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An Roinn

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Gender analysis of KSI casualties 2011-2020



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NISRA

Northern Ireland
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Gníomhaireacht Thuaisceart Éireann
um Staitisticí agus Taighde

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DEFINITIONS

Killed: Died within 30 days from injuries received in a collision.

Serious Injury: An injury for which a person is detained in hospital as an 'in-patient', or any of the following injuries whether or not the person is detained in hospital: fractures, concussion, internal injuries, crushing, burns, severe cuts and lacerations or severe general shock requiring medical treatment.

KSI/KSI Casualties: Refers to casualties where someone was killed or seriously injured

Pedestrians: Include children on scooters, roller skates or skateboards; children riding toy cycles on the footpath; persons pushing bicycles or other vehicles or operating pedestrian-controlled vehicles; persons leading or herding animals; occupants of prams or wheelchairs; people who alight safely from vehicles and are subsequently injured; persons pushing or pulling a vehicle; persons other than cyclists holding on to the back of a moving vehicle.

Car users: Drivers or passengers in a car, light goods vehicle, car driven as a taxi or hackney cab.

Motorcyclists: Drivers/riders of mopeds and motorcycles. Includes riders of two-wheeled motor vehicles, motorcycle combinations, scooters and mopeds.

Pedal cyclists: Drivers/riders of pedal cycles. Includes children riding toy cycles on the carriageway and the first rider of a tandem.

Collisions: Collisions involving personal injury occurring on the public highway (including footpaths) where someone was killed or seriously injured and in which a vehicle is involved. Collisions are categorised as either 'Fatal', 'Serious' or 'Slight' according to the most severely injured casualty.

Young People: Aged between 16 and 24.

Older/Elderly People: Aged 65 and over.

KEY POINTS

Here are the key statistics that can be derived from this report:

Trend information

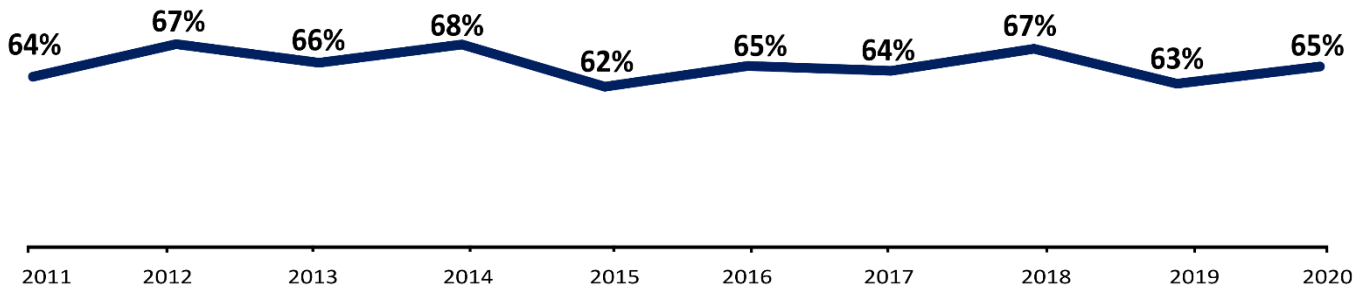
- There was a series high in KSIs in 2002 with 1,676 killed or seriously injured in 2002 but this has reduced by 61% to the most recent period of 652 in 2020.
- The number of male and female KSIs have also dropped accordingly falling by 62% and 59% respectively.
- In terms of the overall proportion by gender, approximately two thirds of KSIs each year are males ranging from 62% in 2015 to 69% in 2007.

In 2011-2020

- A higher proportion of male KSIs were aged 25 to 49 (39%) than that of females (30%) from this age group. A fifth of female KSIs were aged 65 or over (20%) which is almost twice the proportion of that for older males (11%).
- Car drivers accounted for the largest proportion of KSIs for both males (37%) and females (41%).
- Pedestrians were the second highest group for males (20%) while car passengers was second highest for females (28%).
- Of the 1,734 pedestrians killed or seriously injured 1,076 were male (62%) and 658 were female (38%). The proportion differs considerably by age group ranging from 72% male for those aged 25 to 34 to just 48% male for those aged 65 and over.
- Out of the 1,076 male pedestrian KSI casualties, 715 (66%) had responsibility for the collision assigned to the pedestrian. This is in comparison with 370 (56%) female pedestrians being responsible out of 658 female KSIs.
- The proportions of males to females amongst car driver KSIs is approximately two-thirds male (63%) to one-third female (37%). The male proportions are highest amongst the younger age groups accounting for 67% of those aged 16 to 24 and 68% of those aged 25 to 34 whereas the proportions are 56% and 59% male for the 50 to 64 and 65 and over age groups respectively.
- Car passengers are the only road user group to have more females (53%) killed or seriously injured than males (47%).
- There were 72 motorcyclists killed on Northern Ireland's roads within the last ten years with all of these being male riders. The overwhelming majority of the 1,010 motorcyclists killed or seriously injured between 2011 and 2020 were male (945 males and 65 females) which equates to 94%.
- The number of pedal cyclist KSI casualties in the last 10 years were largely male. Of the 525 pedal cyclists killed or seriously injured 451 (86%) were male and 74 female (14%).
- Proportionally, there were more males (40%) killed or seriously injured than females (31%) between 6pm and 6am while in contrast there were relatively more female KSI casualties (38%) between 10am and 4pm than males (31%).
- The top two causation factors for male KSIs were impairment by alcohol/driver rider and excessive speeding (both with 12%). Heedless of traffic crossing carriageway (16%) and inattention or attention diverted (13%) were the top two causations for females.

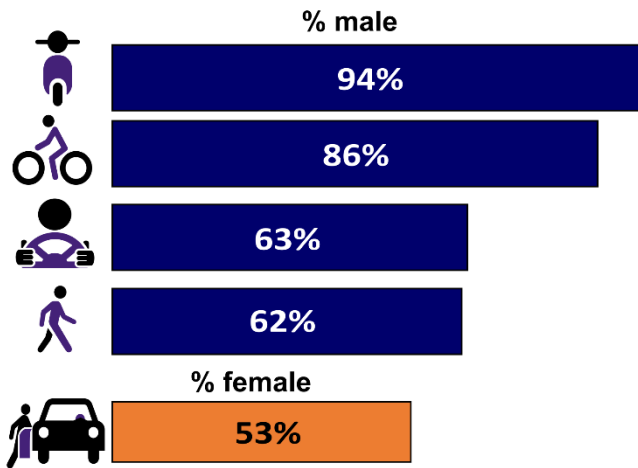


Trend information 2011-2020 — % male KSI Casualties



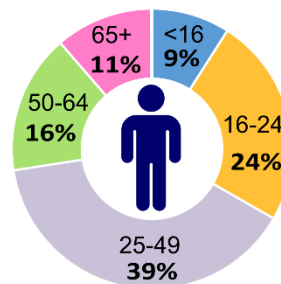
Approximately two thirds of KSI Casualties between 2011 and 2020 were **male**

Proportion of road user category by gender



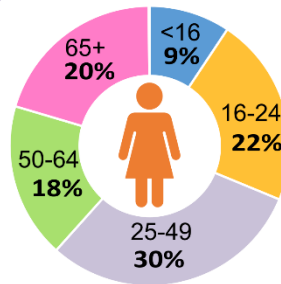
Motorcyclist, pedal cyclist, car driver and pedestrian KSI casualties were majority male while car passenger KSIs were majority female

Male Age

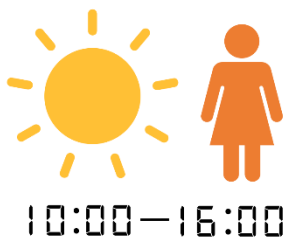


A higher proportion of male KSIs were aged 25-49 (39%) than that of females (30%)

Female Age



A fifth of females (20%) were aged 65 and over. This is almost twice the proportion of older males (11%)



Female time of day

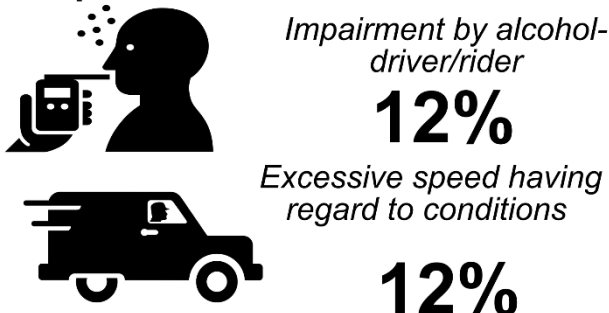
There were proportionately more female KSI casualties (38%) between 10am and 4pm than males (31%) during this time period

Male time of day

Two fifths of males (40%) were killed or seriously injured between 6pm and 6am in comparison with 31% of female KSIs during these hours

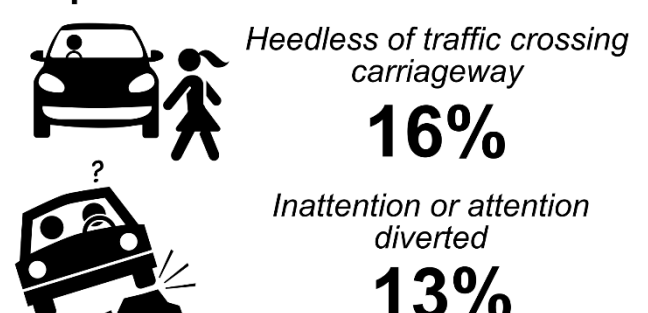


Top 2 Causation factors for males



Impairment by alcohol driver/rider and excessive speeding both accounted for 12% of the principal causation factors where a male was responsible for their own injuries

Top 2 Causation factors for females



The pedestrian causation factor heedless of traffic crossing carriageway was highest for females who were responsible for their own injuries (16%) followed by inattention (13%)

INTRODUCTION

Analysis, Statistics and Research Branch (ASRB) in DfI is responsible for producing the statistical content of the Northern Ireland Problem Profile. Historically, this document focused on the latest five year road casualty data and reported on a wide range of road user groups and behaviours. The document had grown in size over the years and was becoming cumbersome to update. It was therefore agreed at the Road Safety Strategy Research Coordination Group (RSSRCG) that ASRB would seek to develop a series of smaller documents which could form the shape of a live Problem Profile and the profile would be maintained and updated regularly to ensure relevance with existing and emerging road safety issues.

The Problem Profile supplements the NI Road Safety Strategy (NIRSS) to 2020 Annual Statistical Report. The NIRSS to 2020 sets out four road safety targets for Northern Ireland as detailed below.

By 2020, and compared with the base year (2004 to 2008 average), there will be:

- A reduction in the number of people killed in road collisions by at least 60 per cent.
- A reduction in the number of people seriously injured in road collisions by at least 45 per cent.
- A reduction in the number of children (aged 0 to 15) killed or seriously injured in road collisions by at least 55 per cent.
- A reduction in the number of young people (aged 16 to 24) killed or seriously injured in road collisions by at least 55 per cent.

Gender analysis of KSI casualties, 2011 -2020

This gender analysis profile is part of a suite of problem profiles produced by ASRB¹ over the last few years. In terms of structure, this report looks at the trend of males and females killed or seriously injured from 2002 to 2020. The profile of these KSI casualties is then examined by age group and road user class overall, followed by a more detailed analysis by each road user group (pedestrians, car drivers, car passengers, motorcyclists, pedal cyclists and other road users). This includes the top causations for each of these road users by gender and a comparison of KSIs by age group with miles travelled using the Travel Survey of Northern Ireland data. Further analysis includes a comparison of the day of the week and time of day that male and female KSI casualties typically occur, what type of roads these occur on and a section looking at single vehicle collisions. Finally, a mapping section shows the gender proportion for each of the 11 Local Government Districts and a comparison of Northern Ireland with the rest of the United Kingdom.

Please note that these reports are not platforms for recommendations on policy interventions but provide specific evidence to inform such conversations and/or developments.

Front cover photos from [iStock](#).

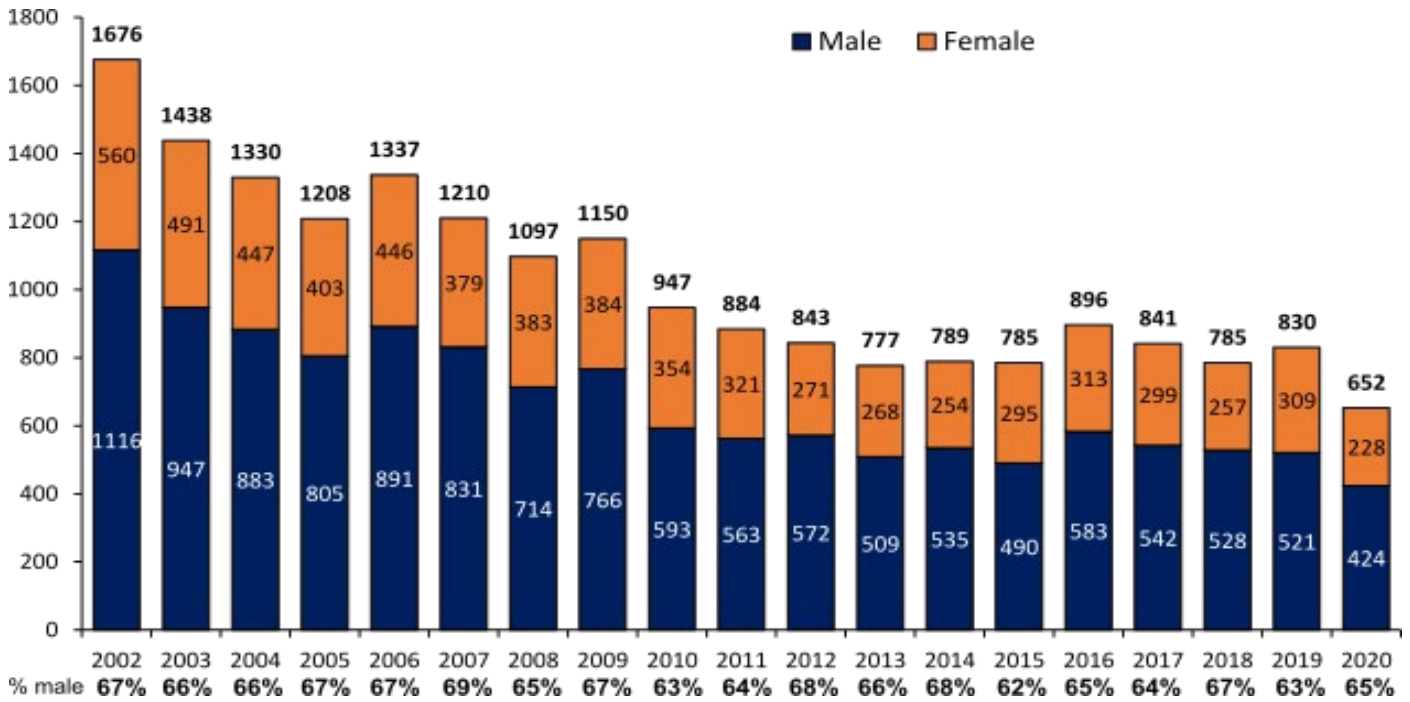
Infographics used in this report have been downloaded from the [Noun project](#). Specific credits to Luis Prad, Simon Child, DEMOGRAPH, Gan Khoon Lay, Vectors Point and EnQiu.

¹ For this and other profiles on topics such as rural roads, speeding, drink driving, pedal cyclists, pedestrians, older drivers, motorcyclists and the A1 dual carriageway can be found at [Topics | Department for Infrastructure \(infrastructure-ni.gov.uk\)](#)

TREND INFORMATION

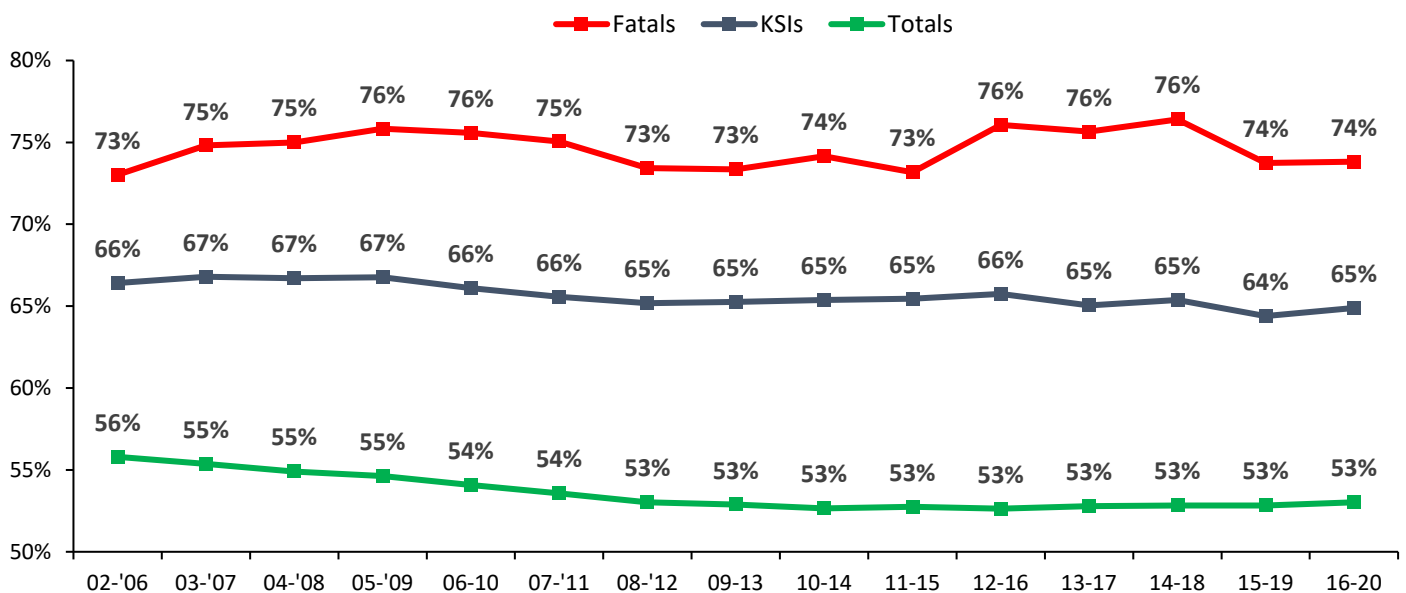
Figure 1 below shows the number of people killed or seriously injured (KSIs) over the nineteen year period 2002 to 2020 split by gender (Table A1 in the Appendix refers). There was a series high in KSIs at the start of the trend with 1,676 killed or seriously injured in 2002 but this has reduced by 61% to the most recent period of 652 in 2020. The number of male and female KSIs have also dropped accordingly falling by 62% and 59% respectively. In terms of the overall proportion by gender, approximately two thirds of KSIs each year are males ranging from 62% in 2015 to 69% in 2007.

Figure 1: Number of people killed or seriously injured 2002-2020



It is useful to look at this information as a five year rolling average which smoothes out annual fluctuations but gives a clear direction of the trend. Figure 2 shows as per the dark blue line, that males account for approximately two-thirds of KSIs, with the range varying by less than 2.5% for each year from a low of 64% to a high of 67%. In terms of fatalities, as displayed in the red line, the proportion of males to females is approximately three to one for each five year period. Over half of all casualties regardless of injury severity, as depicted in the green line, tend to be male.

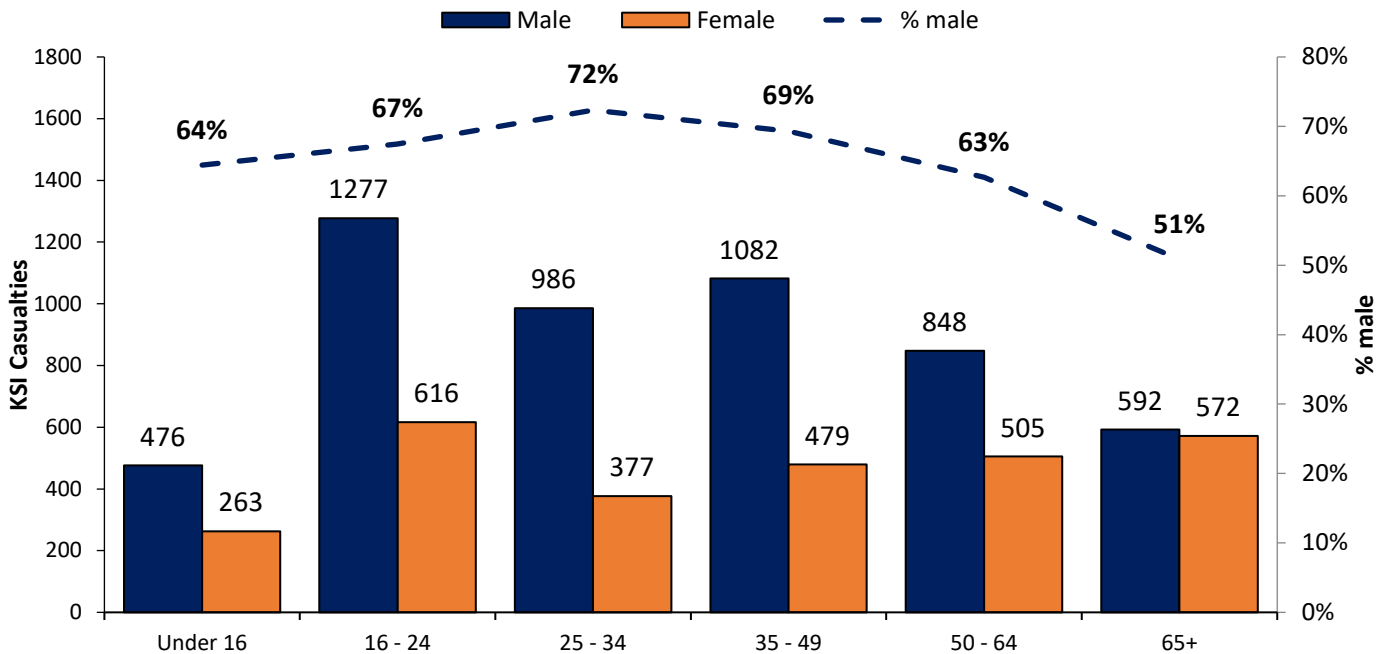
Figure 2: Proportion of male casualties by severity five-year average 2002-2020



AGE GROUP

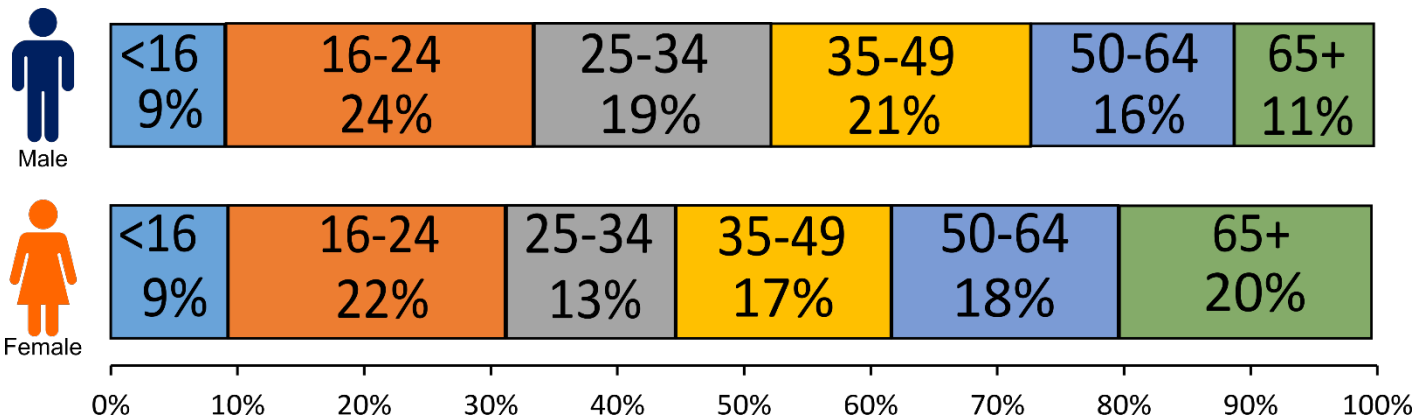
Narrowing the focus to examine the most recent ten year period, the number of KSI casualties by gender and age group for 2011 to 2020 is presented in Figure 3 below. Most KSIs were of those aged 16 to 24 with young people having the most KSIs for both males and females. In terms of ratio though, the highest proportion of males to females were those aged between 25 and 34 with 72% of KSIs from this age group being male and the lowest was for those aged 65 and over with 51%.

Figure 3: Overall KSI casualties by gender and age group, 2011-2020



Looking at the proportions by age group for males versus females as displayed in Figure 4 below reveals a slightly different breakdown. While the percentage of children and young people were roughly similar, a larger proportion of male KSI casualties were of those aged between 25 and 49 (approximately 10% more than that of females). In contrast, although the actual number of KSIs for males (592) and females (572) amongst those aged 65 or over were very close, the proportion of overall KSI casualties from this age group for females was twice that of males. One explanation for this is that passengers make up a high proportion of females who were killed or seriously injured and there are almost 6 times the number of female car passengers aged 65 or over KSIs compared with older male passengers. See page 7 and page 12 for further detail on this.

Figure 4: KSI casualties by age group males versus females, 2011-2020



ROAD USER CLASS

Table 1: Road user KSI casualties by gender, 2011-2020

	Male	Female	Total	Proportion
Pedestrians	1,076	658	1,734	21%
Car Driver	1,953	1,157	3,110	38%
Car Passenger	690	793	1,483	18%
Motorcyclists	945	65	1,010	12%
Pedal cyclists	451	74	525	6%
Other road users	152	68	220	3%
Total	5,267	2,815	8,082	-

Table 1 presents the breakdown of KSI casualties for road user class by gender above. Car drivers accounted for the largest proportion of KSIs for both males (37%) and females (41%). Pedestrians were the next highest group for males (20%) while car passengers was second highest for females (28%). Indeed car passengers were the only road user class to have more female KSIs than males.

Figure 5: KSI casualties by gender and road user category, 2011-2020

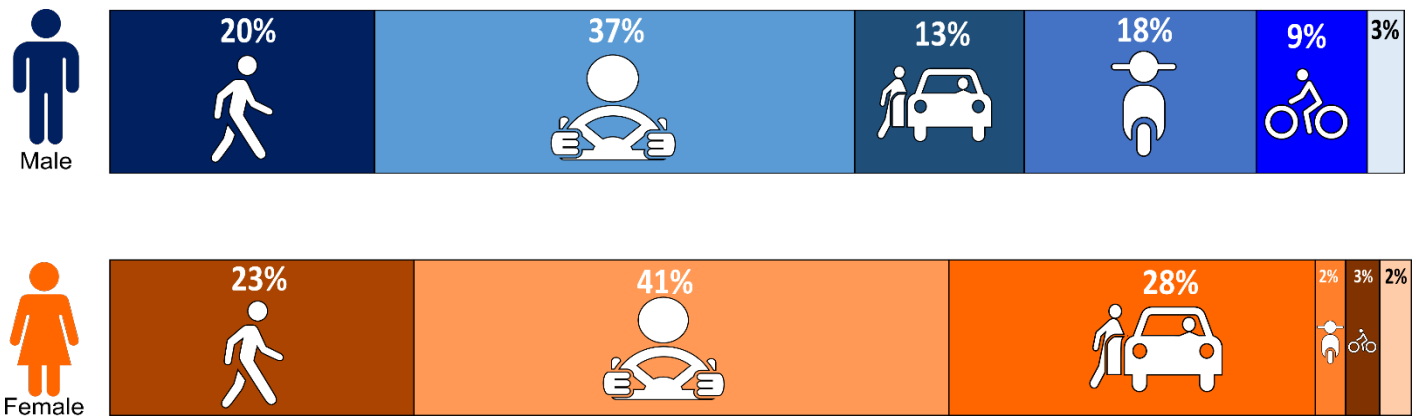
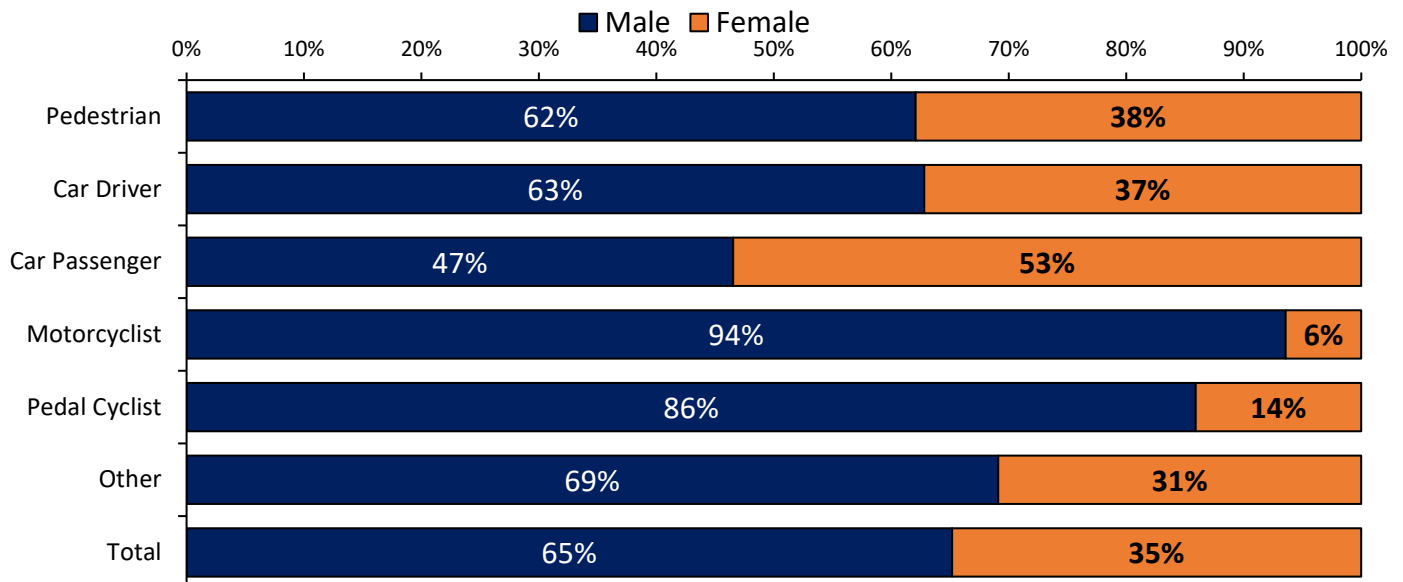
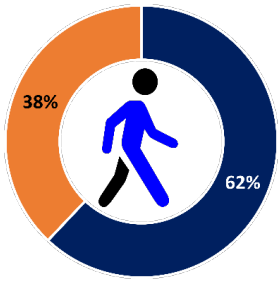


Figure 5 shows the proportions of each road user class for each gender. As can be seen, the proportion of pedestrians and car driver KSI casualties is roughly the same regardless of sex. However, the big difference is that there are many more motorcyclists and pedal cyclists killed or seriously injured amongst males, while, female car passengers make up more than twice the proportion of male car passenger KSIs. Figure 6 shows the proportion of male to females in KSIs for each of the road user categories.

Figure 6: Road user category proportions of KSIs by gender, 2011-2020

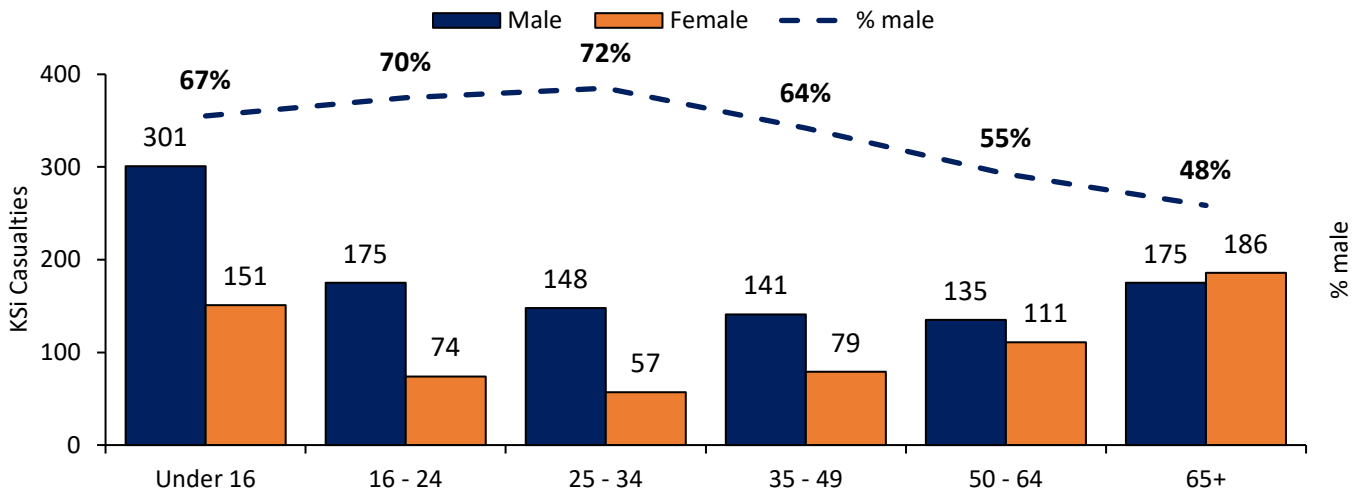


PEDESTRIANS



Of the 1,734 pedestrians killed or seriously injured between 1st January 2011 and 31st December 2020, 1,076 were male (62%) and 658 were female (38%). The proportion differs considerably by age group ranging from 72% male for those aged 25 to 34 to just 48% male for those aged 65 and over. Figure 7 presents a breakdown of pedestrian KSI casualties by gender and age group below.

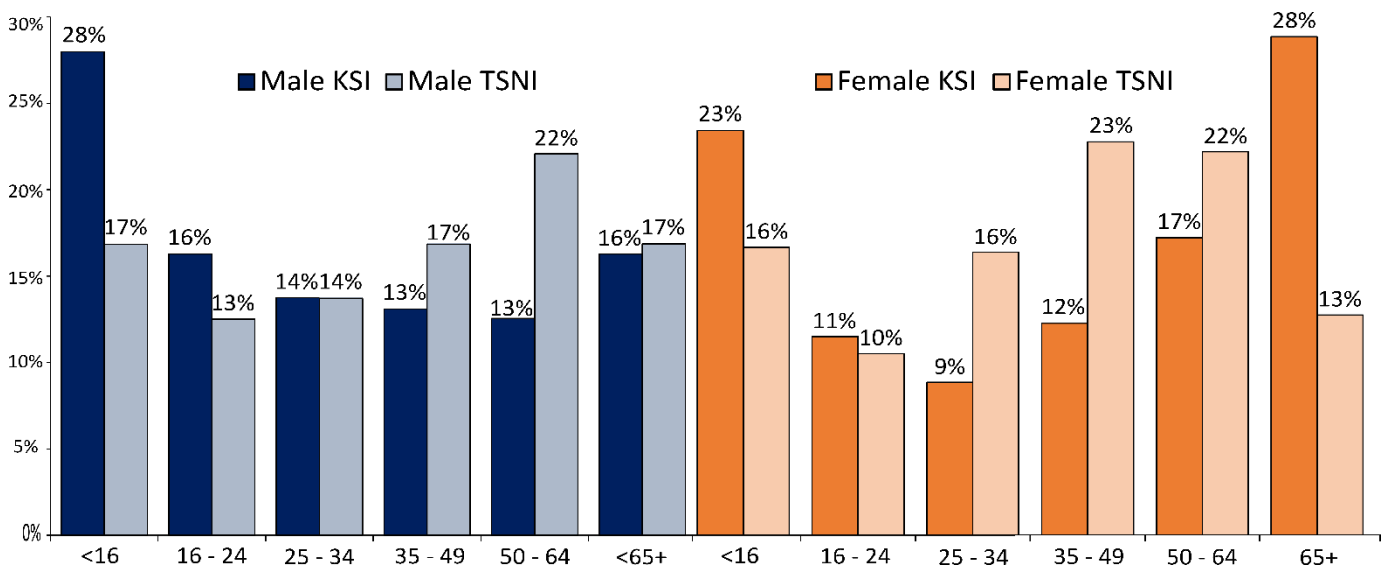
Figure 7: Pedestrian KSI casualties by gender and age group, 2011-2020



Data from the Northern Ireland Travel Survey (TSNI) shows that in the last five years (2015-2019) approximately half of all miles walked are by males and as such, males are over-represented in pedestrian KSIs. Figure 8 below reveals the following interesting insights:

- Children under the age of 16 are over-represented in both male and female pedestrian KSIs. This is perhaps because this age group is more likely to be heedless of traffic on the carriageway and crossing the road while being masked by stationary vehicles.
- Older female pedestrians (aged 65 and over) are the single most over-represented group across both sexes and all ages accounting for 28% of female KSIs but only 13% of miles walked. This pattern isn't reflected amongst older males, though, with their proportion of miles travelled and KSIs being approximately the same.

Figure 8: The proportion of total distance walked¹ and the proportion of killed or seriously injured pedestrian casualties by gender and age group, 2011-2020

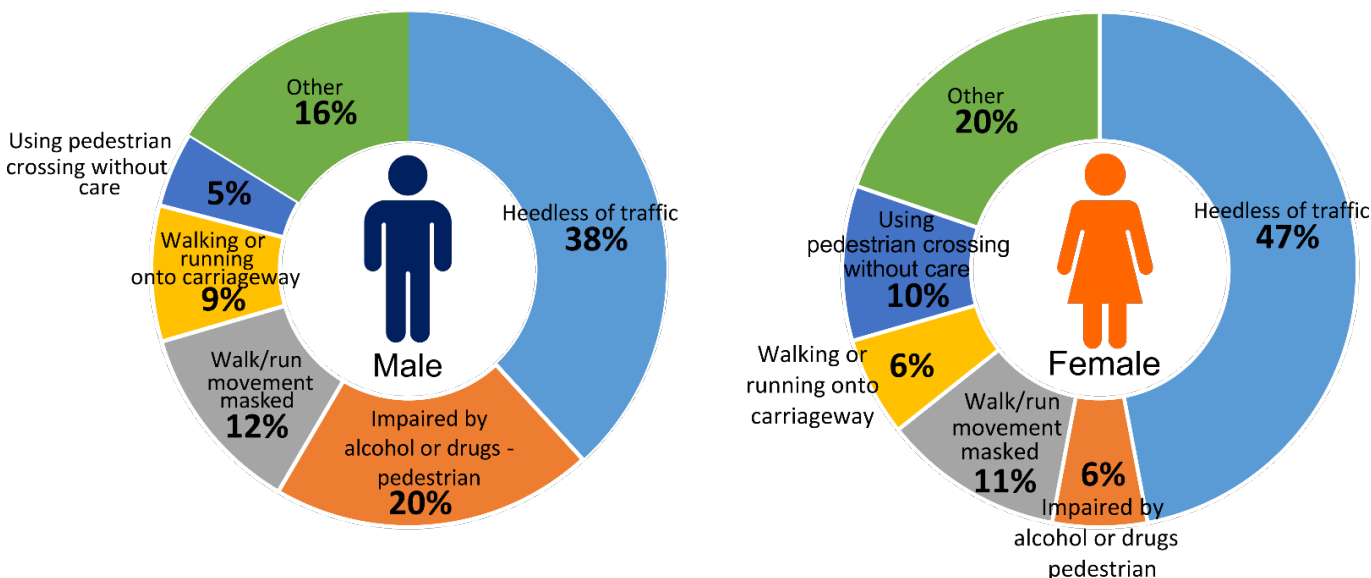


¹ From 2015-2019 data supplied from the Northern Ireland Travel Survey combined with [mid-year population estimates](#)

Out of the 1,076 male pedestrian KSI casualties, 715 (66%) had responsibility for the collision assigned to the pedestrian. This is in comparison with 370 (56%) female pedestrians being responsible out of 658 female KSIs.

The principal causation factors for male and female pedestrian KSI casualties where they were responsible for their own injuries have the same top five for each. These are heedless of traffic (both crossing and walking/standing), impairment by drugs or alcohol, walk/run movement masked, walking or running onto carriageway and using pedestrian crossing without care. However, if you look at Figure 9 below you can see that the proportion for being heedless of traffic is considerably more for females and impairment by alcohol or drugs is much greater for males.

Figure 9: Top five principal causation factors where the pedestrian was at fault by gender, 2011-2020



* heedless of traffic includes 'heedless of traffic crossing carriageway' and 'heedless of traffic walking or standing in carriageway'

Table 2 presents the top two causation factors for pedestrian KSI casualties by age group (including those where another party was at fault) and shows that pedestrian impairment by alcohol is the top causation factor for all male age groups with the exception of those under the age of 16 and over the age of 65. Heedless of traffic crossing carriageway was the top causation for all female age groups with alcohol impairment only featuring second for those aged 16 to 24.

One thing to note amongst older female pedestrian who were killed or seriously injured is that they are much more likely to be knocked down by somebody 'reversing without care'. Three fifths of female pedestrian KSI casualties who were struck by a vehicle reversing were aged 65 or over with this causation factor accounting for 17% of older female pedestrian KSIs as opposed to just 7% for older males.

Table 2: Top two principal causation factors for pedestrian KSI casualties by age group², 2011-2020

	Male		Female	
	First	Second	First	Second
Under 16	Heedless of traffic crossing carriageway	Walk/run movement masked	Heedless of traffic crossing carriageway	Walk/run movement masked
16-24	Impaired by alcohol-pedestrian	Heedless of traffic crossing carriageway	Heedless of traffic crossing carriageway	Impaired by alcohol-pedestrian
25-34	Impaired by alcohol-pedestrian	Heedless of traffic crossing carriageway	Heedless of traffic crossing carriageway	Disobeying pedestrian crossing
35-49	Impaired by alcohol-pedestrian	Heedless of traffic crossing carriageway	Heedless of traffic crossing carriageway*	Inattention or attention diverted*
50-64	Impaired by alcohol-pedestrian*	Heedless of traffic crossing carriageway*	Heedless of traffic crossing carriageway	Inattention or attention diverted
65+	Heedless of traffic crossing carriageway	Inattention or attention diverted	Heedless of traffic crossing carriageway	Reversing without care

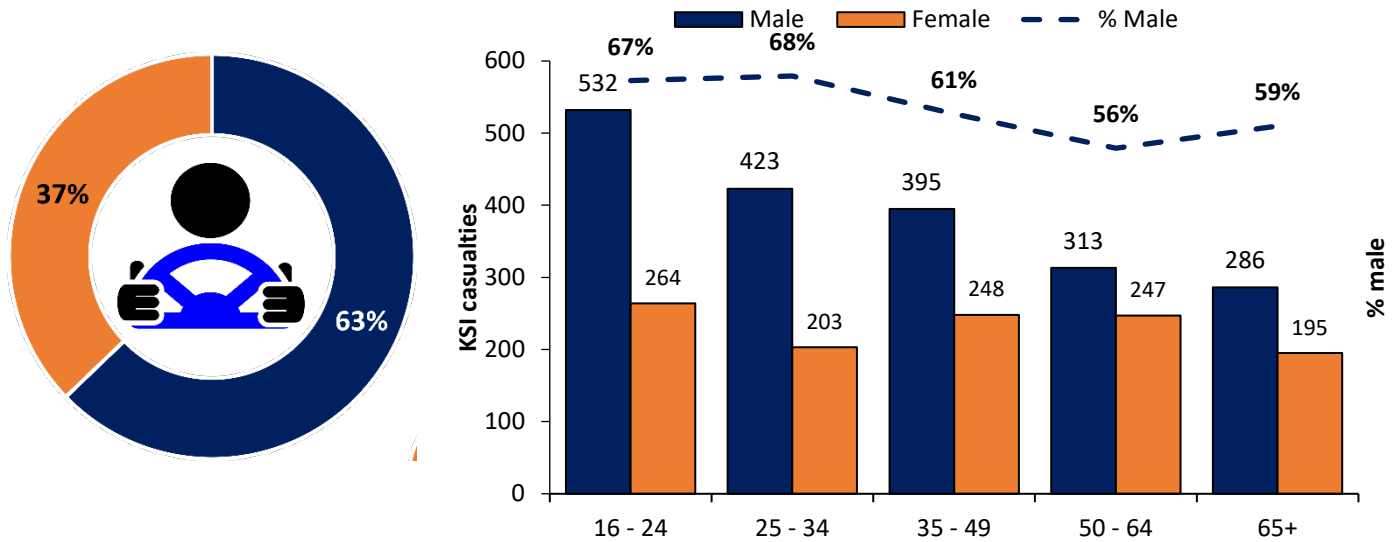
* joint first

² those in bold are pedestrian causation factors

CAR DRIVERS

The proportions of males to females amongst car driver KSIs is approximately two-thirds male (63%) to one-third female (37%). The male proportions are highest amongst the younger age groups accounting for 67% of those aged 16 to 24 and 68% of those aged 25 to 34 whereas the proportions are 56% and 59% male for the 50 to 64 and 65 and over age groups respectively.

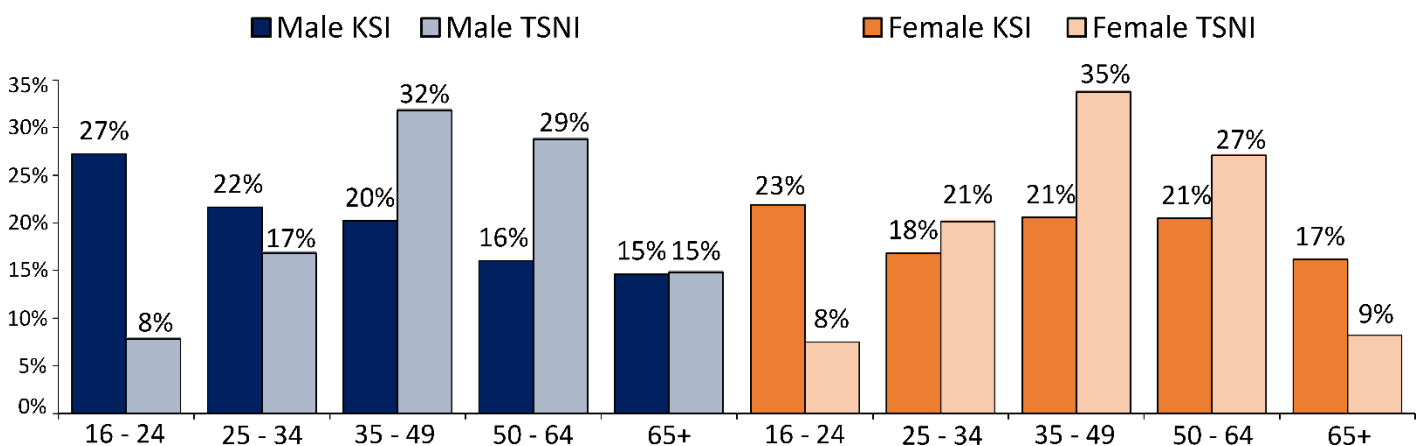
Figure 10: Car driver KSI casualties by gender and age group, 2011-2020



Looking at the last ten years, the number of male KSIs amongst car drivers is on a sliding scale by age category with young males representing over a quarter (27%) of those male car drivers killed or seriously injured gradually decreasing by age group with those aged 65 and over (15%) having the fewest male car driver KSIs. The pattern amongst female car drivers is much different to this. While 16 to 24 year old females had the highest number of those killed or seriously injured, the proportions by age group were much closer together than that of males, ranging from 17% KSIs amongst elderly female drivers to 23% for young female drivers.

Comparing these proportions with the Northern Ireland Travel Survey (Figure 11 below) reveals that KSIs amongst young male and female car drivers are very much over-represented compared with the distance this age group drives by car. In contrast, male and female drivers aged 35 to 49 and 50 to 64 are under-represented in those killed or seriously injured compared with the average total distance driven by these age groups. However, a discrepancy between the genders is that male drivers aged 25 to 34 and female drivers aged 65 and over are over-represented in KSIs in comparison with miles travelled while the reverse is not true amongst female drivers aged 25 to 34 and older male drivers.

Figure 11: The proportion of total distance driven³ and the proportion of killed or seriously injured driver casualties by gender and age group, 2011-2020



³ From 2015-2019 data supplied from the Northern Ireland Travel Survey combined with [mid-year population estimates](#)

Of the 3,110 car driver KSI casualties, 1,814 were the responsibility of the casualty themselves with 1,230 of those responsible being male (68%) and 584 being female (32%). The top ten causation factors for car drivers responsible for their own injury/death split by gender are presented below. The top causation factor for males is impairment by alcohol (21%) closely followed by speeding (19%) while for females the top causation factor was inattention or attention diverted (19%).

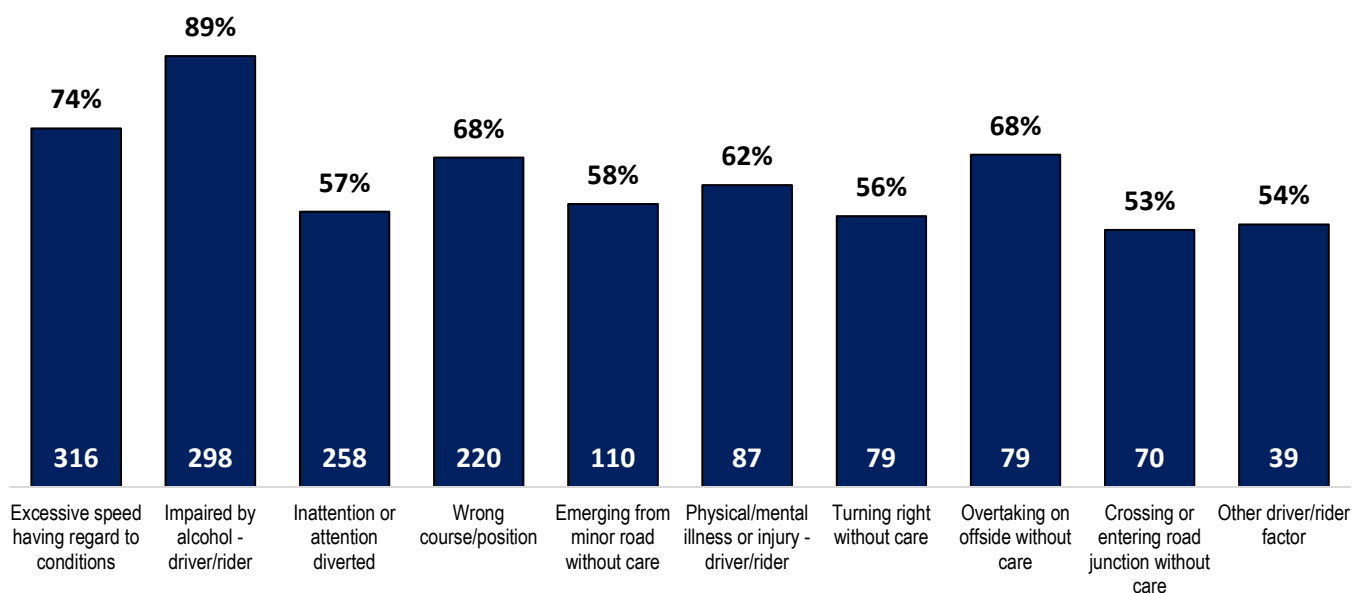
Table 3: Top ten principal causation factors for driver KSI casualties where the driver was responsible by gender, 2011-2020

Causation Factor	Male	Female	Total	% Male
Excessive speed having regard to conditions	233 (19%)	83 (14%)	316	74%
Impaired by alcohol – driver/rider	264 (21%)	34 (6%)	298	89%
Inattention or attention diverted	146 (12%)	112 (19%)	258	57%
Wrong course/position	149 (12%)	71 (12%)	220	68%
Emerging from minor road without care	64 (5%)	46 (8%)	110	58%
Physical/mental illness or injury – driver/rider	54 (4%)	33 (6%)	87	62%
Turning right without care	44 (4%)	35 (6%)	79	56%
Overtaking on offside without care	54 (4%)	25 (4%)	79	68%
Crossing or entering road junction without care	37(3%)	33 (6%)	70	53%
Other driver/rider factor	21 (2%)	18 (3%)	39	54%
Other Factors	164 (13%)	94 (16%)	258	64%
Total	1,230	584	1,814	68%

Although all the principal causation factors in the top ten have a majority male responsibility, the proportion varies quite widely depending on causation factor. Approximately three quarters (74%) of those where the causation was excessive speeding were male and almost 90% of those drivers/riders who were impaired by alcohol were male. Aside from other driver/rider factors, the causations that had the highest female proportion were junction related with turning right and crossing or entering road junction without care accounting for 44% and 47% female responsibility respectively.

In terms of age group, speeding was the highest causation factor for male and female car drivers aged 16 to 24 who were responsible for their own injuries with impairment by alcohol highest for males aged between 25 and 64 and inattention highest for all female age groups over the age of 25.

Figure 12: Top ten principal causation factors for car driver KSI casualties with male proportions, 2011-2020

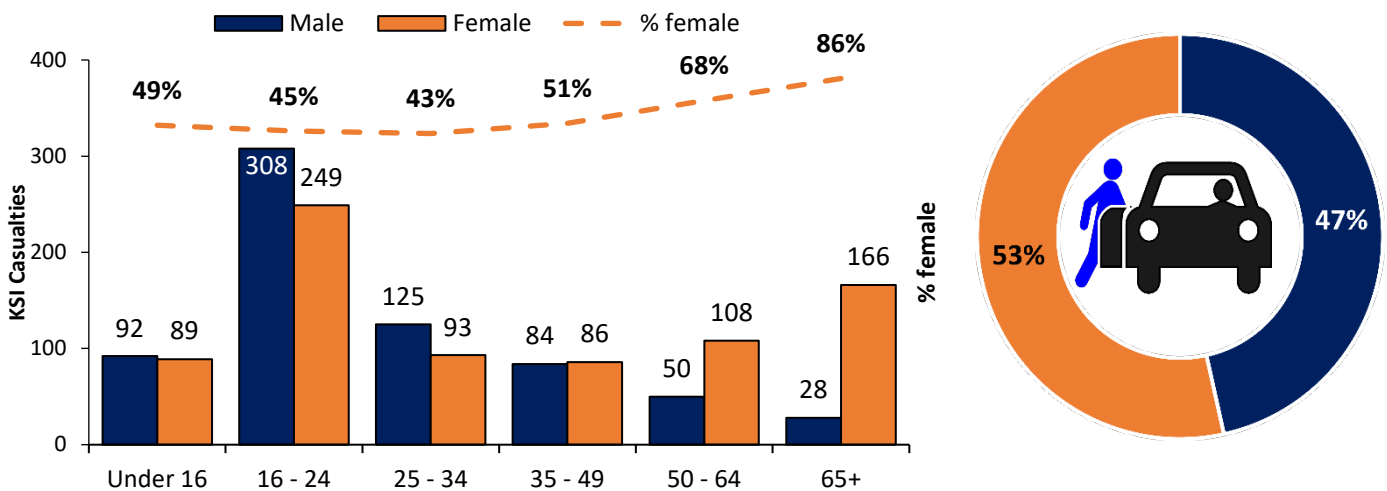


CAR PASSENGERS

Car passengers are the only road user group to have more females (53%) killed or seriously injured than males (47%). Looking at the breakdown by age group shows that those aged 16 to 24 had the highest number of KSI passengers with young males accounting for 45% of all male passenger KSIs and young females accounting for 31% of all female passenger KSIs.

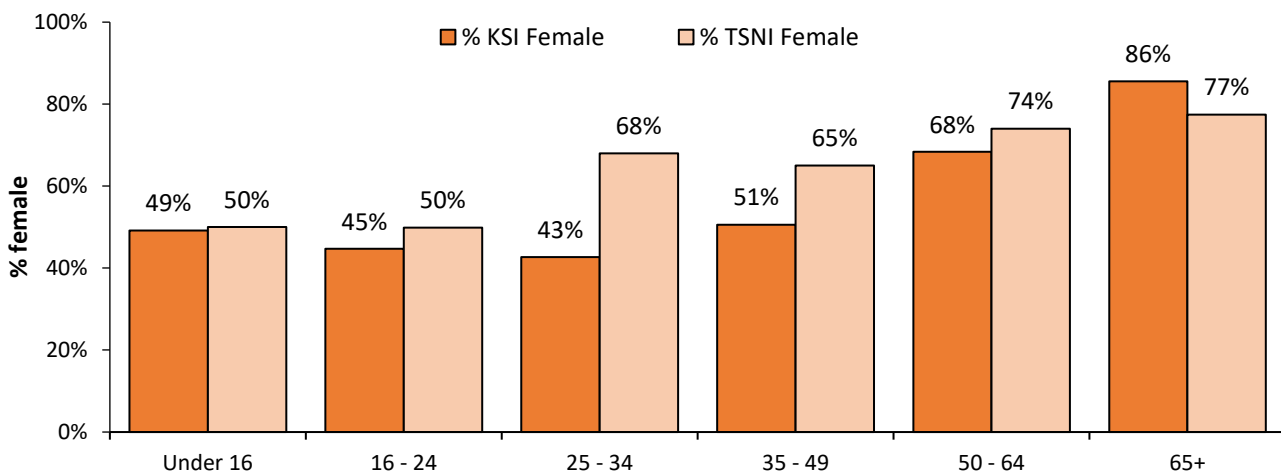
Examining the gender proportions of passengers killed or seriously injured by age group shows that passengers under the age of 35 were more likely to be male. Females overtook males for the first time in the 35 to 49 age group accounting for 51% of passenger KSIs for this age category between 2011 and 2020. The proportion rose further to 68% female KSIs for passengers aged 50 to 64 and increased further still with 166 out of the 194 passenger KSIs aged 65 or over being female (86%). Figure 13 presents this below:

Figure 13: Car passenger KSI casualties by gender and age group, 2011-2020



Data from the Northern Ireland Travel Survey does provide some explanation for this with the average passenger miles travelled by older passengers much more likely to be female (72% for those aged 50-64 and 77% for those aged 65 and over). However, there is still over-representation of female KSI casualties for the oldest age group in comparison with older female miles travelled (86% versus 77%). See Figure 14 below.

Figure 14: Proportion of miles travelled⁴ by female passengers versus proportion of female car passenger KSIs 2011-2020



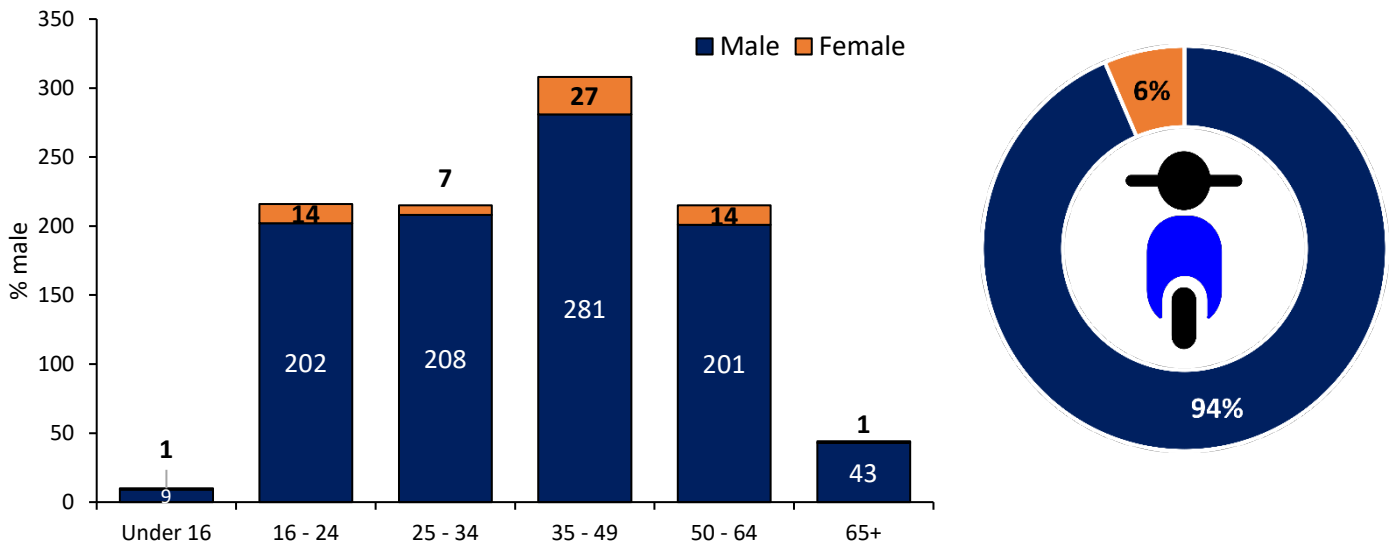
⁴ From 2015-2019 data supplied from the Northern Ireland Travel Survey combined with [mid-year population estimates](#)

Approximately three quarters of drivers responsible for a passenger KSI were male while it is also more likely that the responsible driver is of the same age cohort as the passenger if sharing a vehicle. This means that 'excessive speed' and 'impairment by alcohol' feature highly amongst the principal causation factors for passengers aged between 16 and 49 while inattention was top for those passengers over the age of 50, in line with the top causation factors observed for drivers in these age groups.

MOTORCYCLISTS

There were 72 motorcyclists killed on Northern Ireland's roads within the last ten years with all of these being male riders. The number of motorcyclist KSI casualties by gender are presented below:

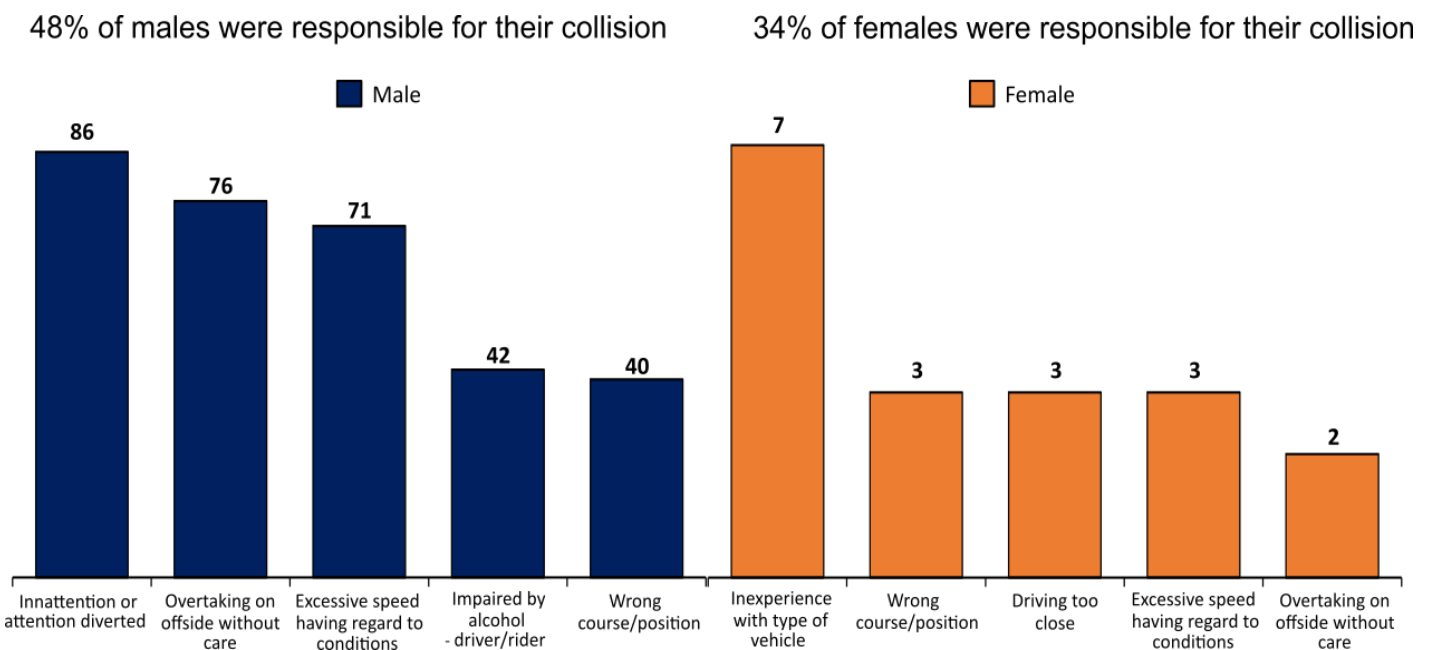
Figure 15: Motorcyclist KSI casualties by gender, 2011-2020



The overwhelming majority of the 1,010 motorcyclists killed or seriously injured between 2011 and 2020 were male (945 males and 65 females) which equates to 94%. Those aged between 35 and 49 accounted for the most motorcyclist KSIs for both males and females. *Please note that it is not possible to compare with the total distance travelled by gender on motorcycles, as there are not enough motorcyclists surveyed in the TSNi to be able to provide this information.*

Of the 945 male motorcycles, 455 were deemed to be the fault of the motorcyclist (48%) in comparison with 22 out of the 65 female motorcyclists (34%), although females have a relatively much smaller base. Inattention or attention diverted (19%) was the highest principal causation factor for male riders while inexperience with the type of vehicle (32%) was the highest for female motorcyclists. A list of the top five causation factors for each gender is presented in Figure 16 below with overtaking on the offside, excessive speed and wrong course/position appearing in the top five for each gender.

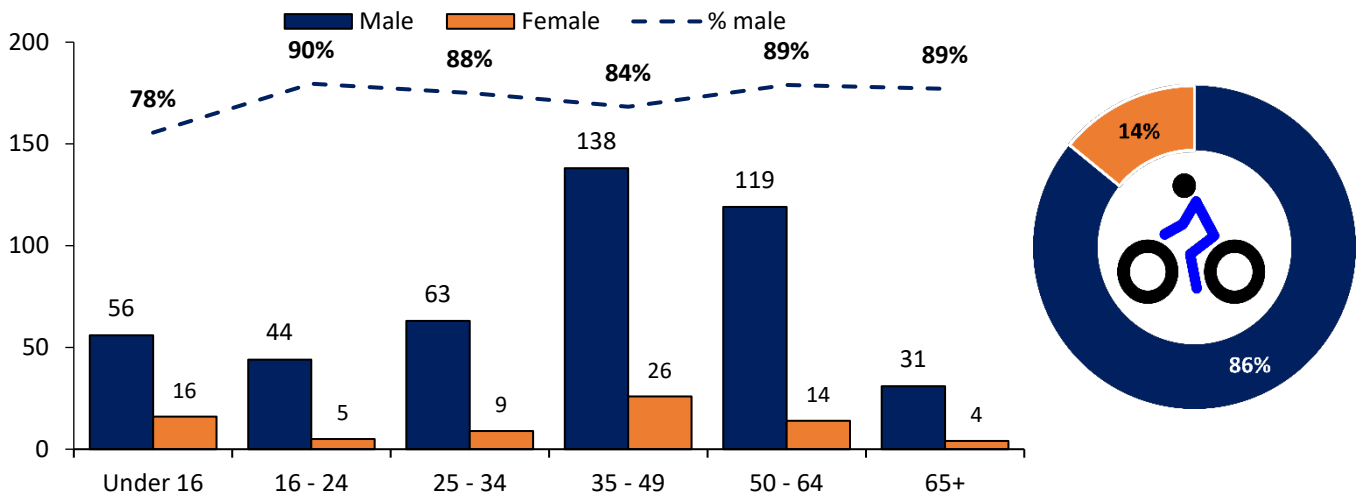
Figure 16: Top five principal causation factors of motorcyclist KSIs who were assigned responsibility for the collision by gender, 2011-2020



PEDAL CYCLISTS

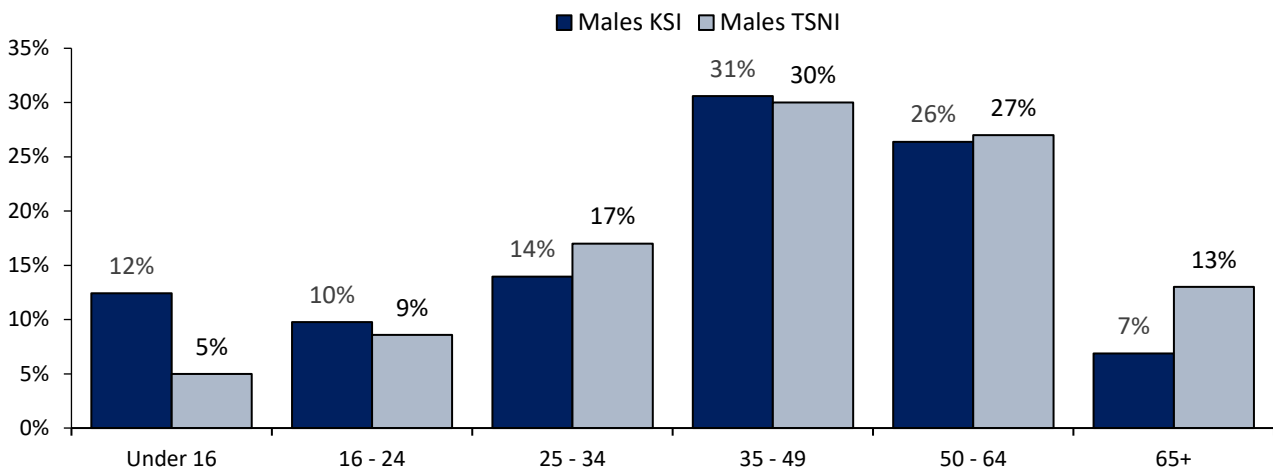
Similar to motorcyclists, the number of pedal cyclist KSI casualties in the last 10 years were largely male. Of the 525 pedal cyclists killed or seriously injured between 2011 and 2020, 451 (86%) were male and 74 female (14%). See chart below.

Figure 17: Pedal cyclist KSI casualties by gender, 2011-2020



This difference largely reflects the difference in cycling prevalence between males and females. Between 2015 and 2019, on average the cycling prevalence was five times higher amongst males than females (61 miles travelled by males compared with 12 travelled by females). Figure 18 below presents a comparison of the proportion of miles cycled by males (from 2015-2019 TSNI) compared with male KSI casualties. You can see that children are the most over-represented age group accounting for 12 percent of male pedal cyclist KSIs but only five percent of male miles cycled. The proportions for male KSI casualties aged 35 to 49 and 50 to 64 KSI, which have the highest number of casualties, are broadly similar to their proportion for average distance travelled using the Northern Ireland Travel Survey data. Unfortunately, there are an insufficient number of cases in the sample to do the same TSNI analysis for female pedal cyclists.

Figure 18: The proportion of total distance cycled⁵ and the proportion of KSI casualties by males broken down by age group, 2011-2020

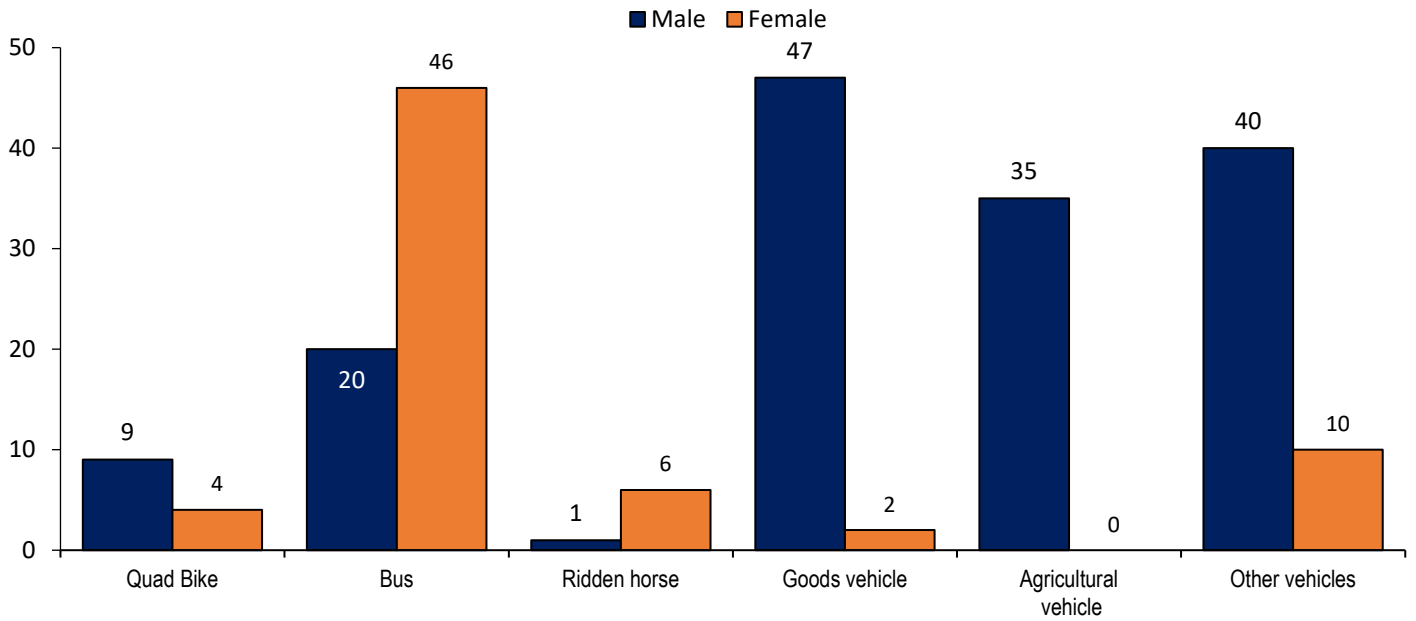


⁵ From 2015-2019 data supplied from the Northern Ireland Travel Survey combined with [mid-year population estimates](#)

Out of the 451 male pedal cyclist KSIs, 137 were responsible for their own injuries (30%) in comparison with 28 females (38%) being responsible for their own injuries out of 74. This is the only road user group other than passengers to have more females responsible for their own injuries than males. The top causation factor for males in which the pedal cyclist was responsible was 'inattention or attention diverted'. Inattention accounted for 49 of the 137 (36%) KSI male casualties followed by 'wrong course/position', which had a relatively small 8% in comparison. These were the same top two for causation factors for responsible female pedal cyclists although caution should be taken as this is from a very small base.

OTHER ROAD USERS

Figure 19: Other road user KSI casualties by gender, 2011-2020



Finally a breakdown of other road users reveals differences between the two genders. There were more female KSI casualties who were passengers on a bus (70% female) and similarly six out of the seven riders who were killed or seriously injured on a horse were female. In contrast, all 35 agricultural vehicle KSIs were male and out of the 49 KSIs that occurred in a Heavy Goods Vehicle (HGV), 47 of these were male.

Figure 20: The proportion of other road users broken down by gender and road user type, 2011-2020

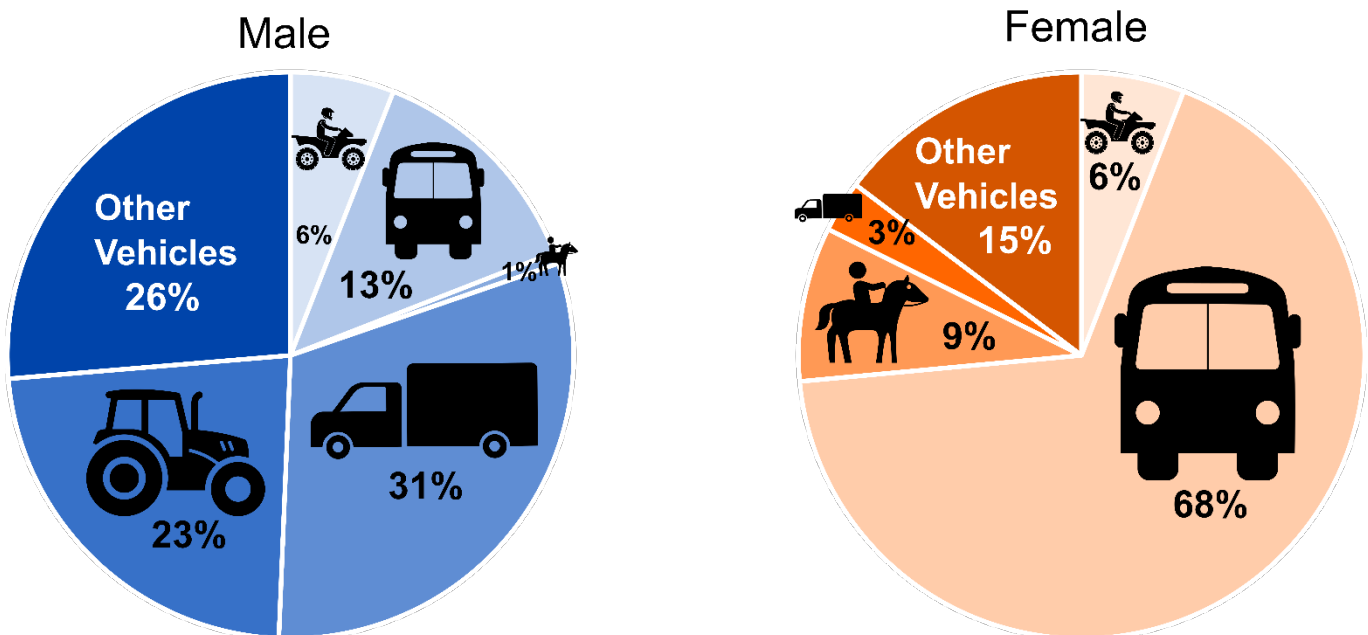


Figure 20 shows the proportion of other road user by gender. More than half of male other road users who were killed or seriously injured were either the driver of an HGV (31%) or agricultural vehicle (23%) while over two thirds of other female road users KSIs were the passenger in a bus (68%).

Examining the age breakdown of the highest casualty vehicle type for each of the genders reveals that over two fifths of male HGV driver KSIs were aged between 35 and 49 (42%) while it was a similar proportion for females aged 65 and over who were a KSI casualty while travelling on a bus.

TIME OF DAY

Comparing males and female KSIs by time of day in Tables 2 and 3 below does reveal some subtle differences between the genders over the last ten years. The biggest single day for male KSIs was Saturday with 890 (17%) while Friday was highest for females with 438 (16%). There were more males killed or seriously injured at the weekend (33%) than females (29%) but while Sunday was second highest for males (16%), it was actually the day with the fewest KSI casualties amongst females (13%). Looking at the tables for each two-hour time band, the greatest period for both was between 4 o'clock and 6 o'clock in the afternoon with this period comprising 16% for both males and females. However, proportionally there were more males (40%) killed or seriously injured than females (31%) between 6pm and 6am while in contrast there were relatively more female KSI casualties (38%) between 10am and 4pm than males (31%). The greatest single two-hour time period for males and females was Friday between 4pm and 6pm while the next highest for both was on a Saturday between 4 to 6 pm for males and 2 to 4pm for females.

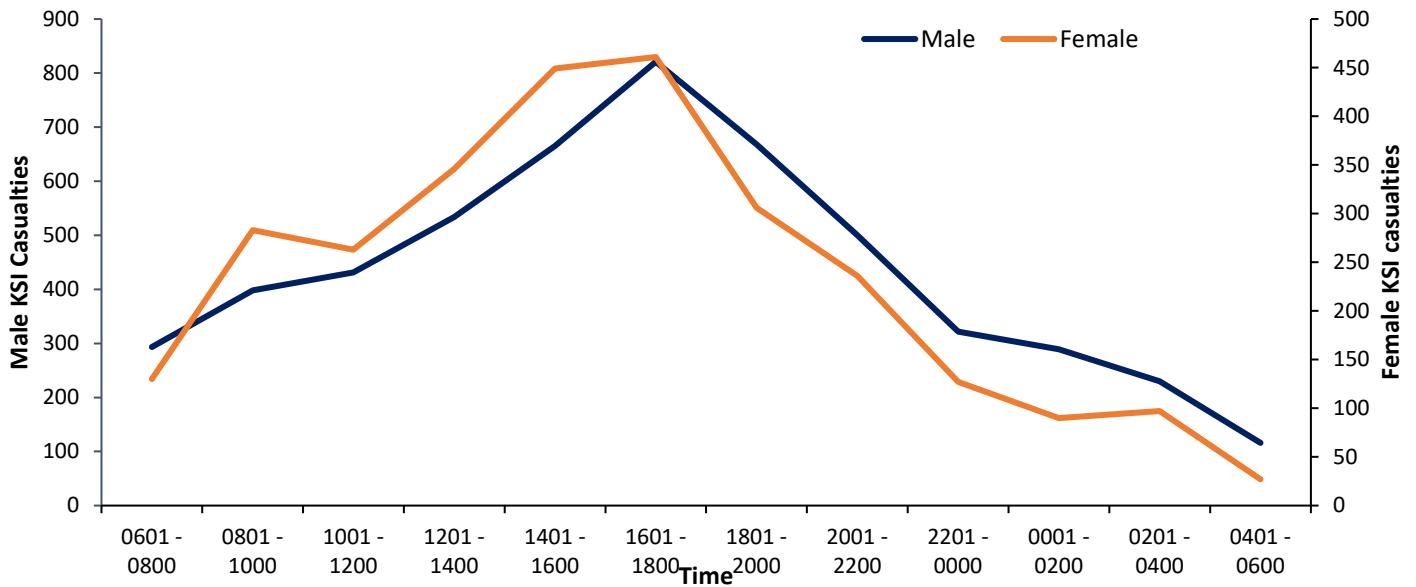
Table 4: Male KSI casualties by time of day, 2011-2020

		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total		
No of KSI Casualties	0601 - 0800	50	47	51	46	49	29	21	293	0601 - 0800	
	0801 - 1000	59	67	79	60	59	52	22	398	0801 - 1000	
	1001 - 1200	40	50	43	56	53	98	91	431	1001 - 1200	
	1201 - 1400	61	65	67	60	69	104	108	534	1201 - 1400	
	1401 - 1600	98	90	89	84	105	113	86	665	1401 - 1600	
	<30	1601 - 1800	104	104	116	121	155	122	99	821	1601 - 1800
	30-59	1801 - 2000	82	101	95	103	94	108	85	668	1801 - 2000
	60-89	2001 - 2200	55	70	65	73	84	73	80	500	2001 - 2200
	90-119	2201 - 0000	38	35	40	47	58	61	43	322	2201 - 0000
	120+	0001 - 0200	45	24	26	19	16	55	104	289	0001 - 0200
		0201 - 0400	19	15	13	23	11	53	96	230	0201 - 0400
		0401 - 0600	15	5	8	21	15	22	30	116	0401 - 0600
		Total	666	673	692	713	768	890	865	5267	
		%	13%	13%	13%	14%	15%	17%	16%	-	

Table 5: Female KSI casualties by time of day, 2011-2020

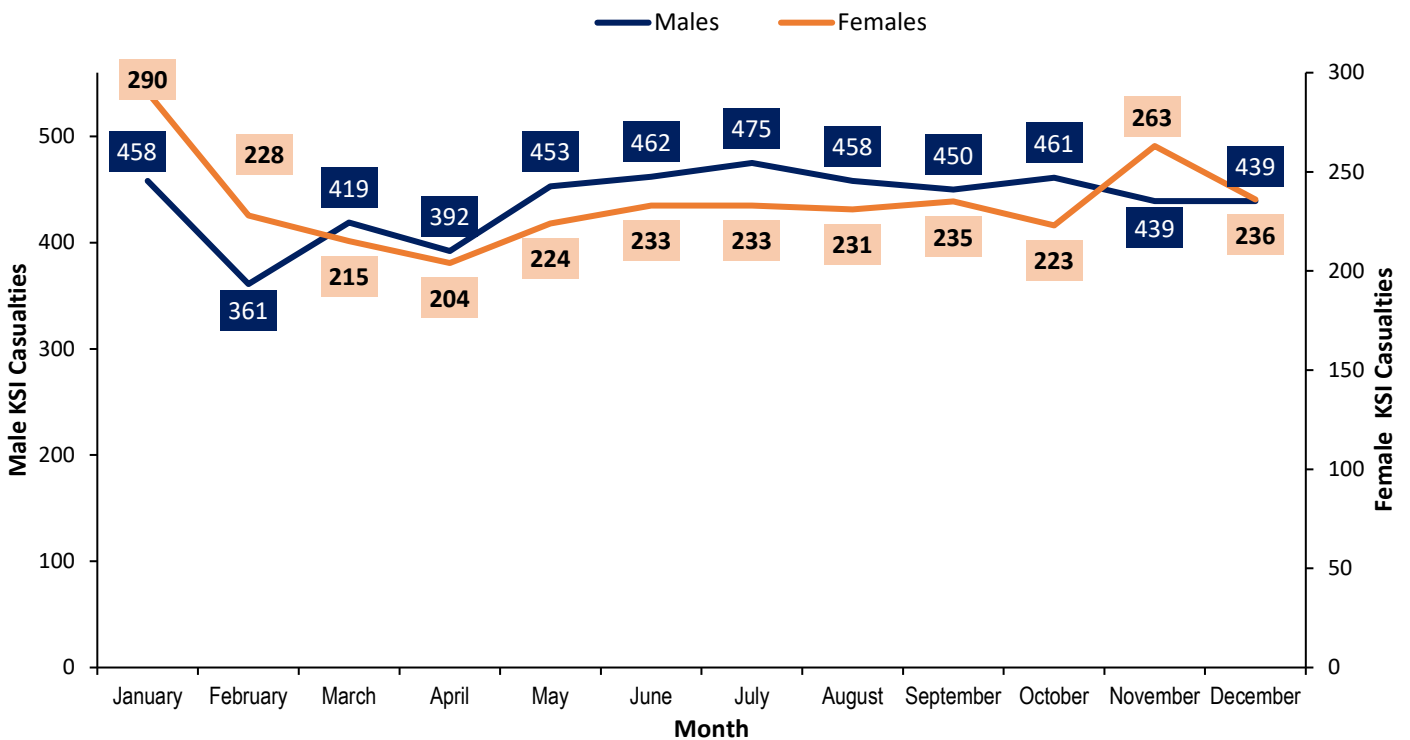
		Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total		
No of KSI Casualties	0601 - 0800	24	21	21	17	26	13	8	130	0601 - 0800	
	0801 - 1000	51	52	39	43	47	24	27	283	0801 - 1000	
	1001 - 1200	33	34	48	31	30	57	30	263	1001 - 1200	
	1201 - 1400	46	49	43	47	52	55	54	346	1201 - 1400	
	1401 - 1600	70	57	67	59	69	77	50	449	1401 - 1600	
	<10	1601 - 1800	64	76	54	65	81	58	63	461	1601 - 1800
	10-29	1801 - 2000	36	55	47	51	49	36	32	306	1801 - 2000
	30-49	2001 - 2200	30	33	39	24	41	48	21	236	2001 - 2200
	50-69	2201 - 0000	13	20	19	14	26	27	8	127	2201 - 0000
	70+	0001 - 0200	14	6	8	7	10	17	28	90	0001 - 0200
		0201 - 0400	8	9	4	9	6	19	42	97	0201 - 0400
		0401 - 0600	3	3	4	4	1	6	6	27	0401 - 0600
		Total	392	415	393	371	438	437	369	2,815	
		%	14%	15%	14%	13%	16%	16%	13%	-	

Figure 21: Male vs female KSI casualties by time of day, 2011-2020



Overlaying the male and female KSI casualties by time of day shows that a greater proportion of females tend to be killed or seriously injured during the daytime between 8am and 4pm while conversely proportionately more males were KSI casualties in the evening and the early hours of the morning.

Figure 22: Male vs female KSI casualties by month, 2011-2020

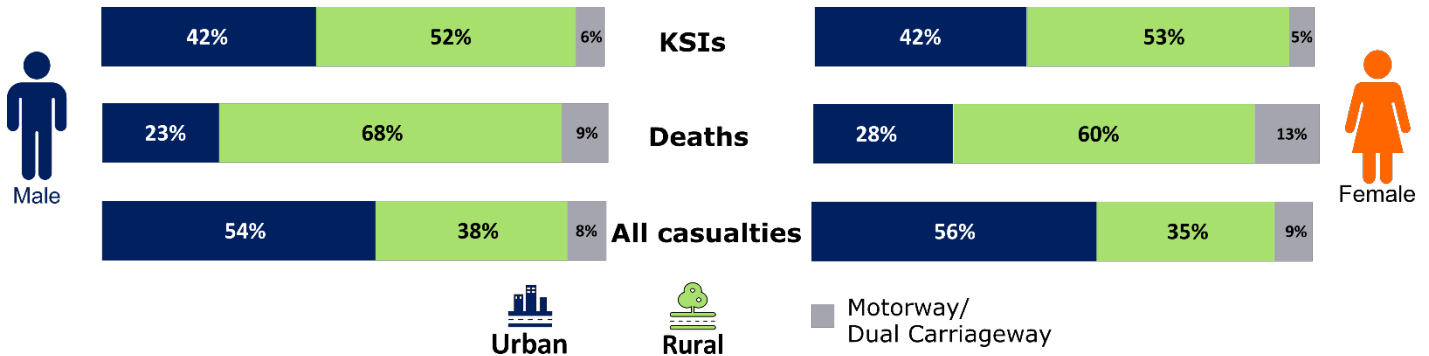


Looking at the data by month of year reveals that the highest months for females are January followed by November whereas for males July is highest closely followed by June. This reveals an interesting insight in that proportionately there are more female KSIs during the winter months and conversely more male KSIs during the summer period. Female KSIs between November and February account for 36% of the total female KSIs for the year in comparison with 32% males for these months. Obviously, this means that there are more male KSIs occurring between March and October (68%) than for females (64%). One explanation for the seasonal variation between the genders is that there are more male pedal cyclists and motorcyclists killed or seriously injured during the spring and summer period while there are more female car user KSI casualties recorded during the winter months.

SPEED LIMIT OF ROAD

There was little difference in the proportion of males compared with females killed or seriously injured by speed limit of the road. Both males and females had 42% of KSI casualties occurring on urban roads while females had 53% occurring on rural roads compared with 52% males. The proportions for both genders were also very similar for road deaths and for all casualties regardless of severity. See Figure 23 below.

Figure 23: Males vs females casualty severity by speed limit of road*, 2011-2020



Looking at the gender proportions for each road user split by speed limit of the road shows that the male to female ratio for KSI casualties amongst car drivers, car passengers, motorcyclists and pedal cyclists are approximately the same regardless of the road being urban or rural.

The only slight differences in terms of road user were amongst pedestrians and other road users. Male pedestrians were over-represented on rural roads with almost three-quarters (74%) of pedestrians killed or seriously injured on country roads being male whereas the overall male pedestrian proportion is 62%. There was also over-representation of other female KSIs on urban roads and other males KSIs on rural roads. These had 50% and 85% male proportions respectively as opposed to the 65% male proportion for other road users overall. An explanation for this is that a high proportion of bus passenger KSIs on urban roads were that of females, accounting for 33 of the 43 urban female KSIs, while the vast majority of male tractor and HGV driver collisions occurred on country roads. Table 6 presents the proportions below:

Table 6: KSI casualties by gender of road users split by speed limit of road*, 2011-2020

		Pedestrian	Car Driver	Car Passenger	Motorcyclist	Pedal Cyclist	Other	Total
Urban	Male	881	403	166	445	300	43	2,238
	Female	585	282	193	30	47	43	1,180
	Total	1,466	685	359	475	347	86	3,418
	% Male	60%	59%	46%	94%	86%	50%	65%
Rural	Male	162	1,410	483	456	128	94	2,733
	Female	57	807	550	32	24	23	1,493
	Total	219	2,217	1,033	488	152	117	4,226
	% Male	74%	64%	47%	93%	84%	80%	65%
Total	Male	1,076	1,953	690	945	451	152	5,267
	Female	658	1,157	793	65	74	68	2,815
	Total	1,734	3,110	1,483	1,010	525	220	8,082
	% Male	62%	63%	47%	94%	86%	69%	65%

* Urban roads are defined as roads with speed limit less than or equal to 40mph, while rural roads are roads with a speed limit greater than 40mph (excluding motorways and dual carriageways)

SINGLE VEHICLE COLLISIONS

A single vehicle collision is defined as a collision which results to the occupants of one vehicle only and where no other party was involved. The majority of these will be car drivers although they can involve motorcyclists, pedal cyclists, buses and other road vehicles. The top three grouped causation factors were excessive speed having regard to conditions, alcohol or drugs driver/rider and careless driving with these three comprising 72% for males and 59% for females killed or seriously injured in single vehicle collisions. See Figure 24 below:

Figure 24: Males vs females grouped causation factors for KSI casualties involved in single vehicle collisions, 2011-2020

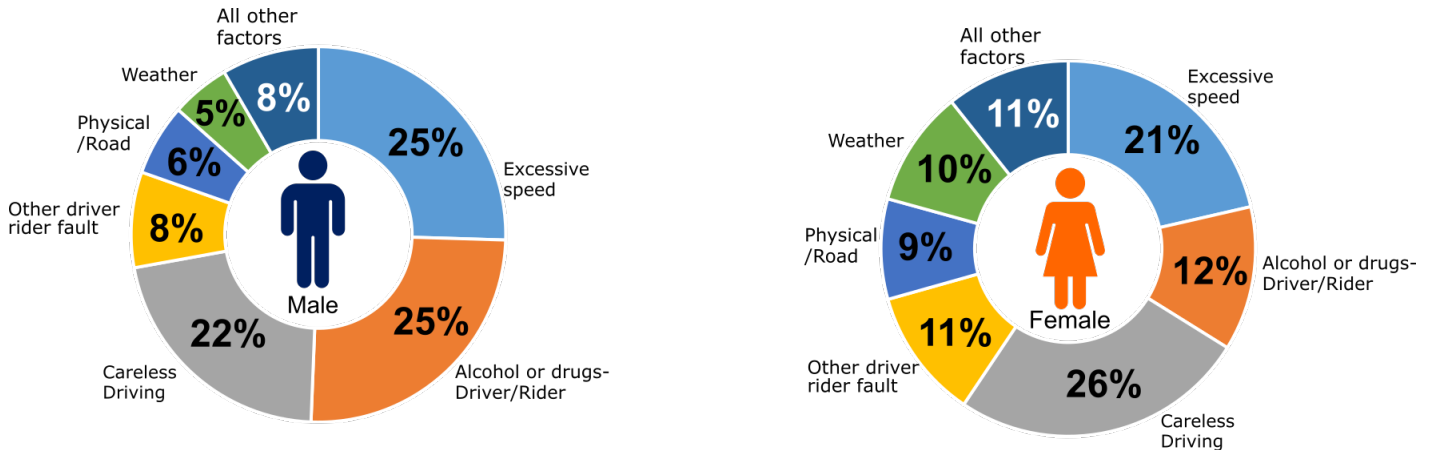
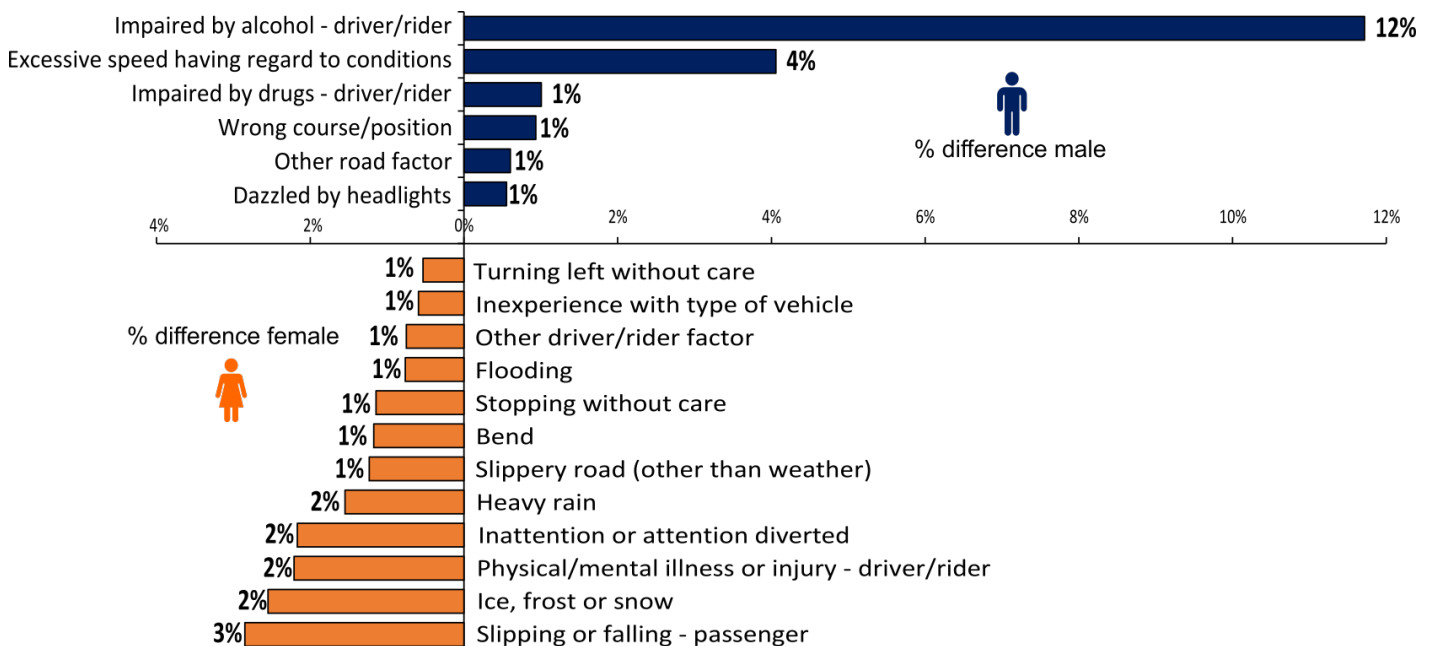


Figure 25 shows the differences in proportions of males and females by principal causation factor. The biggest single difference was drink driving which made up more than twice the proportion of male KSIs (23%) than females (11%). Males were also more likely to be a KSI casualty due to excessive speed with this making up a quarter of all male single vehicle KSI casualties compared with 21% for females. Wrong course position, other road factor and dazzled by headlights made up the other causations that had a slightly larger proportion of male KSI casualties. For females, slipping or falling passenger was the greatest difference from males (3%), followed by ice, frost or snow, physical/mental illness or injury – driver/rider, inattention or attention diverted and heavy rain which all had a 2% proportion higher than males.

Figure 25: Differences by proportion of principal causations for single vehicle collisions, KSI casualties males vs females, 2011-2020



MAPPING

All KSI casualties each District Council had a majority male proportion of approximately two thirds. Belfast was highest with 69% perhaps due to having by far the most motorcyclists and pedal cyclists killed or seriously injured. Derry & Strabane had the lowest male proportion with 62%.

Figure 26: Percentage of male KSI casualties by District Council, 2011-2022

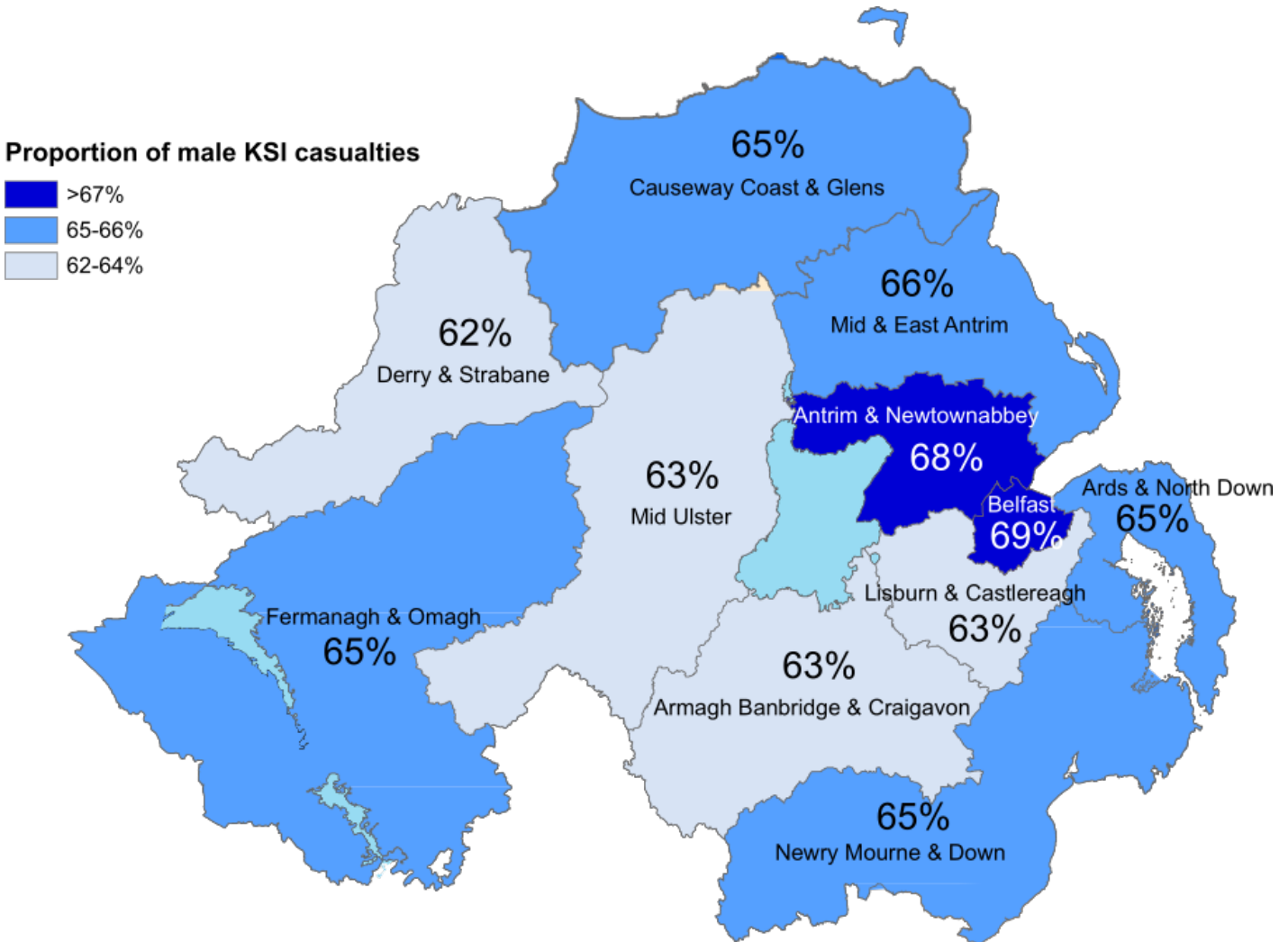
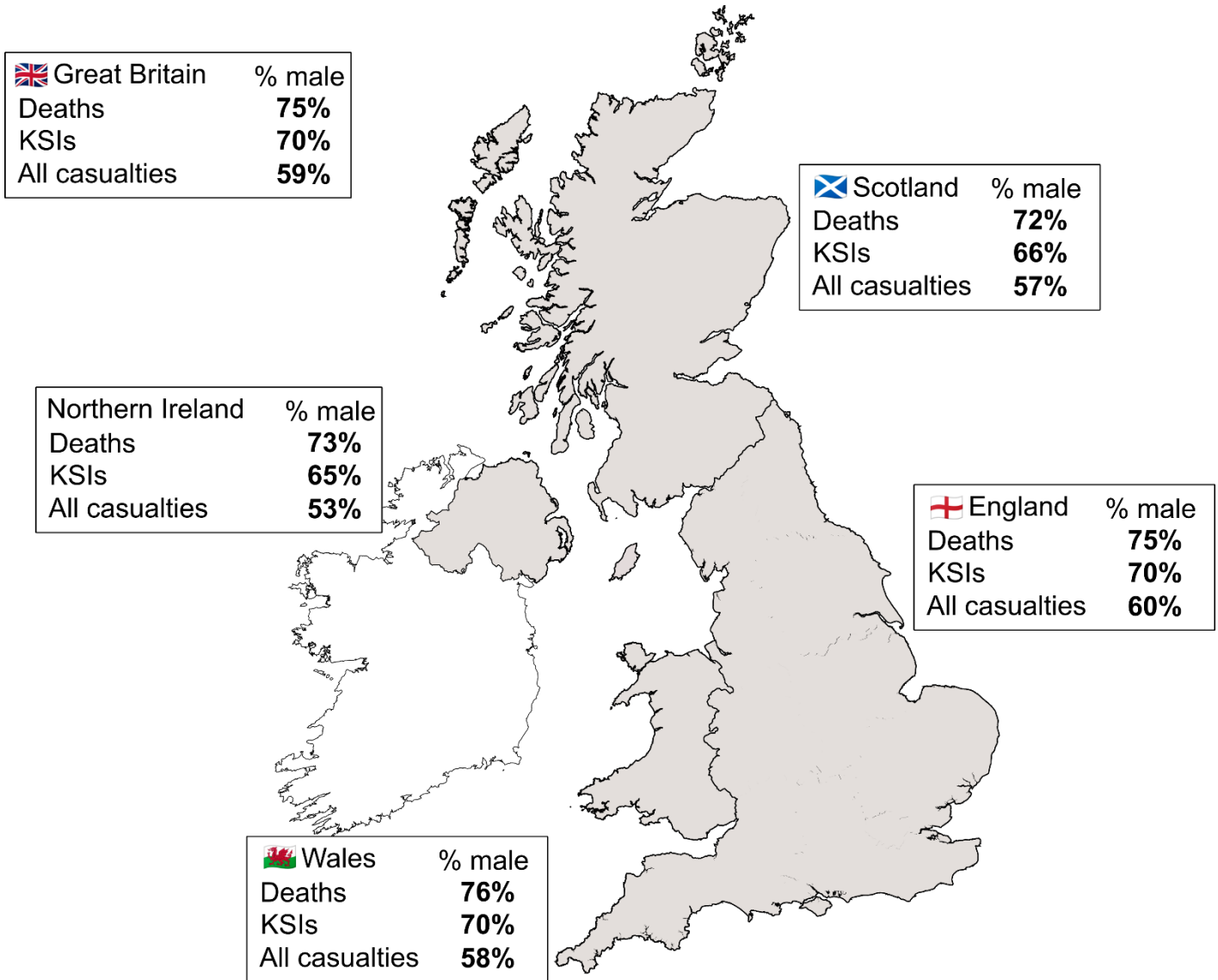


Table 7: Proportion of male KSI casualties by road user type for each District Council, 2011-2020

	Pedestrian	Car Driver	Car Passenger	Motorcyclist	Pedal Cyclist	Total
Antrim & Newtownabbey	65%	69%	40%	96%	87%	68%
Ards & North Down	54%	65%	36%	95%	93%	65%
Armagh City, Banbridge & Craigavon	62%	58%	48%	92%	80%	63%
Belfast	64%	65%	43%	93%	89%	69%
Causeway Coast & Glens	53%	65%	48%	90%	86%	65%
Derry City & Strabane	60%	64%	43%	96%	66%	62%
Fermanagh & Omagh	70%	68%	49%	90%	85%	65%
Lisburn & Castlereagh	64%	60%	45%	94%	86%	63%
Mid & East Antrim	61%	61%	49%	96%	84%	66%
Mid Ulster	64%	62%	46%	98%	85%	63%
Newry, Mourne & Down	63%	59%	54%	94%	89%	65%
Total	62%	63%	47%	94%	86%	65%

Figure 27: Northern Ireland proportion of male deaths, KSIs and all casualties compared with England, Wales and Scotland, 2011-2020



* Please note that it has not been possible to source this information for the Republic of Ireland

Table 8: Number of road deaths, KSIs and overall casualties for each country in the United Kingdom, 2011-2020

	Deaths			KSIs			Overall Casualties		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
England	11,092	3,656	14,748	153,574	65,592	219,166	937,632	635,656	1,573,288
Scotland	1,214	481	1695	12,414	6,448	18,862	57,068	43,171	100,239
Wales	769	242	1011	7,834	3,348	11,182	40,597	29,899	70,496
GB	13,075	4,379	17,454	173,882	75,388	249,210	1,035,297	708,726	1,744,023
NI	452	163	615	5,267	2,815	8,082	47,030	41,893	88,923
UK	13,527	4,542	18,069	179,089	78,203	257,292	1,082,327	750,619	1,832,946

All countries in the United Kingdom had a majority male proportion regardless of casualty severity. Compared with the rest of the United Kingdom, Northern Ireland has the lowest proportion of male KSI casualties (65%) and casualties overall (53%), although this could possibly be due to it having a comparatively smaller base.

TABLES

A1: Casualties by gender, 2002-2020

Year	Killed				KSI Casualties				Overall casualties			
	Male	Female	Total	% male	Male	Female	Total	% male	Male	Female	Total	% male
2002	105	45	150	70%	1116	560	1676	67%	6744	5170	11914	57%
2003	111	39	150	74%	947	491	1438	66%	5704	4621	10325	55%
2004	106	41	147	72%	883	447	1330	66%	5280	4227	9507	56%
2005	104	31	135	77%	805	403	1208	67%	4562	3597	8159	56%
2006	91	35	126	72%	891	446	1337	67%	5099	4083	9182	56%
2007	90	23	113	80%	831	379	1210	69%	5162	4273	9436	55%
2008	80	27	107	75%	714	383	1097	65%	5064	4487	9551	53%
2009	87	28	115	76%	766	384	1150	67%	5294	4473	9767	54%
2010	42	13	55	76%	593	354	947	63%	4735	4222	8957	53%
2011	38	21	59	64%	563	321	884	64%	4640	4120	8760	53%
2012	35	13	48	73%	572	271	843	68%	4685	4323	9010	52%
2013	43	14	57	75%	509	268	777	66%	4806	4380	9187	52%
2014	63	16	79	80%	535	254	789	68%	4988	4399	9388	53%
2015	53	21	74	72%	490	295	785	62%	5188	4547	9737	53%
2016	54	14	68	79%	583	313	896	65%	5025	4566	9591	52%
2017	45	18	63	71%	542	299	841	64%	4852	4330	9184	53%
2018	44	11	55	80%	528	257	785	67%	4579	4141	8720	53%
2019	37	19	56	66%	521	309	830	63%	4712	4157	8872	53%
2020	40	16	56	71%	424	228	652	65%	3555	2930	6487	55%

Please note that some casualties were of unknown gender or didn't have gender assigned so the males and females combined may not sum to the total.

Source: Police Service of Northern Ireland Road Traffic Collision Data

A2: Proportion male by severity of injury rolling five year average, 2002-2020

Year	Killed			KSIs			Overall casualties		
	Male	Total	% male	Male	Total	% male	Male	Total	% male
2002-2006	103	142	73%	928	1398	66%	5478	9817	56%
2003-2007	100	134	75%	871	1305	67%	5161	9322	55%
2004-2008	94	126	75%	825	1236	67%	5033	9167	55%
2005-2009	90	119	76%	801	1200	67%	5036	9219	55%
2006-2010	78	103	76%	759	1148	66%	5071	9379	54%
2007-2011	67	90	75%	693	1058	66%	4979	9294	54%
2008-2012	56	77	73%	642	984	65%	4884	9209	53%
2009-2013	49	67	73%	601	920	65%	4832	9136	53%
2010-2014	44	60	74%	554	848	65%	4771	9060	53%
2011-2015	46	63	73%	534	816	65%	4861	9216	53%
2012-2016	50	65	76%	538	818	66%	4938	9383	53%
2013-2017	52	68	76%	532	818	65%	4972	9417	53%
2014-2018	52	68	76%	536	819	65%	4926	9324	53%
2015-2019	47	63	74%	533	827	64%	4871	9221	53%
2016-2020	44	60	74%	520	801	65%	4545	8571	53%

Please note that some casualties were of unknown gender or didn't have gender assigned so the males and females combined may not sum to the total.

Source: Police Service of Northern Ireland Road Traffic Collision Data

A3: Overall KSI Casualties by gender and age group, 2011-2020

	Male	Female	Total	% male
Under 16	476	263	739	64%
16-24	1,277	616	1893	67%
25-34	986	377	1363	72%
35-49	1,082	479	1,561	69%
50-64	848	505	1,353	63%
65+	592	572	1,164	51%
Unknown	6	3	9	-
Total	5,267	2,815	8,082	65%

Source: Police Service of Northern Ireland Road Traffic Collision Data

A4: Pedestrian KSI Casualties by gender and age group, 2011-2020

	Male	Female	Total	% male
Under 16	301	151	452	67%
16-24	175	74	249	70%
25-34	148	57	205	72%
35-49	141	79	220	64%
50-64	135	111	246	55%
65+	175	186	361	48%
Unknown	1	0	1	100%
Total	1,076	658	1,734	62%

Source: Police Service of Northern Ireland Road Traffic Collision Data

A5: Top 5 pedestrian causation factors by gender where casualty was at fault, 2011-2020

	Male	Female	Total	% male
Heedless of traffic crossing carriageway*	273	174	447	61%
Impaired by alcohol/drugs - pedestrian	145	22	167	87%
Walk/run movement masked	86	42	128	67%
Walking or running onto carriageway	61	23	84	73%
Using pedestrian crossing without care	34	36	70	49%
Others	116	73	189	61%
Total	715	370	1,085	

* includes heedless of traffic crossing carriageway and heedless of traffic walking or standing in carriageway

Source: Police Service of Northern Ireland Road Traffic Collision Data

A6: Car driver KSI Casualties by gender and age group, 2011-2020

	Male	Female	Total	% male
Under 16	3	0	3	100%
16-24	532	264	796	67%
25-34	423	203	626	68%
35-49	395	248	643	61%
50-64	313	247	560	56%
65+	286	195	481	59%
Unknown	1	0	1	100%
Total	1,953	1,157	3,110	63%

Source: Police Service of Northern Ireland Road Traffic Collision Data

A7: Car passenger KSI Casualties by gender and age group, 2011-2020

	Male	Female	Total	% female
Under 16	92	89	181	49%
16-24	308	249	557	45%
25-34	125	93	218	43%
35-49	84	86	170	51%
50-64	50	108	158	68%
65+	28	166	194	86%
Unknown	3	2	5	40%
Total	690	793	1483	53%

Source: Police Service of Northern Ireland Road Traffic Collision Data

A8: Motorcyclist KSI Casualties by gender and age group, 2011-2020

	Male	Female	Total	% female
Under 16	9	1	10	90%
16-24	202	14	216	94%
25-34	208	7	215	97%
35-49	281	27	308	91%
50-64	201	14	215	93%
65+	43	1	44	98%
Unknown	1	1	2	50%
Total	945	65	1,010	94%

Source: Police Service of Northern Ireland Road Traffic Collision Data

A9: Top 10 Motorcyclist causation factors by gender, 2011-2020

	Male	Female	Total	% male
Inattention or attention diverted	86	1	87	99%
Overtaking on offside without care	76	2	78	97%
Excessive speed having regard to	71	3	74	96%
Wrong course/position	40	3	43	93%
Impaired by alcohol - driver/rider	42	0	42	100%
Inexperience with type of vehicle	21	7	28	75%
Driving too close	24	3	27	89%
Overtaking on nearside without care	13	0	13	100%
Crossing or entering road junction	13	0	13	100%
Other driver/rider factor	11	1	12	92%
Others	58	2	60	97%
Total	455	22	477	95%

Source: Police Service of Northern Ireland Road Traffic Collision Data

A10: Pedal cyclist KSI Casualties by gender and age group, 2011-2020

	Male	Female	Total	% female
Under 16	56	16	72	78%
16-24	44	5	49	90%
25-34	63	9	72	88%
35-49	138	26	164	84%
50-64	119	14	133	89%
65+	31	4	35	89%
Total	451	74	525	78%

Source: Police Service of Northern Ireland Road Traffic Collision Data

A11: Other road user KSI Casualties by gender, 2011-2020

	Male	Female	Total	% male
Quad Bikes	9	4	13	69%
Bus	20	46	66	30%
Ridden horse	1	6	7	14%
Goods vehicles	47	2	49	96%
Agricultural vehicles	35	0	35	100%
Others	40	10	50	80%
Total	152	68	220	69%

Source: Police Service of Northern Ireland Road Traffic Collision Data