SQL Validation Report

This report validates all the key performance indicators KPIs and the plot metrices in the Excel, Power BI and the Tableau Dashboard using the MySql workbench.

The main objectives of this report is to ensure data accuracy and alignment across all tools used in the analytics project.

Rows: 307,973

Columns: 21

Key variables

- Accident Index
- Accident Severity
- Number of casualties
- Road Type
- Weather Conditions etc.

Thie validation confirms that all the dashboard metrics accurately reflect the dataset with any inconsistencies.

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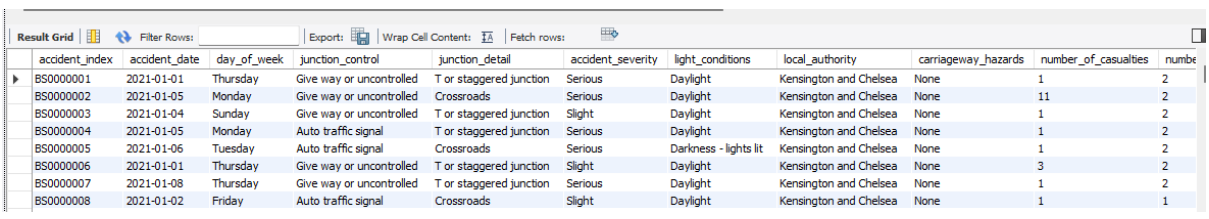
Role: Portfolio Project

Tools Used: MySql Workbench, Excel, Power BI, Tableau

Dataset Size: 307974 rows, 21 columns

Date: February 2026

Dataset Snippet



Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

accident_index	accident_date	day_of_week	junction_control	junction_detail	accident_severity	light_conditions	local_authority	carriageway_hazards	number_of_casualties	numbe
BS0000001	2021-01-01	Thursday	Give way or uncontrolled	T or staggered junction	Serious	Daylight	Kensington and Chelsea	None	1	2
BS0000002	2021-01-05	Monday	Give way or uncontrolled	Crossroads	Serious	Daylight	Kensington and Chelsea	None	11	2
BS0000003	2021-01-04	Sunday	Give way or uncontrolled	T or staggered junction	Slight	Daylight	Kensington and Chelsea	None	1	2
BS0000004	2021-01-05	Monday	Auto traffic signal	T or staggered junction	Serious	Daylight	Kensington and Chelsea	None	1	2
BS0000005	2021-01-06	Tuesday	Auto traffic signal	Crossroads	Serious	Darkness - lights lit	Kensington and Chelsea	None	1	2
BS0000006	2021-01-01	Thursday	Give way or uncontrolled	T or staggered junction	Slight	Daylight	Kensington and Chelsea	None	3	2
BS0000007	2021-01-08	Thursday	Give way or uncontrolled	T or staggered junction	Serious	Daylight	Kensington and Chelsea	None	1	2
BS0000008	2021-01-02	Friday	Auto traffic signal	Crossroads	Slight	Daylight	Kensington and Chelsea	None	1	1

Total Records

```
SELECT COUNT(*) AS total_records
FROM road_acci;
```

total_records
307973

KPIs – Current Year (2022)

Total Casualties

```
SELECT
	SUM(number_of_casualties) AS CY_casualties
FROM road_acci
WHERE YEAR(accident_date) = 2022;
```

CY_casualties
195737

Total Accidents

```
SELECT
	COUNT(accident_index) AS CY_accidents
FROM road_acci
WHERE YEAR(accident_date) = 2022;
```

CY_accidents
144419

Casualties by Severity

Fatal Casualties

```
SELECT
	SUM(number_of_casualties) AS CY_casualties_fatal
FROM road_acci
WHERE
	YEAR(accident_date) = 2022
	AND accident_severity = "Fatal";
```

CY_casualties_fatal
2855

Serious Casualties

```
SELECT
	SUM(number_of_casualties) AS CY_casualties_serious
FROM road_acci
WHERE
	YEAR(accident_date) = 2022
	AND accident_severity = "serious";
```

CY_casualties_serious
27045

Slight Casualties

```
SELECT
	SUM(number_of_casualties) AS CY_casualties_slight
FROM road_acci
WHERE
	YEAR(accident_date) = 2022
	AND accident_severity = "slight";
```

CY_casualties_slight
165837

Severity Distribution

```
SELECT
    accident_severity,
    ROUND(
        SUM(number_of_casualties) * 100.0 /
        SUM(SUM(number_of_casualties)) OVER (),
        2
    ) AS casualty_percentage
FROM road_acci
GROUP BY accident_severity;
```

accident_severity	casualty_percentage
Serious	14.19
Slight	84.10
Fatal	1.71

Vehicle Grouping

```
SELECT
CASE
      WHEN vehicle_type IN ('Agricultural vehicle') THEN 'Agri'
      WHEN vehicle_type IN ('Car', 'Taxi/Private hire car') THEN 'Car'
      WHEN vehicle_type IN ('Motorcycle over 500cc', 'Motorcycle 125cc and
under', 'Motorcycle 50cc and under', 'Motorcycle over 125cc and up to 500cc',
'Pedal cycle') THEN 'Bike'
      WHEN vehicle_type IN ('Bus or coach (17 or more pass seats)', 'Minibus (8 -
16 passenger seats)') THEN 'Bus'
      WHEN vehicle_type IN ('Other vehicle', 'Ridden horse') THEN 'Others'
      WHEN vehicle_type IN ('Goods 7.5 tonnes mgw and over', 'Goods over 3.5t.
and under 7.5t', 'Van / Goods 3.5 tonnes mgw or under') THEN 'Pickup'
    END AS vehicle_group,
SUM(number_of_casualties) AS CY_Casualities
FROM road_acci
WHERE YEAR(accident_date) = 2022
GROUP BY vehicle_group;
```

vehicle_group	CY_Casualities
Car	155804
Bike	15610
Pickup	15905
Bus	6573
Others	1446
Agri	399

Monthly Trend

```
SELECT
    MONTHNAME(accident_date) AS month_name,
    SUM(number_of_casualties) AS cy_total_casualties
FROM road_acci
WHERE YEAR(accident_date) = 2022
GROUP BY MONTH(accident_date), MONTHNAME(accident_date)
ORDER BY MONTH(accident_date);
```

month_name	cy_total_casualties
January	13163
February	14804
March	16575
April	15767
May	16775
June	17230
July	17201
August	16796
September	17500
October	18287
November	18439
December	13200

Road Type

```
SELECT
      road_type,
    SUM(number_of_casualties) AS total_casualties
FROM road_acci
WHERE YEAR(accident_date) = 2022
GROUP BY road_type;
```

road_type	total_casualties
Single carriageway	144653
Roundabout	12683
Dual carriageway	31912
One way street	3499
Slip road	2990

Urban vs Rural

```
SELECT
       urban_or_rural_area,
    SUM(number_of_casualties) AS total_cy_casualities,
    SUM(number_of_casualties) * 100/
    (SELECT SUM(number_of_casualties)
    FROM road_acci
    WHERE YEAR(accident_date) = 2022) AS percentage_of_whole
FROM road_acci
WHERE YEAR(accident_date) = 2022
GROUP BY urban_or_rural_area;
```

urban_or_rural_area	total_cy_casualities	percentage_of_whole
Urban	121251	61.9459
Rural	74486	38.0541

Light Conditions

```
SELECT
CASE
 WHEN light_conditions IN ('Darkness - lighting unknown', 'Darkness - lights lit',
'Darkness - lights unlit',
                                                'Darkness - no lighting') THEN
'Dark'
                            ELSE 'Daylight'
END AS light_conditions_Group,
SUM(number_of_casualties),
SUM(number_of_casualties) * 100/
```

```
    (SELECT SUM(number_of_casualties)
    FROM road_acci
    WHERE YEAR(accident_date) = 2022) AS percentage_of_whole
FROM road_acci
WHERE YEAR(accident_date) = 2022
GROUP BY light_conditions_Group;
```

light_conditions_Group	SUM(number_of_casualties)	percentage_of_whole
Daylight	144539	73.8435
Dark	51198	26.1565

Local Authorities

```
SELECT
      local_authority,
    SUM(number_of_casualties) as Total_casualities
FROM road_acci
GROUP BY local_authority
ORDER BY Total_casualities DESC
LIMIT 10;
```

local_authority	Total_casualities
Birmingham	8611
Leeds	5821
Bradford	4431
Manchester	4366
Liverpool	4052
Cornwall	3820
Sheffield	3737
Kirklees	3312
County Durham	3295
Westminster	3169

All the dashboard KPIs and plot metrices have been successfully been validated with the help of SQL queries ensuring the dashboards can be fully relied upon for insights and reporting.