

ROAD TRAFFIC ACCIDENTS ANALYSIS



INTRODUCTION

- **Data Source:** Kaggle.com
- **Dataset Details:** 32 columns, 12,317 rows with null, duplicate, and incorrect values
- **Data Cleaning:** Reduced to 12 key columns
- **Analysis Performed:**

Total casualties

Casualties distribution by weekdays

Number of vehicles involved with casualties

Age of casualties

Road surface conditions

Weather conditions

Daytime effects

Output: Interactive dashboard filtering by sex of casualties and accident severity



RAW DATA

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X		
1	Time	Day	Age	Sex	Educa	Vehic	Drivin	Type	Owne	Service	Defec	Area_accident_occure	Lanes	Road	Types	Road	Road	Light	Weath	Type	Numb	Numb	Vehic	Casual	Se	
2	17:02:00	Monday	18-30	Male	Above high	Employee	1-2yr	Automobil	Owner	Above 10y	No defect	Urban Area		Tangent rc	No junction	Asphalt ro	Dry	Daylight	Normal	Collision w	2	2	Going stra	na	na	
3	17:02:00	Monday	31-50	Male	Junior high	Employee	Above 10y	Public (> 4	Owner	5-10yrs	No defect	Urban Area	Undivided	Tangent rc	No junction	Asphalt ro	Dry	Daylight	Normal	Vehicle wi	2	2	Going stra	na	na	
4	17:02:00	Monday	18-30	Male	Junior high	Employee	1-2yr	Lorry (41?1	Owner		No defect	Urban Areas	other		No junction	Asphalt ro	Dry	Daylight	Normal	Collision w	2	2	Going stra	Driver or ri	Ma	
5	01:06:00	Sunday	18-30	Male	Junior high	Employee	5-10yr	Public (> 4	Governmental		No defect	Urban Area	other	Tangent rc	Y Shape	Earth road	Dry	Darkness	Normal	Vehicle wi	2	2	Going stra	Pedestrian	Fen	
6	01:06:00	Sunday	18-30	Male	Junior high	Employee	2-5yr		Owner	5-10yrs	No defect	Rural Area	other	Tangent rc	Y Shape	Asphalt ro	Dry	Darkness	Normal	Vehicle wi	2	2	Going stra	na	na	
7	14:15:00	Friday	31-50	Male		Unknown									Y Shape		Dry	Daylight	Normal	Vehicle wi	1	1	U-Turn	Driver or ri	Ma	
8	17:30:00	Wednesda	18-30	Male	Junior high	Employee	2-5yr	Automobil	Owner		No defect	Urban Area	Undivided	Tangent rc	Crossing		Dry	Daylight	Normal	Vehicle wi	1	1	Moving Ba	Driver or ri	Fen	
9	17:20:00	Friday	18-30	Male	Junior high	Employee	2-5yr	Automobil	Governme	Above 10y	No defect	Urban Area	other	Tangent rc	Y Shape	Asphalt ro	Dry	Daylight	Normal	Vehicle wi	2	1	U-Turn	na	na	
10	17:20:00	Friday	18-30	Male	Junior high	Employee	Above 10y	Lorry (41?1	Owner	1-2yr	No defect	Rural Area	other	Tangent rc	Y Shape	Earth road	Dry	Daylight	Normal	Collision w	2	1	Going stra	Pedestrian	Ma	
11	17:20:00	Friday	18-30	Male	Junior high	Employee	1-2yr	Automobil	Owner	2-5yrs	No defect	Urban Area	Undivided	Tangent rc	Y Shape	Asphalt ro	Dry	Daylight	Normal	Collision w	2	1	U-Turn	Passenger	Ma	
12	14:40:00	Saturday	18-30	Male	Above high	Owner	1-2yr	Public (13?1	Owner	Unknown	No defect	Urban Area	other	Tangent rc	No junction	Asphalt ro	Dry	Daylight	Normal	Collision w	2	1	Turnover	na	na	
13	14:40:00	Saturday	31-50	Male	Above high	Employee	No Licence	Automobil	Owner		No defect	Urban Area	Undivided	Tangent rc	No junction	Earth road	Dry	Daylight	Normal	Collision w	2	1	Going stra	Driver or ri	Ma	
14	17:45:00	Thursday	18-30	Male	Junior high	Employee	1-2yr	Public (> 4	Owner	2-5yrs	No defect	Urban Area	Double car	Escarpmer	No junction	Asphalt ro	Dry	Daylight	Normal	Collision w	2	2	Going stra	na	na	
15	17:45:00	Thursday	31-50	Male	Junior high	Employee	5-10yr	Lorry (41?1	Owner	Above 10y	No defect	Urban Area	other	Tangent rc	No junction	Asphalt ro	Dry	Daylight	Normal	Collision w	2	2	Waiting to	na	na	
16	17:45:00	Thursday	31-50	Male	Junior high	Employee	Above 10y	Automobil	Owner	1-2yr	No defect	Urban Area	Undivided	Escarpmer	No junction	Asphalt ro	Dry	Daylight	Normal	Collision w	2	2	Going stra	Driver or ri	Fen	
17	22:45:00	Monday	18-30	Female	Junior high	Employee	Above 10y	Lorry (11?4	Owner		No defect	Urban Area	One way	Tangent rc	Y Shape	Asphalt ro	Wet or dar	Darkness	Raining	Collision w	2	3	Going stra	na	na	
18	22:45:00	Monday	18-30	Male	Junior high	Owner	5-10yr	Public (13?1	Owner		No defect	Urban Area	Undivided	Tangent rc	Y Shape	Asphalt ro	Wet or dar	Darkness	Raining	Collision w	2	3	Going stra	na	na	
19	22:45:00	Monday	18-30	Male	Elementar	Employee	2-5yr	Public (13?1	Owner		No defect	Urban Area	other	Tangent rc	Y Shape	Asphalt ro	Wet or dar	Darkness	Raining	Collision w	2	3	Going stra	na	na	
20	22:45:00	Monday	18-30	Male	Junior high	Employee	2-5yr		Owner	Above 10y	No defect	Urban Area	other	Tangent rc	Y Shape	Asphalt ro	Wet or dar	Darkness	Raining	Collision w	2	3	Moving Ban	na	na	
21	08:20:00	Tuesday	18-30	Male	Junior high	Employee	Below 1yr	Long lorry	Owner	5-10yrs	No defect	Urban Area	One way	Tangent rc	Y Shape	Asphalt ro	Dry	Daylight	Normal	Collision w	2	1	Going stra	Driver or ri	Ma	
22	08:20:00	Tuesday	Under 18	Male	Junior high	Employee	2-5yr	Lorry (41?1	Owner		No defect	Other	One way	Tangent rc	Y Shape	Asphalt ro	Dry	Daylight	Normal	Collision w	2	1	Going stra	na	na	
23	15:10:00	Thursday	18-30	Male	Junior high	Employee	2-5yr	Lorry (11?4	Owner	5-10yrs	No defect	Urban Area	Undivided	Tangent rc	Crossing	Asphalt ro	Dry	Daylight	Normal	Collision w	1	1	Moving Ba	Driver or ri	Ma	
24	12:11:00	Thursday	18-30	Male	Elementar	Employee	5-10yr	Lorry (41?1	Owner		No defect	Urban Areas	other	Tangent rc	Y Shape	Asphalt ro	Dry	Daylight	Normal	Other	2	1	Getting off	Passenger	Fen	
25	12:11:00	Thursday	31-50	Male	Junior high	Employee	Above 10y	Public (12	Owner			Rural Area	Undivided	Tangent rc	Y Shape	Asphalt ro	Dry	Daylight	Normal	Rollover	2	1	Reversing	Passenger	Ma	
26	18:36:00	Wednesda	18-30	Male		Unknown						Urban Area	other		Crossing	Asphalt ro	Dry	Daylight	Normal	Collision w	2	3	Turnover	na	na	
27	18:36:00	Wednesda	18-30	Male	Junior high	Employee	2-5yr	Taxi	Owner	Above 10y	No defect	Urban Area	other	Tangent rc	Crossing	Asphalt ro	Dry	Daylight	Normal	Rollover	2	3	Going stra	Driver or ri	Fen	
28	18:36:00	Wednesda	18-30	Unknown	Junior high	Employee	5-10yr		Owner	2-5yrs	No defect	Urban Area	Double car	Tangent rc	Crossing	Asphalt ro	Dry	Daylight	Normal	Collision w	2	3	Going stra	Pedestrian	Ma	
29	14:35:00	Friday	18-30	Male	Above high	Employee	2-5yr	Automobil	Owner	2-5yrs	No defect	Urban Areas	Undivided	Tangent rc	No junction	Asphalt ro	Dry	Daylight	Normal	Collision w	1	1	Going stra	na	na	
30	12:25:00	Tuesday	Over 51	Unknown		Unknown						Unknown	other	Tangent rc	No junction	Asphalt ro	Dry	Daylight	Normal	Vehicle wi	2	1	Going stra	Driver or ri	Ma	
34	15:25:00	Thursday	18-30	Male	Junior high	Employee	Below 1yr	Lorry (41?1	Owner	5-10yrs	No defect	Other	Undivided	Tangent rc	No junction	Asphalt ro	Dry	Daylight	Normal	Rollover	2	1	Reversing	Passenger	Fen	
36	13:57:00	Saturday	Over 51	Male	Junior high	Employee	Below 1yr	Automobil	Owner	1-2yr	No defect	Rural Area	Undivided	Gentle hor	O Shape	Asphalt ro	Dry	Daylight	Normal	Collision w	2	1	Going stra	Driver or ri	Fen	
37	13:57:00	Saturday	18-30	Male	High scho	Employee	5-10yr	Automobil	Owner	2-5yrs	No defect	Rural Area	Undivided	Gentle hor	O Shape	Asphalt ro	Dry	Daylight	Normal	Fall from v	2	1	Going stra	Pedestrian	Ma	
41	16:30:00	Sunday	Over 51	Male	High scho	Employee	Below 1yr	Automobil	Owner		7	Rural Areas	other	Tangent rc	No junction	Asphalt ro	Dry	Daylight	Normal	Collision w	2	1	Going stra	Driver or ri	Fen	
43	21:50:00	Sunday	31-50	Male		Unknown			Owner	5-10yrs	5	Urban Area	other	Tangent rc	No junction	Asphalt ro	Dry	Darkness	Normal	Vehicle wi	2	2	Going stra	Driver or ri	Fen	
47	14:40:00	Friday	31-50	Male	Junior high	Employee	5-10yr	Lorry (11?4	Owner	2-5yrs		Other	Undivided	Tangent rc	Y Shape	Asphalt ro	Dry	Daylight	Normal	Vehicle wi	1	1	Going stra	na	na	
48	10:36:00	Friday	31-50	Male	Junior high	Employee	1-2yr	Stationwag	Owner	2-5yrs		Other	Undivided	Tangent rc	Crossing	Asphalt ro	Dry	Daylight	Normal	Vehicle wi	2	1	Going stra	na	na	
50	18:19:00	Monday	18-30	Male	Junior high	Employee	Below 1yr	Stationwag	Owner			Other	Two-way (Tangent rc	Crossing	Asphalt ro	Dry	Daylight	Normal	Rollover	2	1	Going stra	na	na	
51	18:19:00	Monday	18-30	Male	High scho	Employee	2-5yr	Automobil	Owner	Below 1yr		Other	Undivided	Tangent rc	Crossing	Asphalt ro	Dry	Daylight	Normal	Vehicle wi	2	1	Going stra	Driver or ri	Ma	
52	19:12:00	Tuesday	18-30	Male	Junior high	Owner	1-2yr	Automobil	Owner	5-10yrs		Other	Two-way (Tangent rc	Other	Asphalt ro	Dry	Daylight	Normal	Vehicle wi	2	1	Going stra	Driver or ri	Fen	
53	19:12:00	Tuesday	31-50	Male	Junior high	Employee	5-10yr	Other	Governme	5-10yrs	No defect	Other	Undivided	Tangent rc	Other	Asphalt ro	Dry	Daylight	Normal	Vehicle wi	2	1	Going stra	na	na	
54	11:38:00	Saturday	Over 51	Male	Elementar	Employee	2-5yr	Taxi	Owner	2-5yrs	No defect	Other	Double car	Tangent rc	No junction	Asphalt ro	Dry	Daylight	Normal	Collision w	2	3	Going stra	Driver or ri	Ma	

CLEANED DATA

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Day_of_week	Age_band_of_d	Age	Area_accident_occured	Area	Road	Light	Weath	Numb	Numb	Sex_o	Accid	t_severity
2	Monday	18-30	18-30	Urban Area	Urban Area	Dry	Daylight	Normal	2	2	na	Slight Injury	
3	Monday	31-50	31-50	Urban Area	Urban Area	Dry	Daylight	Normal	2	2	na	Slight Injury	
4	Monday	18-30	18-30	Urban Area	Urban Area	Dry	Daylight	Normal	2	2	Male	Serious Injury	
5	Sunday	18-30	18-30	Urban Area	Urban Area	Dry	Dark	Normal	2	2	Female	Slight Injury	
6	Sunday	18-30	18-30	Rural Area	Rural Area	Dry	Dark	Normal	2	2	na	Slight Injury	
7	Friday	31-50	31-50	other	Urban Area	Dry	Daylight	Normal	1	1	Male	Slight Injury	
8	Wednesday	18-30	18-30	Urban Area	Urban Area	Dry	Daylight	Normal	1	1	Female	Slight Injury	
9	Friday	18-30	18-30	Urban Area	Urban Area	Dry	Daylight	Normal	2	1	na	Slight Injury	
10	Friday	18-30	18-30	Rural Area	Rural Area	Dry	Daylight	Normal	2	1	Male	Slight Injury	
11	Friday	18-30	18-30	Urban Area	Urban Area	Dry	Daylight	Normal	2	1	Male	Serious Injury	
12	Saturday	18-30	18-30	Urban Area	Urban Area	Dry	Daylight	Normal	2	1	na	Serious Injury	
13	Saturday	31-50	31-50	Urban Area	Urban Area	Dry	Daylight	Normal	2	1	Male	Serious Injury	
14	Thursday	18-30	18-30	Urban Area	Urban Area	Dry	Daylight	Normal	2	2	na	Slight Injury	
15	Thursday	31-50	31-50	Urban Area	Urban Area	Dry	Daylight	Normal	2	2	na	Slight Injury	
16	Thursday	31-50	31-50	Urban Area	Urban Area	Dry	Daylight	Normal	2	2	Female	Serious Injury	
17	Monday	18-30	18-30	Urban Area	Urban Area	Wet	Dark	Raining	2	3	na	Serious Injury	
18	Monday	18-30	18-30	Urban Area	Urban Area	Wet	Dark	Raining	2	3	na	Slight Injury	
19	Monday	18-30	18-30	Urban Area	Urban Area	Wet	Dark	Raining	2	3	na	Serious Injury	
20	Monday	18-30	18-30	Urban Area	Urban Area	Wet	Dark	Raining	2	3	na	Slight Injury	
21	Tuesday	18-30	18-30	Urban Area	Urban Area	Dry	Daylight	Normal	2	1	Male	Serious Injury	
22	Tuesday	Under 18	Under 18	Other	Urban Area	Dry	Daylight	Normal	2	1	na	Slight Injury	
23	Thursday	18-30	18-30	Urban Area	Urban Area	Dry	Daylight	Normal	1	1	Male	Serious Injury	
24	Thursday	18-30	18-30	Urban Area	Urban Area	Dry	Daylight	Normal	2	1	Female	Serious Injury	
25	Thursday	31-50	31-50	Rural Area	Rural Area	Dry	Daylight	Normal	2	1	Male	Serious Injury	
26	Wednesday	18-30	18-30	Urban Area	Urban Area	Dry	Daylight	Normal	2	3	na	Slight Injury	
27	Wednesday	18-30	18-30	Urban Area	Urban Area	Dry	Daylight	Normal	2	3	Female	Slight Injury	
28	Wednesday	18-30	18-30	Urban Area	Urban Area	Dry	Daylight	Normal	2	3	Male	Slight Injury	
29	Friday	18-30	18-30	Urban Area	Urban Area	Dry	Daylight	Normal	1	1	na	Slight Injury	
30	Tuesday	Over 51	Over 51	Unknown	Rural Area	Dry	Daylight	Normal	2	1	Male	Slight Injury	
31	Tuesday	18-30	18-30	Rural Area	Rural Area	Dry	Daylight	Normal	2	1	Male	Slight Injury	
32	Monday	18-30	18-30	Urban Area	Urban Area	Dry	Daylight	Normal	1	1	na	Slight Injury	
33	Thursday	18-30	18-30	Urban Area	Urban Area	Dry	Daylight	Normal	1	1	Male	Slight Injury	
34	Thursday	18-30	18-30	Other	Urban Area	Dry	Daylight	Normal	2	1	Female	Slight Injury	
35	Thursday	31-50	31-50	Urban Area	Urban Area	Dry	Daylight	Normal	2	1	na	Slight Injury	
36	Saturday	Over 51	Over 51	Rural Area	Rural Area	Dry	Daylight	Normal	2	1	Female	Slight Injury	
37	Saturday	18-30	18-30	Rural Area	Rural Area	Dry	Daylight	Normal	2	1	Male	Slight Injury	

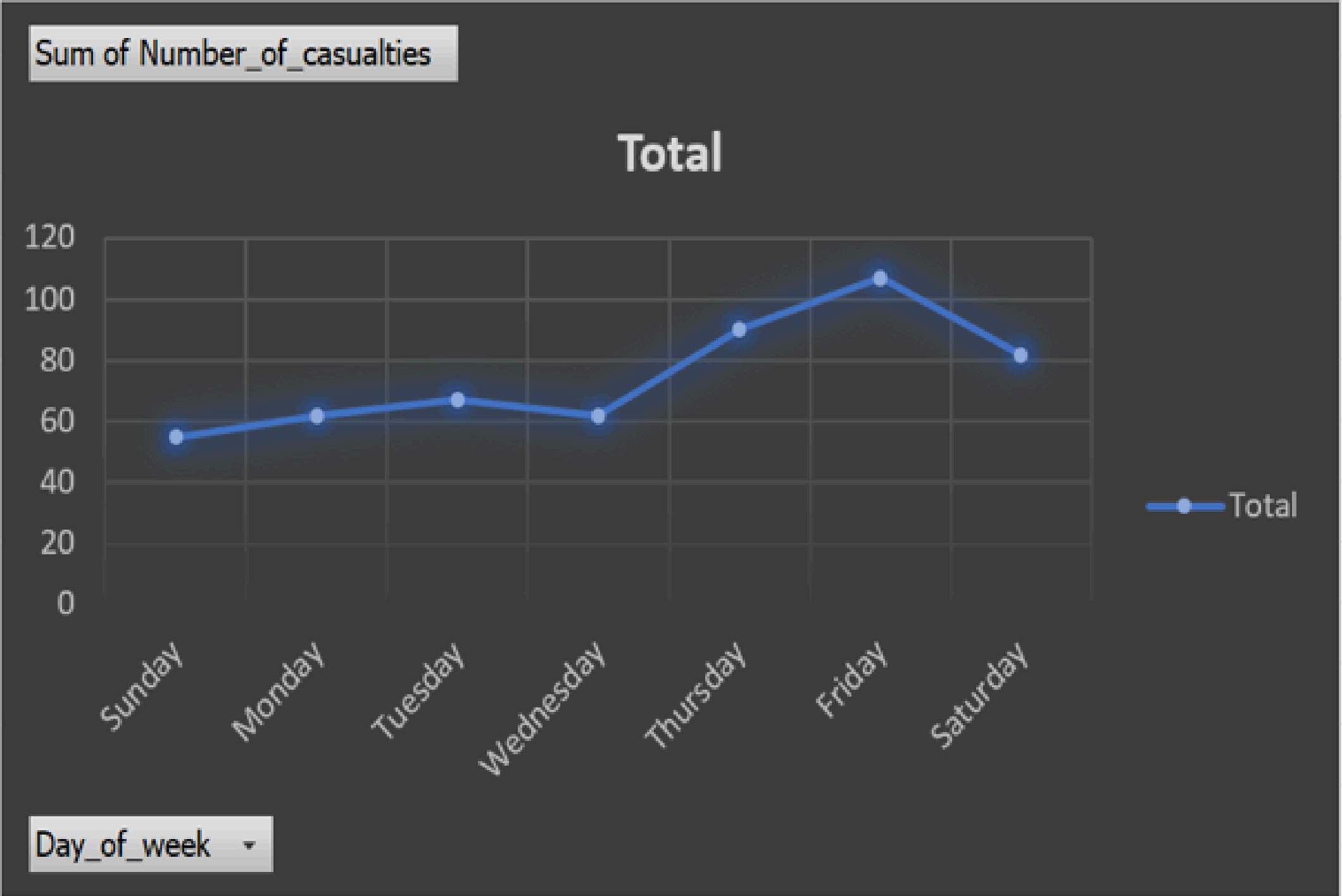
CASUALTIES BY DAY OF THE WEEK

Row Labels	Sum of Number_of_casualties
Sunday	55
Monday	62
Tuesday	67
Wednesday	62
Thursday	90
Friday	107
Saturday	82
Grand Total	525

Sex_of_casualty

Female

Male



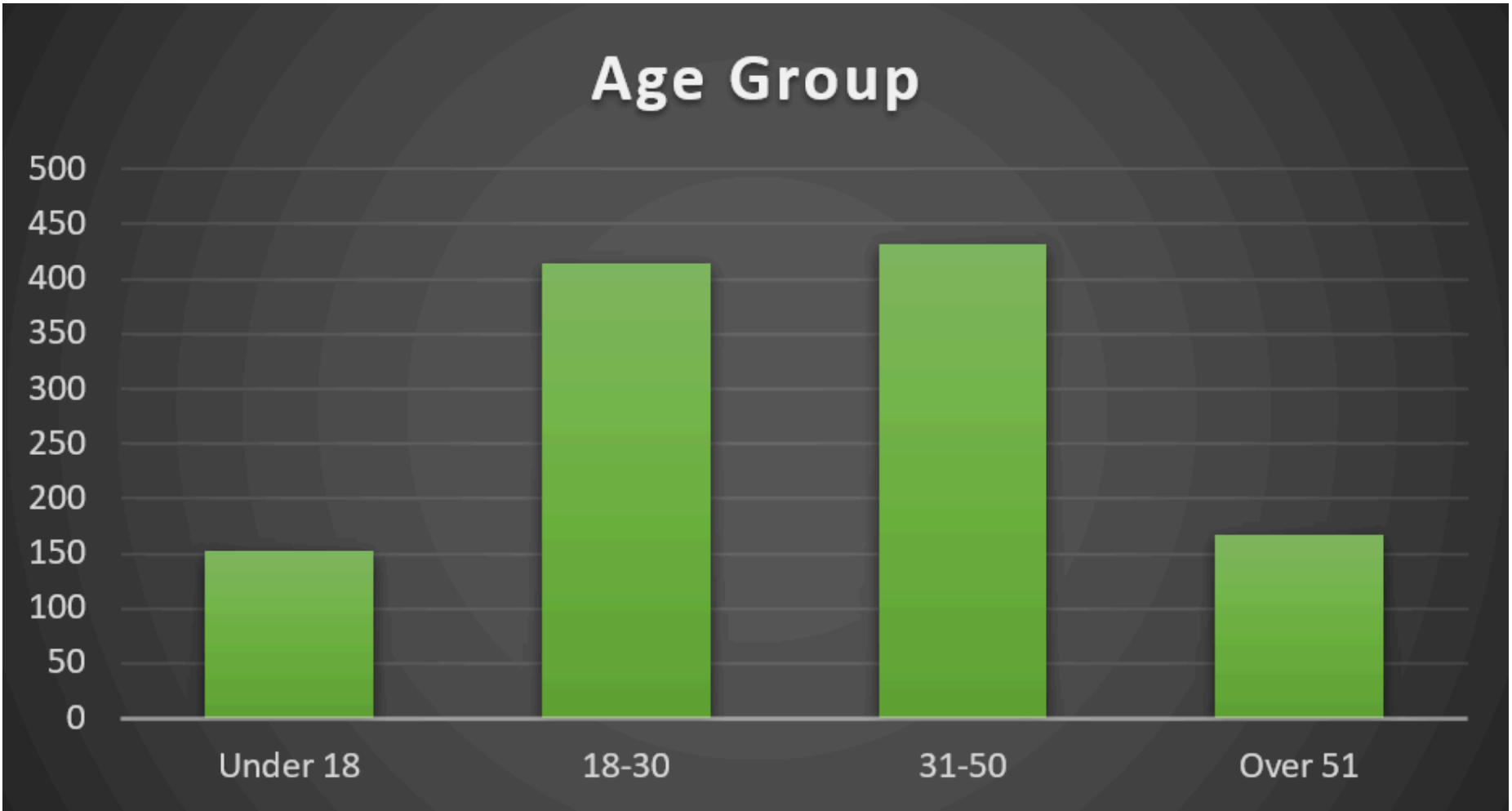
CASUALTIES BY AGE WITH GENDER FILTER

Row Labels	Sum of Number_of_casualties
Under 18	152
18-30	415
31-50	432
Over 51	167
Grand Total	1166

Sex_of_casualty

Female

Male



CASUALTIES VS. VEHICLES INVOLVED WITH ACCIDENT SEVERITY SLICER

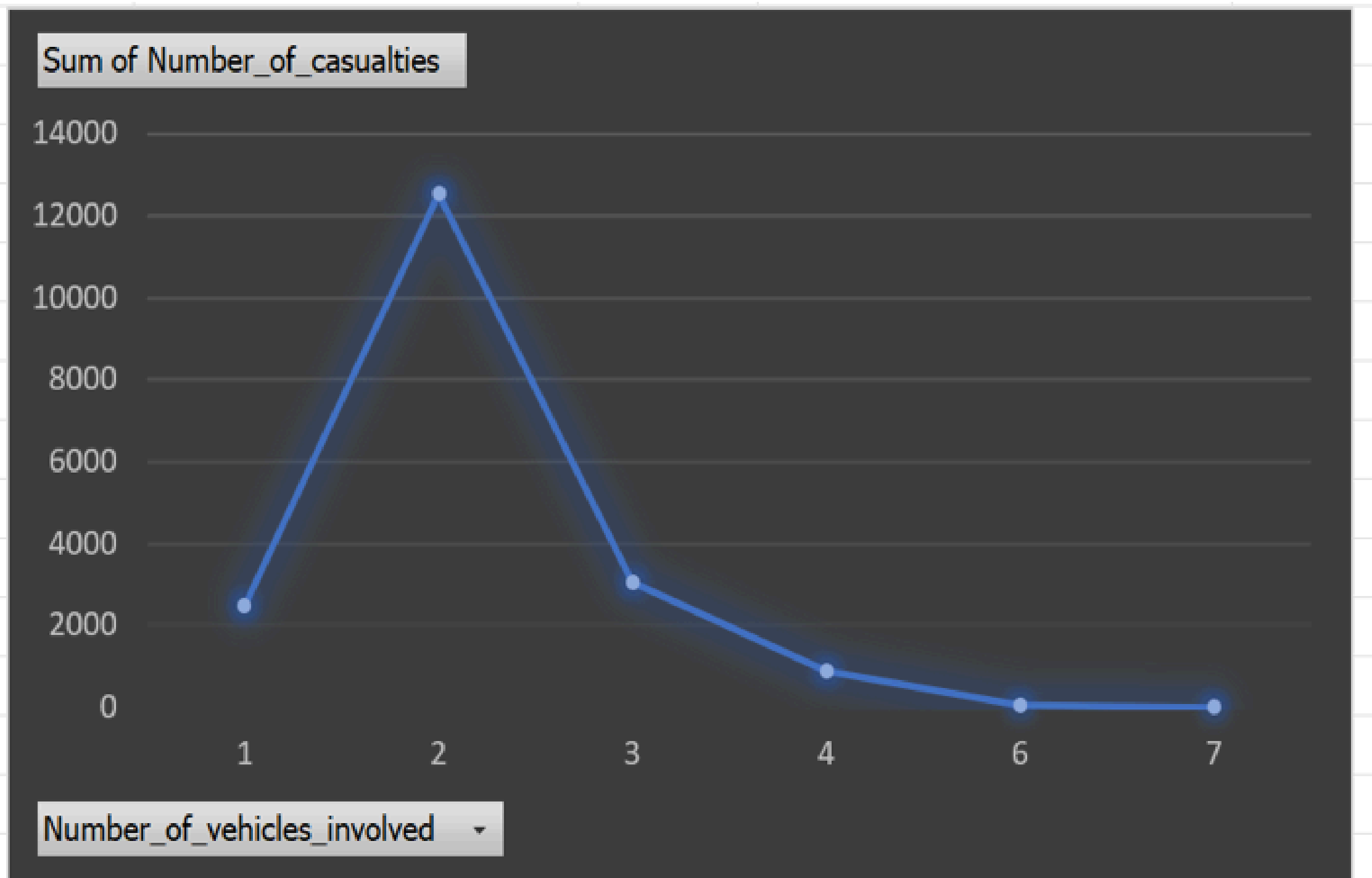
Row Labels	Sum of Number_of_casualties
1	2508
2	12554
3	3056
4	876
6	66
7	7
Grand Total	19067

Accident_sev...

Fatal injury



Serious Injury

Slight Injury



CASUALTIES BY ROAD SURFACE CONDITIONS WITH ACCIDENT SEVERITY FILTER

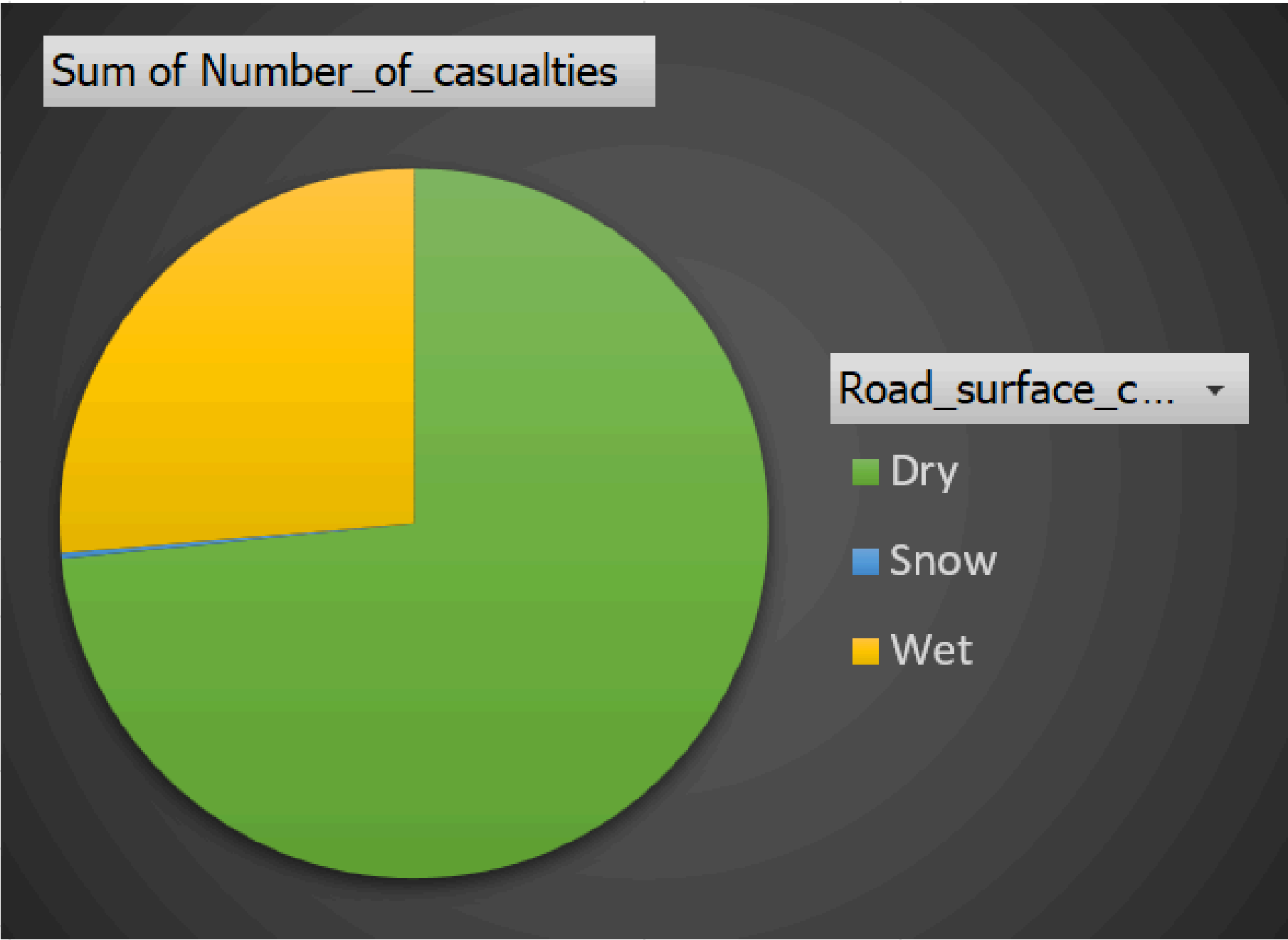
Row Labels	Sum of Number_of_casualties
Dry	856
Snow	3
Wet	307
Grand Total	1166

Accident_severity  

Fatal injury

Serious Injury

Slight Injury



DASHBOARD

Road Accidents Survey

Total Casualties: **6902**

Accident_severity

Fatal injury

Serious Injury

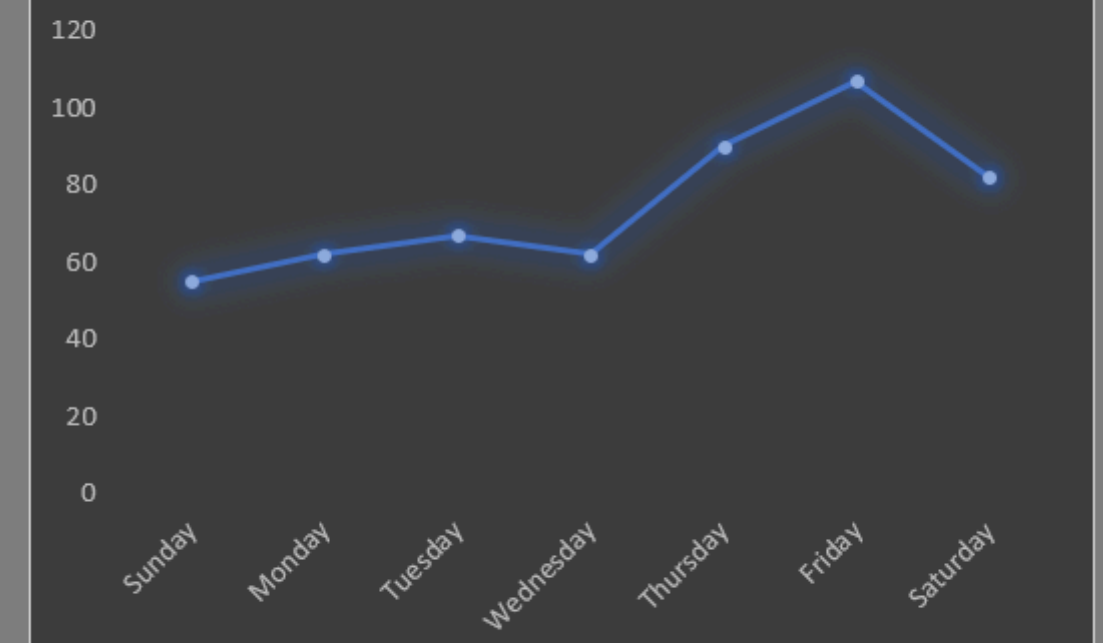
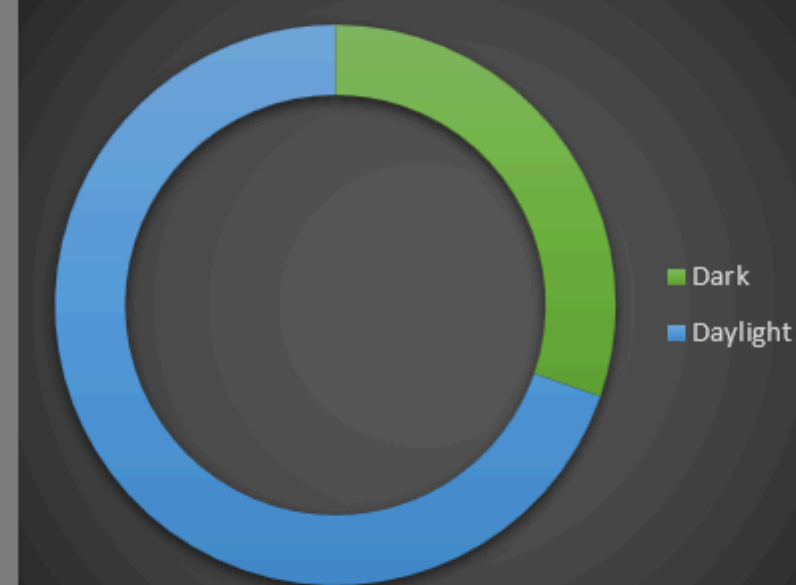
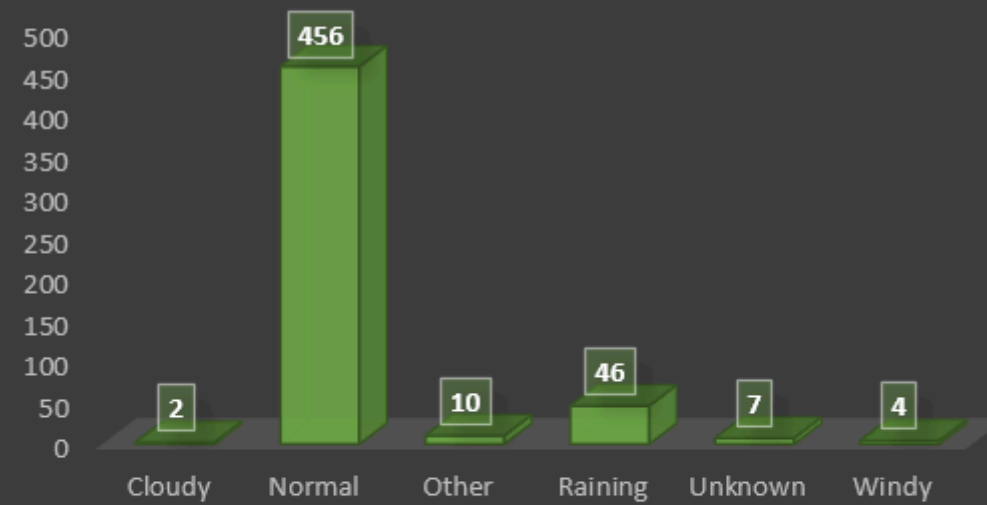
Slight Injury

Sex_of_casualty

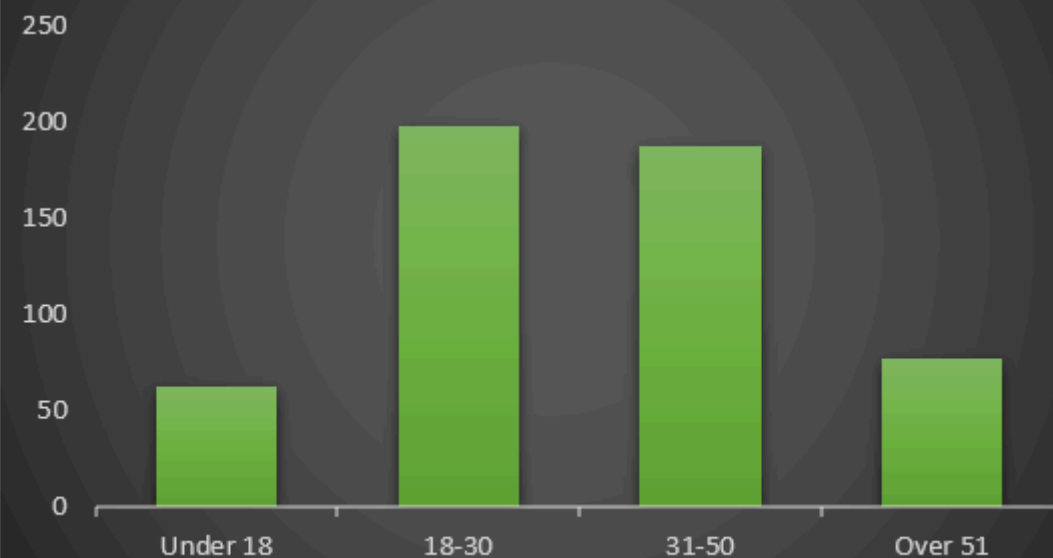
Female

Male

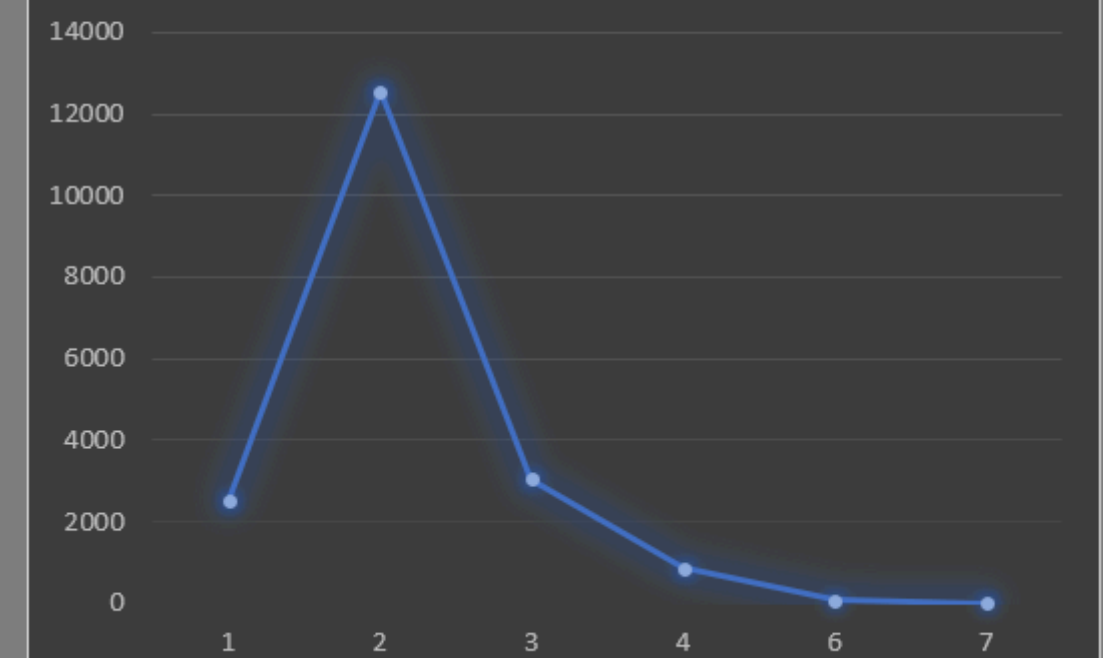
WEATHER



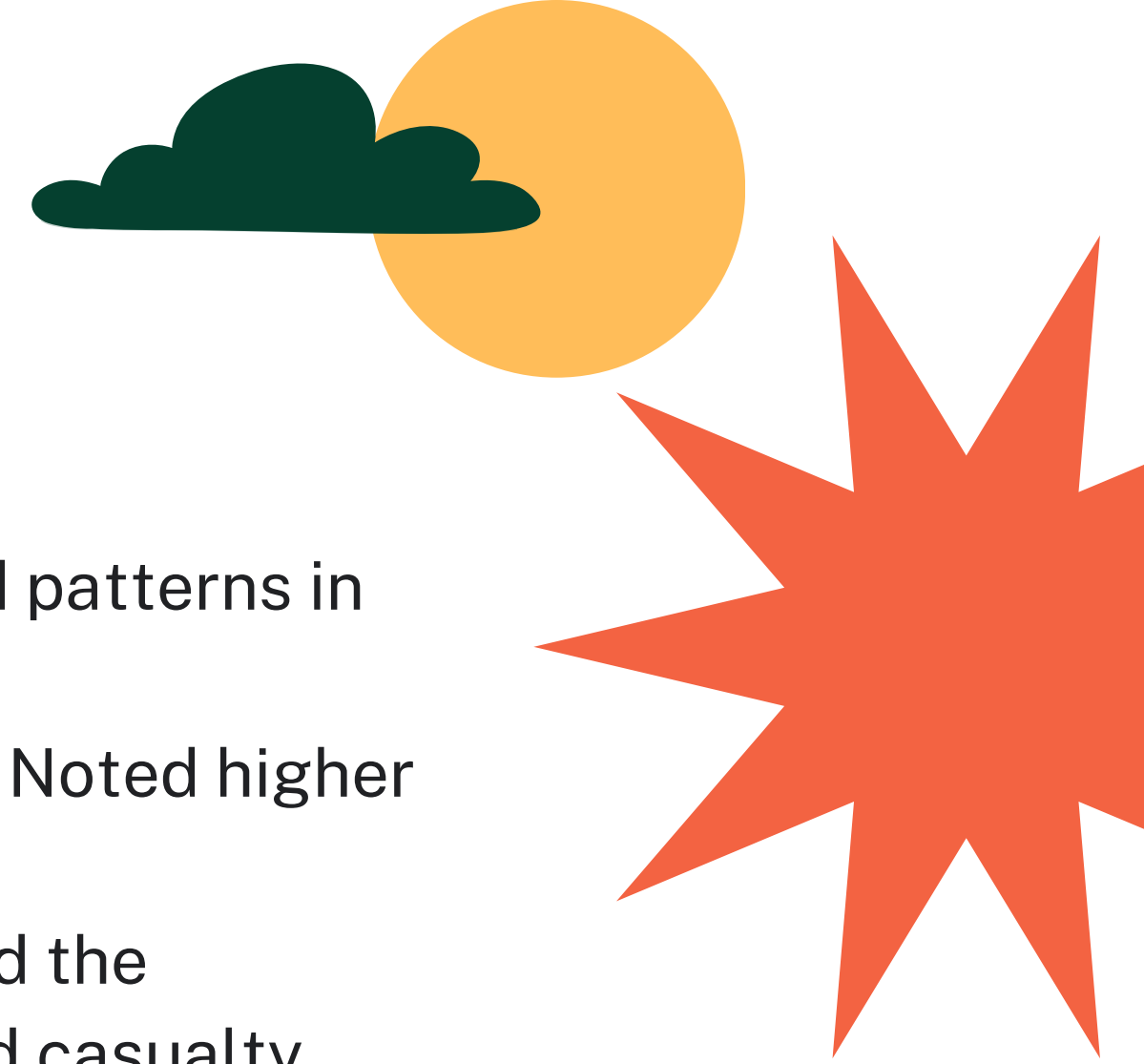
Age of Casualty



Road Surface Type



KEY FINDINGS



- **Total Casualties:** Identified trends and patterns in the overall number of casualties.
- **Casualties Distribution by Weekdays:** Noted higher incidents on weekends.
- **Number of Vehicles Involved:** Analyzed the relationship between vehicle count and casualty severity.
- **Age of Casualties:** Determined which age groups are most affected.
- **Road Surface Conditions:** Assessed how different road conditions impact accident rates.
- **Weather Conditions:** Evaluated the effect of various weather conditions on accidents.
- **Daytime Effects:** Examined how the time of day influences accident occurrences.



THANK YOU

