INFOSYS SPRINGBOARD

kids' screentime patterns to uncover using data Visualization

Problem Statement:

Analyse kids' screentime patterns to uncover trends by age, gender, location type (urban/rural), device type, day-of-week, and activity category using data visualization. The goal is to present clear, actionable insights for parents, educators, and policymakers.

DATASET

Source: Kaggle — Indian Kids Screentime 2025

https://www.kaggle.com/datasets/ankushpanday2/indian-kids-screentime-2025

The Dataset which was Cleaned and Pre-processed in milestone-1, is used

Age	Gender	Avg_Daily_Screen_Time_hr	Primary_Device	Exceeded_Recommended_Limit	Educational_to_Recreational_Ratio	Health_Impacts	Urban_or_Rural	Age_band	Device_Count	Education_time	Recreati
11	male	4.49	Tablet	True	0.44	Poor Sleep	Urban	8-11	590	1.37194444444444	3.11
9	female	4.38	Tablet	True	0.4	Poor Sleep	Rural	8-11	590	1.25142857142857	3.12
8	female	6.7	Tablet	True	0.45	Poor Sleep	Urban	8-11	590	2.07931034482759	4.62
10	male	6.47	Tablet	True	0.5	Poor Sleep	Rural	8-11	590	2.15666666666667	4.31
10	female	12.09	Tablet	True	0.45	Poor Sleep	Urban	8-11	590	3.75206896551724	8.33
10	female	6.24	Tablet	True	0.49	Poor Sleep	Urban	8-11	590	2.05208053691275	4.18
8	male	3.91	Tablet	True	0.51	Poor Sleep	Urban	8-11	590	1.32059602649007	2.58
10	female	3.76	Tablet	True	0.45	Poor Sleep	Urban	8-11	590	1.16689655172414	2.59
8	female	3.59	Tablet	True	0.49	Poor Sleep	Urban	8-11	590	1.18060402684564	2.40
8	female	5.98	Tablet	True	0.44	Poor Sleep	Rural	8-11	590	1.82722222222222	4.15
10	female	7.85	Tablet	True	0.46	Poor Sleep	Rural	8-11	590	2.47328767123288	5.37
8	male	5.86	Tablet	True	0.47	Poor Sleep	Rural	8-11	590	1.87360544217687	3.98
10	male	8.55	Tablet	True	0.45	Poor Sleep	Urban	8-11	590	2.65344827586207	5.89
10	male	5.7	Tablet	True	0.55	Poor Sleep	Rural	8-11	590	2.02258064516129	3.67
8	female	6.49	Tablet	True	0.41	Poor Sleep	Rural	8-11	590	1.88716312056738	4.60
11	male	3.25	Tablet	True	0.3	Poor Sleep	Urban	8-11	590	0.75	

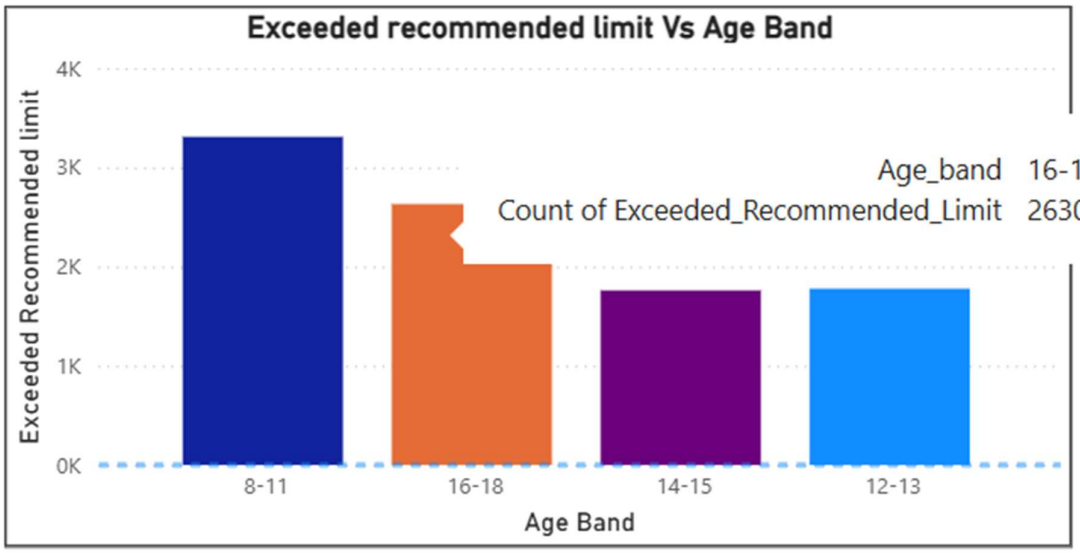
Software used:

In Milestone 2, Power BI was used to visualize and analyze patterns in device usage, educational engagement, and health impacts among children across age groups and genders. Its interactive dashboard capabilities allowed for dynamic filtering, clear comparisons, and professional presentation of insights. Visuals such as pie charts, line graphs, and bar charts highlighted trends in screen time exceedance, educational-to-recreational ratios, and health outcomes. Compared to Jupyter Notebook, Power BI offered faster layout control.

Working:

Added a column of Device count where each device's count is written. Many visuals like bar-chart, line-chart, scatter chart, donut chart, etc. are made to understand the dataset and to identify the problem.

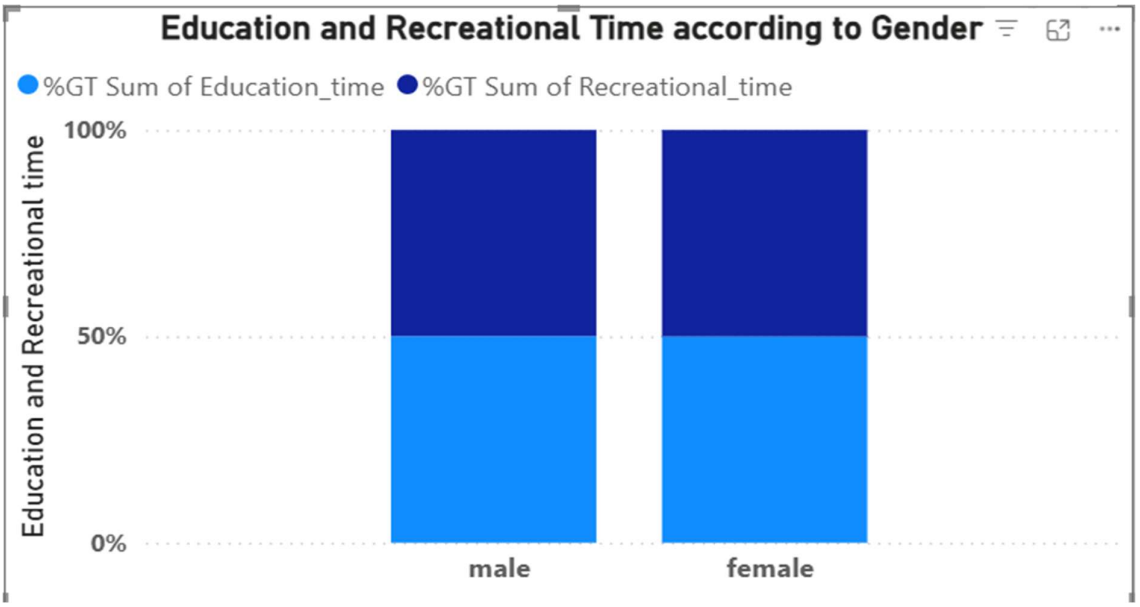
1. Analysis by Demographic Factors



Screen Time by Age Band

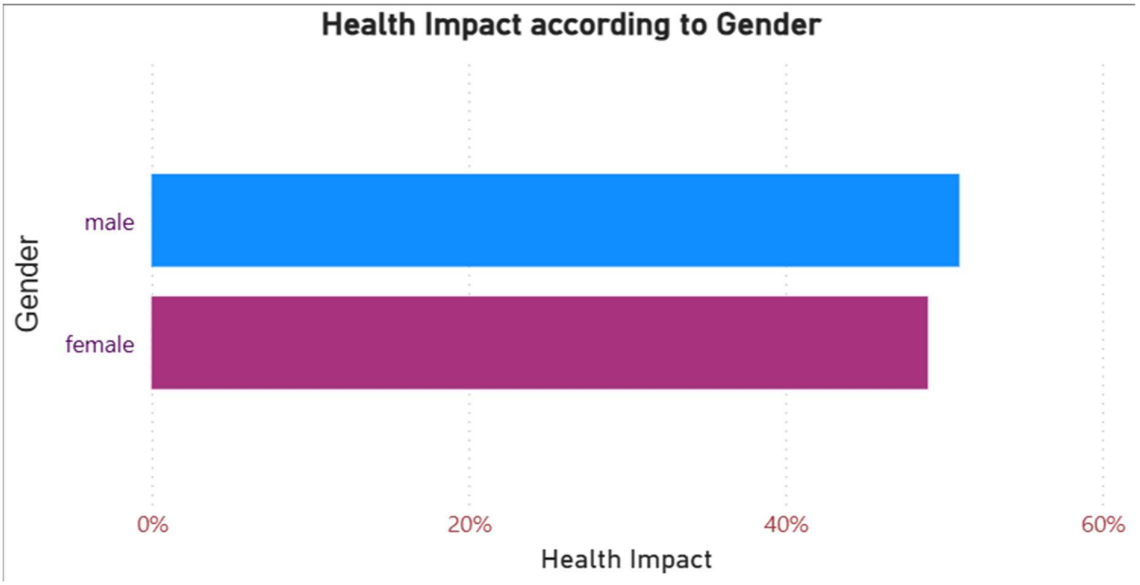
Observation: The youngest age group (8-11 years) has the highest incidence of exceeding recommended screen time limits. The frequency decreases dramatically as age increases, with the 16-18 age group showing the lowest number of exceedances.

- **Screen Time and Activity by Gender**



Observation: According to the chart, there is a minimal difference of about 1% in the time spent on education and recreational activities between males and females.

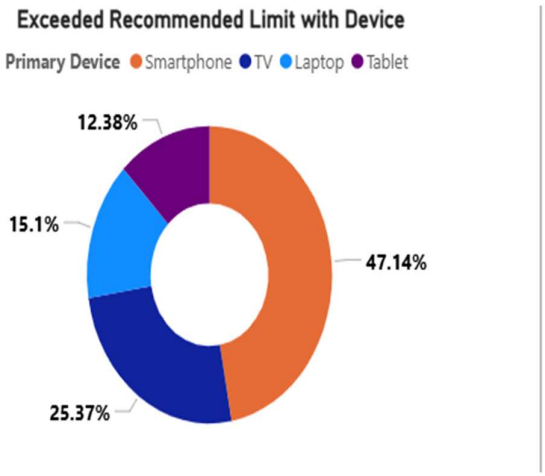
- Health Impact by Gender

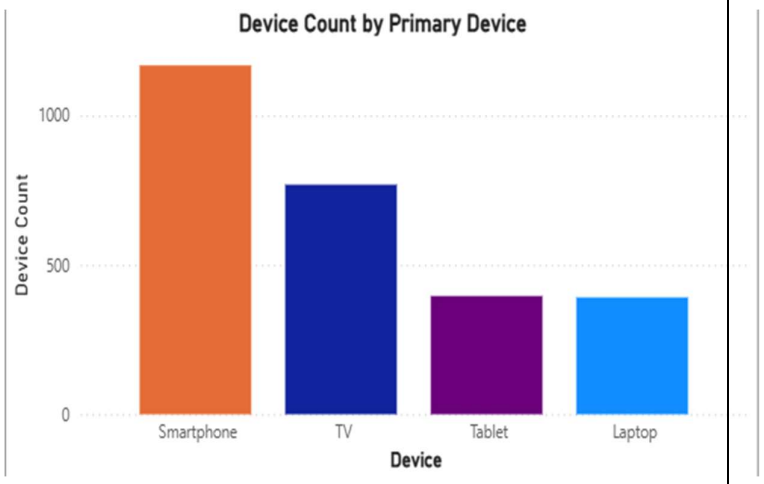


Observation: A higher percentage of females report negative health impacts from screen time compared to males.

2. Analysis by Device and Activity

Primary Device Usage

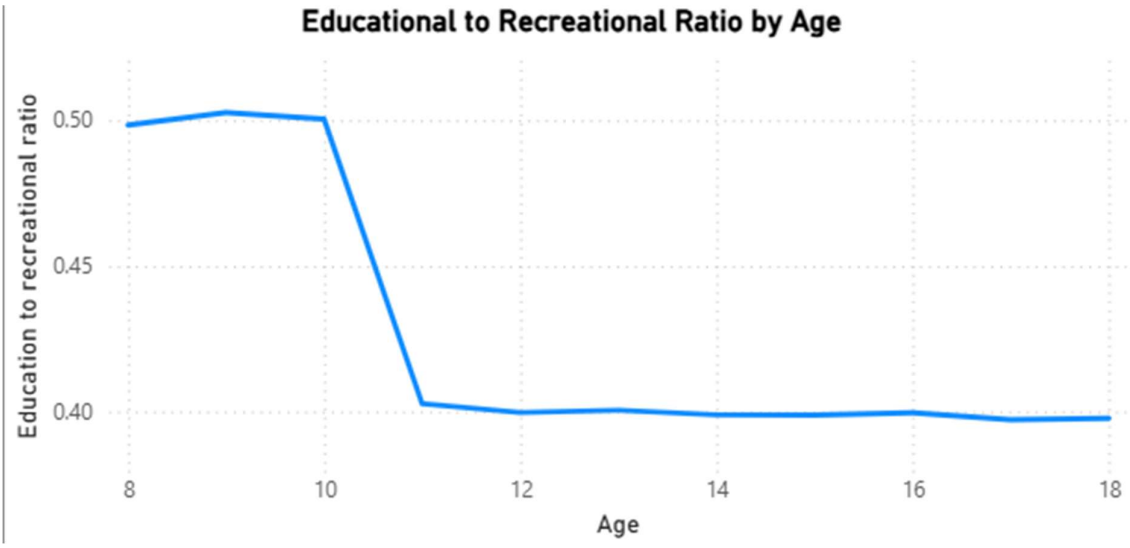




Observation: Smartphones are the most common primary device (47.14%) and are associated with the highest rate of exceeding screen time limits. TVs are the second most common device but show a much lower association with exceedances (25.37%)

Educational to Recreational Ratio by Age

Observation: The education-to-recreation ratio is highest for the youngest age group and shows a general declining trend as age increases**.**



Conclusion:

The analysis shows that smartphones are the most used devices, with users—especially children aged 8–11 years—exceeding recommended screen limits most often. Males spend slightly more time on screens and report higher health impacts than females. As age increases, screen time shifts from educational to recreational use, particularly among older teens. Weekend usage also peaks across all groups. Overall, smartphone users and younger children form the peak usage cohorts, indicating a need for digital wellness awareness and parental supervision to promote balanced and healthy screen habits.