviews (due to the Covid-19 pandemic, the interviews took place remotely via Zoom). The findings provide the NYRF with information on how and why young riders are at risk of collision involvement, and an understanding of the motivations of young riders and what they need, in terms of support. Deep learning segmentation of survey results was undertaken to group motorcyclists into clusters, based on their questionnaire responses. The clusters can be used to target different types of young motorcyclist, tailoring to their specific needs.

With all parts of this project, it has become very clear that there is no such thing as a 'young rider'. Instead, there are a range of types of individual who choose to ride a motorcycle for a range of reasons; who have different experience levels; and who have different attitudes towards motorcycling and behave in different ways. For road safety practitioners, this is important. Interventions will need to be tailored to specific types of young rider, thinking about their motivations, attitudes and needs.

It also became clear that the target group can be difficult to access and engage with and there were a number of recruitment difficulties for both the online survey and interviews. This may be due to COVID-19 as it may have affected access and engagement with this target group. However, the survey and interviews also indicate that this is a disparate group, who do not necessarily identify themselves as a community. Both the online survey and interviews were incentivised, deadlines were extended, and requests for engagement were distributed through various channels, including social media, motorcycle training centres and NYRF partners to maximise participation. It should be remembered that the survey respondents and interview participants were self-selecting. As a result, the findings from the survey and interviews in this report are not necessarily representative of the views of all young riders.

It is important to re-emphasise the size of the young rider collision problem. There were 30,862 young people (16-24 years) injured whilst riding a motorcycle in Great Britain between 2014 and 2018. The majority of these casualties were young males on motorcycles with engines up to 125cc. When comparing with young driver casualties, the numbers of young motorcyclists killed or seriously injured exceeds the numbers of young car drivers for all ages from 16 to 23 years. This is despite car traffic accounting for 78% of vehicle miles in 2016 in Great Britain, compared to 0.9% of vehicle miles being by motorcycle (for drivers of all ages). The highest numbers of young rider casualties were aged between 16 and 21 years old. Rider casualties tend to live in urban areas and are involved in collisions in urban areas.

The collision analysis provided some clear insights into who is injured as a young rider and under what circumstances. Certain Mosaic Groups were over-represented, and these tended to come from

communities with limited resources and squeezed budgets, which may impact on the type of motorcycle they purchase, the training they undertake and the personal protective equipment they use.

There are common circumstances in which young rider collisions occur. Many of the young motorcycle casualties were near a junction at the time of their collision, with many of them travelling straight ahead and in conflict with a car. This could mean that the cars are pulling out of T-junctions or turning right into junctions, into the path of the motorcyclist. This has implications for engagement with other road users, as well as finding ways to reduce motorcycle risk when approaching junctions. How conspicuous they are to other road users, due to clothing and road positioning, and their approach speed are all important factors.

The responses to the survey and interviews align well to the collision analysis. Those who participated in this research are aware of their vulnerabilities as motorcyclists, displaying good knowledge about the importance of helmet choice, maintenance and wearing it correctly. Survey respondents reported riding on the assumption that other road users had not seen them and that they feel intimidated when not given enough space. This was echoed in the interviews when asked about what messages they would like to give to other road users. They wanted respect from other road users and to ask them to look twice and check with blind spots. They asked for patience from other road users, especially when riding on L plates and for others to realise that filtering is legal. Returning to the concept of there being no such thing as a 'young rider', interviewees want other road users to know that not all riders are the same and they should not make assumptions about their behaviour based on the behaviour of other motorcyclists.

In the survey, respondents believed that bad weather, riding too fast, the actions of other road users and young rider inexperience are the factors contributing to young rider collisions. Comparing these results with the collision analysis shows that young riders have a reasonable understanding of why young riders can be involved in collisions, although are incorrect about bad weather conditions often being contributory factors. Inexperience was explored in the interviews, with most participants feeling that young rider inexperience increased risk. However, they felt that this could quickly be replaced by overconfidence and that other road users not looking out for smaller vehicles also played a part.

Most of the survey respondents (82%) commute to/from work and/or college or university most days on their motorcycle, therefore, the motorcycle may be their main form of transport. It should therefore be borne in mind that those who participated in the survey and/or interviews are likely to be enthusiastic riders and may not represent all of the rider types out there (for example, the car aspirants who are riding for a short period for necessity or those who ride for work, not choice). Interestingly, while a third of young rider casualties were riding for work at the time of their collision, low percentages of survey respondents reported regularly riding for work. The survey respondents were self-selecting, and they may not have identified themselves as 'motorcyclists' because riding is a function of their job, not who they are. This may influence how they are accessed and engaged with.

The survey respondents were asked questions on personal protective clothing (PPE) and whether they wear different items all the time, sometimes, or never. There were some mixed and worrying responses, with nearly three-quarters sometimes wearing a tracksuit when riding and half sometimes wearing trainers. Similarly, around half of the respondents admitted to never wearing leather or textile boots or jackets. Interviewees were asked what might prevent young people from wearing protective clothing. Responses included worrying about appearances; the costs of purchase; the inconvenience of wearing them (especially in the summer and getting changed out of PPE and carrying it around); or not finding clothing that fits (this was a common problem for the female participants). Information on

where to find affordable PPE would be welcomed. Messaging could be linked to visibility and motorcycle light maintenance, highlighting that almost a third of their collisions occur at night.

Interestingly, over half of the survey respondents believed that the CBT did not give them all the skills they need to be a safe rider and believed that including a hazard perception test and pre-learning before the CBT would have helped them to be more prepared. As a result, in the interviews, the participants were asked if they think it would be beneficial to have a theory and/or hazard perception as part of the CBT. There were a lot of mixed feelings – most of the participants stated that there should be more of a theory element and hazard perception training. However, there was mixed opinions on whether they should be formally or informally tested. Some stated that it should be the same as learning to drive a car, while others stated this may put people off and that more on-road training would be more beneficial.

Whilst most respondents indicated that they did not engage in risky behaviours, such as following too close, racing, and riding too fast into corners, there were those who did indicate that they did these things. Some of these risky behaviours emerged in the interviews, as activities other young riders do engage in (often by those who meet up in groups). In the online survey, two-thirds agreed that they felt safe filtering through stationary traffic, so supporting them to do this properly is important. It was also raised by a few of the interview participants, who highlighted that filtering is legal but there is no support for young riders on how to filter appropriately. It is not something that is taught or encouraged in the CBT.

The survey respondents were quite positive about a motorcycling app that included information on training, safe riding tips, route planning and protective clothing, with only 20% stating that they would not use such an app. Within the interviews, most of the participants stated an app or website targeted at young people would be useful and suggested small snippet videos on motorcycle maintenance. In the survey, the respondents indicated that they mostly use Spotify (69%) and YouTube (49%) for accessing music, and out of the social media platforms that respondents use, 80% use Facebook; 76% use Instagram; and 68% use Snapchat. Twitter and Reddit are less often used. Traditional TV advertising is unlikely to be effective.

A number of recommendations emerged from the collision analysis and the insights from young motorcyclists themselves.

Overall approach

- For NYRF members and other stakeholders to use this report as a guide when creating interventions targeting young riders, working with colleagues to drill down into their local young rider collision issues.
- Consider that there is diversity between young riders, with their interests, motivations, experience, behaviour, and attitudes differing. Interventions will need to be tailored according to the type of rider who is the target.
- To target the youngest segments of young riders (16 to 21 years old) as these are the motorcyclists most at risk of collision involvement. Furthermore, the segmentation, surveys and interviews suggest that these are the riders requiring the most support. They have less experience and have undergone less training, providing an opportunity for engagement and assistance before poor habits or attitudes are developed.

Engagement

- Identify effective ways to engage with young riders who are using a motorcycle for the first time to commute to school, college, or an apprenticeship. Whilst working with educational establishments is one option, the numbers of young riders per institution may be small.
- Identify ways in which to engage with gig economy and delivery riders, who may not identify as motorcyclists. Working with businesses may be the more effective method of engagement.
- Look to accessing, and engaging with, young riders on social media platforms such as Instagram, Snapchat and TikTok.
- Work collaboratively with trainers to access and engage with this group as young riders tend to approach their trainers for support. This could involve encouraging training bodies to deliver the DVSA's RideFree scheme and promoting the scheme to increase participation amongst young riders.

Training

- Liaise with DVSA on the findings and discuss the support surrounding CBT that young riders would like.
- Creating online theory-based and hazard perception resources and/or presentation on 'what could go wrong' to assist those new to riding.
- Provide support on how to filter appropriately.

Websites and apps

- The creation of a website or app aimed at young riders with key and accurate information regarding the different tests and what you can and cannot do and lots of quick videos on maintenance would be extremely helpful.
- The app or website could include route planning, safe riding tips, and information on training and protective clothing.

Campaigns

- Focus on PPE as young riders admitted to not always wearing it all – perhaps as a campaign showing the consequences of not wearing PPE (although not based on fear appeal)
- Highlighting the importance of their visibility and bike light maintenance, alongside adopting good road positioning and approach speeds will help reduce their risk at night-time and at junctions.

Further research

- Investigate which online forums they use to access information, exploring partnerships and cross-referencing of materials and resources.
- Undertake exploratory work to understand where motorcycles are purchased from, given a third said they bought theirs second hand and 12% online. Advice on motorcycle purchase could be included in an app or website.
- Undertake further research to explore why 44% of survey respondents thought that drink and drugs were a factor in young rider collisions and whether this is due to their own behaviour, the observed behaviour of others or based on other information (or misinformation).

Introduction

The National Young Rider Forum (NYRF) is a group of road safety professionals which includes representatives from MCIA, MAG, local authority road safety teams, police forces, fire & rescue services and road safety partnerships from across the country. At its inaugural meeting on the 19th February 2019, held at Alfreton Fire Station, the nature and extent of the problem partners faced was discussed, the definition of a 'Young Rider' was agreed and examples of best practise were shared.

It soon became clear that little in-depth knowledge was known about their target road safety group – the Young Rider. Therefore, the Forum decided that its first piece of work would be to commission a research paper to understand the attitudes, behaviours, needs and preferred methods of communication of young riders. Research consultancy, Agilysis, were commissioned in November 2019 to undertake this work.

Using the findings from this research work, the NYRF will be able to work together to produce interesting, informative, engaging road safety resources. These resources can be delivered consistently across the country and evaluated to measure effectiveness in reducing road collisions involving young riders.

The aim of this research project is to inform, inspire and drive appropriate road safety activities.

In trying to understand young riders, a multi-staged approach was taken by Agilysis. Casualty analysis was firstly carried out to provide an insight into what the problem is. Analysis was conducted on the most recent five years, exploring trends, age analysis, gender, deprivation levels, rurality, home regions, mosaic analysis, and crash locations. Other circumstances analysed include journey purpose, vehicle manoeuvres, timing and contributory factors.

Online surveys were also distributed to young riders. The purpose of the survey was to gain an insight into young motorcyclists and their characteristics, attitudes, and behaviours. They were presented with questions on their motorcycle (the type and where they purchased it from); when and why they ride and how they got into it; attitudes to training and PPE; confidence in different situations; what they think the causes of collisions are; communication preferences; and socio-demographic data.

Survey data was segmented using a deep learning algorithm to segment motorcyclists into groups, based on the similarity of their questionnaire responses. This technique takes a holistic approach, using all of the data available from the questionnaires. This produced a number of different clusters, members of each sharing common characteristics and providing insights to the NYRF on the different types of young rider they need to engage with.

Interviews were held with young riders. The purpose of the interviews was to delve deeper into the thoughts and experiences of young riders, asking questions on what they perceive to be motivations and barriers to riding; what influenced them to ride and what could influence others to start riding; support they currently get and support they think would be beneficial; their thoughts around the CBT; which road user type they think is at most risk; young riders' inexperience; messages to other road users; protective clothing; and their attitudes to riding whilst tired; as well as providing them the opportunity to raise any issues or concerns. Due to the COVID-19 pandemic, the interviews took place remotely via Zoom.

This target group proved to be difficult to access and engage with and there were a number of recruitment difficulties for both the online survey and interviews. This may be due to COVID-19 as it

may have affected access and engagement with this target group. However, the survey and interviews also indicate that this is a disparate group, who do not necessarily identify themselves as a community. The research has revealed that their reasons for motorcycling vary; influencing how they feel about motorcycling and other motorcyclists. This may have influenced how they responded to the survey and interviews and could also affect how road safety practitioners find them and engage with them more generally.

Both the online survey and interviews were incentivised, deadlines were extended, and requests for engagement were distributed through various channels, including social media, motorcycle training centres and NYRF partners to maximise participation.

It should be remembered that the survey respondents and interview participants were self-selecting. As a result, the findings from the survey and interviews in this report are not necessarily representative of the views of all young riders.

Casualty Analysis

SCOPE

This analysis explores the Department for Transport's collision data to provide an insight into the ways in which young people in Great Britain are involved in injury collisions as motorcyclists. These data are collected by police and collated by the Department for Transport as a National Statistic. The collisions which are included involve at least participant sustaining an injury and the collisions were reported to the police. This means that these are the minimum numbers of injury collisions which could have occurred, as no information is available on those unreported to the police.

The following filters were applied to the data, prior to analysis:

- Date range of 2014-2018 (the most recent five years available)
- Casualty age between 16 and 24 years old
- Type of related vehicle was a motorcycle
- Casualty class was rider

The above filters mean that this analysis focuses on **injured young motorcycle riders only** (so does not include any pillion passengers, uninjured young motorcyclists, or other casualties in motorcycle collisions).

The total number of young motorcyclists injured in Great Britain in the last five years is 30,862.

Most of the analysis is undertaken using the sample of 30,862 young motorcyclists who sustained any level of injury. There are some pieces of analysis undertaken on those who were killed (314 casualties) or killed or seriously injured (8,076 casualties) between 2014 and 2018. Most of the analysis is undertaken using this time period (2014-2018), although there is some trend analysis which goes back further in time.

SETTING THE SCENE

CASUALTY TRENDS

Figure 1 shows the recent trends for all young motorcycle casualties by engine size but regardless of age. It shows that there were few changes in overall numbers of casualties between 2009 and 2016, after which, there have been reductions in young motorcycle casualty numbers.

However, there have been reporting changes in recent years, which may affect trends. "From 2016 onwards, figures on the severity of injury have been affected by a large number of police forces changing their reporting systems. It is likely that recording of injury severity is more accurate for forces using these new reporting systems... Some of these serious injuries may previously have been classified as slight injuries which means that the 2016, 2017 and 2018 serious injuries are not comparable to previous years."[1]In the future, this means that reporting will be more accurate, but for now, trend analysis on unadjusted serious figures should be treated with caution. As such, most of this analysis is undertaken on all casualties, regardless of severity, as the overall numbers of those involved have not changed.

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[1] Department for Transport, *Reported road casualties in Great Britain: 2018 annual report,* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/834585/reported-road-casualties-annual-report-2018.pdf, p.3

Figure 1 - 16 to 24-year-old rider casualties – all severities – by year
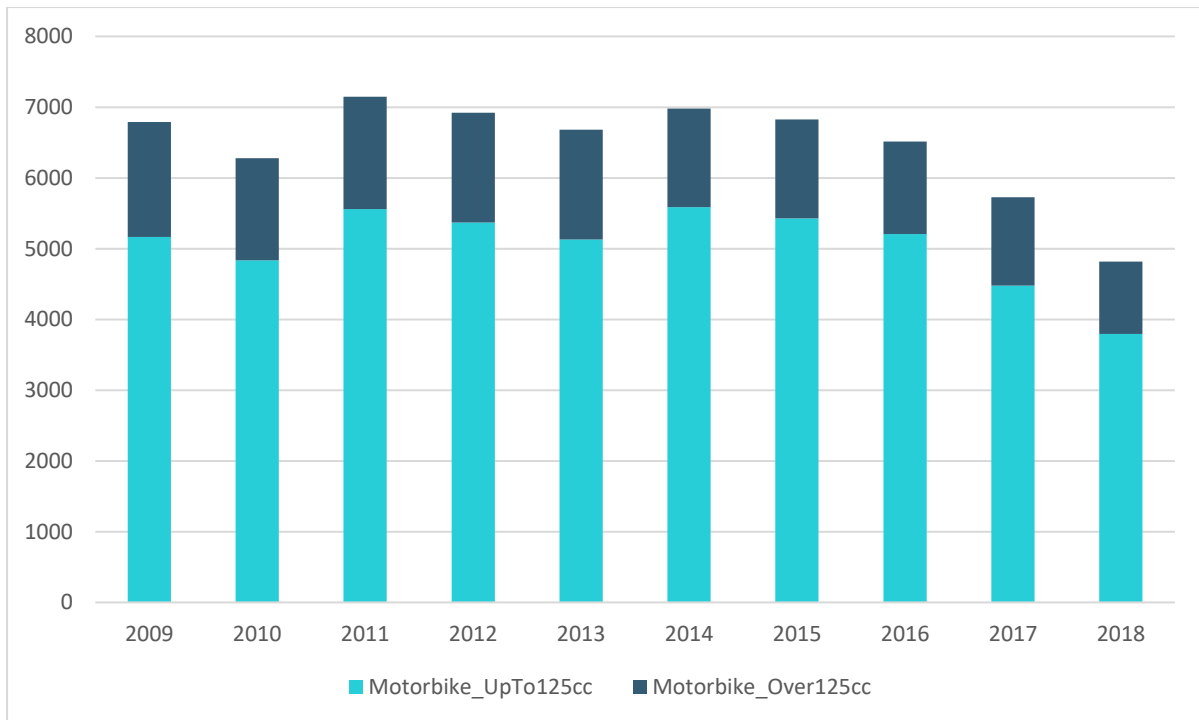
The majority of rider casualties were on smaller motorcycles in every year.

AGE ANALYSIS

Figure 2 shows the most recent five years of motorcycle casualties by age and motorcycle engine size. It shows a peak at age 17 years, with numbers gradually reducing with age. Unsurprisingly, the proportion of casualties on larger motorcycles increases with age.

Figure 2 - 16 to 24-year-old rider casualties – all severities (2014-2018) – by age
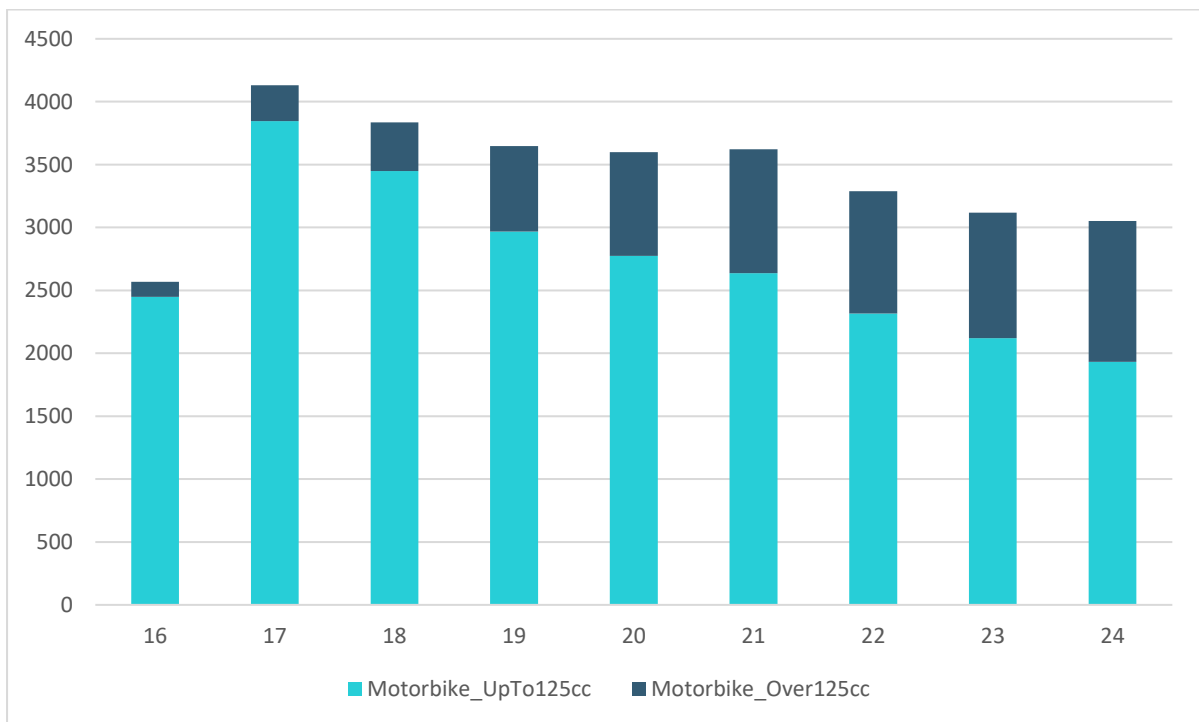
Figure 3 shows the same information as Figure 2 but for those killed or seriously injured only. The age trends are slightly different, with less of a reduction in casualty numbers with age and with higher proportions of those on larger motorcycles who were killed or seriously injured as the riders get older. In total, there were 8,076 young motorcyclists killed or seriously injured between 2014 and 2018 in Great Britain.

Figure 3 - 16 to 24-year-old rider casualties – killed or seriously injured (2014-2018) – KSIs
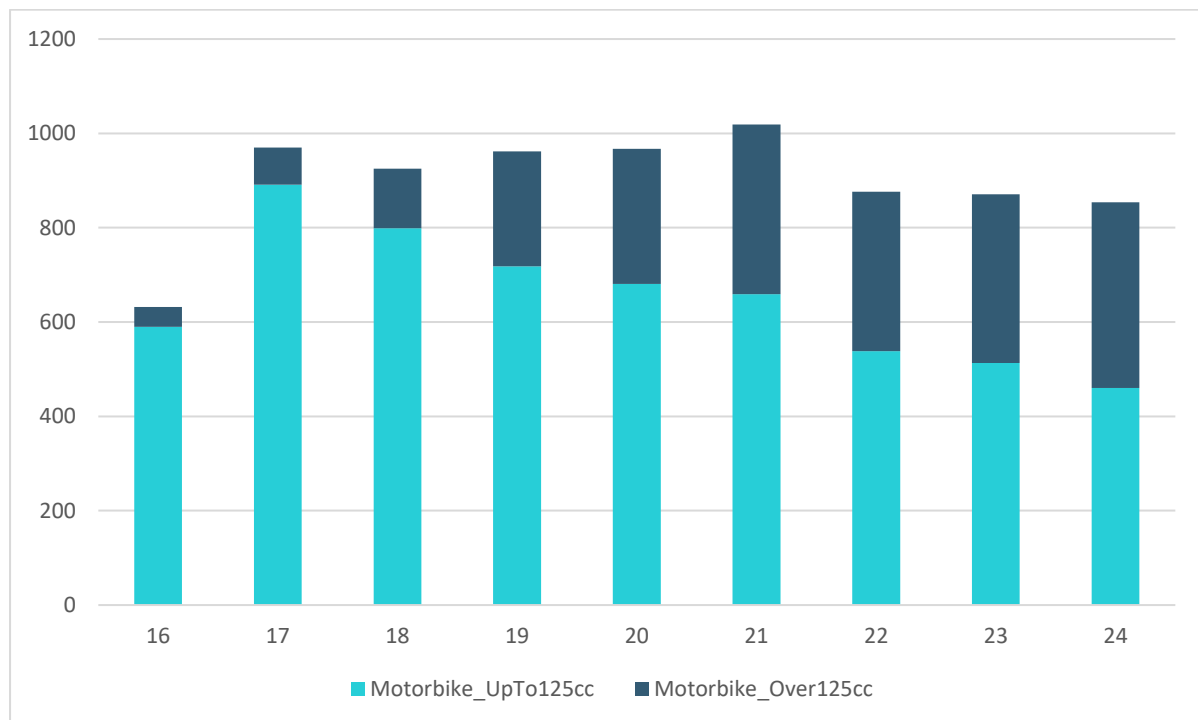

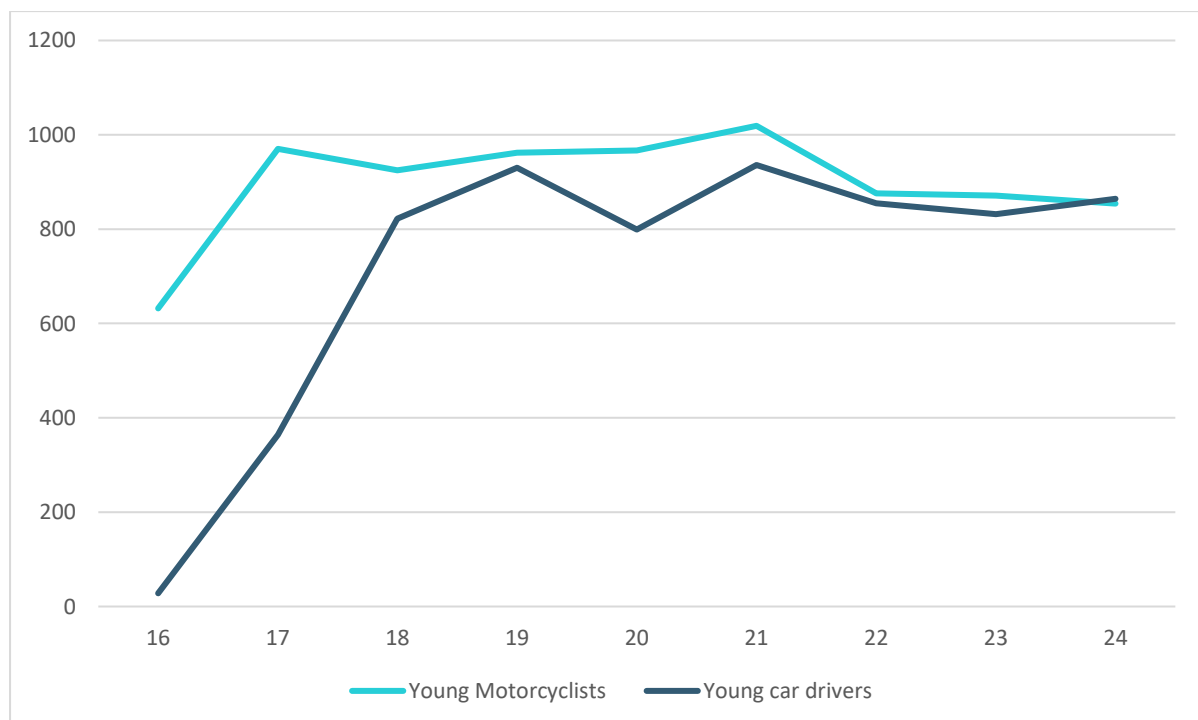*Figure 4 - 16-to-24-year KSI Driver Casualties*

Figure 4 compares the numbers of young motorcyclists who were killed or seriously injured in Great Britain between 2014 and 2018 with the numbers of young car drivers who were also killed or seriously injured in that time period. It shows that it is only at age 24 that the numbers of KSI casualties who are car drivers exceeds young motorcyclists. This is despite car traffic accounting for 78% of vehicle miles in 2016 in Great Britain, compared to 0.9% of vehicle miles being by motorcycle (for drivers of all ages).[2]

Figure 5 - 16 to 24-year-old rider casualties – Fatal casualties (2014-2018) – Fatalities
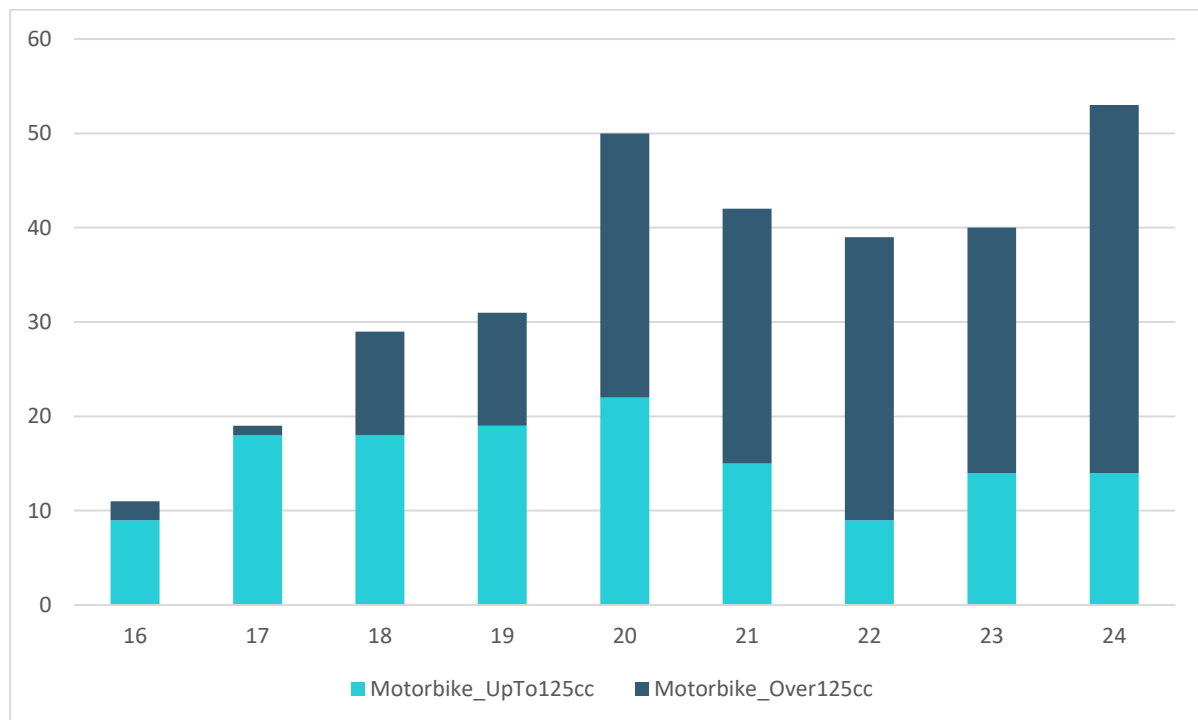
Whilst the numbers are much smaller in Figure 5, it shows that the number of young riders who were fatally injured increases with age and the proportions switch from being predominantly on smaller motorcycles to being predominantly on larger ones. There were 314 young people killed on a motorcycle in this time period.

After setting out the differences by severity, most of the rest of the analysis is conducted on casualties who suffered an injury of any severity. For many of the charts, the analysis is split by motorcycle size.

GENDER

Figure 6 shows the gender of those rider casualties on smaller motorcycles, by age. Overall, about 8% of these riders were female. The proportion of female riders on motorcycles up to 125cc reduces with age (from a peak of 11% at aged 16 years).

For all ages of young motorcyclist, the majority (92%) of rider casualties were male. In comparison, only 55% of 16- to 24-year-old car driver casualties are male.

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[2] Table TRA0101, Department for Transport Statistics: Road traffic (vehicle miles) by vehicle type in Great Brating, annual from 1949

Figure 6 – Gender of casualties on up to 125cc (2014-2018) – Gender
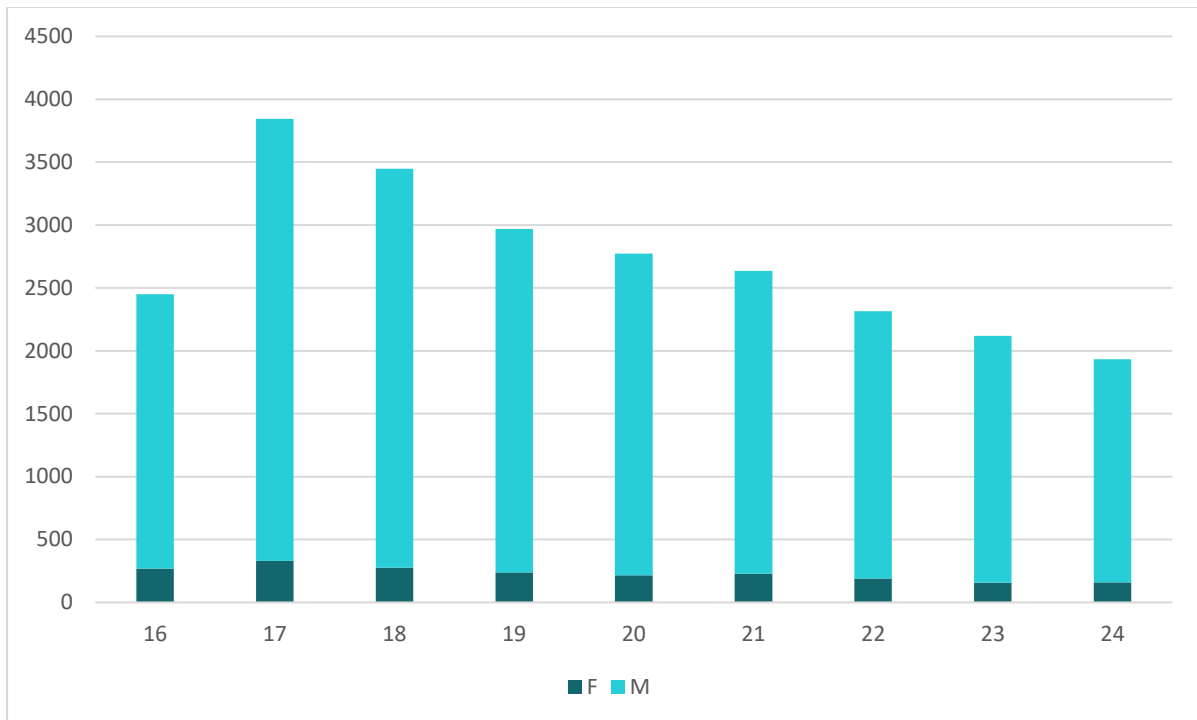
Figure 7 shows the same information for those on larger motorcycles. Again, the majority were male, with 5% being female. The overall number of casualties increases with age, with little change in the proportion of females (after aged 16).

Figure 7 - Gender of casualties on over 125cc (2014-2018) – by age
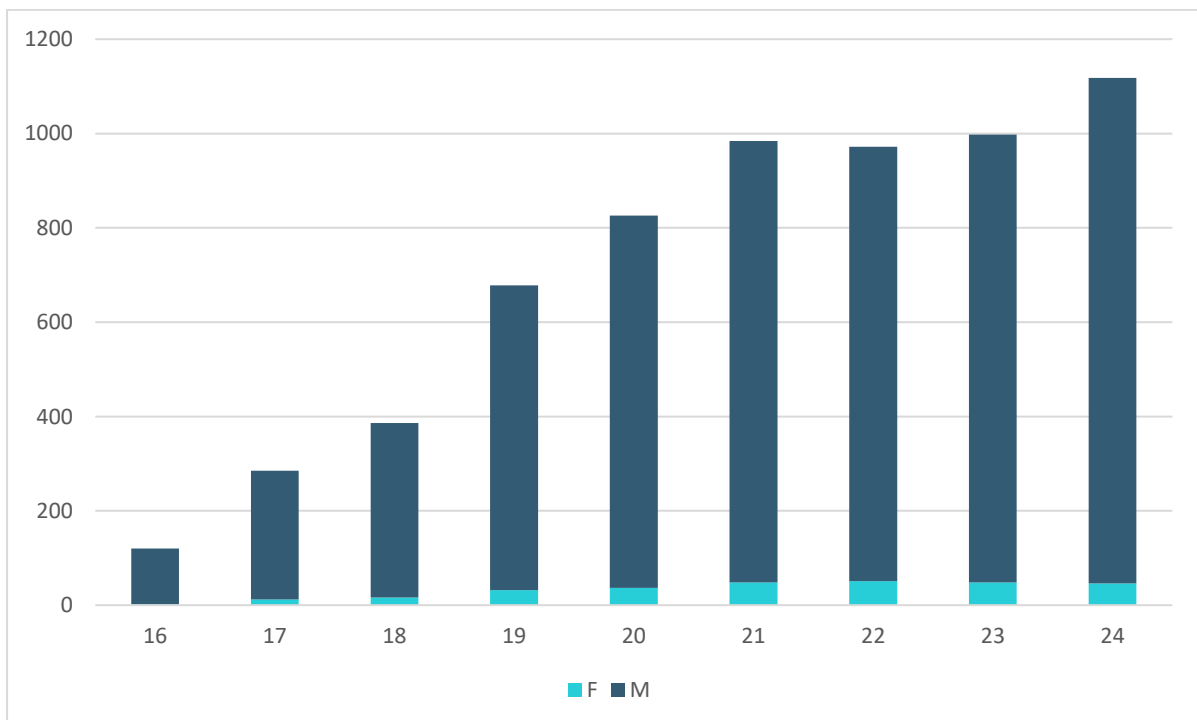
SEGMENTATION

The age and engine size analysis suggested that not all young motorcyclists are the same. As such, the data were segmented along those lines for subsequent analysis, to see if there were differences in the

way these segments are involved in collisions. Future elements of this project, including a survey and focus groups, will also be segmented and comparisons will be made with this analysis.

Table 1 shows the proportions of total young rider casualties by age and engine size. Overall, 31.6% of young riders are aged 16 to 18 year olds and were on motorcycles up to 125cc. This segment represented 39.8% of those on smaller motorcycles. The next largest segment was 19 to 21 year-olds on smaller motorcycles, representing 27.2% of all young rider casualties and 34.2% of those on smaller motorcycles. This is followed by 20.6% of all young rider casualties being 22 to 24 year olds on smaller motorcycles, which represents 26% of those on smaller machines. The next largest segment is 22 to 24 year olds on larger motorcycles, representing 10% of all young rider casualties and 48.5% of young riders on large motorcycles. Of all young riders, 8.1% are 19 to 21 year-olds on larger motorcycles, representing 39.1% on bigger bikes. There were 2.6% of all rider casualties who were aged 16 to 18 years old and riding machines over 125cc. These riders are on larger motorcycles illegally and as such, are not included in subsequent analysis. The rest of the analysis is based on the five segments.

Table 1 - Segmentation of casualties by age and engine size (2014-2018)

16- to 18-year-olds on up to 125cc 31.6% (9,745)	16- to 18-year-olds on over 125cc 2.6% (791)
19- to 21-year-olds on up to 125cc 27.2% (8,380)	19- to 21-year-olds on over 125cc 8.1% (2,488)
22- to 24-year-olds on up to 125cc 20.6% (6,370)	22- to 24-year-olds on over 125cc 10.0% (3,088)
Total Up to 125cc: 79.4% (24,495)	Total Over 125cc: 20.6% (6,367)

WHO IS INVOLVED?

This section explores the five segments to determine 'who' they were. The segments are defined by age group and whether their motorcycle had an engine over or under 125cc, with 'under' including up to 125cc.

GENDER

The highest percentages of female casualties were in the three 'under' segments, with 9% of those in *16 to 18 under* being female, as shown in Figure 8.

Figure 8 - Gender split by segment (2014-2018)
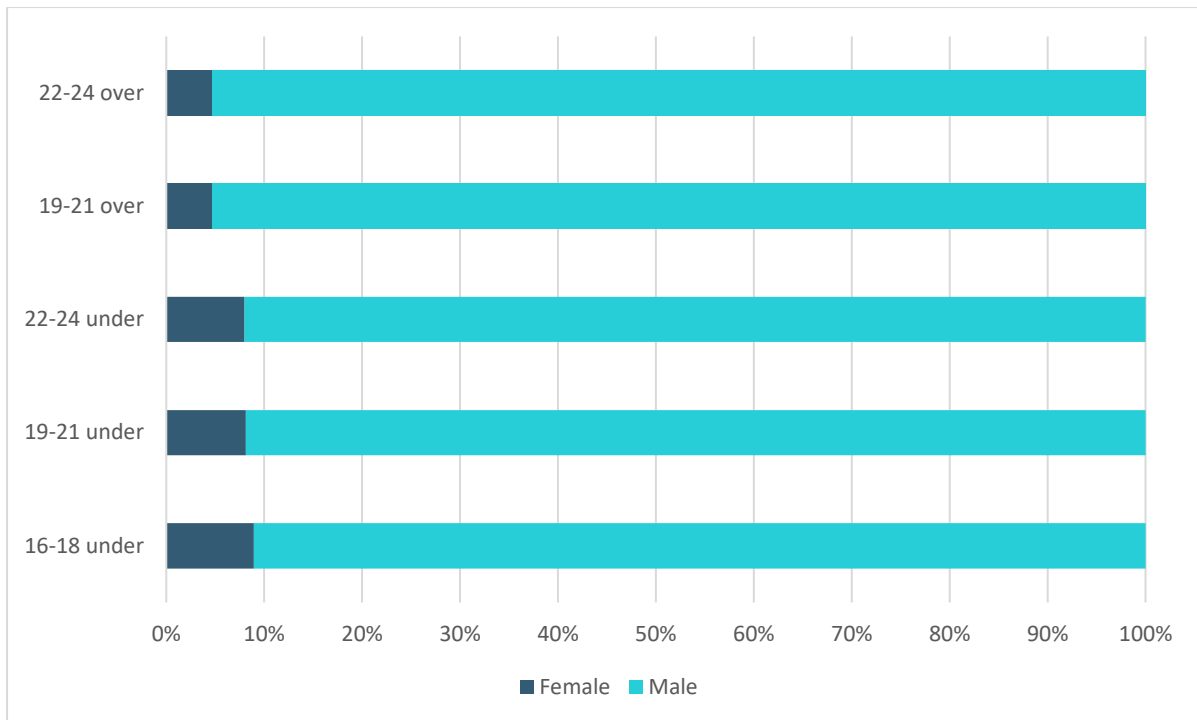
DEPRIVATION

Figure 9 – Deprivation distribution by segment (2014-2018)
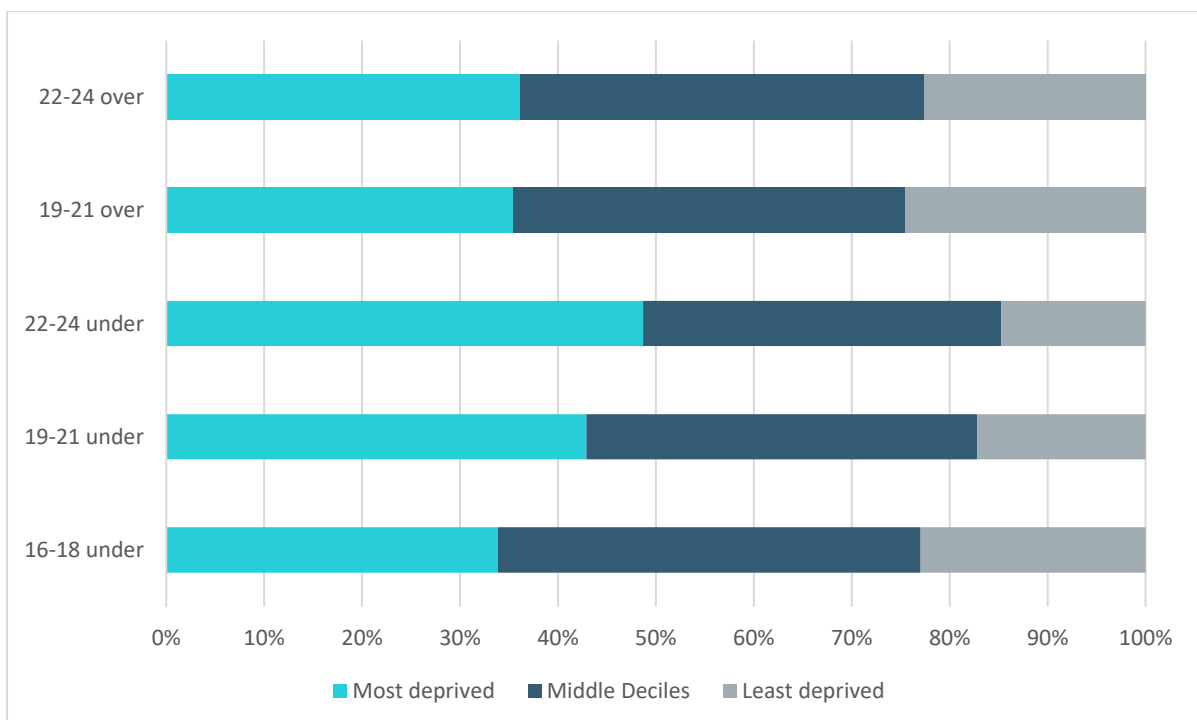
Deprivation levels are examined using UK Index of Multiple Deprivation (IMD) values. IMD is calculated by the Office for National Statistics (ONS), the Scottish Government and the Welsh Government, and uses a range of economic, social and housing data to generate a single deprivation score for each small area in the country. This profile uses deciles, which are ten groups of equal frequency ranging from the 10% most deprived areas to the 10% least deprived. It should be remembered that indices of multiple

deprivation include income, employment, health, education, access to services and living environment and are not merely about relative wealth. Home postcode data for casualties is used to define their deprivation levels. If all casualties were equally distributed across the country, then each decile would comprise of 10% of casualties.

For this analysis, the deciles have been grouped to make the analysis clearer. The three most deprived deciles have been grouped into 'most deprived', the three least deprived deciles have been grouped into 'least deprived' and the four deciles in the centre (from more deprived 40% to less deprived 40%) into 'middle deciles'. As above, if casualties were equally distributed then the 'most deprived' should equal 30%, the 'least deprived' should be 30% and the 'middle deciles' should equal 40%.

Figure 9 shows that casualties were not equally distributed across the groups. For the *19 to 21 under* (43%) and *22 to 24 under* (49%) segments, over 40% of the casualties were from the 'most deprived' communities. There were greater than expected numbers of casualties in the 'middle deciles' for *16 to 18 under* and *22 to 24 over* segments. For all segments, there were fewer than 30% who were in the 'least deprived' group, with slightly higher percentages from the *16 to 18 under, 19 to 21 over* and *22 to 24 over* segments.

Postcode data can also be used to determine home rurality, also defined using Government data, shown in Figure 10. In all cases, the majority of young rider casualties come from urban areas, especially those in the *19 to 21 under* and *22 to 24 under* segments. Between 78% and 90% of young rider casualties (depending on age), live in urban areas. The highest percentages from rural areas were *16 to 18 under* (22%) and *19 to 21 over* (19%) segments.

RURALITY
Figure 10 – Home rurality by segment (2014-2018)
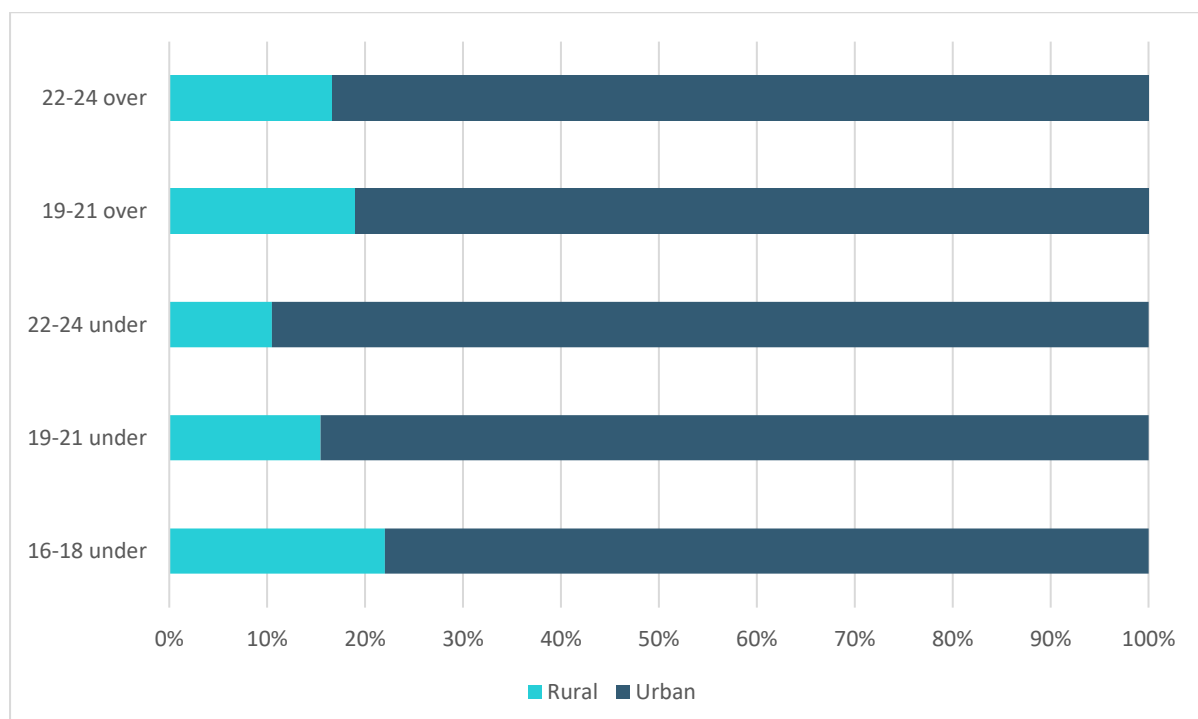
Home Region

Figure 11 shows the home locations of young rider casualties from 2014 to 2018, expressed as rates calculated as the numbers of young riders injured in each region per 100,000 16-to-24 years in the local population. It shows the rates are highest in the south of England, particularly in London, where there are 661 rider casualties per 100,000 young people. The South East, the South West and East of England all have young rider casualty rates between 450 and 560 casualties per 100,000 16-to-24-year-olds.

Figure 11 - Map of Home Regions of Young Riders (casualties per 100,000 16-to-24-year population)
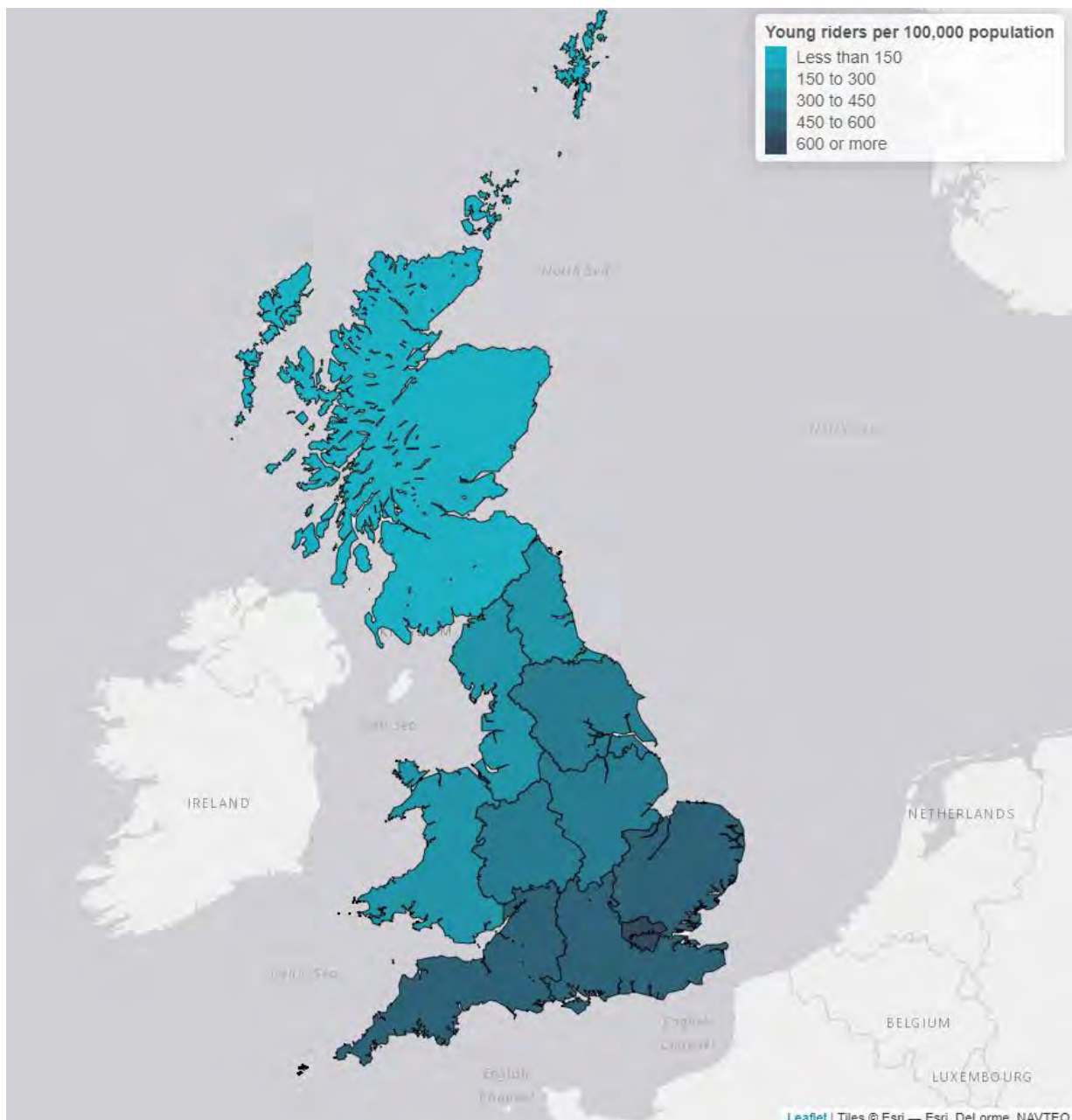
The East Midlands, West Midlands and Yorkshire and Humberside all experienced between 300 and 400 casualties per 100,000 young people. There were 150 to 300 young rider casualties per 100,000

population in the North East, North West and Wales, whilst Scotland had the lowest casualty rates of 106 per 100,000 young people.

MOSAIC ANALYSIS

The final analysis conducted using the home postcodes of the young rider casualties is using a socio-demographic profiling system, called Mosaic. Mosaic profiling uses Experian's Mosaic Public Sector cross-channel classification system[3], which is assigned uniquely for each casualty and vehicle user based on individual postcodes in STATS19 records. Typically, nearly 85% of casualty and driver STATS19 records can be matched to Mosaic Types, so residency analysis is based on about five out of six young rider casualties involved in reported injury collisions.

Mosaic is intended to provide an accurate and comprehensive view of citizens and their needs by describing them in terms of demographics, lifestyle, culture and behaviour. The system was devised under the direction of Professor Richard Webber, a leading authority on consumer segmentation, using data from a wide range of public and private sources. It is used to inform policy decisions, communications activity and resource strategies across the public sector.

Mosaic presently classifies the community represented by each UK postcode into one of 15 **Groups** and 66 **Types**. Each Group embraces between 3 and 6 Types.

This profile displays Mosaic analysis as dual series column charts, to facilitate quick and easy insight into residents and relative risk. In these charts, the wider background columns denote the absolute number of young rider casualties in each Mosaic Group, corresponding to the value axis to the left of the chart. The darker columns in the foreground provide an **index** for each Mosaic Group. These indices are 100 based, where a value of 100 indicates the number of casualties shown by the corresponding background column is exactly in proportion to the population of communities in the UK where that Group predominates. Indices over 100 indicate **over representation** of that Group among casualties relative to the population: for example, a value of 200 would signify that people resident in communities of that Group were involved in collisions at twice the expected rate. Conversely, indices below 100 suggest **under representation**, so an index of 50 would imply half the expected rate. Inevitably, index values become less significant as numbers of involved residents decrease, because increased random fluctuations tend to decrease levels of confidence.

The following charts (Figure 12 to Figure 16) show the Mosaic distributions for each of the five segments. Summaries of the over-represented Mosaic Groups are shown in Appendix A: Selected Mosaic Groups.

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[3] http://www.experian.co.uk/marketing-services/products/mosaic-uk.html

Figure 12 - Home Mosaic of 16 to 18-year-old rider casualties on up to 125cc (2014-2018)
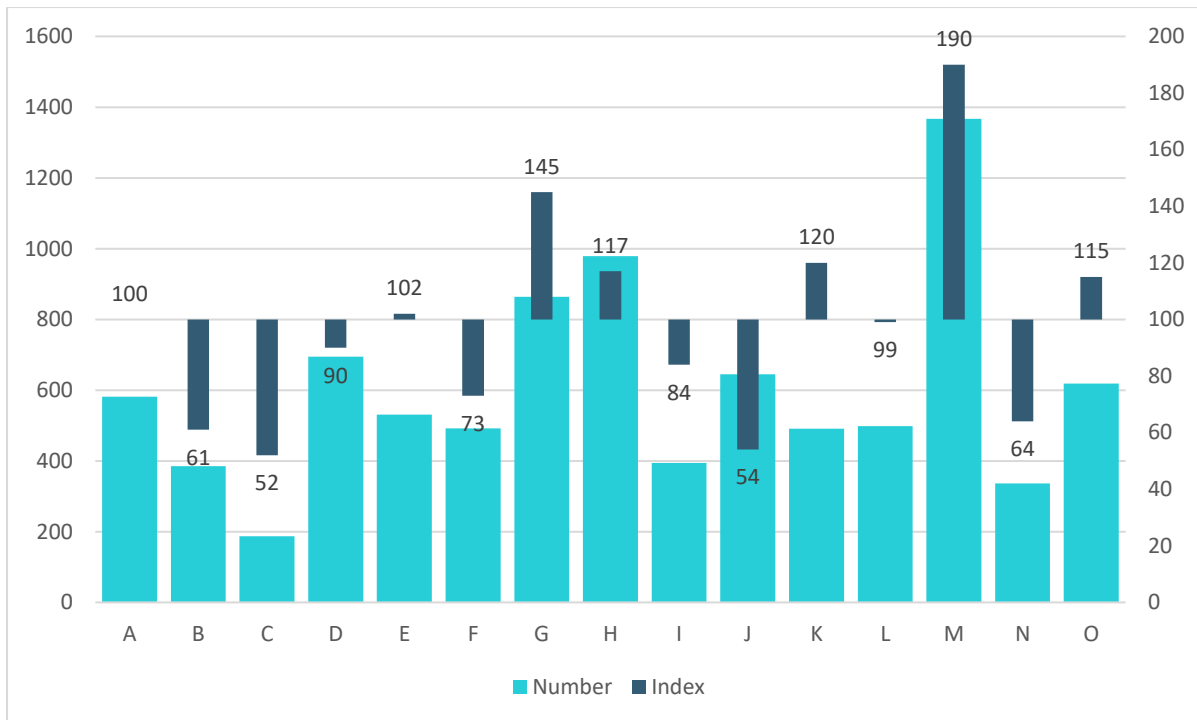
Figure 12 shows the Mosaic Groups where the *16 to 18 under* segment come from. There were three Mosaic Groups of interest for this segment: *Group M: Family Basics* represents a large number of casualties for this segment and is over-represented compared to the number of residents of this Group in Great Britain (as shown with an index of 190); *Group G: Rural Reality,* which represents the third largest group of casualties and is over-represented with an index of 145; and *Group H: Aspiring Homemakers,* which represents the second largest group and is over-represented with an index of 117.

Figure 13 shows the Mosaic Groups for the *19 to 21 under* segment. Again, there were three Mosaic Groups which are of interest for this segment: *Group M: Family Basics* represents the largest number of casualties for this segment and is over-represented compared to the number of residents of this Group in Great Britain (as shown with an index of 203); *Group O: Municipal Tenants,* which represents the second largest group of casualties and is over-represented with an index of 181; and *Group I: Urban Cohesion,* which represents the fourth largest group and is over-represented with an index of 160.

Figure 13 - Home Mosaic of 19 to 21-year-old rider casualties on up to 125cc (2014-2018)
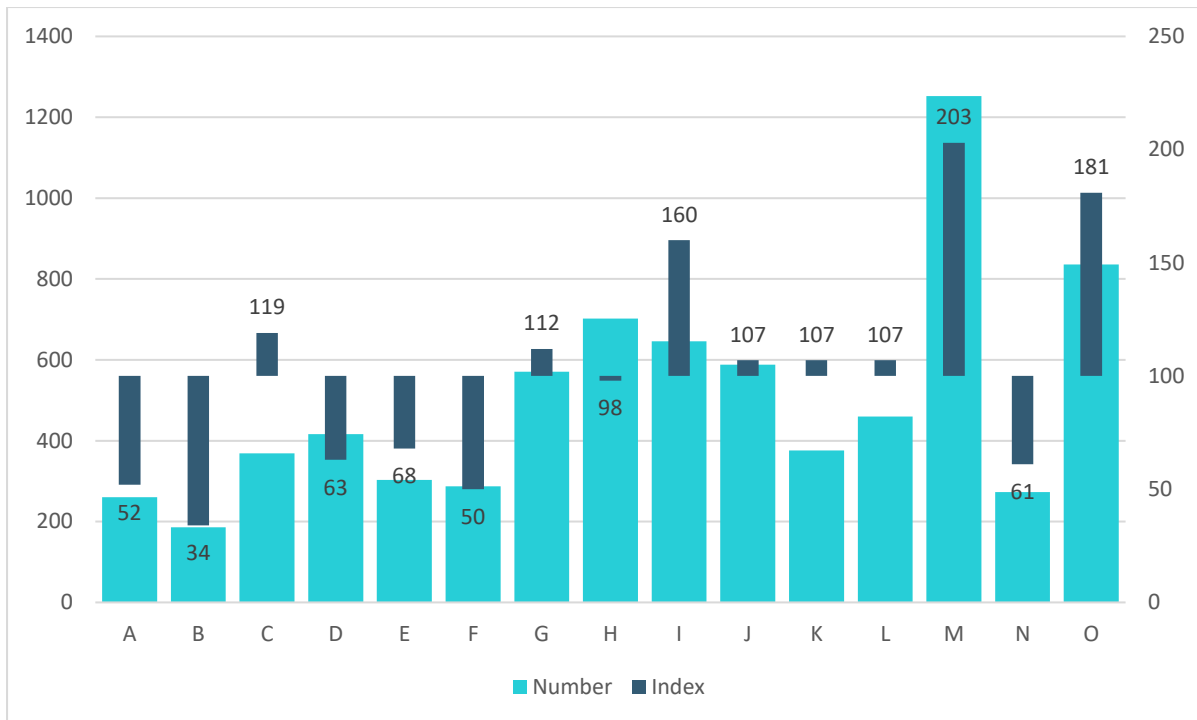
Figure 14 - Home Mosaic of 22 to 24-year-old rider casualties on up to 125cc (2014-2018)

Figure 14 shows the Mosaic Groups for the *22 to 24 under* segment. Again, there were three Mosaic Groups which are of interest for this segment and this profile is very similar to the previous one: *Group M: Family Basics* represents the largest number of casualties for this segment and is over-represented compared to the number of residents of this Group in Great Britain (as shown with an index of 176); *Group O: Municipal Tenants,* which represents the second largest group of casualties and is over-

represented with an index of 220; and *Group I: Urban Cohesion,* which represents the fourth largest group and is over-represented with an index of 181.

Figure 15 shows the Mosaic Groups for the *19 to 21 over* segment. There were three Mosaic Groups which are of interest for this segment, although there were far fewer Groups over-represented for this segment: *Group M: Family Basics* represents the largest number of casualties for this segment and is over-represented compared to the number of residents of this Group in Great Britain (as shown with an index of 182); *Group O: Municipal Tenants,* which represents the second largest group of casualties and is over-represented with an index of 145; and *Group L: Transient Renters,* which represents the fifth largest group and is over-represented with an index of 128.

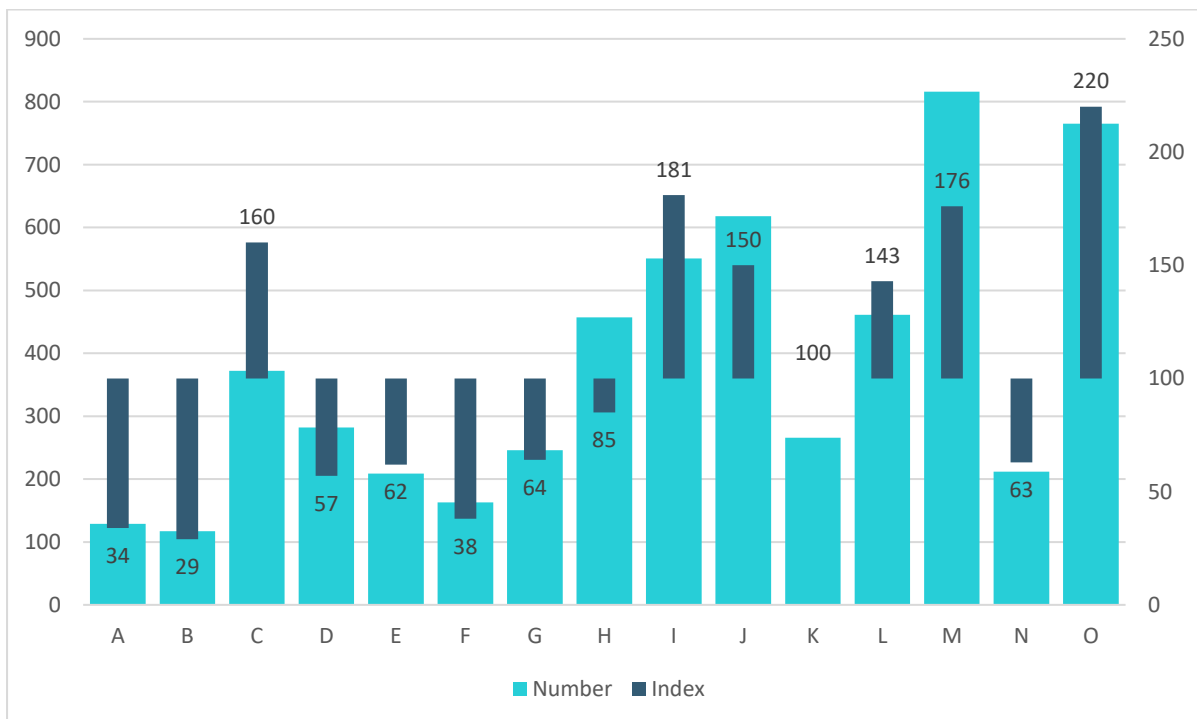Figure 16 shows the Mosaic Groups for the *22 to 24 over* segment. There were several Mosaic Groups which are of interest for this segment, with several that were over-represented. The three of interest are: *Group M: Family Basics* represents the largest number of casualties for this segment and is over-represented compared to the number of residents of this Group in Great Britain (as shown with an index of 151); *Group O: Municipal Tenants,* which represents the fourth largest group of casualties and is over-represented with an index of 130; and *Group I: Urban Cohesion,* which represents the fifth largest group and is over-represented with an index of 147.
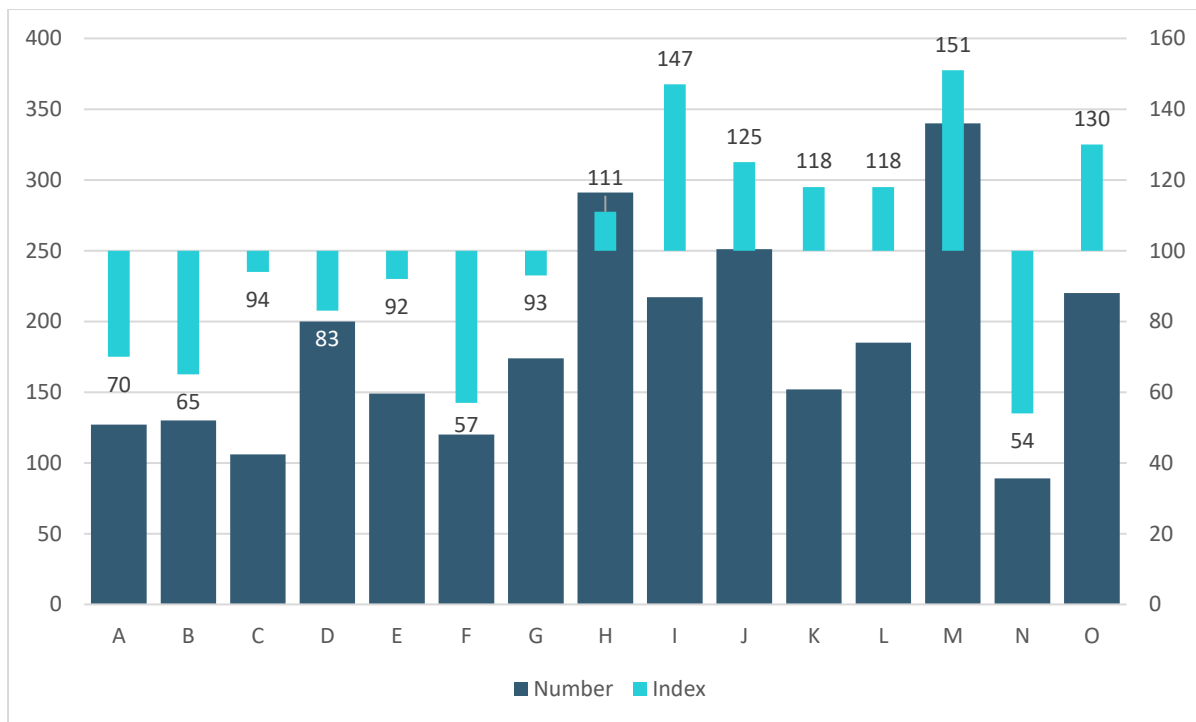
Mosaic Summary

The Mosaic analysis reveals some common themes across the five segments. All of them are over-represented amongst residents of *Group M: Family Basics,* with this group producing large numbers of casualties for each segment. This Mosaic Group tends to consist of families with children, with the parents aged between 18 and 40 years. Children tend to be aged between 0 and 17 years old. This suggests that the young motorcyclists are either living at home with parents or have branched out on their own. This Group tend to have limited resources and survive on squeezed budgets. This may impact on their transport options (car ownership is low) and how much they can afford in relation to personal protective equipment.

Group O: Municipal Tenants also features for several segments. These are social renters, living in low-cost housing in challenged neighbourhoods. These places have few employment options, resulting in low income. The adults in these households tend to be aged between 46 and 60 years old, and whilst there is not an over-representation of children in the households, where there are children, they tend to be teenagers (12 to 17) or over 18 years old. Again, incomes are low, as is car ownership.

WHERE DO THEY OCCUR?

This section explores where collisions involving young rider casualties occur.

CRASH LOCATION

The previous analysis examined who young rider casualties are and where they are from.

Figure 17 shows the collision locations by segment, showing that the majority of collisions occur in urban areas. For the three 'under' segments, between 70% and 80% occurred on urban roads whilst for 'over' segments, 37% occurred on rural roads (showing that those on larger motorcycles are more likely to be involved in collisions in rural locations than those on smaller motorcycles). This is consistent with the residency data, which showed that young rider casualties are from urban areas. This demonstrates that they are involved in collisions on urban roads.

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Figure 17 – Crash location by segment (2014-2018)

Figure 17 – Crash location by segment (2014-2018)
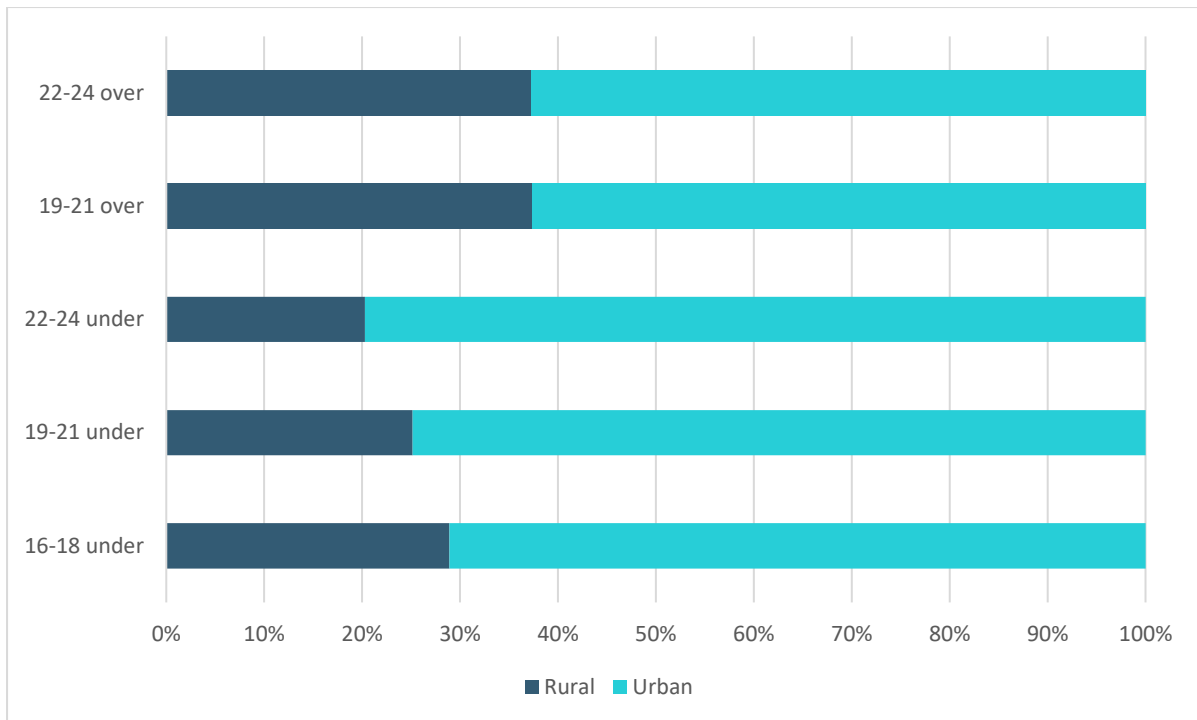
SPEED LIMIT

Overwhelmingly, young rider casualties are involved in collisions on 30mph roads, as shown in Figure 18 and Figure 19. For those on larger motorcycles, 16% occurred on 60mph roads.

Figure 18 – Speed limit of segments up to 125cc (2014-2018)
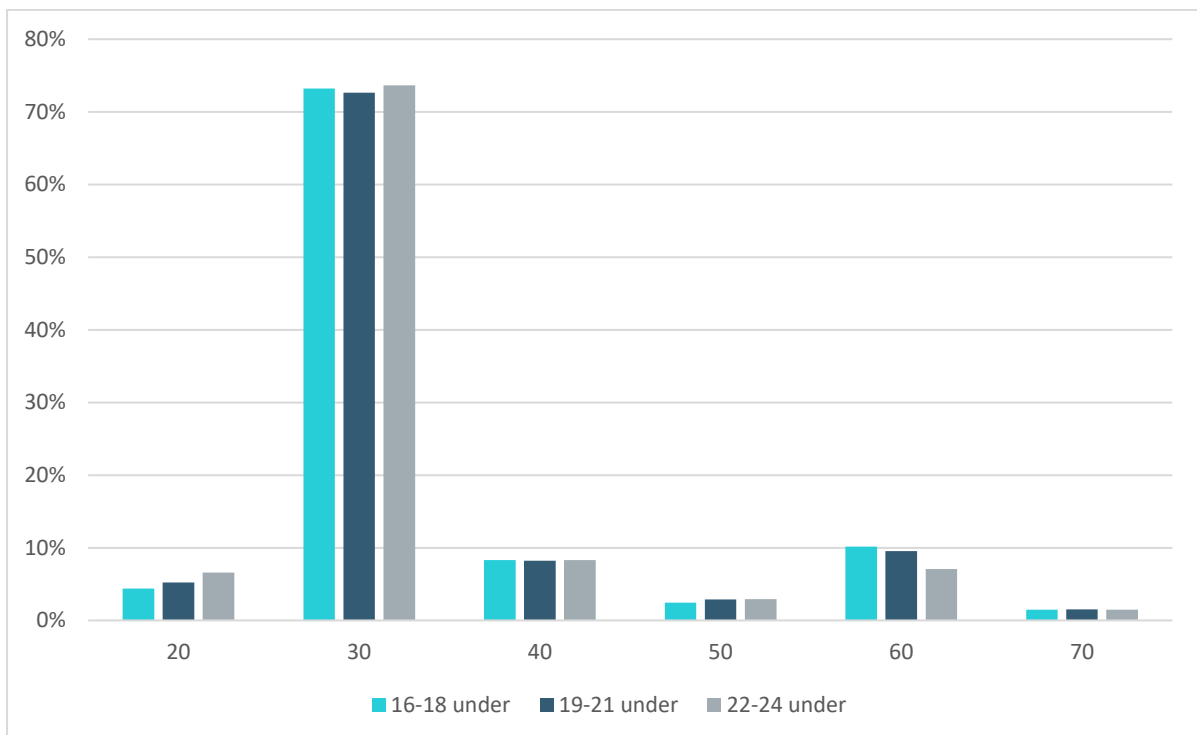
Figure 19 - Speed limit of segments over 125cc (2014-2018)
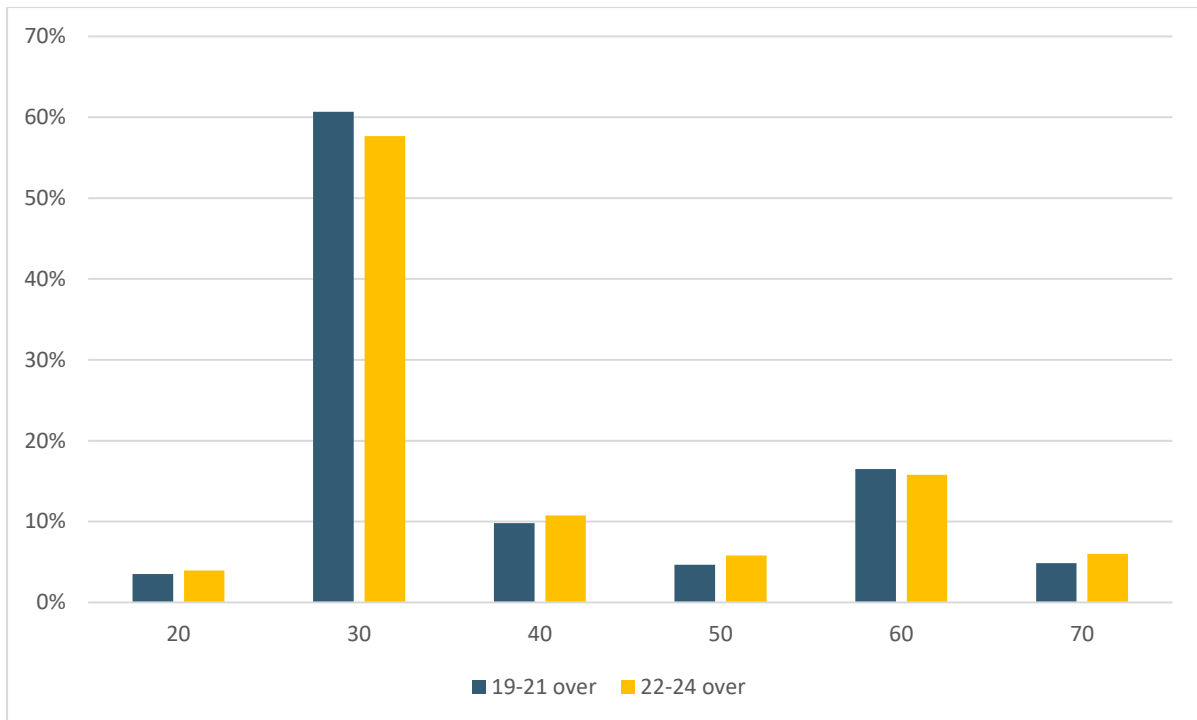
ROAD TYPES

Figure 20 and Figure 21 show the road types for the five different segments of young rider casualties. In all cases, over 75% were on single carriageway roads at the time of the collision, with over 80% of those on smaller motorcycles on these roads.

Figure 20 – Road type of segments up to 125cc (2014-2018)
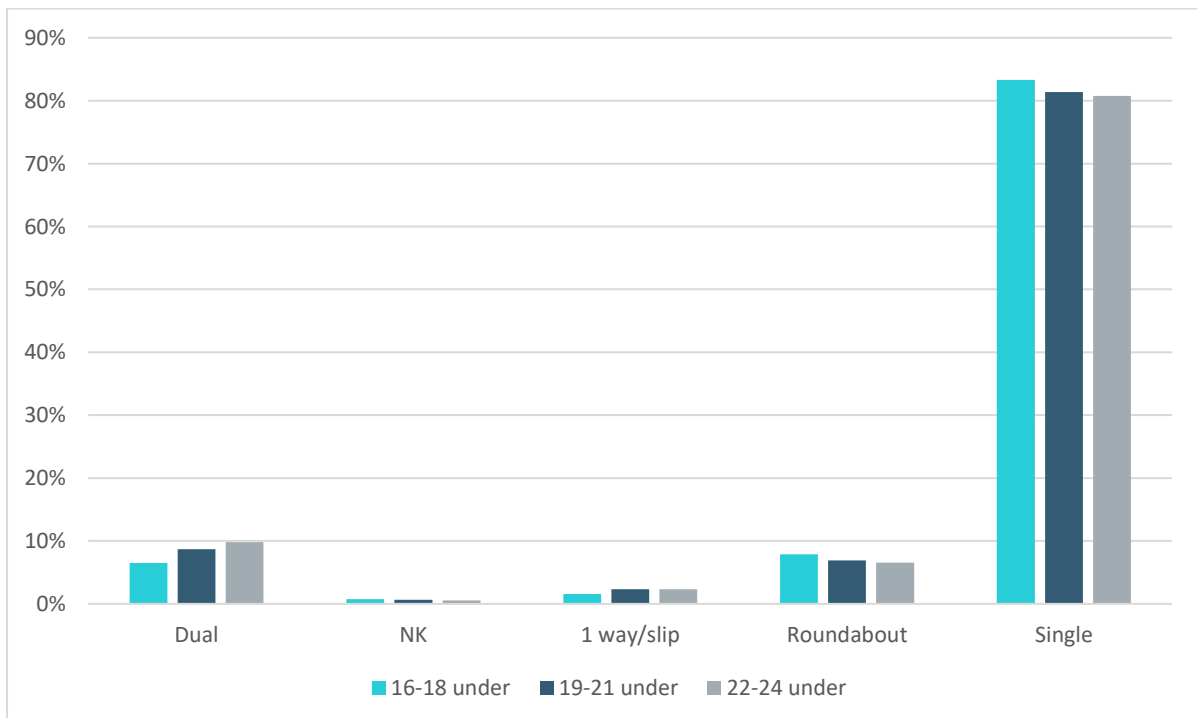
For those on larger motorcycles, 13% of *19 to 21 over* and 15% of *22 to 24 over* were on dual carriageways at the time of their collision.

Figure 21 – Road type of segments over 125cc (2014-2018)

Figure 21 – Road type of segments over 125cc (2014-2018)
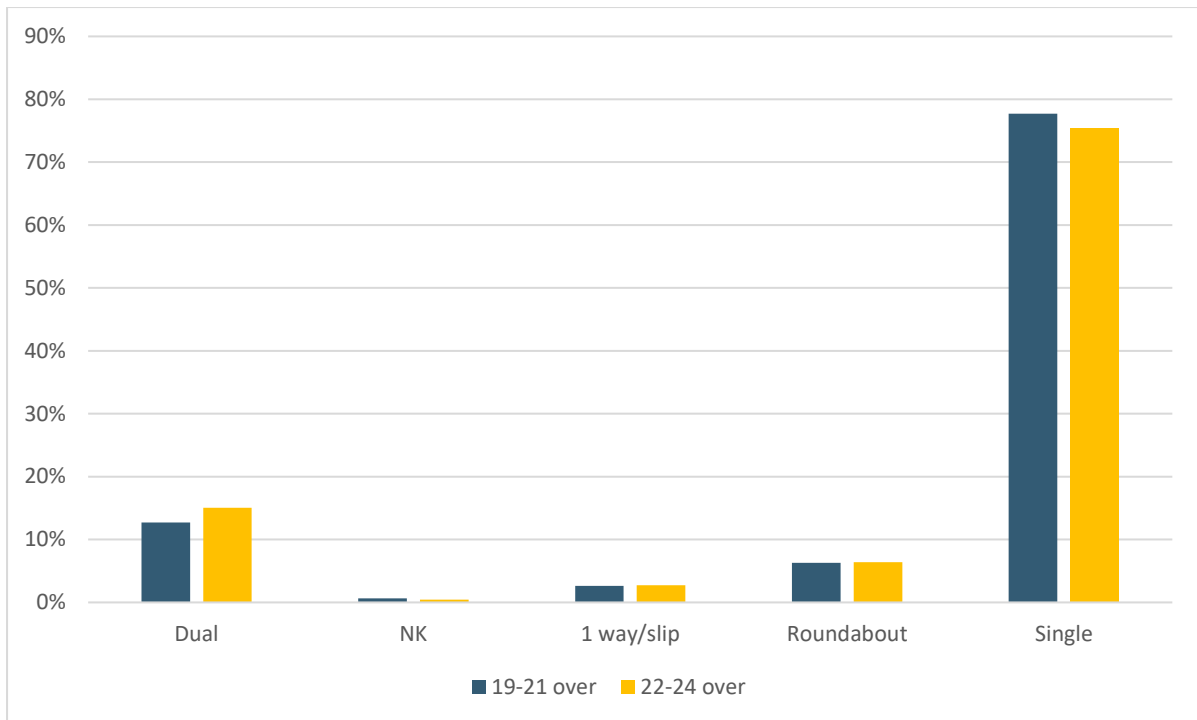
ROAD CLASS

Figure 22 and Figure 23 show the road classes that young rider casualties were on at the time of their collision.

There were some differences between the segments. For the *16 to 18 under* segment, the largest percentage were on unclassified roads (39%), followed by 37% on A roads. This segment also had the highest percentages on B and C roads. For the *19 to 21 under* segment, the largest percentage were on A roads, followed by 33% on unclassified roads. A similar trend was seen for the *22 to 24 under* segment, with 49% involved in collisions on A roads and 30% on unclassified roads.

Whilst A roads are major roads between towns and regions, they are not all classified as 'strategic' roads (which are managed by Highways England, rather than the local highways authority). In total, 2.7% of all young rider casualties were injured on Highways England's roads, which is 830 casualties.

Figure 22 – Road class of segments up to 125cc (2014-2018)
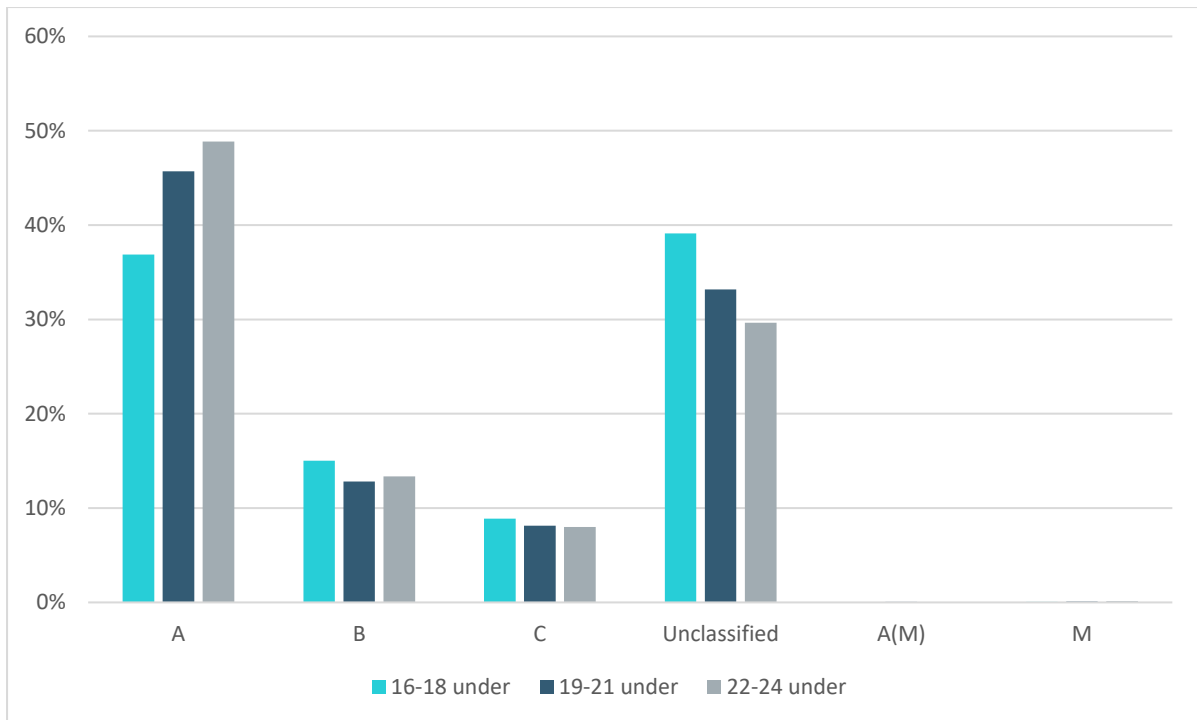
Figure 23 shows the road class for those on larger motorcycles. In this case, 51% of *19 to 21 over* and 54% of *22 to 24 over* riders were on A roads and 27% and 25% were on unclassified roads respectively.

Figure 23 – Road class of segments over 125cc (2014-2018)
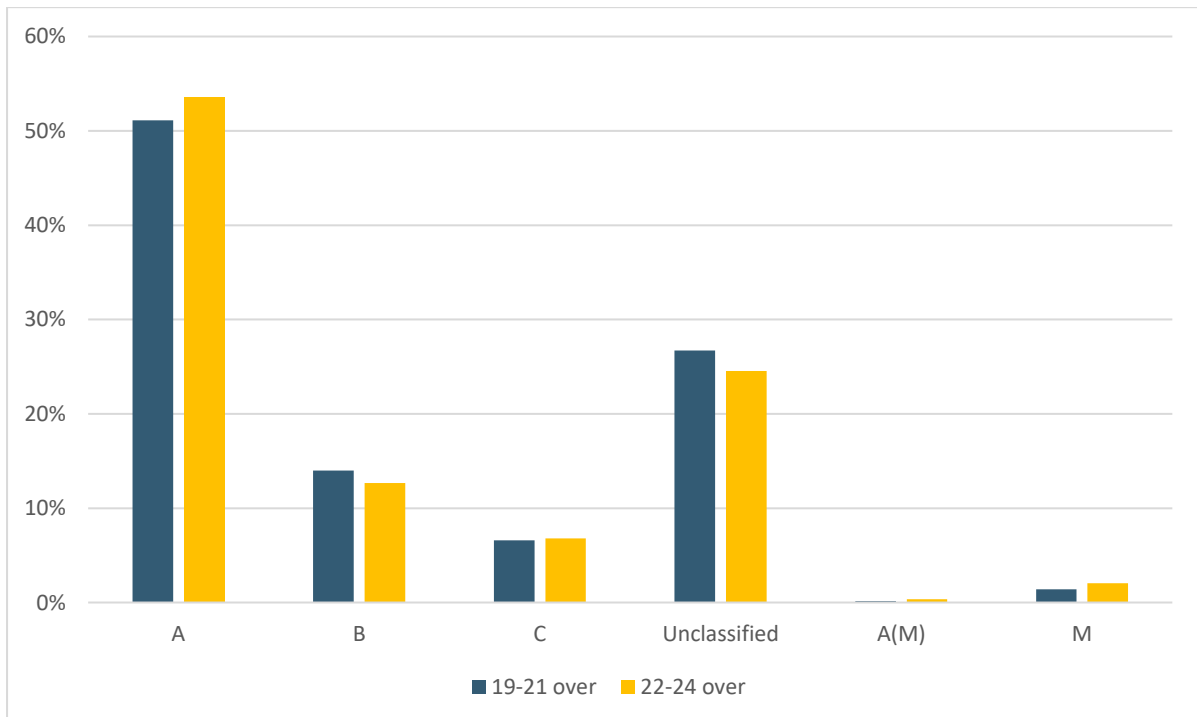
JUNCTION DETAIL

Figure 24 – Junction detail of segments up to 125cc (2014-2018)
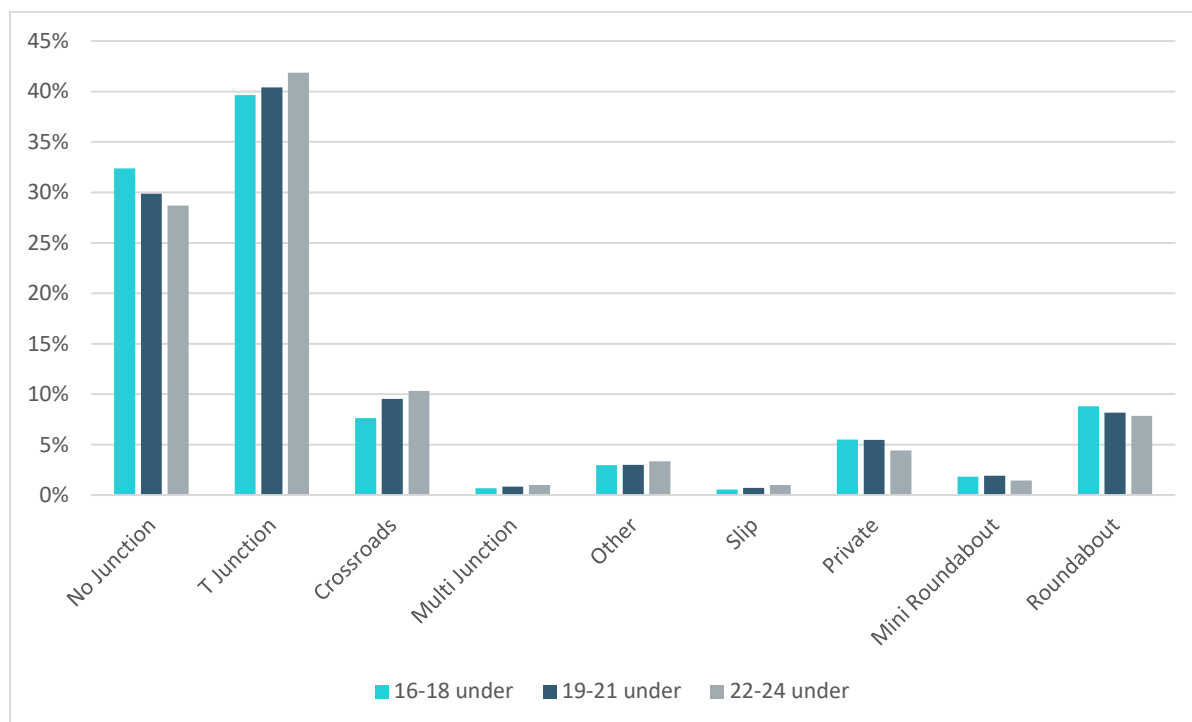
The following two charts show the junction details of the locations at which the young motorcyclists were injured in collisions. Both Figure 24 and Figure 25 show that around 30% of the young motorcyclists were not at a junction at the time of their collision, with between 34% and 42% of young motorcyclists being at a T-junction. A further 8-10% were at crossroads and 8% were at roundabouts, showing the focus should be at T-junctions. In the later analysis into vehicle manoeuvres on page 32, it was revealed that young motorcyclists are most likely to be in conflict with car drivers whilst the motorcyclist was travelling straight ahead. This junction analysis might suggest that car drivers are pulling out of T-junctions or turning right into junctions into the path of the motorcyclist.

Figure 25 – Junction details of segments over 125cc (2014-2018)

Figure 25 – Junction details of segments over 125cc (2014-2018)
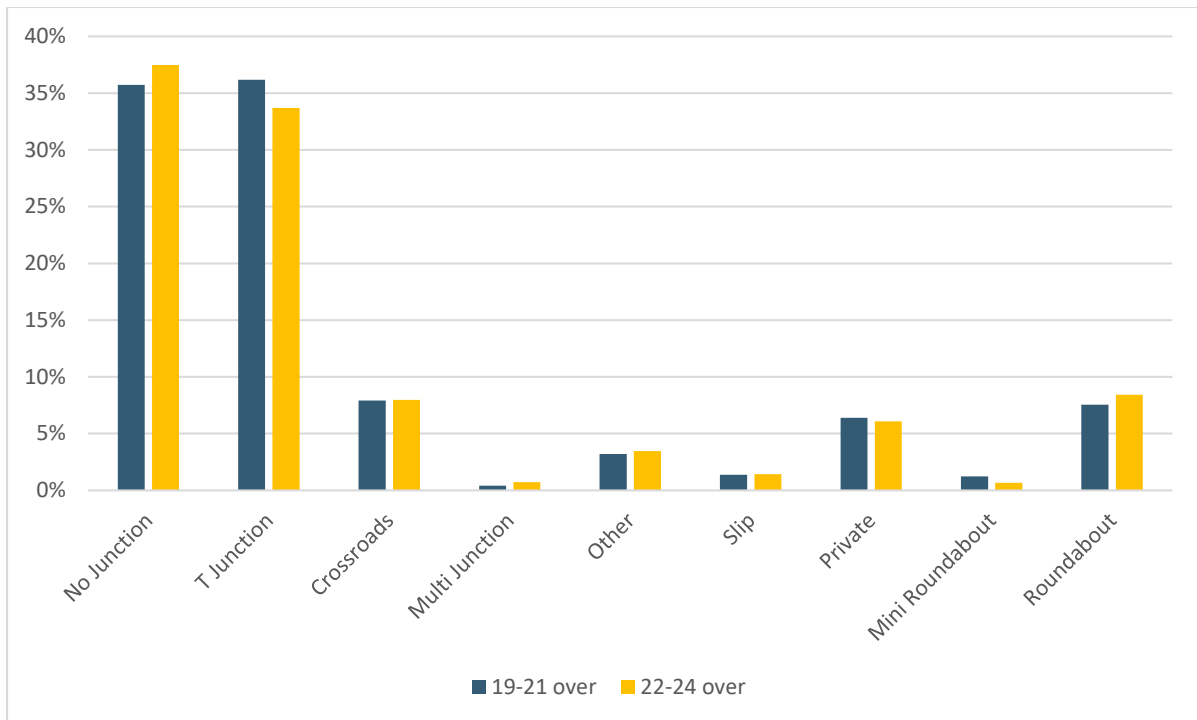
HOW DO THEY OCCUR?

This section looks at the circumstances in which young rider casualties were involved in collisions.

NUMBER OF VEHICLES INVOLVED

Figure 26 shows the number of vehicles involved in the collisions. Between 15% and 19% of the young rider casualties were involved in single vehicle collisions (so no other vehicle involved), with the highest percentages for those on larger motorcycles. Between 70% and 80% were involved in collisions where there were two vehicles – the motorcyclist and one other vehicle. Only 6% of those on smaller motorcycles were involved in collisions with three or more vehicles, compared to 9% of those on larger motorcycles.

Figure 26 – Number of vehicles involved by segment (2014-2018)
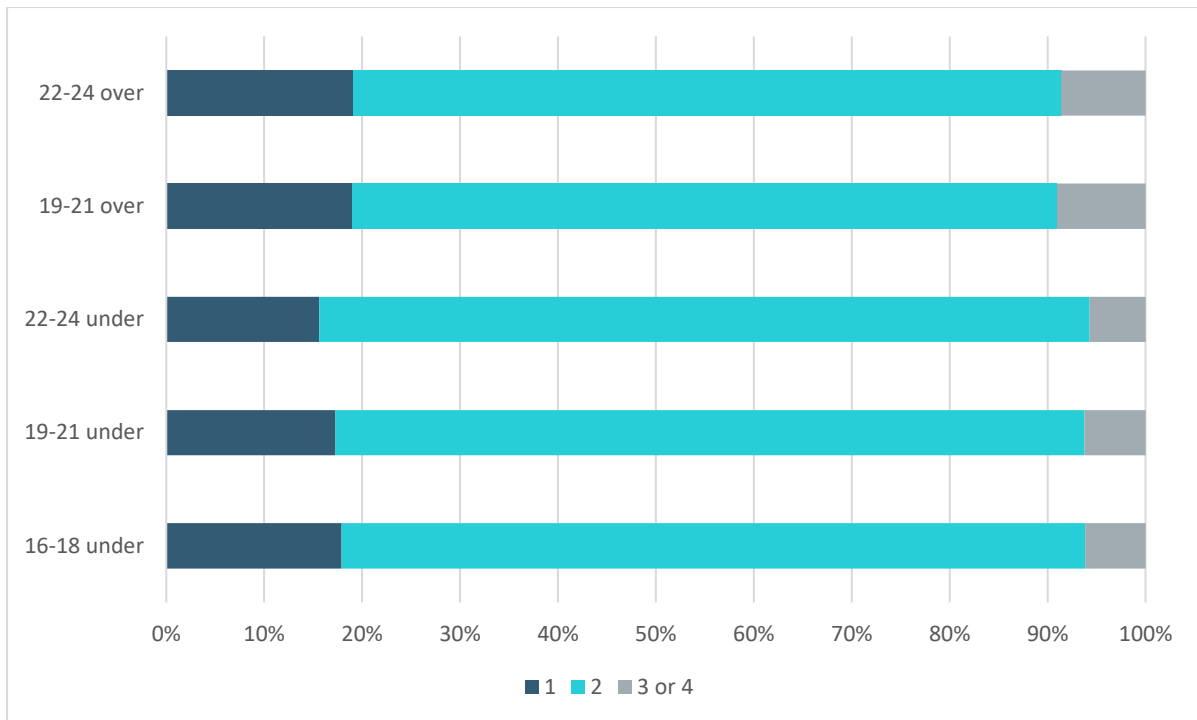
TYPES OF VEHICLE INVOLVED

Table 2 shows the types of vehicle involved in the collisions resulting in young riders being injured. The term 'crash involved' is used, denoting that at least one of the type of vehicle was involved in the collision but not necessarily in direct conflict with the young rider themselves (for example, there could be a three vehicle collision, involving the motorcyclist, a bus and a car, where the bus hits the car and the car hits the motorcyclist. The collision will be described as involving a bus, but the motorcyclist will not have been hit by the bus themselves).

The table shows that few young riders were involved in collision involving a bus or a pedal cyclist. The majority of young riders were involved in a collision with a car. For all segments, 7% were involved in a collision with a senior driver (who could be driving any of the vehicles in the rows above) and 7-9% were involved in a collision with a goods vehicle. About 9% were involved in a collision with a young car driver and between 17% and 24% were in a collision which involved a working driver (defined where journey purpose was 'at work'). This working driver could be the young rider casualty themselves.

Table 2 - Involvement of other participants by segment (2014-2018)

	16-18 years up to 125cc	19-21 years up to 125cc	22-24 years up to 125cc	19-21 years over 125cc	22-24 years over 125cc
Crash involved a bus	1%	1%	1%	1%	1%
Crash involved a car	72%	73%	73%	70%	70%
Crash involved a goods vehicle	7%	8%	9%	7%	8%
Crash involved a pedal cyclist	1%	1%	1%	1%	1%
Crash involved a senior driver	7%	7%	7%	7%	7%
Crash involved a working driver*	17%	22%	24%	17%	18%
Crash involved a young car driver	8%	9%	9%	9%	9%

*This could be the young motorcyclist.

Note: there could be double counting where one collision involved more than one type of participant and one participant could be counted more than once (e.g. a young car driver also being a working driver) so percentages do not equal 100%.

The number of vehicles and types of vehicles analysis shows that young motorcyclists are most commonly in conflict with cars. This isn't surprising, given that cars comprise 77% of traffic (compared to motorcyclists being 1% of traffic). This is based on the 255 billion vehicle miles driven by cars in 2018, compared to the 2.7 bvm by motorcycles.[4]

For context, there were 396,800 mopeds and motorcycles under 125cc registered in Great Britain in 2018, with 1,089,900 motorcycles over 125cc registered in the same period[5]. This means that small motorcycles and mopeds make up 27% of those motorcycles registered in Great Britain, making the majority of the 1% of billion vehicle miles being made by larger motorcycles.

Contributory Factors analysis is shown on page 33 in detail but it is worth pointing out here the relationship between car drivers and motorcyclists and whether each party was thought to have contributed to the collision. In total, 70% of those young motorcyclists injured in collisions attended by police were thought to have contributed to the collision occurring and received at least one contributory factor. Of those car drivers involved in collisions involving a young motorcyclist, 60% also received at least one contributory factor and were thought to have contributed to the collision in some way. This suggests that both car drivers and young motorcyclists contributed to these collisions occurring.

JOURNEY PURPOSE

Figure 27 shows the journey purpose of the young rider casualties. 'Commute' represents the journey made to get to work at the beginning of each working day or shift, or the journey made after work to get home from work. 'Work' is when the rider was working at the time of the collision. This could be as a delivery or courier rider; in a role where a motorcycle is the most appropriate form of transport (police, paramedic or blood bikes, for example); or was using a motorcycle to get between meetings as part of their working day[6]. It is not possible to determine which of these roles the working motorcyclists may have been performing from this data, but the times of day analysis may give some indications. It

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[4] https://roadtraffic.dft.gov.uk/summary
[5] MCIA, *Statistical Pocket Guide v1 2020,* (The Motorcycle Industry Association, Coventry, 2020)
[6] Department for Transport, *Instructions for the Completion of Road Accidents Reports from non-CRASH Sources,* (Department for Transport, London, 2011), p.62

should also be noted that journey purpose is not always recorded, meaning the percentages are likely to be underestimates.

Figure 27 – Journey purpose by segment (2014-2018)
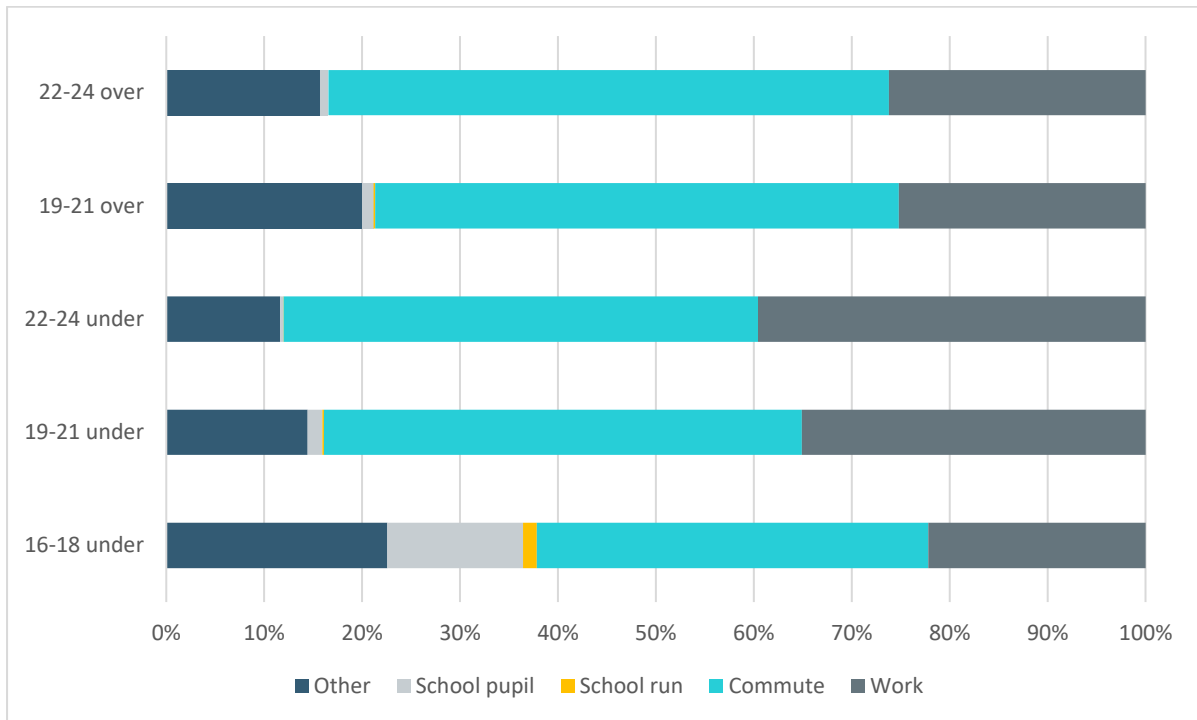
The analysis shows that between 22 and 40% of young rider casualties were recorded as riding for work at the time of their collision, and between 40 and 57% were commuting.

The largest percentages who were recorded as riding for work at the time of their collision were the *19 to 21 under* and *22 to 24 under* segments. The largest percentages recorded as commuting were the *19 to 21 over* and *22 to 24 over* segments. The *16 to 18 under* segment had the highest percentages of 'other' journey purpose, a school pupil travelling to school (14%) and those being taken on the school run (1%). School pupils will be those travelling to Sixth Form or college.

VEHICLE MANOEUVRES

Figure 28 – Vehicle manoeuvre of segments up to 125cc (2014-2018)
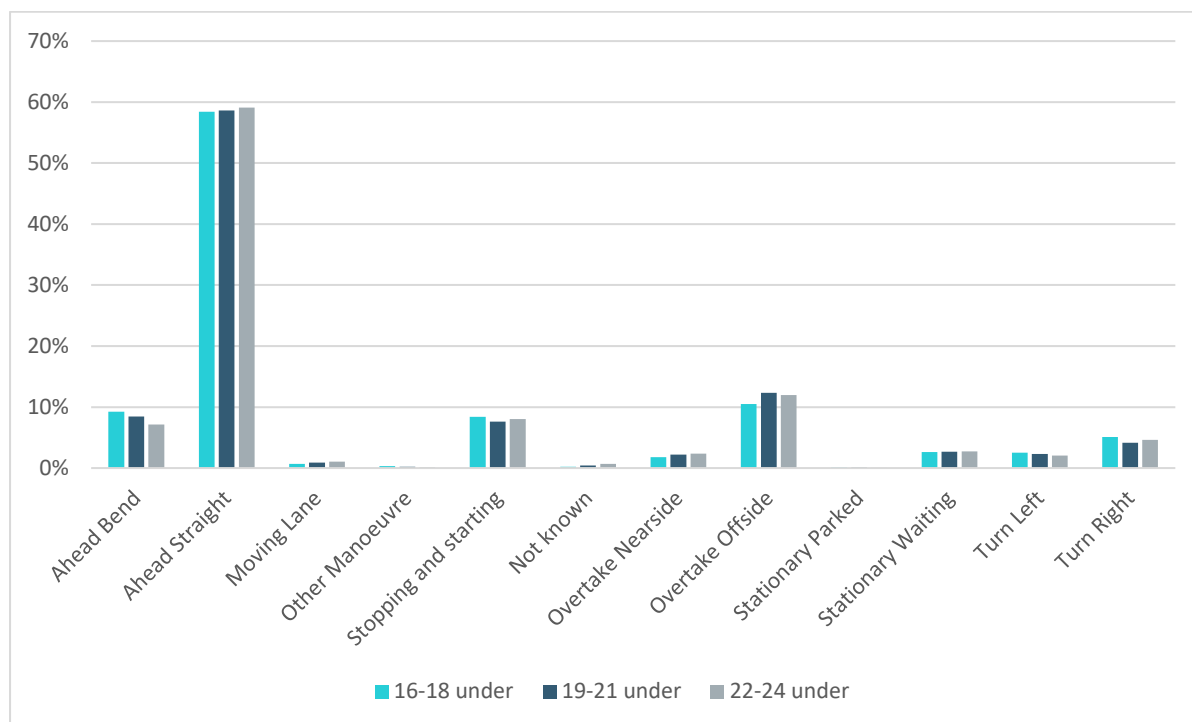
Figure 28 and Figure 29 show the vehicle manoeuvres of the young rider casualties. For all young riders, just under 60% were travelling straight ahead at the time of their collision. Those on smaller motorcycles were more likely to be manoeuvring by stopping and starting (8%) or turning right (4-5%) than those on larger motorcycles. Conversely, those on larger motorcycles were more likely to be travelling ahead on a bend (12-13%) or overtaking on the offside (14-15%).

Figure 29 – Vehicle manoeuvre of segments over 125cc (2014-2018)
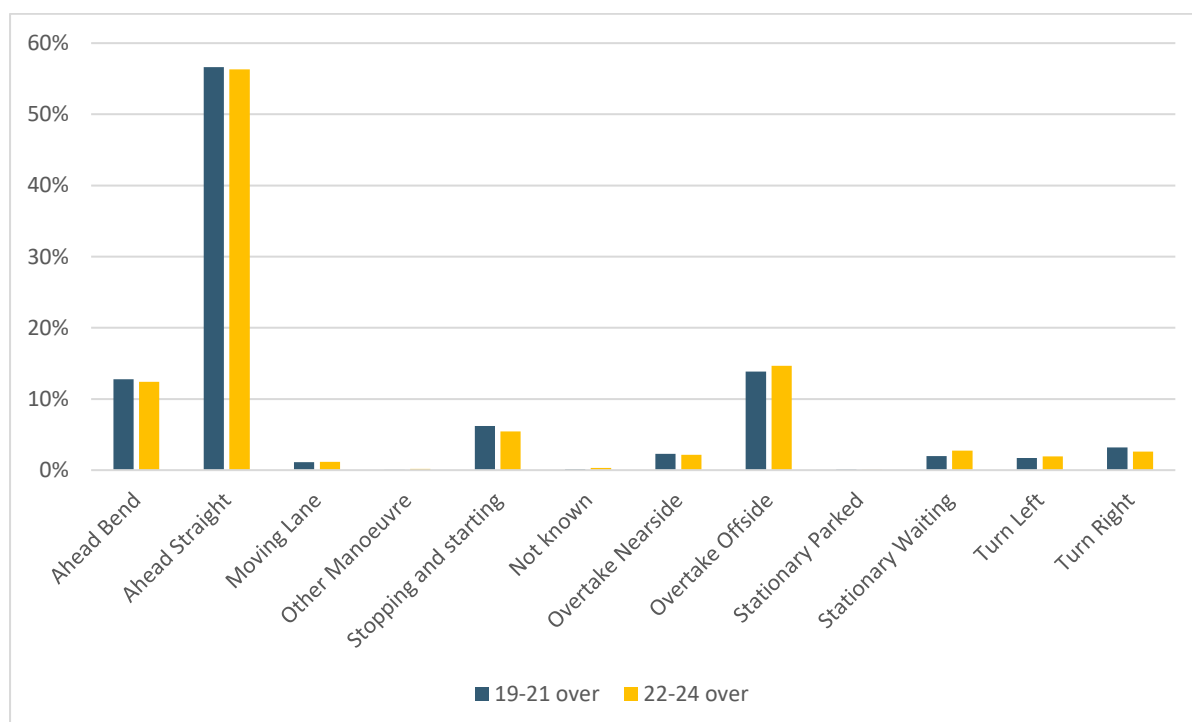
Looking in more detail at the young motorcyclists who were injured whilst travelling straight ahead, two-thirds were in collisions which also involved a car. Only one-third of these casualties were away from a junction at the time, suggesting that motorcyclists are commonly travelling straight ahead, and cars emerge into or out of a junction into their path. Of those motorcyclists travelling straight ahead, 48% were in a collision with a car at a T-junction, crossroads or roundabout.

CONTRIBUTORY FACTORS

Police officers who attended the scene of an injury collision may choose to record certain contributory factors (CFs) which in the officer's view were likely to be related to the incident. Up to six CFs can be recorded for each collision. CFs reflect the officer's opinion at the time of reporting, but may not be the result of extensive investigation. Consequently, CFs should be regarded only as a general guide for identifying factors as possible concerns.

In all CF analysis, only collisions which were both attended by a police officer and for which at least one factor was recorded are included. It means that this analysis is undertaken on a subset of the data previously analysed above. Since multiple CFs can be recorded for a single collision, the same incidents may be included in analysis of more than one CF. Figure 30 and Figure 31 show the groups of contributory factors assigned to the different segments. The groups are set out in Appendix B: Contributory Factor Groupings.

Figure 30 – Contributory factors of segments up to 125cc (2014-2018) – young riders
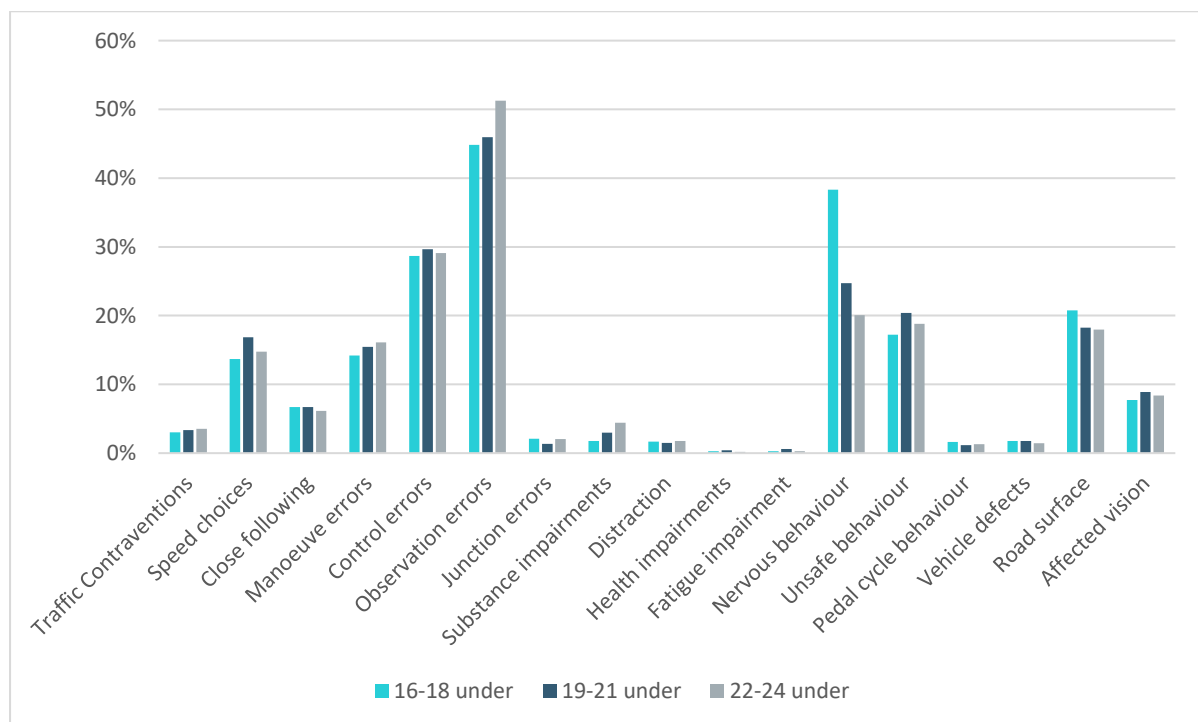
Figure 31 – Contributory factors of segments over 125cc (2014-2018) – young riders
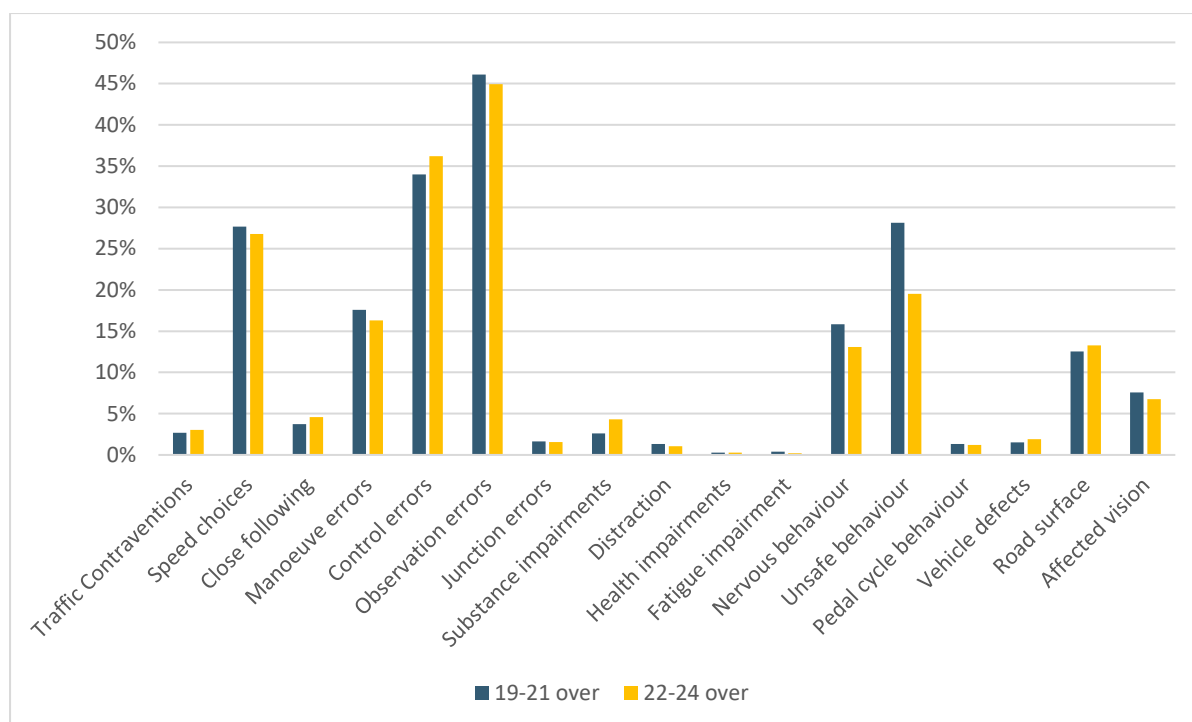
The *16 to 18 under* segment had some of the highest percentages of Control Errors, Nervous Behaviour and Road Surface contributory factors. The *19 to 21 under* segment had high percentages of Control Errors, Nervous Behaviour and Unsafe Behaviour contributory factors. Both of these were most commonly assigned Observation Errors, with the *22 to 24 under* segment receiving the highest percentage of these (51% of this segment receiving any contributory factor). Observation Errors are commonly assigned in all collisions, not just those involving motorcyclists, under the assumption that if participants had looked properly, they would have been able to take mitigating actions. The *22 to 24 under* segment also received Control Error and Unsafe Behaviour contributory factors.

The *19 to 21 over* segment had some of the highest percentages of those riders receiving Speed Choice, Manoeuvre Errors, Control Errors and Unsafe Behaviour contributory factors. The *22 to 24 over* segment had the second highest percentage of Speed Choice and highest percentage of Control Error contributory factors.

Looking at those riders who were travelling straight ahead at the time of their collision, 11% were thought to have lost control; 10% were considered to have been 'careless, reckless or in a hurry'; and for 13%, their inexperience was seen as a contributory factor. It should be remembered that participants can receive more than one contributory factor, meaning that some riders could be counted more than once in this analysis.

WHEN DO THEY OCCUR?
This section looks at when the young rider casualties were injured.

DAY OF WEEK
Those on smaller motorcycles, as shown in Figure 32, were most likely to be involved in collisions on weekdays.

Those on larger motorcycles were more evenly split across the week. Whilst there were higher percentages involved on weekdays, the percentages involved at the weekends were only slightly lower.

Figure 32 – Day of week of segments up to 125cc (2014-2018)
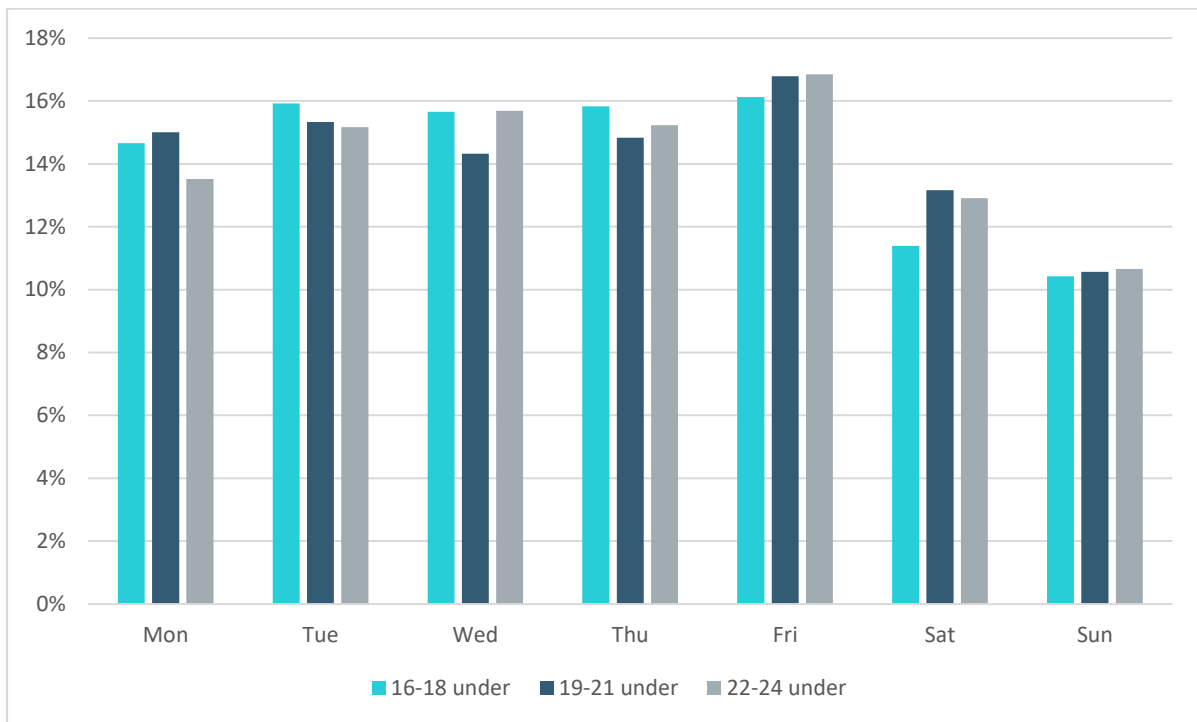
Figure 33 – Day of week of segments over 125cc (2014-2018)
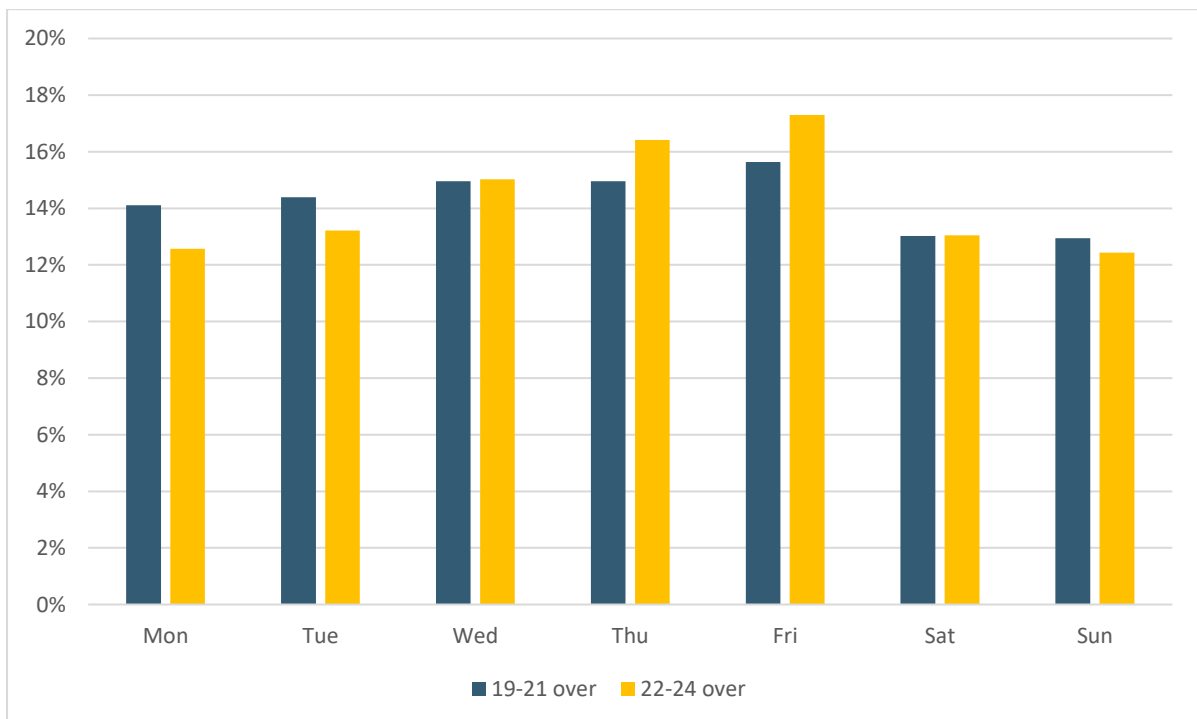
TIME OF DAY

Figure 34 shows the time of the day that the young riders on smaller motorcycles were involved in collisions. There is a clear peak between 3pm and 6pm, especially for the *16 to 18 under* segment.

Figure 34 – Time of day of segments up to 125cc (2014-2018)
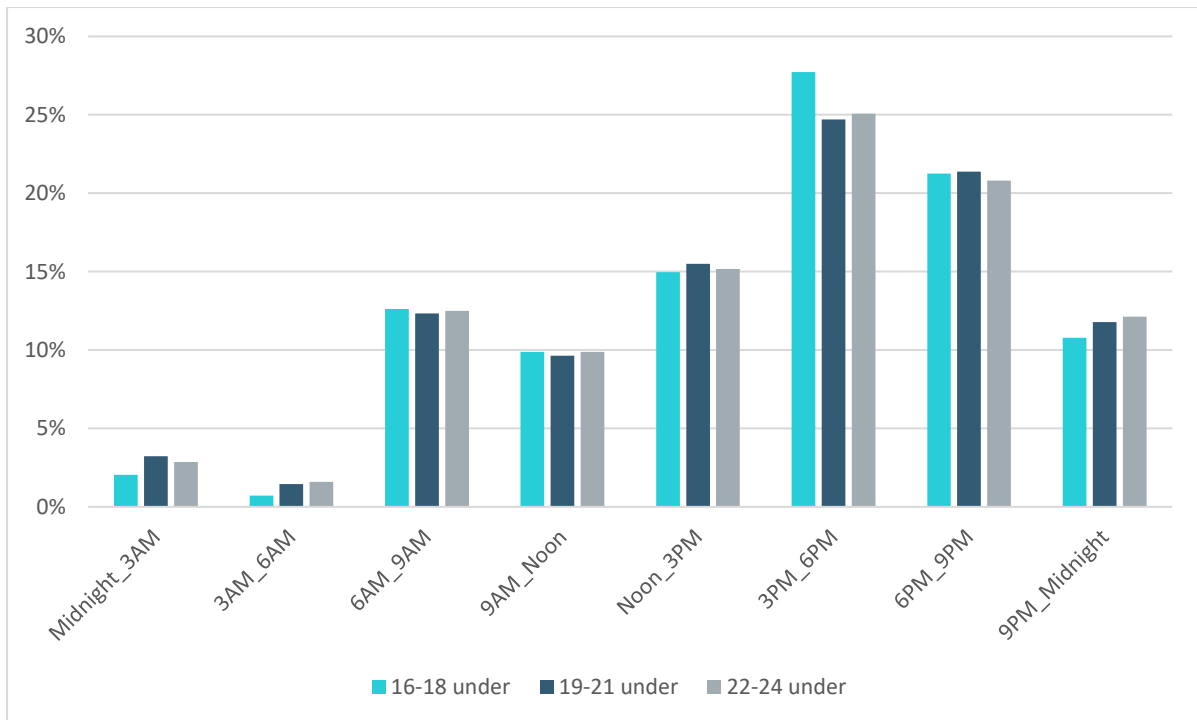
Those on larger motorcycles have a similar peak in the afternoons, as shown in Figure 35. However, there is also a smaller morning peak and the afternoon peak starts at noon.

Figure 35 - Time of day of segments over 125cc (2014-2018)
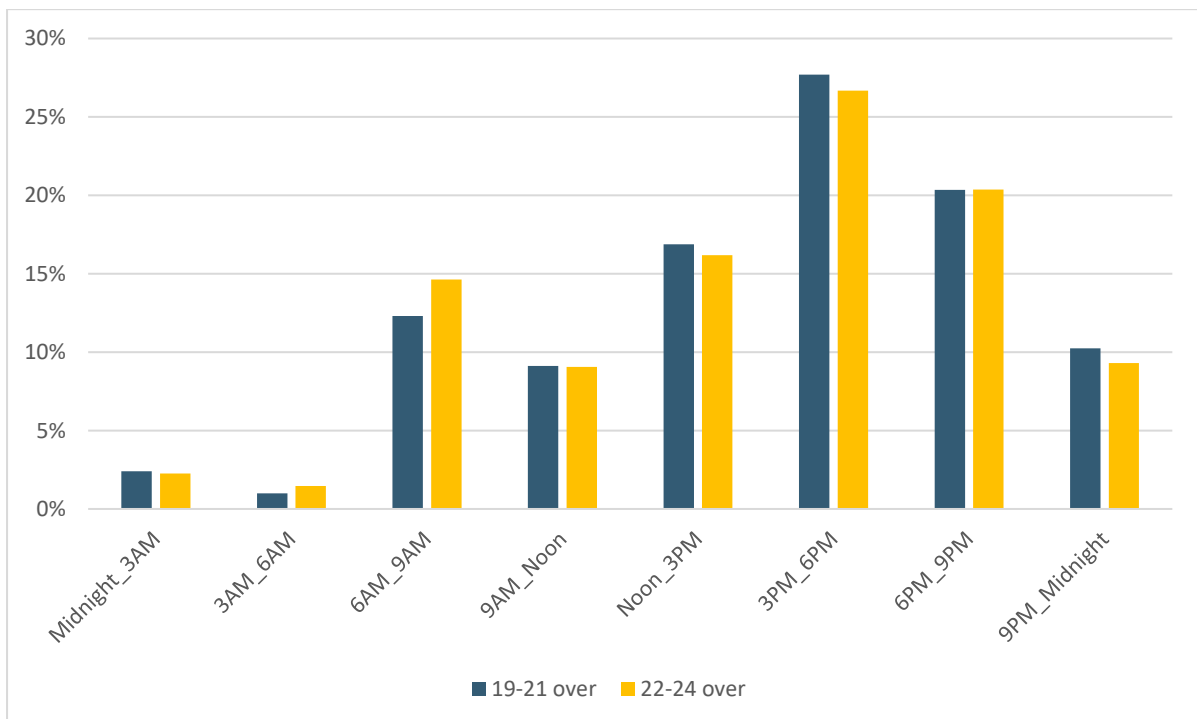
MONTH OF YEAR

Figure 36 – Month of year of segments up to 125cc (2014-2018)
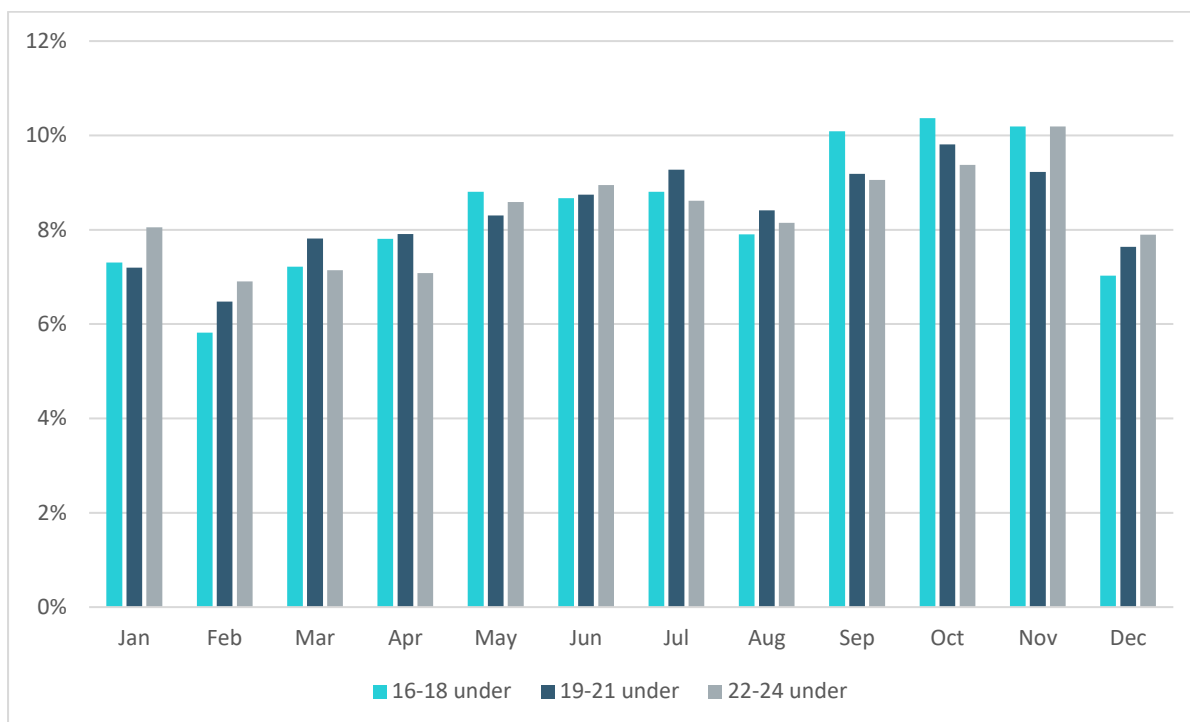
The month of year in which young riders were involved in collisions are shown in Figure 36 and Figure 37. The charts show different trends for the segments, based on engine size. Those belonging to the three segments with engine sizes up to 125cc were involved in collisions throughout the year, with autumnal peaks (September to November). This peak coincides with the start of the academic year and may reflect novice riders using motorcycles for the first time to travel further to college, work or apprenticeships. Combining known journey purpose with month analysis shows that of those who were involved in collisions between September and November, 9% were on the way to school, 55% were commuting and 36% were at work at the time of their collision. This is only slightly different to the annual journey purpose patterns (7% on the way to school, 56% commuting and 37% at work).

Those on motorcycles over 125cc are more likely to be involved in collisions in the traditional motorcycling 'season' of April to October.

Figure 37 – Month of year of segments over 125cc (2014-2018)
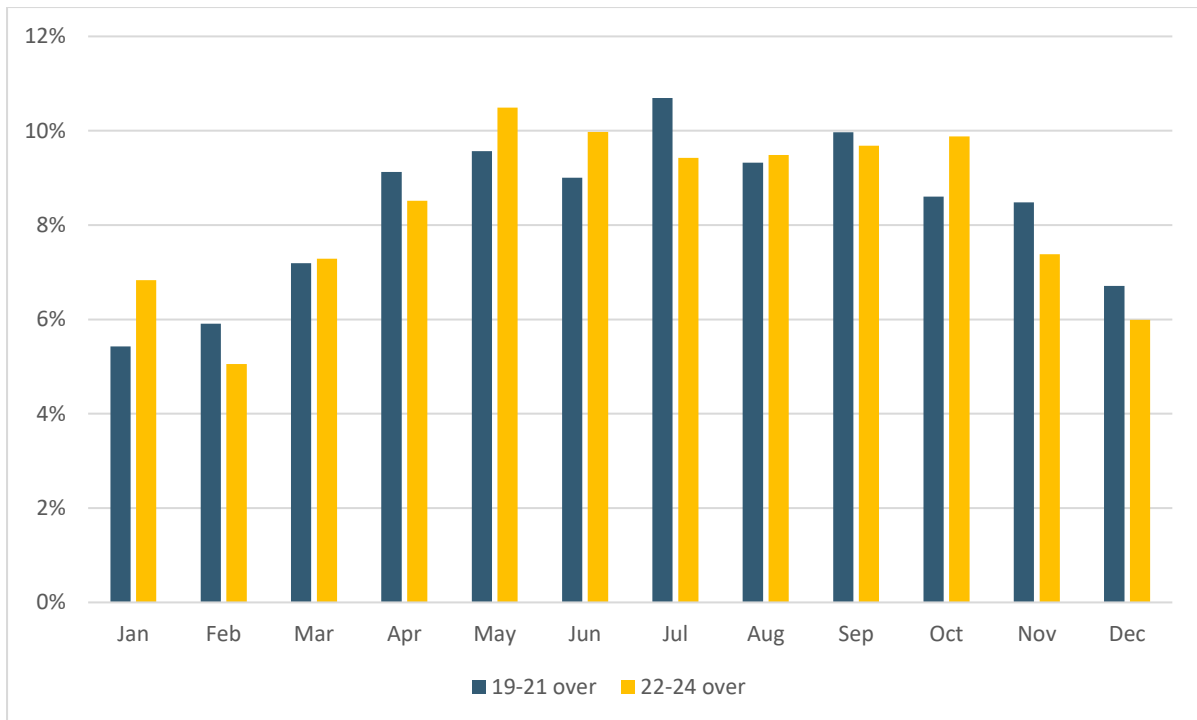
WEATHER CONDITIONS

Figure 38 – Weather conditions of segments up to 125cc (2014-2018)
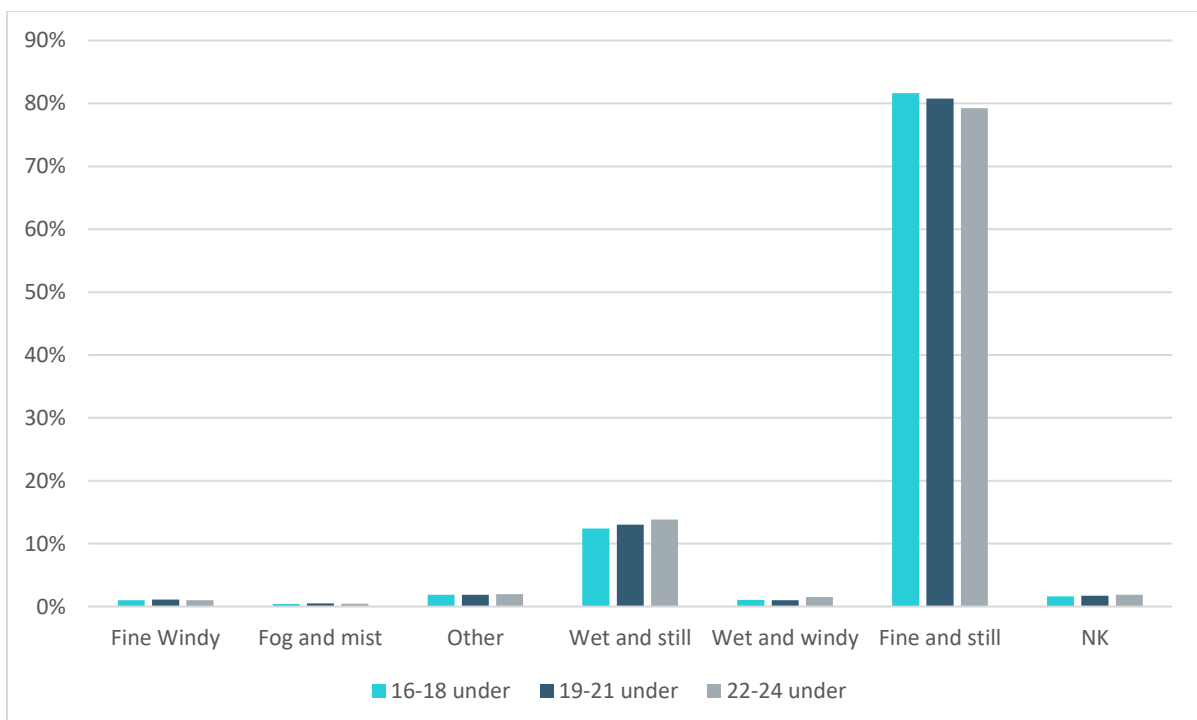
Overwhelmingly, young riders are involved in collisions in fine and still weather, as shown in Figure 38 and Figure 39, although just over 10% of those on smaller motorcycles were involved in collisions in wet and still weather (compared to less than 10% of those on larger motorcycles).

Figure 39 - Weather conditions of segments over 125cc (2014-2018)
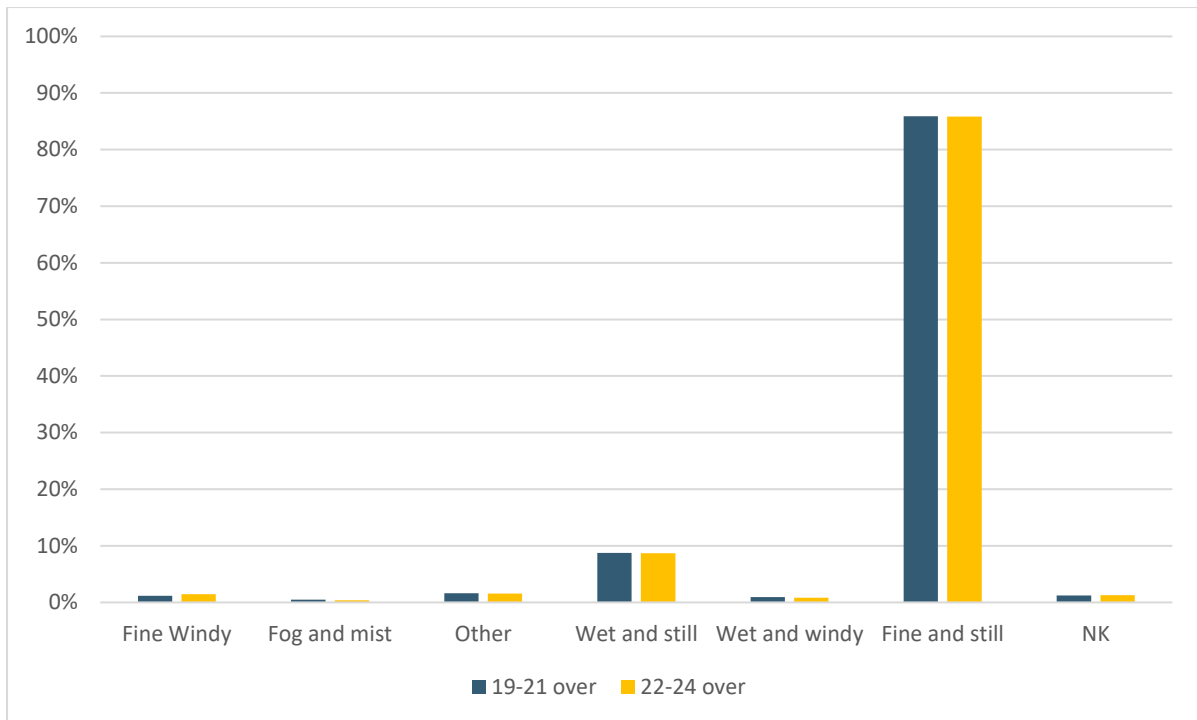
LIGHTING CONDITIONS

Figure 40 – Lighting conditions of segments up to 125cc (2014-2018)
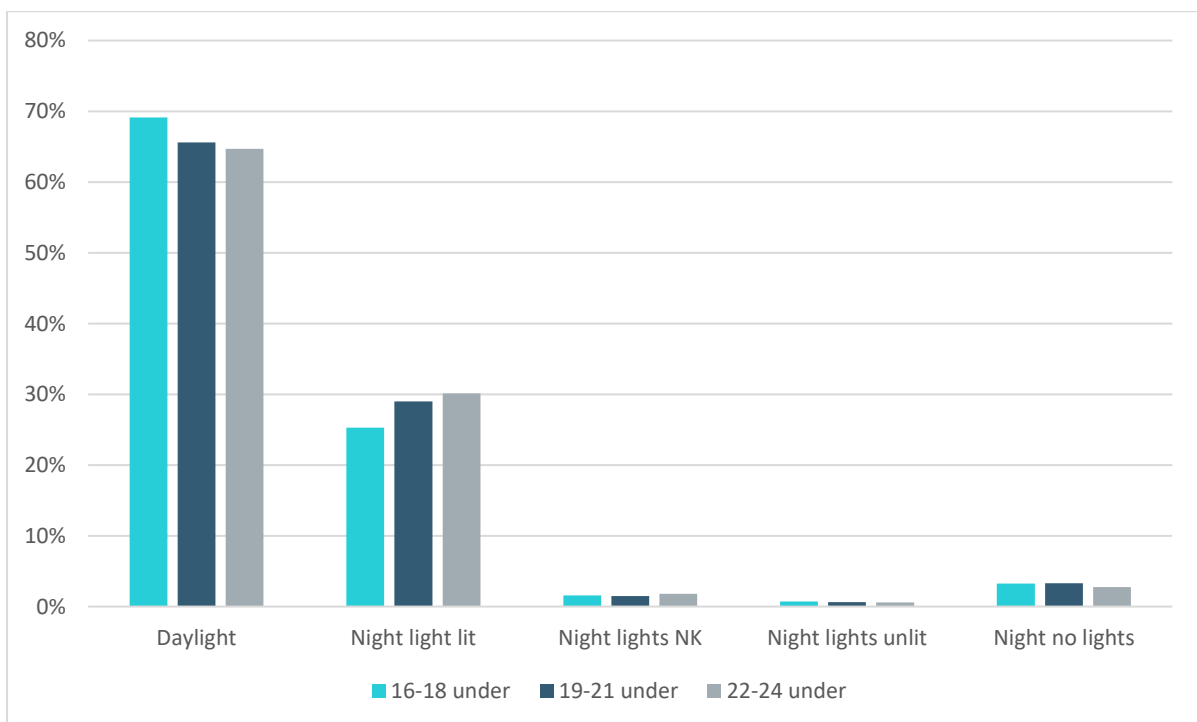
Most casualties were involved in collisions in daylight, as shown in Figure 40 and Figure 41. For those on smaller motorcycles, over 65% were involved in collisions in daylight with 29% of *19 to 21 under* and 30% of *22 to 24 under* were at night-time when streetlights were lit.

There were slightly higher percentages of those on larger motorcycles who were involved in collision in daylight (both segments at 73%).

Figure 41 – Lighting conditions of segments over 125cc (2014-2018)
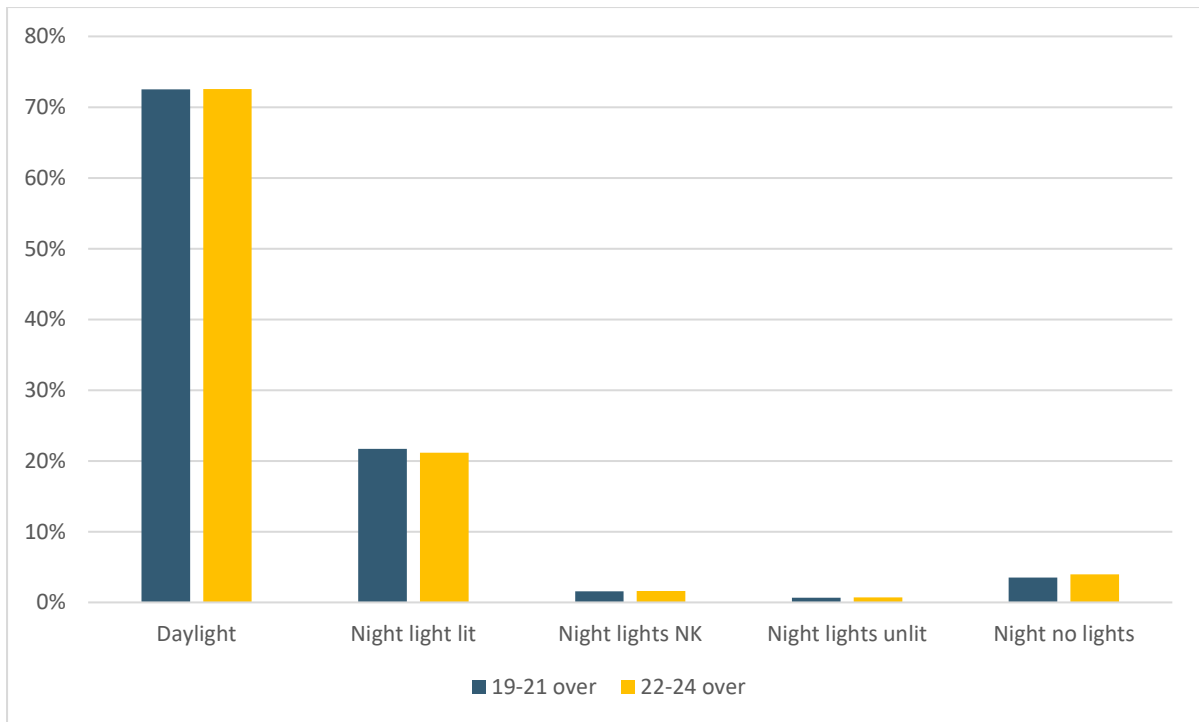
Online Questionnaire

An online survey was disseminated through NYRF, its partners and Agilysis. The surveys ran from 11th March to 31st August 2020 and a prize draw was offered as an incentive to participation. There were 542 surveys which were fully completed but only 182 of those were a motorcyclist aged between 16-24 years old. This sample size is smaller than was hoped and it became evident that young motorcyclists are a difficult to engage with. Furthermore, the survey went live before the Covid-19 pandemic took hold in the UK but did not close until after the end of the first lockdown. This made recruitment more challenging, despite using social media, NYRF partners and motorcycle training schools to disseminate the survey. These results, therefore, can only reflect the views of the young riders surveyed and is not representative of all young riders in the UK.

The purpose of the survey was to gain an insight into young motorcyclists and their characteristics, attitudes, and behaviours. They were presented with questions on their motorcycle (the type and where they purchased it from); when and why they ride and how they got into it; attitudes to training and PPE; confidence in different situations; what they think the causes of collisions are; communication preferences; and socio-demographic data. Some of the questions had been used in other research studies exploring motorcyclists' attitudes, behaviours, and preferences, whilst other questions were written specifically for this project, in consultation with NYRF members. Members of the forum reviewed the questionnaire before its launch, checking the language and terminology used.

DEMOGRAPHICS

There were 182 online surveys fully completed by motorcyclists aged between 16-24. As Figure 42 demonstrates, 81% of the respondents were male, and 18% female (the total exceeds 100% due to rounding). This is consistent with the casualty analysis, where a high majority of young motorcyclists involved in collisions being male.

Figure 42 - Gender of respondents

Legend: Female, Male, Non-binary, Prefer not to say
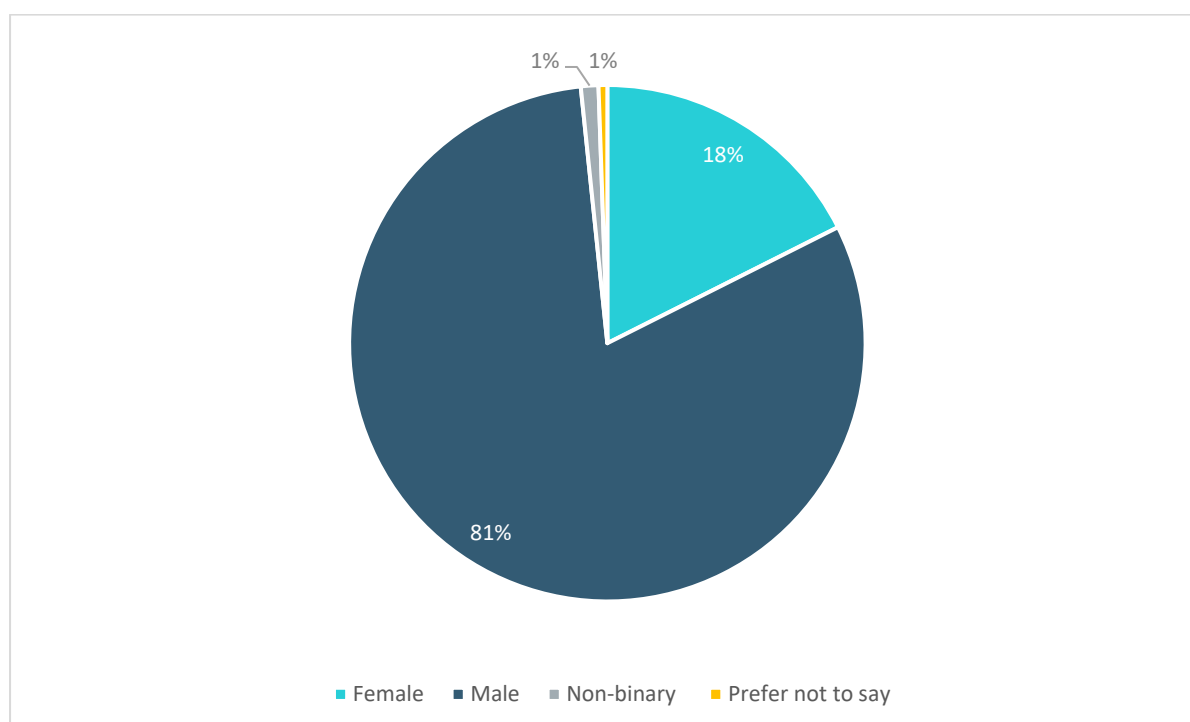
As Figure 43 demonstrates, there was a good range of ages, as the respondents were fairly distributed between 16-24 years old.

Figure 43 – Respondents' age
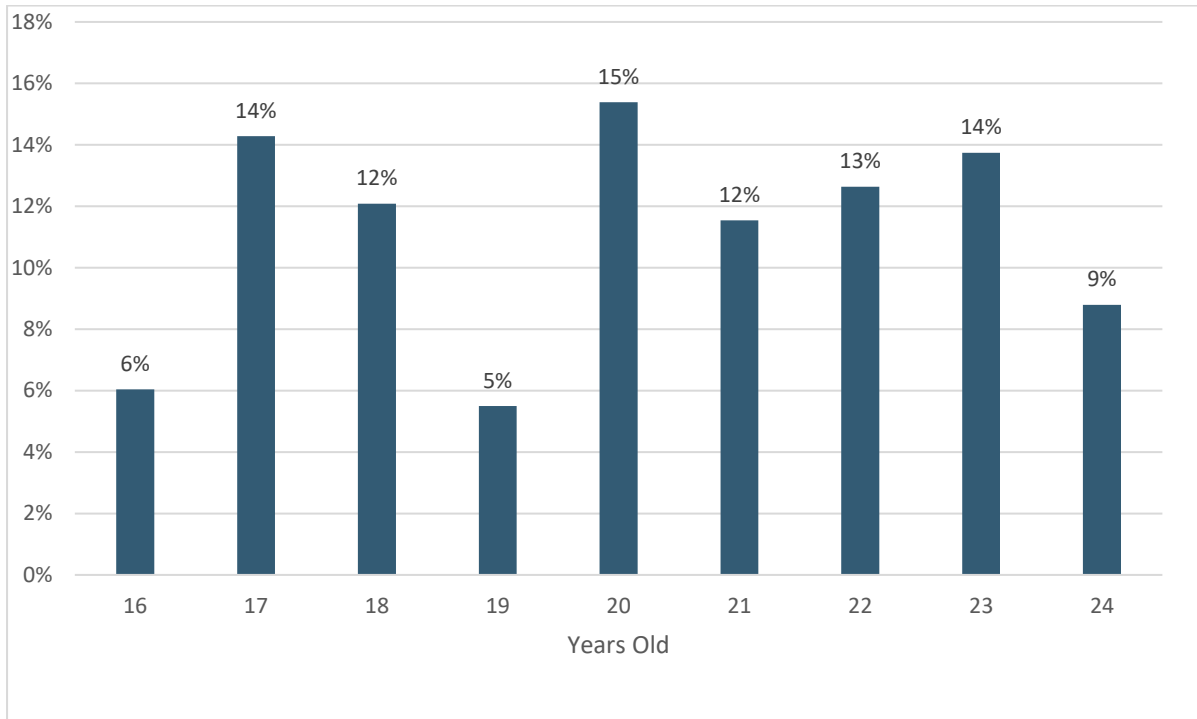
ABOUT THEIR MOTORCYCLE AND THEIR RIDING

Figure 44 - The reasons why respondents started motorcycling
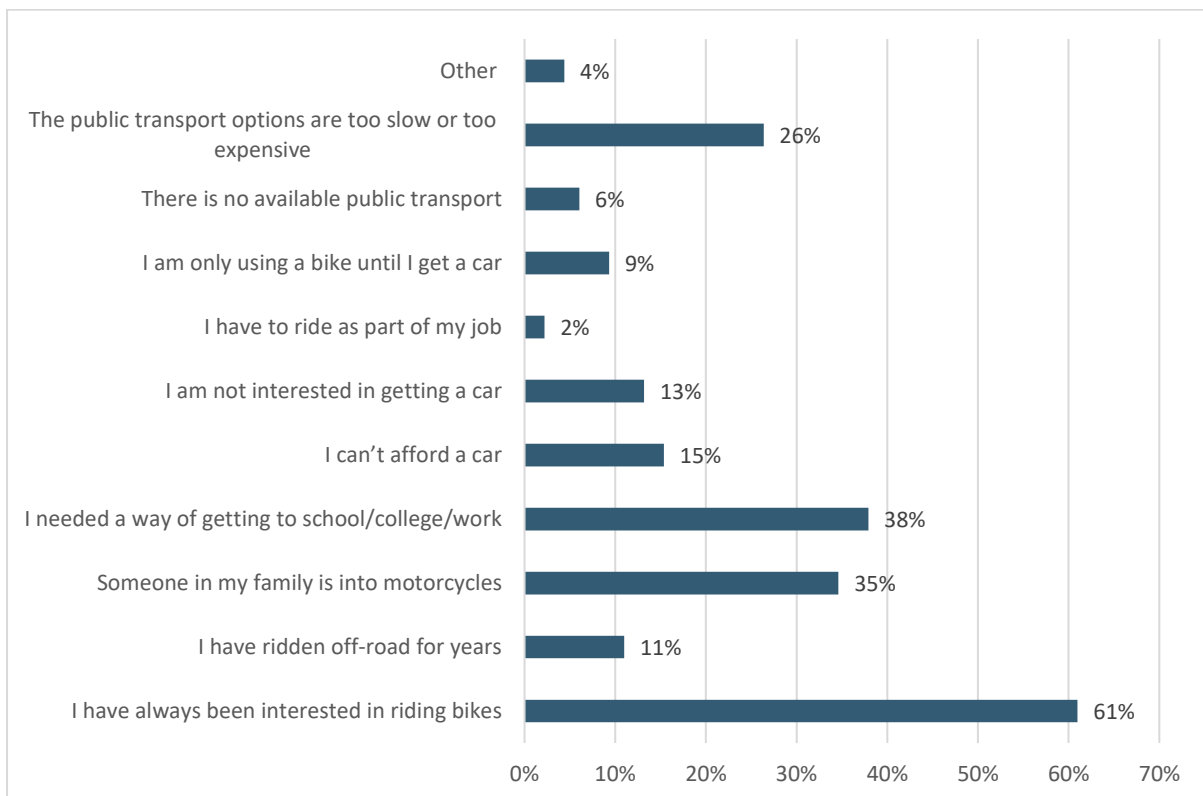
The respondents were asked to indicate the reason or reasons why they started to ride a motorcycle. They were allowed to select all of the options that applied to them. More than half of the respondents stated that they have always been interested in riding motorcycles therefore are passionate about riding, and 38% stated that they needed a way of getting to school/college/work. There were 35% who stated that someone in their family is into motorcycles therefore may have been influenced by their family member to start riding. Of the participants, 26% stated that the public transport options are too slow or too expensive.

The respondents were asked what type of motorcycle they ride, 35% indicated that they ride geared motorcycles up to 125cc the most often, and 24% ride motorcycles over 125cc, 19% scooter 'twist n go' type moped up to 125cc, and 16% scooter 'twist n go' type moped up to 50cc.

Figure 45- Motorcycle type
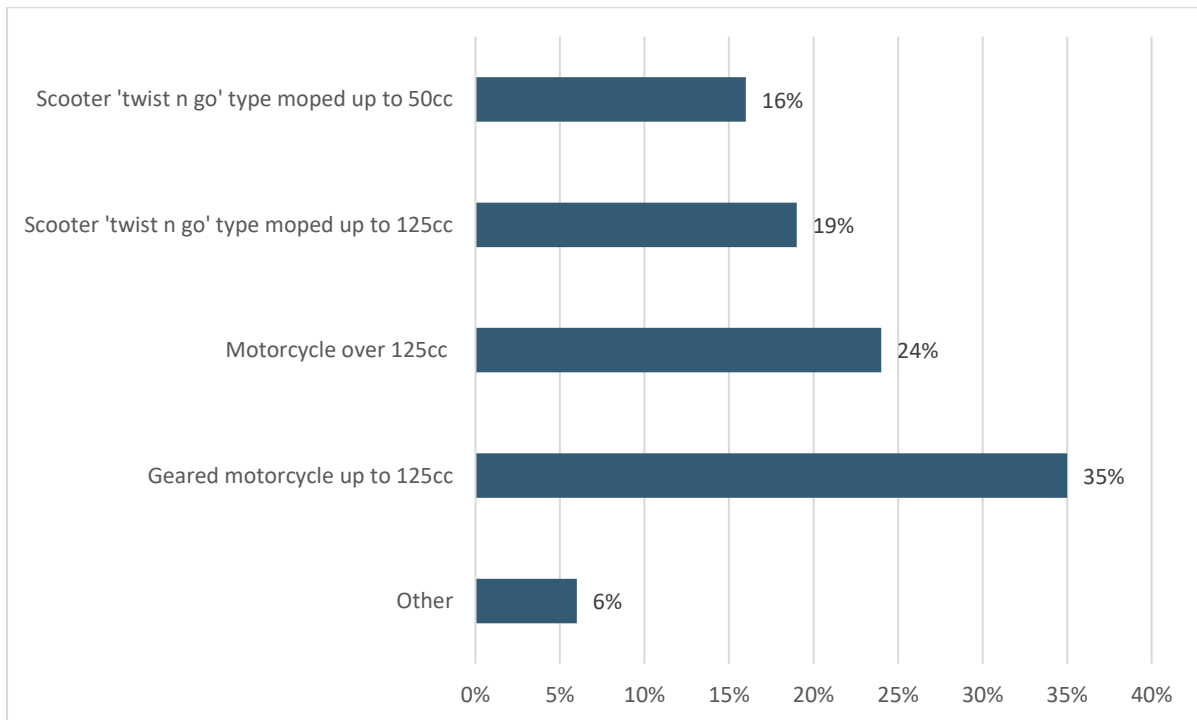
The respondents were asked where they got the motorcycle they ride most often from. Just over one third (37%) stated they bought their motorcycles from a retailer; 35% bought their motorcycle second hand; and 12% bought it online. Therefore, young riders are more likely to purchase their motorcycle either second hand or from a motorcycle retailer, rather than purchasing it online or obtaining it from a friend or having it given to them.

Figure 46 - Where respondents got their motorcycle from
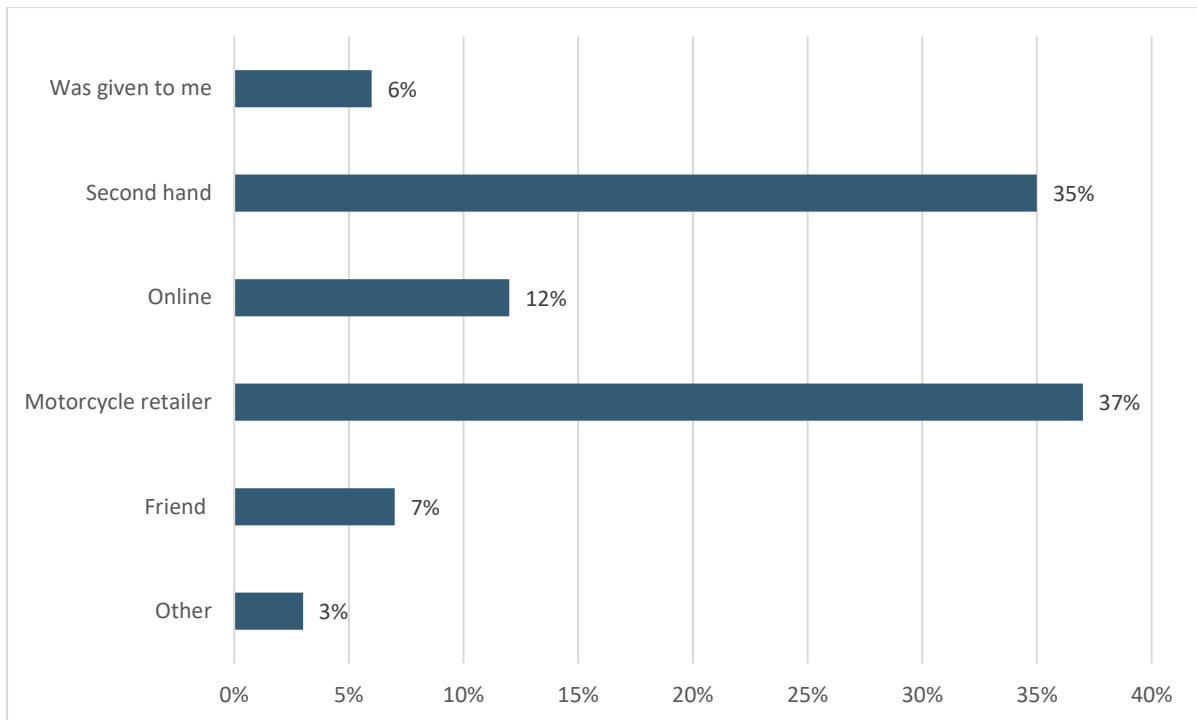
Respondents were asked to estimate their average annual motorcycle mileage. Of the respondents, 30% ride 2001-4000 miles a year, 20% ride 4001-6000 miles a year, 13% 6001-8000 miles a year, and 12% 0-1000 miles a year.

Figure 47 – Respondents' average annual motorcycle mileage
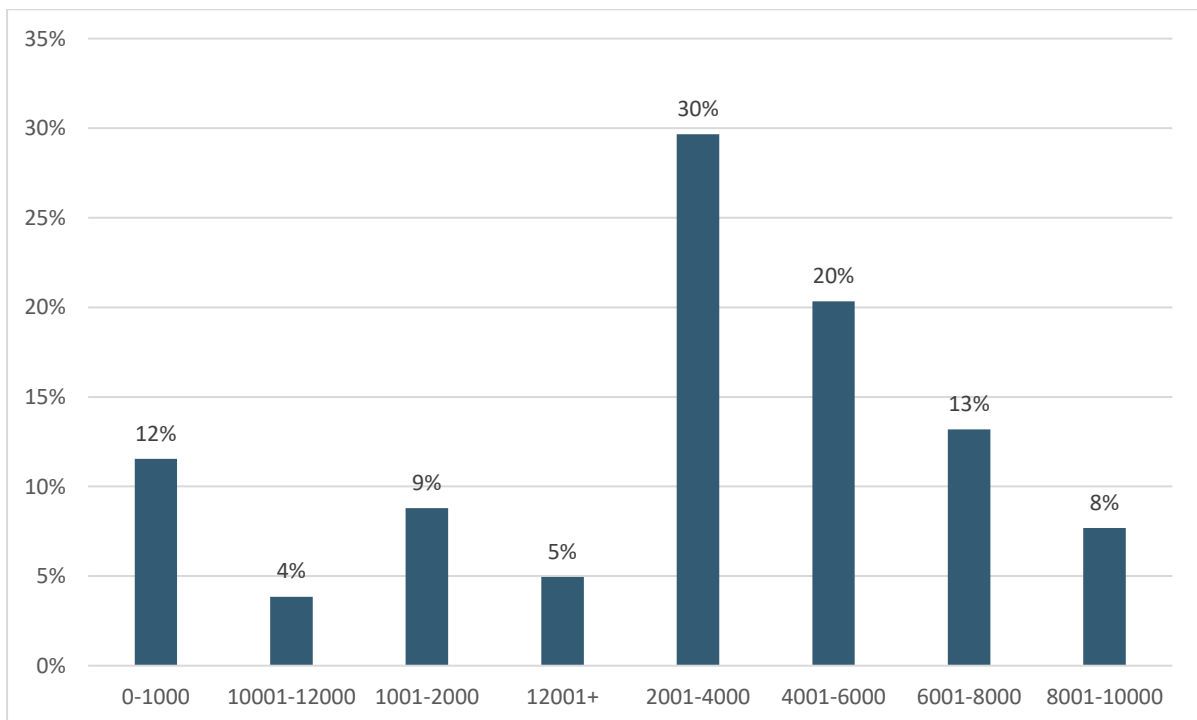
JOURNEY PURPOSES

Figure 48 – Respondents' journey purposes

Club meetings
- Less often: 61%
- Once or twice a month: 13%
- Once or twice a week: 8%
- Weekends only: 7%
- Most Days: 7%

Track days
- Less often: 77%
- Once or twice a month: 5%
- Once or twice a week: 3%
- Weekends only: 2%
- Most Days: 6%

For pleasure
- Less often: 6%
- Once or twice a month: 12%
- Once or twice a week: 22%
- Weekends only: 17%
- Most Days: 40%

Errands
- Less often: 14%
- Once or twice a month: 15%
- Once or twice a week: 24%
- Weekends only: 8%
- Most Days: 36%

Work purposes e.g. as a delivery driver
- Less often: 70%
- Once or twice a month: 2%
- Once or twice a week: 5%
- Weekends only: 2%
- Most Days: 14%

Holiday/touring/sightseeing
- Less often: 40%
- Once or twice a month: 23%
- Once or twice a week: 8%
- Weekends only: 10%
- Most Days: 13%

For college/university
- Less often: 61%
- Once or twice a month: 3%
- Once or twice a week: 6%
- Weekends only: 2%
- Most Days: 25%

Commuting to/from work
- Less often: 22%
- Once or twice a month: 4%
- Once or twice a week: 10%
- Weekends only: 3%
- Most Days: 57%

Social occassions
- Less often: 14%
- Once or twice a month: 19%
- Once or twice a week: 20%
- Weekends only: 18%
- Most Days: 27%

Shopping
- Less often: 26%
- Once or twice a month: 16%
- Once or twice a week: 23%
- Weekends only: 9%
- Most Days: 23%

Legend: ■ Less often ■ Once or twice a month ■ Once or twice a week ■ Weekends only ■ Most Days

Respondents were asked how frequently (on a scale of 'most days' to 'less often') they ride for different journey purposes. Over half (57%) of the respondents stated that they ride most days commuting to/from work, and 37% stated that they ride for errands most days. Of the respondents, 25% indicated that they ride for college/university most days. Therefore, for over half of the respondents, a

motorcycle may arguably be their main form of transport. Also, 14% stated they ride for work purposes (such as delivery rider) most days. It should be remembered that the respondents were self-selecting and therefore we cannot say that the journey purpose selections of this sample are representative of the population as a whole. It may be, for example, that those who do ride for work purposes do not identify themselves as motorcyclists because it is a function of their job, and not a characteristic of themselves. They may have not known about the survey or thought it applied to them.

Of the respondents, 40% stated that they ride for pleasure most days; 22% ride once or twice a week for pleasure; and 17% ride for pleasure at the weekends only. For holiday/touring/sightseeing, 23% of the respondents ride once or twice a month. Regarding social riding, 61% of the respondents ride less often at club meetings. For social occasions, 27% of the respondents ride most days; 18% at weekends only; 20% once or twice a week; and 19% stated once or twice a month. Out of the journey purposes presented, track days was the least often undertaken (77%).

Finally, it should be remembered that a majority of these respondents completed the survey during the first Covid-19 lockdown and so journey purpose may reflect the journeys they were able to make at that time.

CBT AND TWO-PART TEST

Over half of the respondents had taken a CBT, and a third of the respondents had taken both a two-part test and a CBT.

Figure 49 - What kind of test respondents had taken
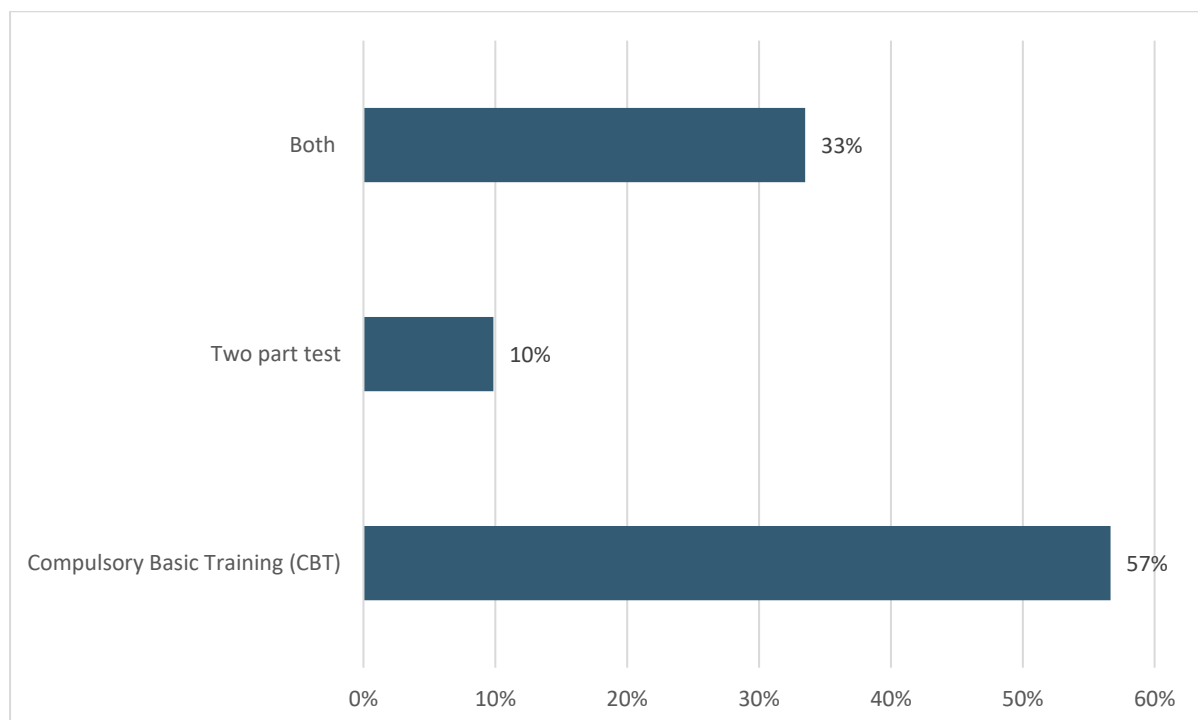
Of the respondents:
- Half of the respondents (52%) agree or strongly agree that their CBT gave them all the skills they need to be a safe rider.
- 68% disagree or strongly disagree that their CBT took too long to complete.
- 58% agree or strongly agree that it would have been good to do a hazard perception test as part of the CBT.

- 56% disagree or strongly disagree that they would have liked to have done their CBT over several days.
- 47% agree or strongly agree that some kind of pre-learning, before the CBT, would have helped them to be more prepared, 25% neither agree nor disagree.
- 34% agree that it would be good to have some follow-up support after the CBT, and 31% neither agree nor disagree.
- 46% agree or strongly agree that they would like a theory test to be included.

Therefore, half of the respondents believed that the CBT did not give them all the skills they need to be a safe rider and believed that including a hazard perception test and pre-learning before the CBT would have helped them to be more prepared. As a result, this has been further explored in the interviews with young riders to see what that might look like and whether they think they should be formally tested or not.

Figure 50- Agreement levels on statements about Compulsory Basic Training (CBT)
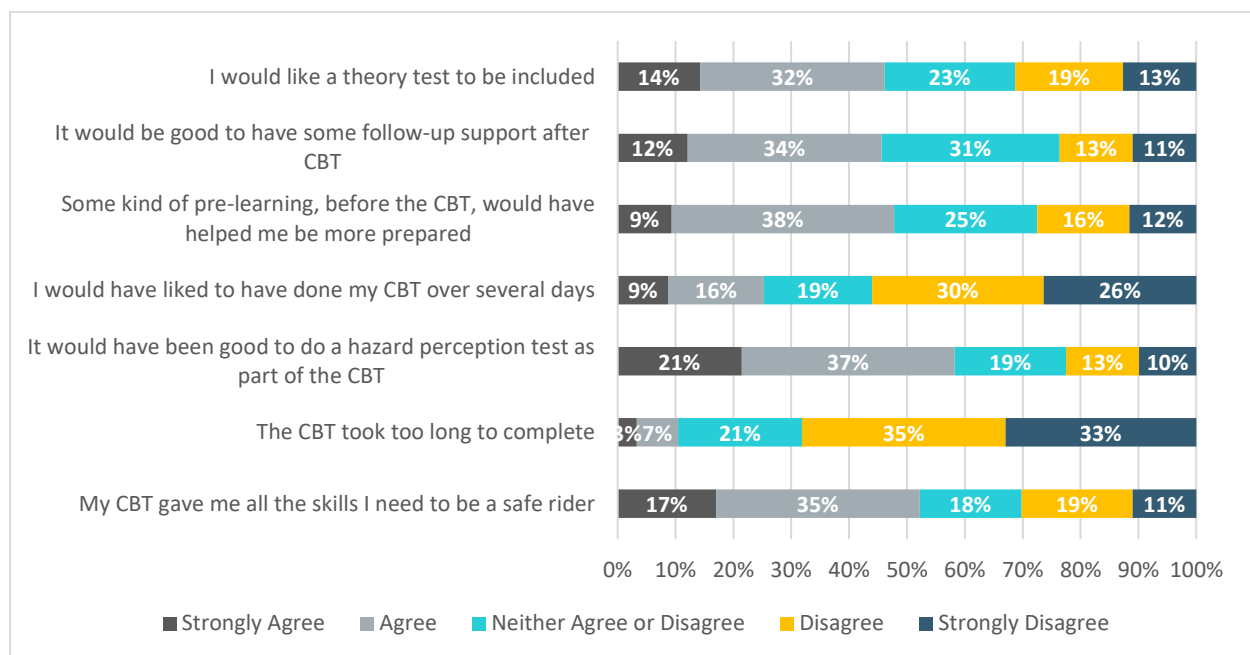
CLOTHING WORN WHEN RIDING

Respondents were asked questions on personal protective equipment (PPE) and whether they wear protective clothing always, sometimes, or never. Of the respondents, 78% always wear leather/textile gloves; 72% sometimes wear a leather one-piece; 70% sometimes wear a tracksuit; and 49% sometimes wear trainers. However, 59% never wear leather/textile boots; 55% never wear leather/textile jackets; and 40% never wear leather/textile armour. There are some worrying admissions here; to hear that nearly three-quarters **sometimes** wear a tracksuit when riding and half **sometimes** wear trainers is a concern. Similarly, around half of the respondents admitted to never wearing leather or textile boots or jackets. It seems that the message around glove wearing has been received by the majority of respondents.

As there were mixed responses in what clothing they wear when riding, attitudes towards PPE was further explored in the interviews with young riders.

Figure 51 - What respondents wear while riding

	Always	Sometimes	Never
Leather/textile gloves	78%	17%	5%
Jeans (armoured)	3%	35%	20%
Tracksuit	4%	70%	8%
Leather one-piece	4%	72%	4%
Hi Viz/Reflective gear	2%	35%	20%
Leather/textile armour	3%	36%	40%
Leather/textile boots	1%	15%	59%
Leather/textile trousers	2%	31%	26%
Leather/textile jacket	2%	17%	55%
Everyday jacket	3%	48%	14%
Hoodie	3%	48%	10%
Trainers	4%	49%	17%
Jeans (regular)	3%	36%	21%
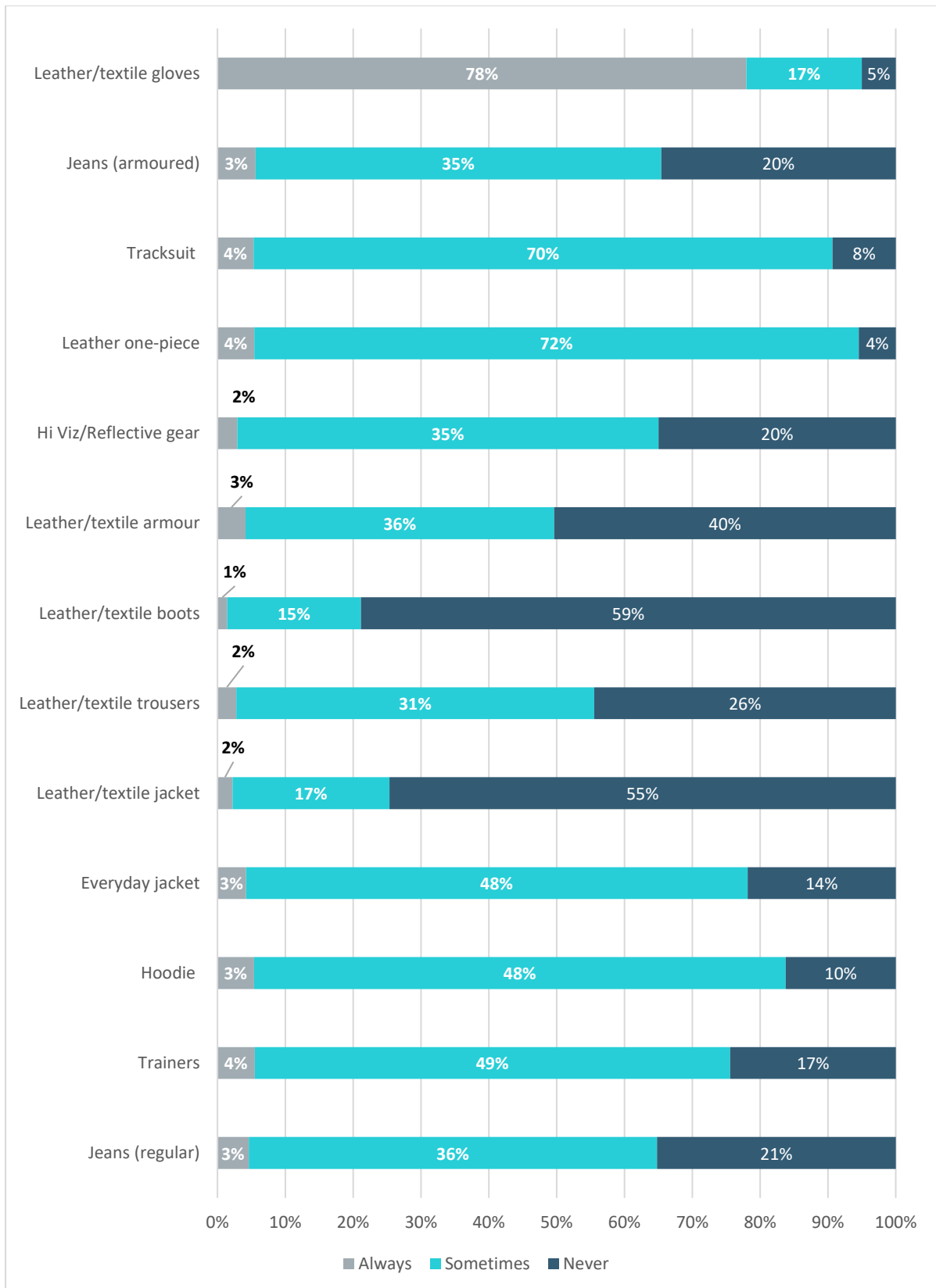
MOTORCYCLE HELMETS

Of the respondents, 62% have purchased their motorcycle helmets new from a motorcycle retailer, and 40% had purchased their helmets new from an online retailer. There were, however, respondents who obtained their helmets second hand, either from friends, Facebook, or eBay.

Figure 52 - Where respondents have purchased their motorcycle helmets from
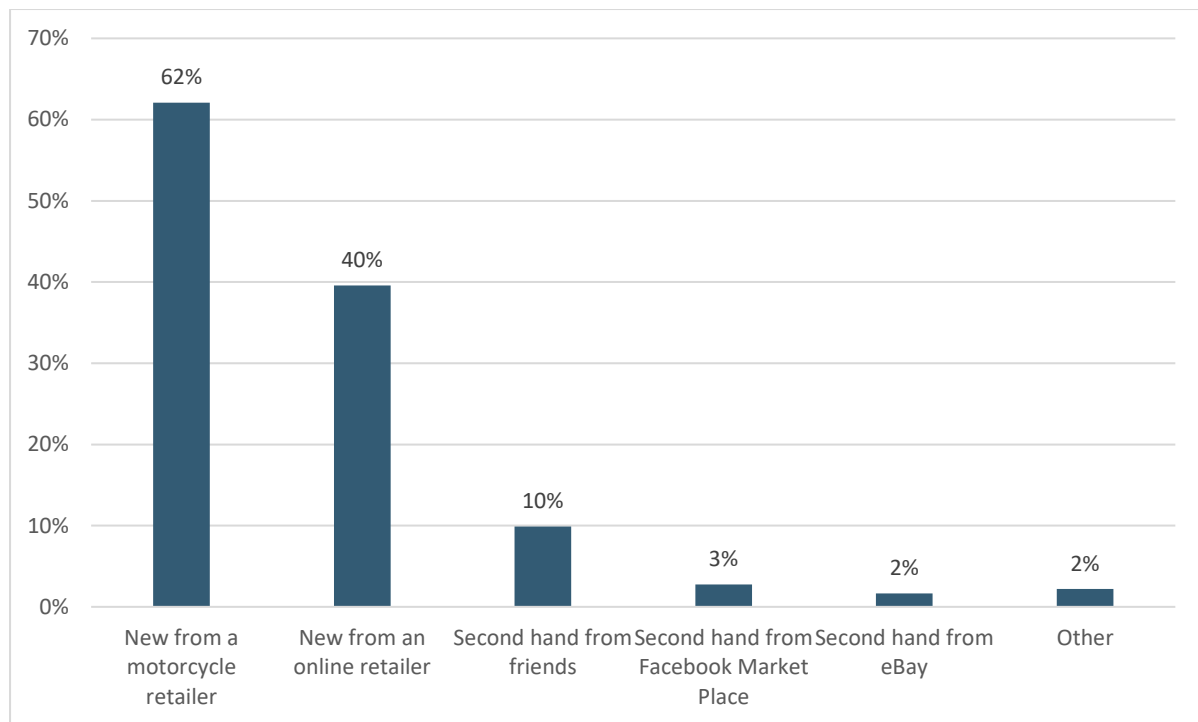
Of the respondents:
- 62% strongly disagree to sometimes sharing their motorcycle helmet with their mates.
- 79% strongly agree that they use the chin strap to secure their motorcycle helmet.
- 64% strongly disagree to consider wearing a helmet that had been slightly damaged after a crash.
- There were mixed responses regarding still wearing a helmet that had been slightly damaged by a hard surface (30% disagree, 25% strongly disagree, 19% neither agree nor disagree, 17% agree that they would wear it).
- 67% agree or strongly agree on being aware of the SHARP rating systems for helmets.
- There were mixed responses regarding helmet choices guided by the SHARP rating (18% strongly agree, 27% agree, 30% neither agree or disagree, 18% disagree and 7% strongly disagree).
- Half (51%) agree or strongly agree that they chose their helmet for the way it looked.
- 70% agree or strongly agree that they got advice on the fit of their helmet before buying it.

These questions suggest that the respondents have good knowledge about the importance of helmet choice, maintenance and wearing.

Figure 53 - Level of agreement relating to motorcycle helmets

Figure 53 - Level of agreement relating to motorcycle helmets
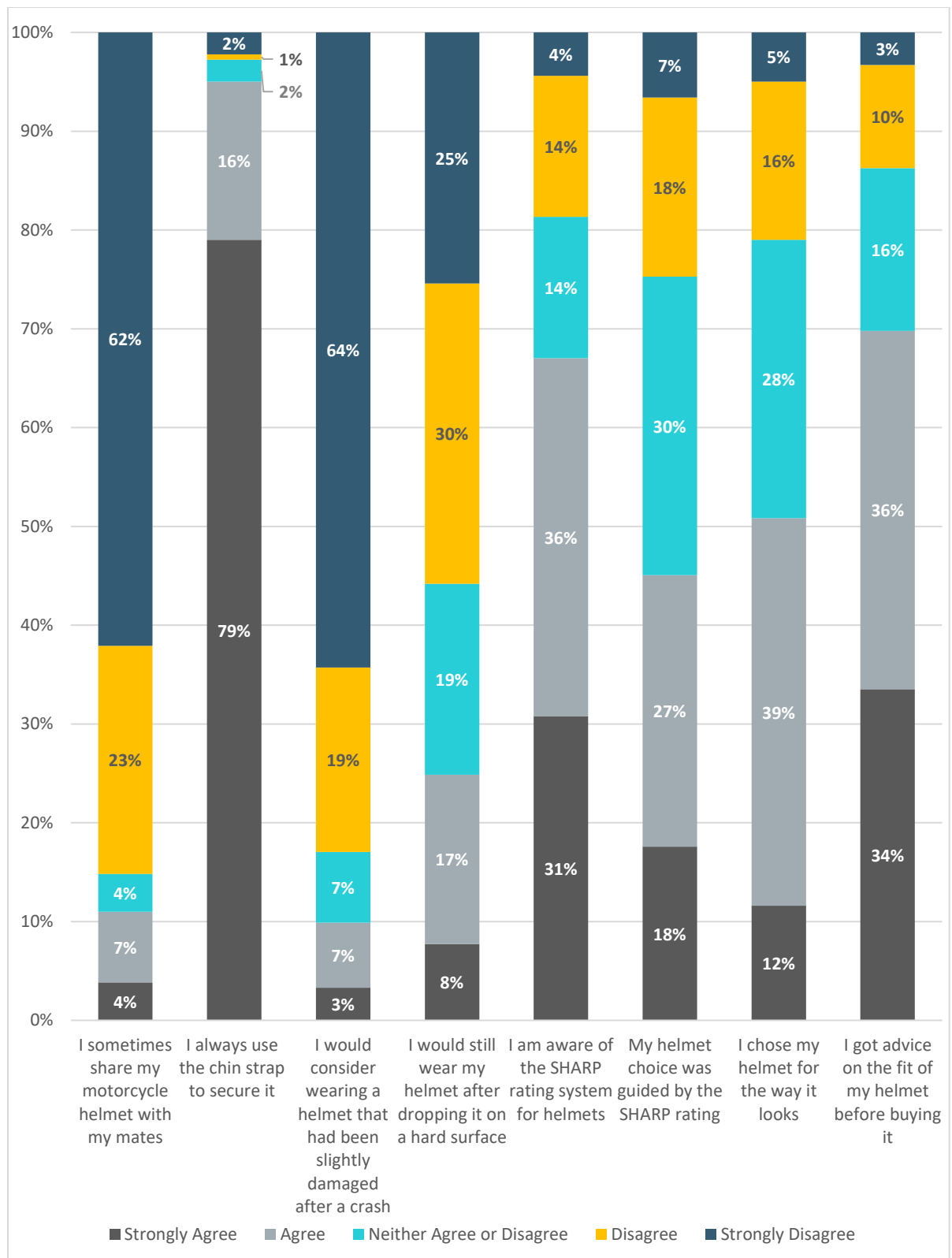
ROAD TYPES

Respondents were asked how safe they felt riding on different road types. Of the respondents, 68% felt very confident on residential roads (20mph or 30mph); 60% felt very confident on roads in

town (20mph to 40mph); 50% felt very confident on country roads (50mph to 60mph); and 40% felt very confident on dual carriageways or motorways (70mph). Overall, just over half of the participants felt confident on most roads with residential roads (20mph or 30mph) being the most (68%), and dual carriageways or motorways (70mph) being the least of the road types (40%). It shows that confidence decreases as road speeds increase.

Figure 54 - How safe respondents feel riding on the following types of road
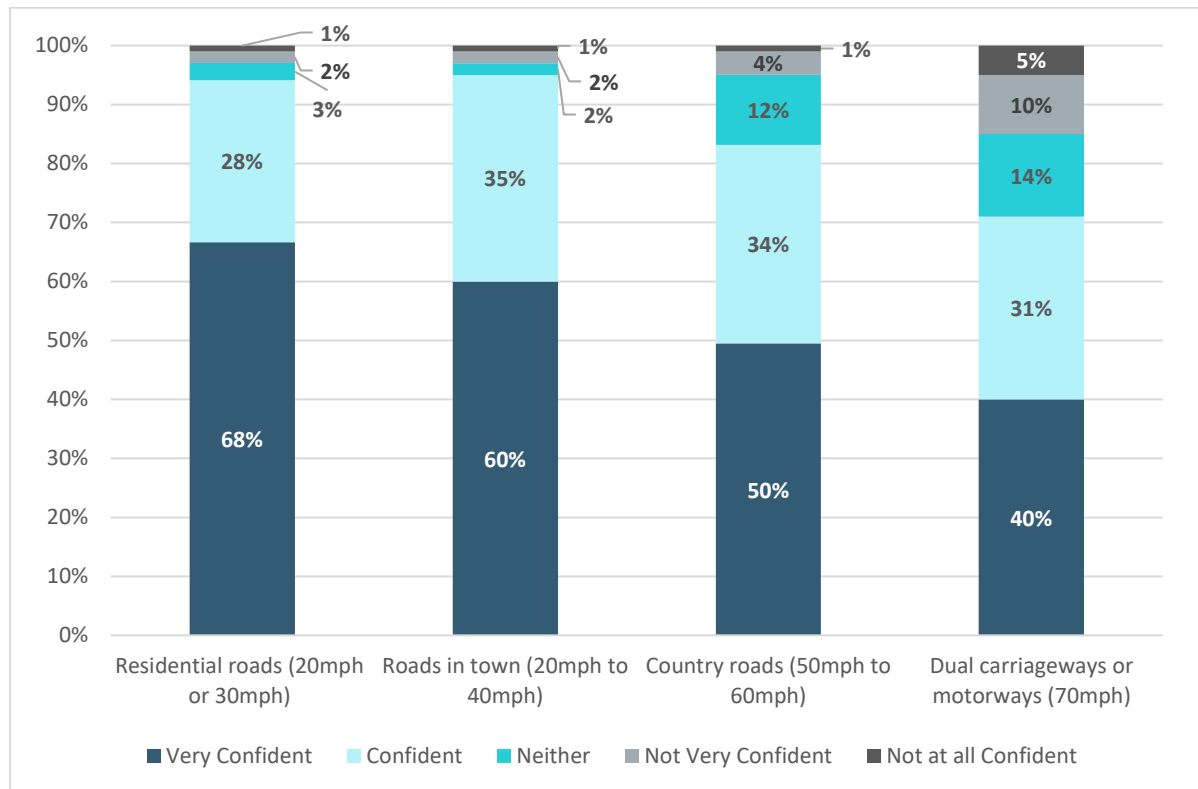
RIDING ATTITUDES AND BEHAVIOURS

There were a number of questions in the survey asking about levels of agreement with statements about their behaviour and attitudes.

Of the respondents:

- Half of them (55%) agree or strongly agree that they sometimes feel intimidated by other road users because they do not leave enough space.
- 82% agree or strongly agree that they ride on the assumption that other road users have not seen them.
- 79% agree or strongly agree that it is important to do basic vehicle checks before every ride.
- 78% disagree or strongly disagree that they sometimes ride so close to the vehicle in front that it would be difficult to stop in an emergency.
- 64% agree or strongly agree that they would never get involved in unofficial 'races' with other riders or drivers.
- 54% disagree or strongly disagree that they occasionally ride so fast into a corner that they scare themselves.
- 69% agree or strongly agree that that they filter through stationary traffic and feel it is safe.

There were some interesting responses here. There are some indications of their awareness of their vulnerability, with a majority riding on the assumption that other road users have not seen them and over half feeling intimidated as others do not leave enough space. It is encouraging to see the high

percentages of respondents who believe it is important to do basic vehicle checks. Whilst most respondents indicated that they did not engage in risky behaviours such as following too close, racing, and riding too fast into corners, there were those who did indicate that they did these things. Two-thirds agreed that they felt safe filtering through stationary traffic, so supporting them to do this properly is important.

Figure 55 - Agreement levels for the following statements
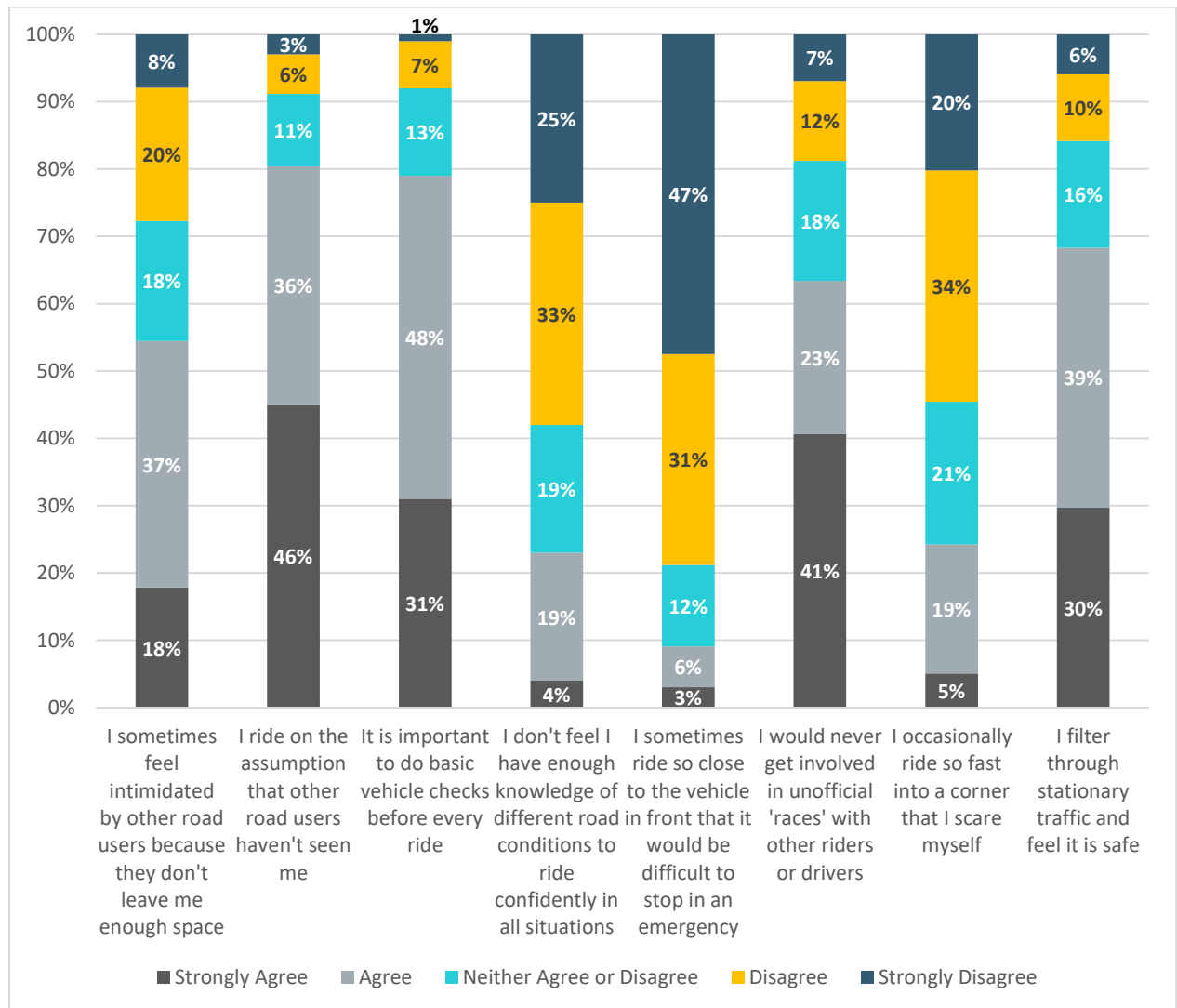
The respondents were asked which of the factors in Figure 56 are the cause of young riders being involved in a road collision. Of the respondents:

- 35% indicated that sometimes motorcycling when tired is the cause of young riders being involved in road collisions, and 26% stated often.
- There are mixed responses for drinking alcohol/taking drugs and motorcycling, 23% state sometimes, 21% often, and 21% very often.
- 34% indicated that following too closely to the vehicle in front is often the cause of young riders being involved in road collisions, 29% indicated sometimes, and 24% indicated very often.
- 65% indicated that riding too fast is often or very often the cause of young riders being involved in road collisions.

- 46% indicated traffic congestion is sometimes the cause of young riders being involved in road collisions.
- 67% indicated bad weather conditions is often or very often the cause of young riders being involved in road collisions.
- 38% indicated poorly maintained motorcycles sometimes being the cause of young riders being involved in road collisions and 35% indicated sometimes poorly maintained roads.
- 63% indicated often or very often inexperienced or nervous riding is the cause of young riders being involved in road collisions.
- 65% indicated often or very often the actions of drivers of cars, vans or lorries is the cause of young riders being involved in road collisions.
- 42% indicated sometimes the actions of other motorcyclists being the cause of young riders being involved in road collisions, and 32% indicated rarely.
- 41% indicated sometimes the actions of pedestrians or cyclists being the cause of young riders being involved in road collisions.

As a result, young riders believe bad weather conditions, riding too fast, the actions of other road users and young rider inexperience are the factors contributing to young riders being involved in road collisions. Only 35% indicated that riding whilst tired is sometimes the cause of young riders being involved in road collisions, therefore this was further explored in the interviews. The responses indicate that young riders do feel vulnerable when riding. Forty-two percent of respondents said that drinking alcohol or taking drugs and motorcycling contributed to young rider collisions.

Cross-referencing with the casualty analysis suggests that respondents are mostly correct in their understanding about why young riders can be involved in collisions. The collision analysis showed that most motorcyclists were involved in collisions with another vehicle and that this was often when they were travelling straight ahead, and another vehicle was exiting or entering a junction into their path. With contributory factors, speed choice and nervous behaviour (which includes 'learner or inexperienced driver/rider') also featured in the collision analysis and were correctly identified by respondents. However, respondents were incorrect in thinking that fatigue and poor weather conditions were contributing to collisions when these factors do not feature highly within the casualty data. It could be that these factors lead to unreported incidents (falls in slippery weather) or are underreported (as fatigue could be difficult to identify).

SOCIAL MEDIA PLATFORMS

In order to assist the NYRF with communicating with young riders, a number of questions were asked about how they access social media and entertainment. The respondents indicated that they mostly use Spotify (69%) and YouTube (49%) for accessing music.

Of the respondents, 87% use Netflix for viewing programmes and films; 62% use YouTube; and 51% use Amazon Prime Video. Traditional TV advertising is unlikely to reach this audience.

Figure 57 - Which channels respondents use for accessing music

Channel	%
Other	6%
Google Play/Android Marketplace	5%
Soundcloud	8%
Google (search engine)	4%
Amazon/Amazon mp3/Kindle	8%
Facebook	7%
iTunes/App store/ibookstore/Apple store	19%
Amazon Music	15%
YouTube	49%
Digital radio	11%
Spotify	69%
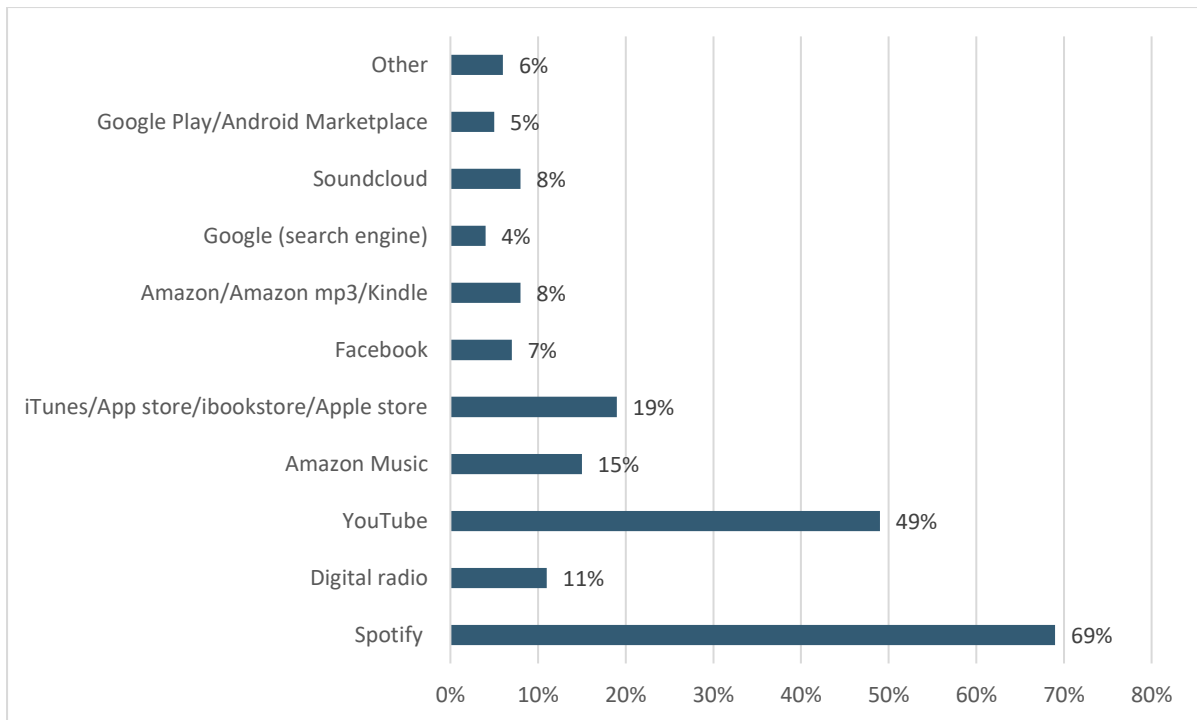
Figure 58 - Which of the following do respondents use for viewing programmes and films

Platform	%
Traditional TV	28%
Netflix	87%
Amazon Prime Video	51%
NowTV	18%
Disney Life	13%
YouTube	62%
Other	4%
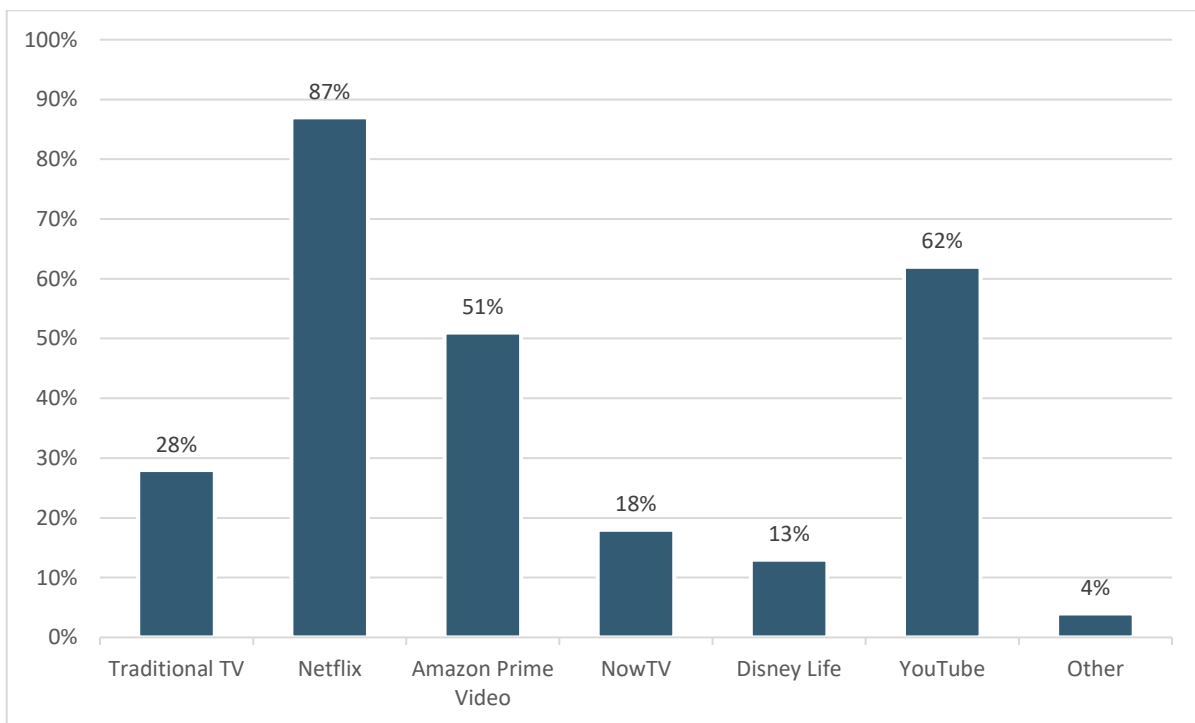
Thinking about the social media platforms that respondents use, 80% use Facebook; 76% use Instagram; and 68% use Snapchat. Twitter and Reddit are less often used.

Figure 59 - Which of the following social media platforms do respondents use
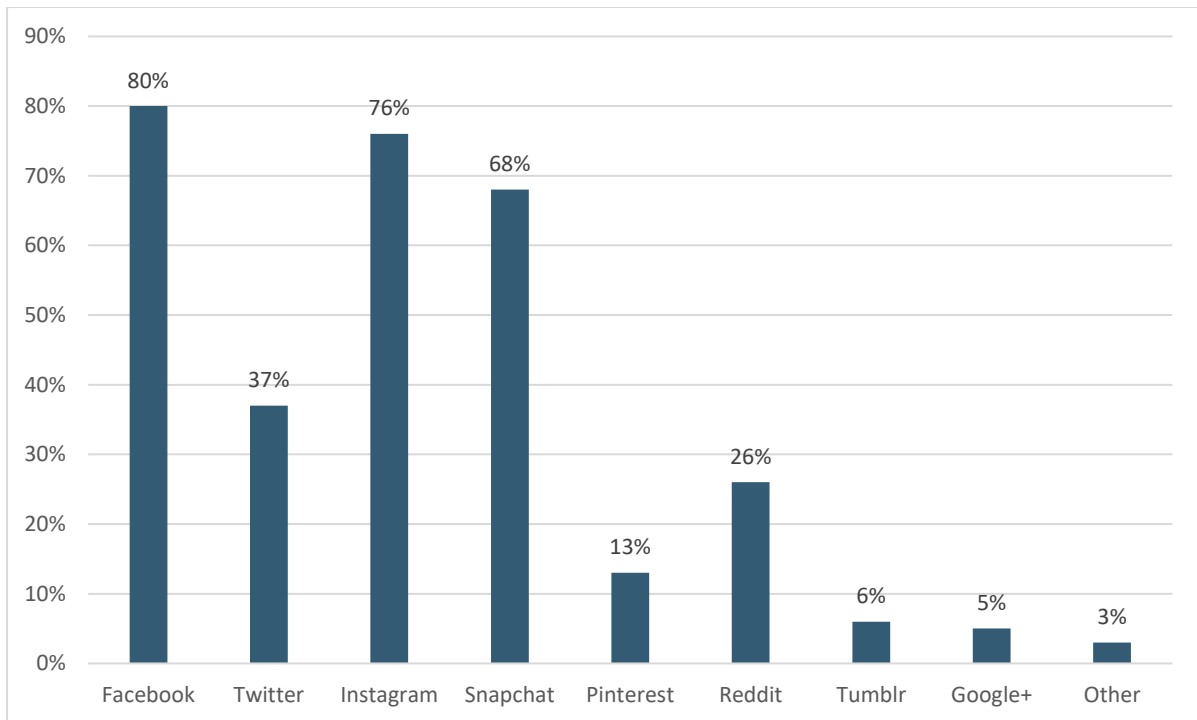
For information about riding, 59% of the respondents would use Google; 55% would use online forums; 42% would go to their motorcycle trainer; and 37% to their motorcycle retailer.

Figure 60 - If the respondents were going to look for information about riding, where would the respondent go
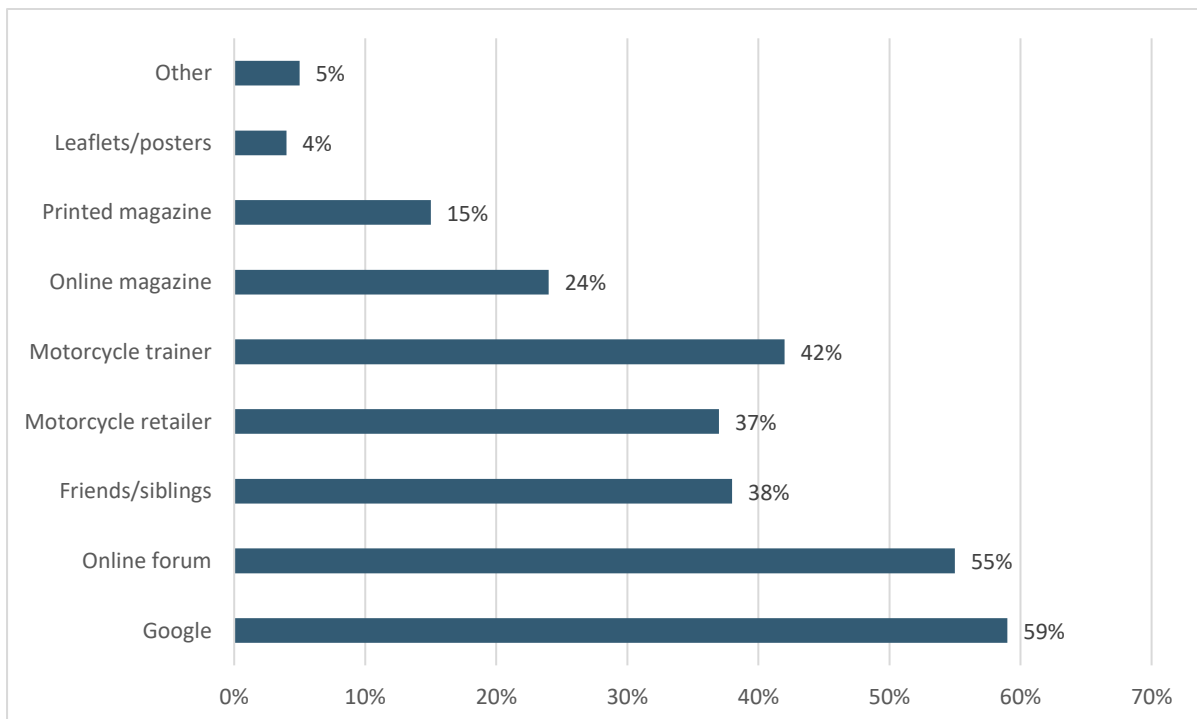
YOUNG RIDERS' APP

The NYRF wanted to understand if young riders would be interested in an app that provided advice and information about motorcycling.
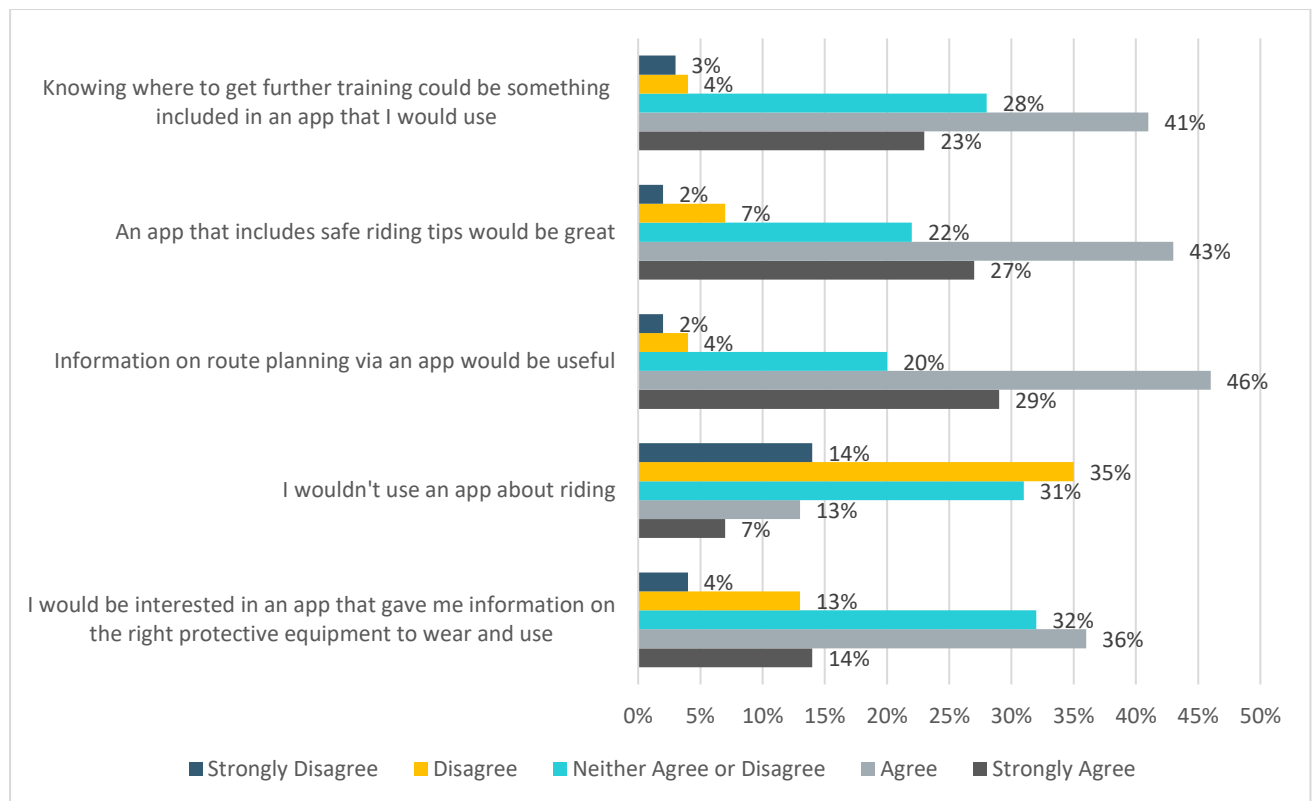
Of the respondents:

- 50% agree that they would be interested in an app that gave them information on the right protective equipment to wear and use.
- Only 20% agreed that they would not use an app about riding, and 31% neither agreed nor disagreed.
- 75% agree or strongly agree that information on route planning via an app would be useful.
- 70% agree or strongly agree an app that includes safe riding tips would be great.
- 64% agree or strongly agree that knowing where to get further training could be something included in an app that they would use.

Overall, respondents were positive about a motorcycling app that included information on training, safe riding tips, route planning and protective clothing, with only 20% stating that they would not use such an app.

Segmentation

GROUPING RESPONDENTS

Segmentation analysis was conducted on the survey respondents, not the interview participants (although some of the interview participants were recruited via the survey).

A deep learning algorithm was used to segment motorcyclists into groups based on the similarity of their questionnaire responses. A deep autoencoder neural network was used to spatially arrange motorcyclists so that those with more similar responses are closer together, and those who differ more are further apart. This technique takes a holistic approach, using all of the data available from the questionnaires, whilst also accounting for interdependencies between responses to different questions. Once the motorcyclists are arranged, a hierarchical clustering algorithm is used to form distinct groups of similar motorcyclists. The cluster hierarchy also provides super-groups of motorcyclists that show which of these groups are similar to each other. One of the major benefits of this technique is that it allows respondents to be grouped without researcher bias.

CLUSTERS

Figure 62 shows the way that the survey respondents were grouped by the system into 13 different clusters. The members of each cluster share common characteristics and responded to questions in the same way.

Figure 62 - Cluster analysis of survey respondents
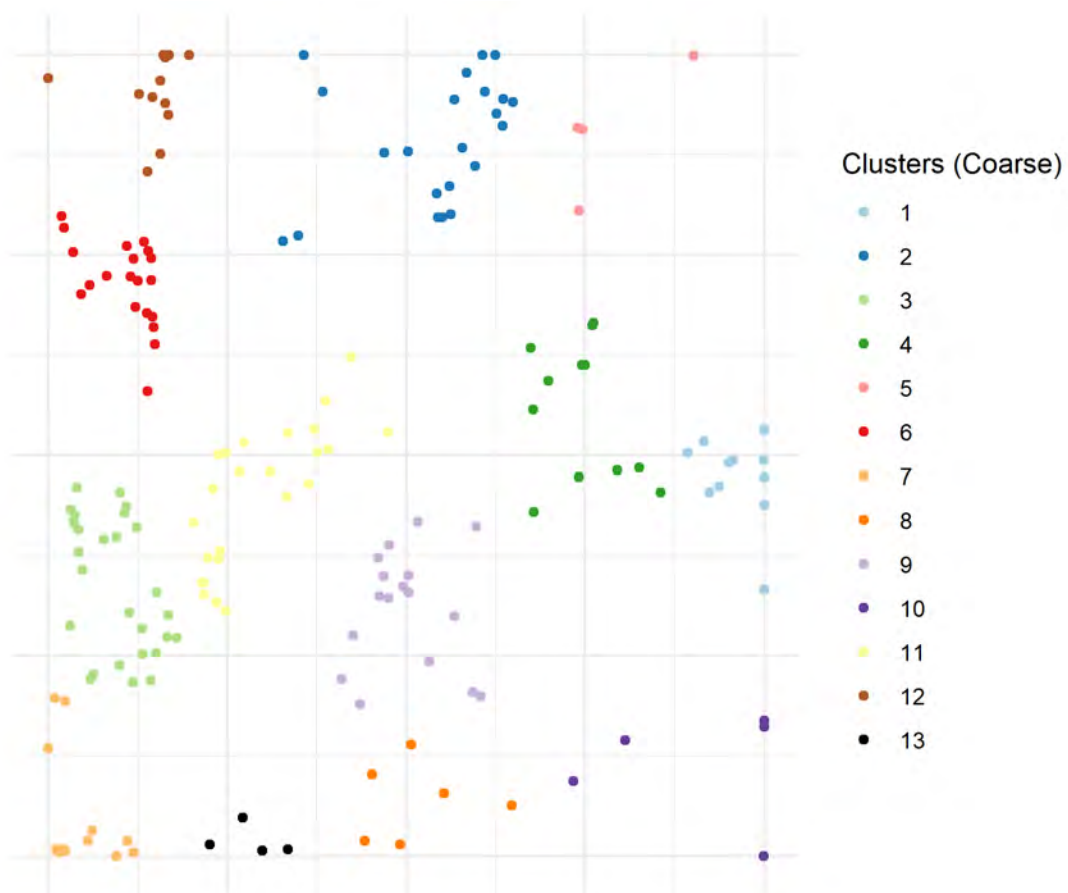
Manual analysis of the clusters revealed that there were also common characteristics between clusters, allowing them to be brought together in overarching groups. The creation of these overarching groups will assist road safety practitioners understand the similarities and differences between the different clusters.

Table 3 provides a summary of Group 1, who are described as 'Experienced Riders'. There are four clusters here and these align with the older riders from the casualty analysis. These clusters account for 27% of all participants and are riders who are most often in their early twenties and have completed the CBT and two-part test. Their age, training and experience levels mean that they tend to be quite confident riders and are not necessarily looking for support. Whilst the four clusters share a range of characteristics, some clusters have safer attitudes and behaviour than others.

Table 3 - Group 1: Experienced riders

Group 1	These clusters are more experienced and have undertaken more training than other clusters. They tend to be confident and are less likely to want support. Some clusters are safer than others.
Percentage of respondents	27%
Media preferences	YouTube, Facebook, Spotify, Netflix, Twitter, Snapchat, Instagram, Amazon Prime
Sources of riding information	Google, motorcycle trainer, online forum, online magazine (only Cluster 5)
Features in a riding app	Route planning, safety tips, further training
Cluster 1	**Experienced, confident career rider**
Percentage of respondents	6%
Characteristics	22-24 years old High mileage Completed CBT and two-part test Rides for most purposes (not work or commuting or college) Not a car aspirant Wears PPE Bought bike new from retailer Won't share their helmet or wear a damaged helmet Bought helmet based on looks Confident in all situations
Cluster 2	**Confident but not necessarily safe**
Percentage of respondents	12%
Characteristics	Mostly male Always interested in motorcycles Completed CBT and two-part test Doesn't wear all the PPE Definitely doesn't wear high visibility Bought helmet based on looks Wouldn't like a CBT over several days Would like CBT pre-learning Confident in all situations
Cluster 4	**Experienced, confident career commuter**
Percentage of respondents	7%
Characteristics	19-24 years Family are into motorcycles Completed CBT and two-part test Has a motorcycle over 125cc Not riding for work Commutes Not a car aspirant Wears PPE

	Bought bike online Won't share their helmet or wear a damaged helmet Would like hazard perception and theory test in CBT Wouldn't like CBT over several days but don't think it took too long Confident in all situations Rides safely
Cluster 5	**Experienced and safe car aspirant pleasure rider**
Percentage of respondents	2%
	19-24 years Mostly male Completed CBT and two-part test Pleasure rider Not riding for work Car aspirant Wears some PPE and doesn't wear jeans, trainers or tracksuits Bought bike new from retailer Won't share their helmet or wear a damaged helmet Doesn't choose their helmet based on looks Doesn't want additions to the CBT but would like post-CBT support Confident in all situations Has a safe attitude to riding

Table 4 provides a summary of Group 2, who are described as inexperienced riders. These motorcyclists have only completed the CBT but are enthusiastic about riding and are not aspiring to car ownership. There is a real opportunity to engage with these individuals at the start of their riding career, as they are asking for support to help them gain experience and increase their confidence. The cluster differences this time relate to gender, journey purpose and safe attitudes and behaviours. Overall, they account for 27% of survey respondents.

Table 4 - Group 2: Inexperienced riders

Group 2	These clusters are inexperienced in that they have only completed CBT. They identify themselves as motorcyclists. There is an opportunity to provide support to them as they gain experience and increase their confidence. Again, some of these clusters exhibit unsafe behaviours.
Percentage of respondents	27%
Media preferences	YouTube, Facebook, Spotify, Netflix, Twitter, Instagram, Amazon Prime, Reddit, Now TV
Sources of riding information	Google, motorcycle trainer, online forum,
Features in a riding app	Route planning, safety tips, further training, protective clothing
Cluster 9	**Inexperienced but safe female commuter**
Percentage of respondents	9%
Characteristics	More females Not riding for work Commutes Wears PPE Wears high visibility Won't share their helmet Aware of SHARP Got advice on helmet fitment Don't think CBT took too long Not confident on the faster roads Safe attitudes
Cluster 10	**Inexperienced college rider, wanting support**
Percentage of respondents	3%

Characteristics	Not high mileage
	CBT only
	Not riding for work
	Rides for college or university
	Doesn't report high PPE wearing but doesn't report wearing normal clothes
	Won't wear a damaged helmet
	Didn't buy their helmet for looks
	Would like pre-learning, theory test and post CBT support
	Confident on all roads apart from dual carriageways
	Safe attitudes
	Not confident filtering
Cluster 11	**Inexperienced, unconfident enthusiast**
Percentage of respondents	13%
Characteristics	Have always been interested in bikes
	CBT only
	Ride a Twist n go or geared bike up to 125cc
	Not riding for work
	Not a car aspirant
	Wears PPE
	Bought bike new from retailer
	Won't share their helmet or wear a damaged helmet
	Aware of SHARP
	Don't think the CBT took too long
	Not as confident on the faster roads
	Do vehicle checks
	Don't close follow
Cluster 13	**Inexperienced multi-purpose with mixed attitude**
Percentage of respondents	2%
Characteristics	Mostly male
	CBT only
	Ride a Twist n go or geared bike up to 125cc
	Rides for multiple purposes
	Not riding for work
	Not a car aspirant
	Wears some PPE
	Bought their bike online
	Won't share their helmet or wear a damaged helmet
	Would like theory test in CBT and post-CBT support
	Don't think the CBT took too long
	Not as confident on the faster roads
	Gets involved in races
	Feels safe filtering and doesn't close follow

Table 5 - Group 3: Inexperienced car aspirants

Group 3	The members of these clusters probably don't see themselves as motorcyclists as many are riding until they can get a car. They are not necessarily confident and don't always wear PPE. This could be because they do not see it as a worthy investment. They also exhibit some unsafe behaviours.
Percentage of respondents	35%
Media preferences	Netflix, Twitter, Amazon Prime
Sources of riding information	Google, friend/sibling, online forum, printed magazine (Group 8 only), Group 12 has no real preference
Features in a riding app	Protective clothing, further training. Group 12 – no real preference
Cluster 3	**Inexperienced car aspirant with mixed attitude**

Percentage of respondents	15%
Characteristics	CBT only Ride a Twist n go or geared bike up to 125cc Aspires to car ownership Sometimes wears jeans Got helmet fitment advice Felt the CBT gave them the skills to be a safe rider Confident on all roads apart from dual carriageways Never close follows
Cluster 6	**Inexperienced, unconfident car aspirants who don't wear PPE**
Percentage of respondents	12%
Characteristics	CBT only Ride a Twist n go or geared bike up to 125cc Not riding for work Aspires to car ownership Doesn't wear textile/leather gloves or trousers Doesn't wear armour Would like CBT over several days Not confident away from residential roads Doesn't race
Cluster 8	**Inexperienced, unconfident female car aspirants**
Percentage of respondents	3%
Characteristics	16-18 years More females Family members are into motorcycles CBT only Ride a Twist n go or geared bike up to 125cc Not riding for work Aspires to car ownership Aware of SHARP Would like CBT over several days but also felt CBT took too long (*this might indicate they felt there is too much content for one day*) Would like hazard perception as part of CBT Not confident away from residential roads Doesn't feel confident filtering
Cluster 12	**Car aspirant riding a second hand bike with no PPE**
Percentage of respondents	7%
Characteristics	More females Not high mileage Ride a Twist n go or geared bike up to 125cc Aspire to car ownership Sometimes wears jeans Doesn't generally wear PPE Didn't buy their bike new from a retailer Bought second hand from friends Would like CBT over several days but felt CBT took too long (*this might indicate they felt there is too much content for one day*) Would like pre learning with CBT Not confident away from residential roads Follows too closely Doesn't feel confident filtering Does vehicle checks

Table 6 - Cluster 7

Cluster 7	There was one cluster which did not seem to align well with the other clusters. This cluster rides for pleasure and does not aspire to car aspirant but they exhibit risky behaviours and may be 'hard to reach'.
Percentage of respondents	8%
Media preferences	Does not use Now TV, Facebook, Instagram
Sources of riding information	Friend or sibling
Features in a riding app	No real preference
Cluster 7	**Inexperienced pleasure rider not using PPE**
Characteristics	Ride a Twist n go or geared bike up to 125cc Not a car aspirant Wears trainers Doesn't report high PPE use Would like CBT over several days but felt CBT took too long Would like hazard perception in CBT Only confident on rural roads Gets involved in races

Interviews

Interviews were held with young riders. The purpose of the interviews was to delve deeper into the thoughts and experiences of young riders asking questions on:

- What they perceive to be motivations and barriers to riding
- What influenced them to ride and what could influence others to start riding
- Support they currently get and support they think would be beneficial
- Their thoughts around the CBT
- Which road user type they think is at most risk
- Young riders' inexperience
- Messages to other road users
- Protective clothing
- Their attitudes to riding whilst tired; as well as providing them the opportunity to raise any issues or concerns.

Due to the COVID-19 pandemic, the interviews took place remotely via Zoom. Thirteen interviews/paired interviews took place with fifteen young riders (eleven males and four females aged between 18-24).

This target group proved to be difficult to access and engage with, so the deadline was extended, an incentive was added (chance to win a £50 Amazon voucher), and participants were able to choose a date and time that suited them. Although only fifteen young riders participated in the interviews, interesting insights emerged from these conversations.

Before starting the discussion, the aims, objectives and purpose of the research were discussed, as well as gaining verbal consent from the participants. Participants were made aware that their names or other personal identifiers would not be included anywhere, and that only their gender and age would be used. It was made clear that anything they said would be kept strictly confidential and would only be used for the purpose of the research. All the interview discussions were audio recorded and transcribed.

The interview participants have been grouped within the clusters to see how they align with the online survey respondents (see page 58); however, it is worth mentioning that the assigning of clusters is based on the researchers' judgment based on the information provided during the interviews (where different questions were asked than in the survey).

WHAT INFLUENCED THEM TO START RIDING?

The participants were asked about why they got into riding, thinking about who or what influenced them (if anything) to start motorcycling. Figure 63 is a 'word cloud' which collates the words used in the responses and increases the size of the word according to how often it was mentioned.

Figure 63 - What influenced the participants to start motorcycling?

There were various factors that influenced the young riders to start riding, such as growing up around motorcycles and being influenced by their parents. Some have always been interested in motorcycles. Others started out riding for convenience, as it is a quick and easy way to become independent and travel to college and/or work, but for many of these, it either become their main form of transport or subsequently turned into a passion and hobby.

These responses may suggest that those who took the time to engage with the researchers and talk openly for this project are the most passionate about motorcycling and it is something that they care about. Conversely, it could be that young people who choose to ride a motorcycle are generally enthused about it.

WHETHER THEY MEET UP WITH OTHER YOUNG RIDERS

Interviewees were asked if they ever meet up with other young riders and if so, where do they meet. There were mixed responses to this question. The participants stated that there is not a general community feel amongst young riders and some of them found it difficult to find other young riders to ride with. Some of the participants have friends that they ride with and they tend to meet at car parks, general biker meet-up places, ride to each other's houses, or plan (coastal) routes together.

Interestingly, when speaking about 'young riders', some of the participants see them as the 'other'. For example, a few of the participants stated that young riders are generally immature, silly, not sensible and are looking to go out and kill themselves. As a result, some of the participants ride with older and more experienced riders.

'I don't ride with anyone my own age; I've got a mature head on my shoulders. There are young groups in my area but have never appealed to me as I've got a different attitude. For them, they meet up, cause some havoc, make some noise. They don't really care about the gear or safety or the important things – for me that's what riding is about. I much rather get along with a middle-aged person than someone my own age' (Female, 21, Cluster 5 – Experienced and safe car aspirant pleasure rider)

'They're immature and just silly in my area. I used to ride with people a little bit older – go to a café, get a drink and plan a route' (Male, 23, Cluster 2 – Confident but not necessarily safe)

'Years ago, when I had a 125cc – was into going to bike nights and group meets, biker events that you happen to see down at the coasts, not so much recently because been so busy with other things going on.' (Male, 24, Cluster 1 – Experienced, career rider)

'Got a couple of my friends into riding, meet up and ride around with them, coastal routes, back roads, around Norfolk' (Male, 20, Cluster 4 – Experienced, confident career commuter)

'Through social media I have – actually met my partner through it which was pretty cool, and I did end up working in a motorcycle shop and met a lot of youngsters through that especially other girls – like 'yeah let's go and ride our bikes'. The bike I've got as well has like a cult around them, so yeah, go on lots of meet ups […] Mostly youngsters.' (Female, 24, Cluster 9 – Inexperienced but safe female commuter)

WHAT PUTS PEOPLE OFF FROM RIDING AND WHAT COULD ENCOURAGE PEOPLE TO RIDE?

Figure 64 - What could put people off from riding?

There was an interactive element in the interviews which allowed the participants to add post-it notes to a virtual whiteboard, to share their views, about what they think could put people off from riding. Responses are shown in the Figure 64 word cloud included that there could be pressures from parents, as motorcycles and scooters are perceived as dangerous death machines and have a stigma attached. They also mentioned that the cost for young people is higher than it should be which could put some people off, as well as being exposed to weather conditions (ice and snow), and to road conditions such as potholes, fuel and oil on the road. Also, as a young person there are a lot more risks as a rider. They also mentioned that people may be put off by the risk of crashing; scared of being in control of a machine; that it is not convenient (for example carrying luggage); and it is seen as more of a hobby than a means of getting about.

Figure 65 - What could encourage people to start or continue riding?

The participants then had the opportunity to think about what could encourage people to start riding or continue to ride. They stated the positives of motorcycling as well as what more could be done. Some of the positives they stated was that motorcycling provides the ability to get to destinations faster (for example, not being stuck in traffic and can use some bus lanes), and also having the ability to filter through traffic. It is cheaper in running costs and insurance, compared to a car. They also mentioned that it gives young people more time to get used to the road and road safety before learning to drive (and helps them to become a better driver). Compulsory Basic Training is also an easy and cheap way to become independent and mobile. They also stated that through riding you can learn skills, gain confidence and more freedom, meet like-minded people, and make friends. They also mentioned the adrenaline rush you get from riding.

The participants also provided some suggestions for what could be done to encourage more people to start or continue motorcycling. Some of the participants mentioned that riding could be promoted as having utility benefits, rather than focusing on it being dangerous and something to be avoided. They also stated that if there was more training for car drivers, to understand motorcycle rules and behaviours on the roads, it might encourage people to start or continue riding as other road users can put them off. The participants also stated that more could be done by schools and colleges (such as promoting the benefits) and local councils (to provide safer parking). Some stated insurance costs for young people could be reduced to attract more people. Some of the participants also stated they would advise people who are interested to have a go on a motorcycle and to do CBT to see how great it is to ride. Also, they stated that more advertisements and advanced rider schemes could encourage people.

YOUNG RIDER SUPPORT

When asking young riders about who they would go to for support, some of the participants stated that they would go to experienced riders that they know such as family members. They would also go to their friends, their trainer, local mechanic and/or dealership, and some stated that they attend advanced training groups and have formed a support network. Some stated that they watch YouTube videos. One of the participants stated that he would just laugh with his friends if he made a mistake

whilst riding and believes there is no replacement for going out and riding and learning from your own mistakes.

When the participants were asked what further support they think would be beneficial for them, they stated that having an official website aimed at young riders, with key and accurate information regarding the different tests and what you can and cannot do, with lots of quick videos on maintenance, would be extremely helpful (as there seems to be a lot of confusion and mixed messages). The participants also stated that having more advanced courses and local groups/meet-ups targeted for young riders would be good, and some added having more experienced riders pass on their knowledge. Some stated that more support should come from the CBT, as well as the police (as motorcycle theft is rife). One of the participants believed that small bikes are dangerous and that you should be allowed on bigger bikes while still on L plates, as smaller bikes can only go to a certain speed which can put them at risk. Some of the participants stated that there are a lot of resources out there, you just need to find them, whilst others thought there could be more.

CBT – THEORY TEST AND HAZARD PERCEPTION TRAINING

In the interviews, the participants were asked if they think it would be beneficial to have a theory and/or hazard perception test as part of the CBT. There were a lot of mixed feelings – most of the participants stated that there should be more of a theory element and hazard perception training. However, there was mixed opinions on whether they should be formally or informally tested. Some stated that they should incorporate more theory and hazard perception training, but it should not be a formal pass or fail, and others thought the process should be the same as learning to drive. Some of the participants stated that the CBT should remain as it is, as it might put people off if it required more stages. Whilst it is a legal requirement to complete CBT, its current structure makes it easy to become independent and mobile. One of the participants put forward the idea of having an informal presentation on road safety during the CBT as having anything formal would put people off. Some stated that there should be more on-road training and not more classroom content, as you are more likely to learn on the bike and through gaining the experience. One of the participants suggested doing more challenging on-road training as part of the CBT and to pull over and discuss real-life hazards.

'Not really because the CBT is just teaching you how to ride a bike, you're not being assessed on anything in the CBT. If anything it could discourage people getting involved. It will probably encourage [them] to be safer, but it'll be an extra step to prevent new people. When you're 16 or 17 you don't want to have to do a theory test, just do your CBT and for a lot of people that's hard enough. The rest they just pick up on their own. As long as you talk them through basic road signs and to keep your head on a swivel and keep looking out – make them aware of it, but don't assess them on it. Just get out on the bike and ride – only so much you can learn on a perfectly dry car park' (Male, 21, Cluster 5 – Experienced and safe car aspirant pleasure rider)

'Definitely, 100%. I think both theory test and hazard perception need to be on there.' (Male, 20, Cluster 5 – Experienced and safe car aspirant pleasure rider)

'I wouldn't have liked to do a theory test, but I think there should be theory-based teaching before they let you out on the road – people aren't prepared enough – off you go and you don't know everything you should know to keep safe' (Female, 24, Cluster 9 – Inexperienced but safe female commuter)

'Definitely, I don't think it is fair to let them out on the road with little road knowledge – for cars you have to. Maybe something similar but not up to the same standard – maybe if it is just a presentation or package delivered by the instructors – something definitely needs to be put out there because

you're not aware of the dangers you've never encountered – when I used to go out in the first year nearly killed myself every time I went out – that goes into the memory bank – near misses. Like a package of common things that go wrong – would be beneficial […] Informal because CBT isn't a full test – it would put people off having an official test and doing CBT and going to a test centre. So, do a presentation, add some hazard perception videos made available online' (Female, 21, Cluster 5 – Experienced and safe car aspirant pleasure rider).

'100% think it's wrong that you're allowed to jump straight onto the road without theory test, you're just thrown in the deep end straight away. It's not only dangerous for yourself but for other people – don't know the rules of the road and how to go around the road. It should be exactly the same as the car/theory/hazard perception test […] should be formally tested' (Male, 18, Cluster 13 – Inexperienced multi-purpose rider with mixed attitude).

MOST AT RISK ROAD USER

A poll style question was added to give the participants a chance to reflect and choose which road user they thought is at most risk of being killed in a collision per billion miles travelled.

Figure 66 - Road user at most risk of being killed in a collision
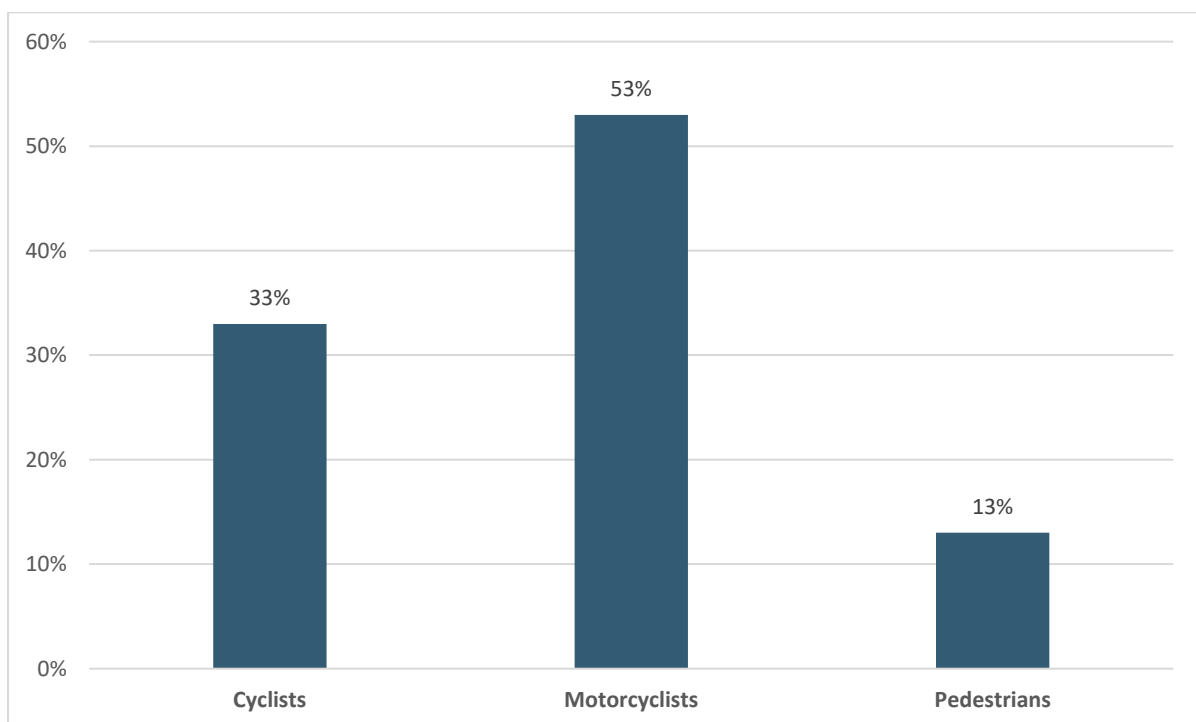
Of the participants, 33% stated cyclists were at greatest risk and the reasons they provided were that cycles do not have an engine, so they are not heard. They also thought that cyclists get in the way and do not adhere to the rules of the road. Some stated pedestrians (13%) because they do not wear protective gear and they do not look when crossing roads. Half of the participants stated motorcyclists (53%). They believed they were at most risk because motorcyclists do not wear enough protective gear and by law, they only must wear a helmet. They also mentioned that a lot of motorcyclists will overtake in more dangerous locations than cars would, and they accelerate much quicker therefore have a false sense of security as they think they can go a lot quicker than they can. It is interesting to see that participants were aware of the vulnerabilities of motorcyclists and linked these to the fact that some motorcyclists wear little or no protective equipment (apart from the mandatory helmet), and motorcyclist behaviours.

Within the interview, it was briefly touched on whether the participants had been involved in a collision – most had not. One participant had collided with a taxi due to inexperience and the taxi driver not indicating, which resulted in the participant going over the bonnet and sustaining soft tissue damage. Most participants have had incidents where they have come off their bike on their own but had not been involved in serious collisions.

YOUNG RIDERS' INEXPERIENCE OR SOMETHING ELSE?

The participants were asked whether they believe young riders are at risk because of their own inexperience or if there is something else contributing. Most of the participants stated that inexperience has to do with it, as well as young riders' overconfidence and other inconsiderate road users who are not looking out for motorcyclists and not looking twice before pulling out.

'I think it's a mix of inexperience and overconfidence, believe that 'I'm better than I actually am' and showing off to mates and get an adrenaline rush being on the bike, so you feel a lot more capable than you can be because of adrenaline rush' (Male, 20, Cluster 13 – Inexperienced multi-purpose rider with mixed attitude)

'Yes – a lot of it is [inexperience], they don't know like carry speed around a corner, a lot of people I know, we all ride fast back routes, so many people gun it and hammer the brakes and then gun it' (Male, 23, Cluster 2 – Confident but not necessarily safe)

'50/50, inexperience and also car drivers not looking out for bikes. Experienced myself in a car – look one way and it was a country lane and no one was there and pulled out and it was 40mph and he's going 70mph and almost hit him. Maybe I could take a second look, but most car drivers aren't looking for smaller things. Particularly at night – one single light instead of two – mistake for something else. As you can see a car pulling out, move your bike, so the light is moving, and the driver reacts more to a moving light than something that is still - learnt that from the advanced course' (Male, 20, Cluster 5 – Experienced and safe car aspirant pleasure rider)

'That's an aspect of it – as you get more experience you know not to do certain things – or what a car would possibly do. And how cars treat other people. I would ride 30mph on a 30mph bend and cars will overtake me because I have an L plate whereas they wouldn't do that to my dad' (Female, 18, Cluster 10 – Inexperienced college rider, wanting support)

'Inexperience, as you're just getting used to it, after first couple of months you start getting cocky with it become overconfident, so inexperience sort of benefits them in a way. Mainly say overconfidence' (Male, 21, Cluster 5 – Experienced and safe car aspirant pleasure rider)

'Bit of both – young so don't have the road awareness and other drivers because people don't indicate or look in the mirrors or rush' (Male, 23, Cluster 2 – Confident but not necessarily safe)

MESSAGES TO OTHER ROAD USERS

Figure 67 – Participants' messages to other road users

Figure 67 is another word cloud. Participants were asked to make a note of what message they would like to give to other road users that they believed would make it safer for them and others whilst out riding. They mentioned respect, to look out for us, to look twice and check their blind spots. They wanted others to be aware of all road users and how road conditions affect them differently and to give extra room in the wet and wind. They also mentioned giving motorcyclists more room generally and to know that they have the same rights as car users, and to allow them to filter when appropriate. They ask other road users to be patient with motorcyclists, especially with those with L plates or smaller bikes which can only go up to 30mph by law, not by choice. Also, displaying L plates does not mean they are an easy target to bully on the roads. They also ask other road users to overtake them as they would a car, not a cyclist. Also, if a motorcycle overtakes them – not to take it personally. They also stated that not all motorcyclists are the same and want to race and therefore ask not to add pressure on to them to go fast and that not all motorcyclists dart between lanes and smash mirrors. They would also like other road users to know that filtering is legal.

YOUNG RIDERS AND PROTECTIVE CLOTHING

The participants were asked if they have all the protective gear. Most of the participants stated that they have all the protective gear and wear it all most of the time. A small handful stated that they find it difficult to wear all the protective gear during the summer months when they would prefer to wear jeans and trainers. Some stated they only wear the full protective gear if they are doing a long journey. Another participant stated she would not wear protective trousers to work as they make a noise when she walks, and they are a hassle to change out of and carry around. The participants were asked what the barriers are for wearing protective clothing and they stated the expense, appearance, inconvenience, and protective clothing not being easily accessible. A couple of females mentioned how it is difficult to find protective clothing for women that fits and is not all pink.

'It's expensive – might go shopping and pick up a pair of jeans for £20, for motorcycle the cheapest I got was £120, same for the jacket starting price. For some people that's really expensive. A lot of

young people don't think about their safety – don't think it's cool, don't want to be seen to be safe.'
(Male, 20, Cluster 5 – Experienced and safe car aspirant pleasure rider)

'it is expensive, just going down the road think they can get away with it' (Male, 23, Cluster 2 –
Confident but not necessarily safe)

*'Appearance plays a role, at 16 don't wear it and then get used to not wearing it and looking 'cool'
if you're having an accident this time of the night, not going to be seen, need to have reflective stuff'*
(Female, 18, Cluster 6 – Inexperienced, unconfident car aspirant who don't wear PPE)

*'Not easily accessible and expensive – want to go to work and easily start work and look okay, don't
want it to look like obvious safety gear, young people want to look the part – look cool not like the
Michelin man hear them walking from a mile away with their bulky trousers'* (Female, 24, Cluster 9 -
Inexperienced but safe female commuter)

*'Such an issue for women's clothing, [the] men's range is so much bigger, and a lot of women's gear is
girly and very pink. Some women might like that, but I don't want to wear all pink, trying to find stuff
that fits is a nightmare'* (Female, 18, Cluster 10 – Inexperienced college rider, wanting support)

*'If it's got hi-vis on, any hi-vis, people don't want to wear it. They have to think about what they're
wearing and if it fits in with their group of mates – not a real way to get around that'* (Male, 21,
Cluster 5 – Experienced and safe car aspirant pleasure rider)

'Think it looks unstylish, makes them look fat, not fashionable' (Male, 18, Cluster 13 – Inexperienced
multi-purpose rider with mixed attitude)

The participants were then asked what they think would help to motivate young people to wear protective clothing. Most stated there needs to be more awareness and campaigns out there on what would happen if you do not wear protective gear while riding. They also stated that it should be made law to wear all protective clothing. One of the participants stated that the only way to motivate people is to let them come off their bike and realise how important it is to wear protective clothing. Others suggested having more deals and making protective clothing affordable.

*'People need to be educated on what's happened in the past when someone has not worn the gear, so
maybe photos of coming off the bike and road rash and losing all their skin. If you don't wear gear and
have a serious accident – it is life changing or it could kill you either way. Awareness on why it's
important and what can happen if you don't. Should be law to wear protective clothing.'* (Male, 20,
Cluster 5 – Experienced and safe car aspirant pleasure rider)

*'Let them come off without it, if you've done it once, you don't want to do it again – I know I don't
anyway. Just let people come off and find out how painful it is when they do'* (Male, 21, Cluster 5 –
Experienced and safe car aspirant pleasure rider)

RIDING WHILST TIRED

The participants were asked their thoughts and opinions about riding whilst tired. Most of them believed it is high risk and dangerous and compared tired driving/riding to drink driving. They understood that it can sometimes be unavoidable if it gets too late (and they tend to ride as they would not like to leave their bike anywhere out of fear of theft). They all have, however, come up with coping strategies such as taking regular breaks; planning where they intend to stop before the ride; making

sure they drink caffeine; that they get plenty of sleep; pulling over if too tired to refresh themselves; and remaining alert and cautious while riding.

'Definitely – I used to work in a theatre and come back home 4 or 5 am regularly after 12 hours of hard manual labour. Your reactions drop, you're tired, you're not focused, and you do 20 miles, and you think "how did I get here?" You do zone out, lucky nothing happens, but reactions are lower, but you do get home, but if something were to happen, you're not in your prime to react really' (Female, 21, Cluster 5 – Experienced and safe car aspirant pleasure rider)

'I've done it a few times – I know driving while driving tired is similar to drunk driving, I've felt not safe or stable. One of my friends was involved in an accident where someone pulled out on him. We stayed overnight in Weston – rode back and didn't sleep and he had to go to work straight away and got into the accident because of his reaction time.' (Male, 20, Cluster 5 – Experienced and safe car aspirant pleasure rider)

'I wouldn't ride if I'm tired, I wouldn't jump on a bike, no point in risking it, could forget something very little. In a car you're constantly looking everywhere, and you have more distractions as you're in a warm box, got your phone, your radio, satnav, there's a lot of things that can distract you as a car driver. You're a lot more concentrated as a rider – not that many distractions' (Male, 21, Cluster 4 - Experienced, confident career commuter)

OTHER THOUGHTS AND EXPERIENCES

Towards the end of the interview, the participants were given the opportunity to express any other thoughts around young riders or whether they wanted to share any other experiences they have had as young riders.

A few of the participants mentioned how difficult it would be to access young riders as although social media is a good way to target them, a lot of young people do not use Facebook. However, they recommended social media platforms such as Instagram, Snapchat and TikTok. They mentioned that having short snippet videos (not long videos as young people have short attention spans) such as "Maintenance Mondays" on these platforms would be more beneficial than having to go on a separate website. They stated that they would like videos for tips and maintenance, for example, how to adjust their chain and other simple maintenance, as taking the bike to a garage can be expensive. They also mentioned that having a young person involved in the videos would make it more relatable than having someone from a different generation. Another participant stated how colleges are a good way to target young riders as at their local college they were offered motorcycle night school and learnt how to maintain a bike.

One of the participants stated that a lot of young riders need to support one another more as there is not a lot of support between them and there is not a community feel. This can be because they do not want to make new friends with other motorcyclists and go for a ride together and be friendly, like it is for the older generation. He has found it difficult to access and engage with young riders.

A couple of the participants also mentioned how dangerous it is to ride a 50cc as it can only be ridden up to 30mph and other road users tend to get angry and overtake closely. This can make it hazardous and it also adds pressure to those on L plates to ride faster to avoid getting bullied on the road. Therefore, they state, it should be allowed to start on a bigger bike to get away safely from those types of road users who do not like to share the road.

One of the participants expressed that motorcycles are not safe and that there is a need to stop trying to make them as safe as possible. He stated that you do not get on a motorcycle with the illusion that

you are going to be 100% safe as that is not how it works. He stated that incorporating motorcycles in the theory test for car drivers would be better than any campaign to educate them.

Some of the participants also mentioned that it is quite complicated to understand the different stages and tests that are needed to be done to be fully qualified by 24 years old. They found there is a lack of clear information and that there should be a breakdown of the different tests and stages on an official government website. They also expressed how expensive it can be to do the different tests.

Conclusions

Through analysing national collision data; conducting online surveys and semi-structured interviews with young motorcyclists; and segmenting the data, we have gained interesting insights into young riders. With all parts of this project, it has become very clear that there is no such thing as a 'young rider'. Instead, there are a range of types of individual who choose to ride a motorcycle for a range of reasons; who have different experience levels; and who have different attitudes towards motorcycling and behave in different ways. For road safety practitioners, this is important. Interventions will need to be tailored to specific types of young rider, thinking about their motivations, attitudes and needs.

Firstly, it is important to re-emphasise the size of this problem. There were 30,862 young people (16-24 years) injured whilst riding a motorcycle in Great Britain between 2014 and 2018. The majority of these casualties were young males on motorcycles with engines up to 125cc. When comparing with young driver casualties, the numbers of young motorcyclists killed or seriously injured exceeds the numbers of young car drivers for all ages from 16 to 23 years. This is despite car traffic accounting for 78% of vehicle miles in 2016 in Great Britain, compared to 0.9% of vehicle miles being by motorcycle (for drivers of all ages). The highest numbers of young rider casualties were aged between 16 and 21 years old. Rider casualties tend to live in urban areas and are involved in collisions in urban areas.

Looking at the sociodemographic characteristics of young rider casualties, there were overrepresentations of Mosaic Groups M (*Family Basics*) and O (*Municipal Tenants*). Both of these Groups live on limited resources and have squeezed budgets, which may impact on the type of motorcycle they purchase, the training they undertake and the personal protective equipment they use.

Most of the young motorcycle casualties were near a junction at the time of their collision, with many of them travelling straight ahead and in conflict with a car. This could mean that the cars are pulling out of T-junctions into the path of the motorcyclist. This has implications for engagement with other road users, as well as finding ways to reduce motorcycle risk when approaching junctions. How conspicuous they are to other road users, due to clothing and road positioning, and their approach speed are all important factors.

The responses to the survey and interviews align well to the collision analysis. Those who participated in this research are aware of their vulnerabilities as motorcyclists, displaying good knowledge about the importance of helmet choice, maintenance and wearing it correctly. Survey respondents reported riding on the assumption that other road users had not seen them and that they feel intimidated when not given enough space. This was echoed in the interviews when asked about what messages they would like to give to other road users. They wanted respect from other road users and to ask them to look twice and check with blind spots. They asked for patience from other road users, especially when riding on L plates and for others to realise that filtering is legal. Returning to the concept of there being no such thing as a 'young rider', interviewees want other road users to know that not all bikers are the same and they should not make assumptions about their behaviour based on the behaviour of other motorcyclists.

In the survey, respondents believed that bad weather, riding too fast, the actions of other road users and young rider inexperience are the factors contributing to young rider collisions. Comparing these results with the collision analysis shows that young riders have a reasonable understanding of why young riders can be involved in collisions, although are incorrect about bad weather conditions often

being contributory factors. Inexperience was explored in the interviews, with most participants feeling that young rider inexperience increased risk. However, they felt that this could quickly be replaced by overconfidence and that other road users not looking out for smaller vehicles also played a part.

It was interesting to hear the routes into motorcycling and their thoughts on how to encourage others to take it up. Over half of the survey respondents stated they have always been interested in riding motorcycles and a third of them stated that they have a family member who is into motorcycles which may have influenced them to start riding. This was also observed in the interviews as some of the participants stated that they have always been interested in motorcycles and others started out of convenience, as it is a quick and easy way to become independent and travel to college and/or work. It has then either become their main form of transport or subsequently turned into a passion and hobby.

Most of the survey respondents (82%) commute to/from work and/or college or university most days on their motorcycle, therefore, the motorcycle may be their main form of transport. It should therefore be borne in mind that those who participated in the survey and/or interviews are likely to be enthusiastic riders and may not represent all of the rider types out there (for example, the car aspirants who are riding for a short period for necessity or those who ride for work, not choice). Interestingly, while a third of young rider casualties were riding for work at the time of their collision, low percentages of survey respondents reported regularly riding for work. The survey respondents were self-selecting, and they may not have identified themselves as 'motorcyclists' because riding is a function of their job, not who they are. This may influence how they are accessed and engaged with.

A majority of survey respondents reported doing basic vehicle checks, and motorcycle maintenance emerged as a topic in the interviews when asked what further support they would like. They were asking for short snippet videos on how to adjust their chain and other basic maintenance tips, preferably presented by a young person. It was felt these could be shared on Instagram, Snapchat or TikTok so they don't have to visit a separate website.

The survey respondents were asked questions on personal protective clothing (PPE) and whether they wear different items all the time, sometimes, or never. There were some mixed and worrying responses, with nearly three-quarters sometimes wearing a tracksuit when riding and half sometimes wearing trainers. Similarly, around half of the respondents admitted to never wearing leather or textile boots or jackets. However, when asking the interview participants, most stated that they have all the protective clothing, but a small handful admitted that they do not always wear all of it (some may not have felt comfortable to admit this to the researcher out of fear of being judged whereas this is eliminated in an anonymous online survey).

The participants were asked what might prevent young people from wearing protective clothing; by externalising the question and not concentrating on them personally, it was hoped that their answers would be more likely to reflect their true feelings. Responses included worrying about appearances; the costs of purchase; the inconvenience of wearing them (especially in the summer and getting changed out of PPE and carrying it around); or not finding clothing that fits (this was a common problem for the female participants). A handful of the interview participants suggested having campaigns to show the difference of wearing PPE and of not wearing PPE, as this may influence those who do not always wear it. As a result, this would be a good area for NYRF to focus on. It should be remembered that there is evidence to show that fear appeal can be counterproductive, especially amongst young males. Careful consideration should be made to the use of graphic images of injuries sustained by those not wearing PPE and perhaps campaigns should focus on social norms, positive modelling and countering the perceived barriers to wearing PPE. Information on where to find affordable PPE would be welcomed.

Messaging could be linked to visibility and bike light maintenance and configuration, highlighting that almost a third of their collisions occur at night.

Interestingly, over half of the survey respondents believed that the CBT did not give them all the skills they need to be a safe rider and believed that including a hazard perception test and pre-learning before the CBT would have helped them to be more prepared. As a result, in the interviews, the participants were asked if they think it would be beneficial to have a theory and/or hazard perception as part of the CBT. There were a lot of mixed feelings – most of the participants stated that there should be more of a theory element and hazard perception training. However, there was mixed opinions on whether they should be formally or informally tested. Some stated that it should be the same as learning to drive a car, while others stated this may put people off and that more on-road training would be more beneficial.

Whilst most respondents indicated that they did not engage in risky behaviours, such as following too close, racing, and riding too fast into corners, there were those who did indicate that they did these things. Some of these risky behaviours emerged in the interviews, as activities that other young riders engage in (often by those who meet up in groups). In the online survey, two-thirds agreed that they felt safe filtering through stationary traffic, so supporting them to do this properly is important. It was also raised by a few of the interview participants, who highlighted that filtering is legal but there is no support for young riders on how to filter appropriately. It is not something that is taught or encouraged in the CBT.

The survey respondents were quite positive about a motorcycling app that included information on training, safe riding tips, route planning and protective clothing, with only 20% stating that they would not use such an app. Within the interviews, most of the participants stated an app or website targeted at young people would be useful and suggested small snippet videos on motorcycle maintenance. In the survey, the respondents indicated that they mostly use Spotify (69%) and YouTube (49%) for accessing music, and out of the social media platforms that respondents use, 80% use Facebook; 76% use Instagram; and 68% use Snapchat. Twitter and Reddit are less often used. Traditional TV advertising is unlikely to be effective.

This report brings together collision analysis with insights from young motorcyclists themselves. There are clear opportunities to combine the findings from these different sources to provide the support they would like, and the support they need, in order to reduce the risks identified in the collision analysis.

RECOMMENDATIONS

Overall approach

- For NYRF members and other stakeholders to use this report as a guide when creating interventions targeting young riders, working with colleagues to drill down into their local young rider collision issues.
- Consider that there is diversity between young riders, with their interests, motivations, experience, behaviour, and attitudes differing. Interventions will need to be tailored according to the type of rider who is the target.
- To target the youngest segments of young riders (16 to 21 years old) as these are the motorcyclists most at risk of collision involvement. Furthermore, the segmentation, surveys and interviews suggest that these are the riders requiring the most support. They have less experience and have undergone less training, providing an opportunity for engagement and assistance before poor habits or attitudes are developed.

Engagement

- Identify effective ways to engage with young riders who are using a motorcycle for the first time to commute to school, college, or an apprenticeship. Whilst working with educational establishments is one option, the numbers of young riders per institution may be small.
- Identify ways in which to engage with gig economy and delivery riders, who may not identify as motorcyclists. Working with businesses may be the more effective method of engagement.
- Look to accessing, and engaging with, young riders on social media platforms such as Instagram, Snapchat and TikTok.
- Work collaboratively with trainers to access and engage with this group as young riders tend to approach their trainers for support. This could involve encouraging training bodies to deliver the DVSA's RideFree scheme and promoting the scheme to increase participation amongst young riders.

Training

- Liaise with DVSA on the findings and discuss the support surrounding CBT that young riders would like.
- Creating online theory-based and hazard perception resources and/or presentation on 'what could go wrong' to assist those new to riding.
- Provide support on how to filter appropriately.

Websites and apps

- The creation of a website or app aimed at young riders with key and accurate information regarding the different tests and what you can and cannot do and lots of quick videos on maintenance would be extremely helpful.
- The app or website could include route planning, safe riding tips, and information on training and protective clothing.

Campaigns

- Focus on PPE as young riders admitted to not always wearing it all – perhaps as a campaign showing the consequences of not wearing PPE (although not based on fear appeal)
- Highlighting the importance of their visibility and bike light maintenance, alongside adopting good road positioning and approach speeds will help reduce their risk at night-time and at junctions.

Further research

- Investigate which online forums they use to access information, exploring partnerships and cross-referencing of materials and resources.
- Undertake exploratory work to understand where motorcycles are purchased from, given a third said they bought theirs second hand and 12% online. Advice on motorcycle purchase could be included in an app or website.
- Undertake further research to explore why 44% of survey respondents thought that drink and drugs were a factor in young rider collisions and whether this is due to their own behaviour, the observed behaviour of others or based on other information (or misinformation).

APPENDIX A: SELECTED MOSAIC GROUPS

16 to 18 under Mosaic Groups		
M Family Basics	**G** Rural Reality	**H** Aspiring Homemakers
Family Basics are families with children who have limited budgets and can struggle to make ends meet. Their homes are low cost and are often found in areas with fewer employment options. Typically aged in their 30s and 40s, Family Basics consists of families with school age children, who can be overstretched due to limited opportunities, low incomes and the costs of raising their children. In addition to younger children, some families also continue to support their adult offspring.	Rural Reality are people who live in rural communities and generally own their relatively low cost homes. Their moderate incomes come mostly from employment with local firms or from running their own small business. Rural Reality are a mix of families, mature couples and older singles living in lower cost housing. Some live in developments that have sprung up around villages, others in scattered hamlets or in remote communities.	Aspiring Homemakers are younger households, who have, often, only recently set up home. They usually own their homes in private suburbs, which they have chosen to fit their budget. Aspiring Homemakers are typically younger families, couple who are yet to have children, and singles in their 20s and 30s. A good number are setting up homes for the first time. Couples can be married or more likely cohabiting, and where there are children they are usually of nursery or primary school age.

19 to 21 under Mosaic Groups		
M Family Basics	**O** Municipal Tenants	**I** Urban Cohesion
Family Basics are families with children who have limited budgets and can struggle to make ends meet. Their homes are low cost and are often found in areas with fewer employment options. Typically aged in their 30s and 40s, Family Basics consists of families with school age children, who can be overstretched due to limited opportunities, low incomes and the costs of raising their children. In addition to younger children, some families also continue to support their adult offspring.	Municipal Tenants are long-term social renters living in low-value multi-storey flats in urban locations, or small terraces on outlying estates. These are challenged neighbourhoods with limited employment options and correspondingly low household incomes. People in Municipal Tenants are typically of working age. These are some families with children, but most are singles.	Urban Cohesion are settled extended families and older people who live in multi-cultural city suburbs. Most have bought their own homes and have been settled in these neighbourhoods for many years, enjoying the sense of community they feel there. Urban Cohesion contains both families with school age children and older children, and older people pre and post retirement. A good proportion are larger families who share their home with elderly parents or other family members.

22 to 24 under Mosaic Groups

M Family Basics	O Municipal Tenants	I Urban Cohesion
Family Basics are families with children who have limited budgets and can struggle to make ends meet. Their homes are low cost and are often found in areas with fewer employment options. Typically aged in their 30s and 40s, Family Basics consists of families with school age children, who can be overstretched due to limited opportunities, low incomes and the costs of raising their children. In addition to younger children, some families also continue to support their adult offspring.	Municipal Tenants are long-term social renters living in low-value multi-storey flats in urban locations, or small terraces on outlying estates. These are challenged neighbourhoods with limited employment options and correspondingly low household incomes. People in Municipal Tenants are typically of working age. These are some families with children, but most are singles.	Urban Cohesion are settled extended families and older people who live in multi-cultural city suburbs. Most have bought their own homes and have been settled in these neighbourhoods for many years, enjoying the sense of community they feel there. Urban Cohesion contains both families with school age children and older children, and older people pre and post retirement. A good proportion are larger families who share their home with elderly parents or other family members.

19 to 21 over Mosaic Groups

M Family Basics	O Municipal Tenants	L Transient Renters
Family Basics are families with children who have limited budgets and can struggle to make ends meet. Their homes are low cost and are often found in areas with fewer employment options. Typically aged in their 30s and 40s, Family Basics consists of families with school age children, who can be overstretched due to limited opportunities, low incomes and the costs of raising their children. In addition to younger children, some families also continue to support their adult offspring.	Municipal Tenants are long-term social renters living in low-value multi-storey flats in urban locations, or small terraces on outlying estates. These are challenged neighbourhoods with limited employment options and correspondingly low household incomes. People in Municipal Tenants are typically of working age. These are some families with children, but most are singles.	Transient Renters are single people are pay modest rents for low cost homes. Mainly younger people, they are highly transient, often living in a property for only a short length of time before moving on. Households in this group are typically aged in their 20s and 30s and are either living alone or homesharing. Very few people are married and there are few children.

22 to 24 over Mosaic Groups

M Family Basics	O Municipal Tenants	I Urban Cohesion
Family Basics are families with children who have limited budgets and can struggle to make ends meet. Their homes are low cost and are often found in areas with fewer employment options. Typically aged in their 30s and 40s, Family Basics consists of families with school age children, who can be overstretched due to limited opportunities, low incomes and the costs of raising their children. In addition to younger children, some families also continue to support their adult offspring.	Municipal Tenants are long-term social renters living in low-value multi-storey flats in urban locations, or small terraces on outlying estates. These are challenged neighbourhoods with limited employment options and correspondingly low household incomes. People in Municipal Tenants are typically of working age. These are some families with children, but most are singles.	Urban Cohesion are settled extended families and older people who live in multi-cultural city suburbs. Most have bought their own homes and have been settled in these neighbourhoods for many years, enjoying the sense of community they feel there. Urban Cohesion contains both families with school age children and older children, and older people pre and post retirement. A good proportion are larger families who share their home with elderly parents or other family members.

APPENDIX B: CONTRIBUTORY FACTOR GROUPINGS

Injudicious Action	Driver Errors or Reactions	Driver Impairment or Distraction	Behaviour or Inexperience	Other
Traffic Contraventions	**Manoeuvre Errors**	**Substance Impairments**	**Nervous Behaviour**	**Vehicle Defects**
Disobeyed automatic traffic signal	*Poor turn or manoeuvre*	*Impaired by alcohol*	*Nervous, uncertain, or panic*	*Tyres illegal, defective, or under-inflated*
Disobeyed double white lines	*Failed to signal or misleading signal*	*Impaired by drugs (illicit or medicinal)*	*Learner or inexperienced driver/rider*	*Defective lights or indicators*
Disobeyed 'Give way' or 'Stop' signs or markings	*Passing too close to cyclist, horse rider or pedestrian*		*Inexperience of driving on the left*	*Defective brakes*
Disobeyed pedestrian crossing facility			*Unfamiliar with model of vehicle*	*Defective steering or suspension*
Illegal turn or direction of travel				*Defective or missing mirrors*
				Overloaded or poorly loaded vehicle or trailer
Speed Choices	**Control Errors**	**Distraction**	**Unsafe Behaviour**	**Road Surface**
Exceeding speed limit	*Sudden braking*	*Driver using mobile phone*	*Aggressive driving*	*Poor or defective road surface*
Travelling too fast for conditions	*Swerved*	*Distraction in vehicle*	*Careless, reckless or in a hurry*	*Deposit on road (e.g., oil, mud, chippings)*
	Loss of control	*Distraction outside vehicle*		*Slippery road (due to weather)*
Close Following	**Observation Error**	**Health Impairments**	**Pedal Cycle Behaviour**	**Affected Vision**
Following too close	*Failed to look properly*	*Uncorrected, defective eyesight*	*Vehicle travelling along pavement*	*Stationary or parked vehicle(s)*
	Failed to judge other person's path or speed	*Illness or disability, mental or physical*	*Cyclist entering road from pavement*	*Vegetation*
			Not displaying lights at night or in poor visibility	*Road layout (e.g., bend, winding road, hill crest)*
			Cyclist wearing dark clothing at night	*Buildings, road signs, street furniture*
	Junction Errors	**Fatigue Impairment**	**Pedestrian Behaviour**	*Dazzling headlights*
	Junction overshoot	*Fatigue*	*Crossing road masked by stationary or parked vehicle*	*Dazzling sun*
	Junction restart (moving off at junction)		*Failed to look properly*	*Rain, sleet, snow or fog*
			Failed to judge vehicle's path or speed	*Spray from other vehicles*
			Wrong use of pedestrian crossing facility	*Visor or windscreen dirty or scratched*
			Dangerous action in carriageway (e.g., playing)	*Vehicle blind spot*
			Careless, reckless or in a hurry	
			Impaired by alcohol	
			Impaired by drugs (illicit or medicinal)	
			Pedestrian wearing dark clothing at night	
			Disability or illness, mental or physical	

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