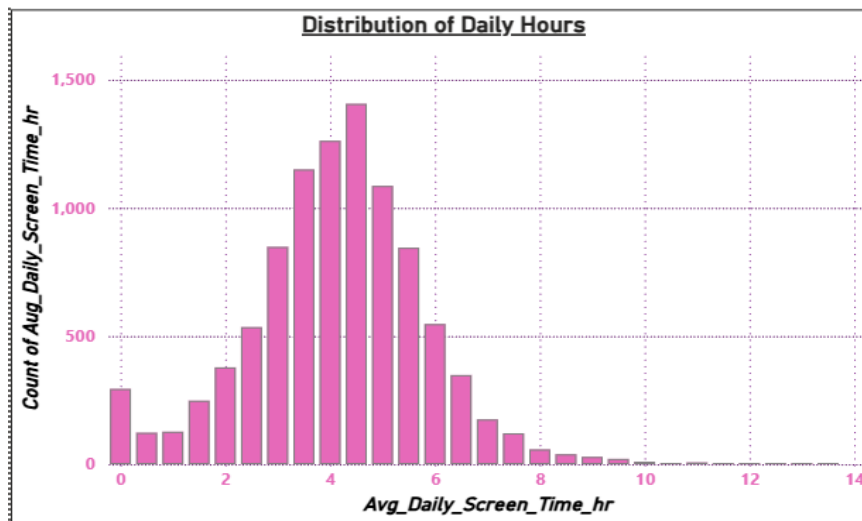


## Screen Sense: Kids' Screentime Visualization

Week 3 and Week 4:

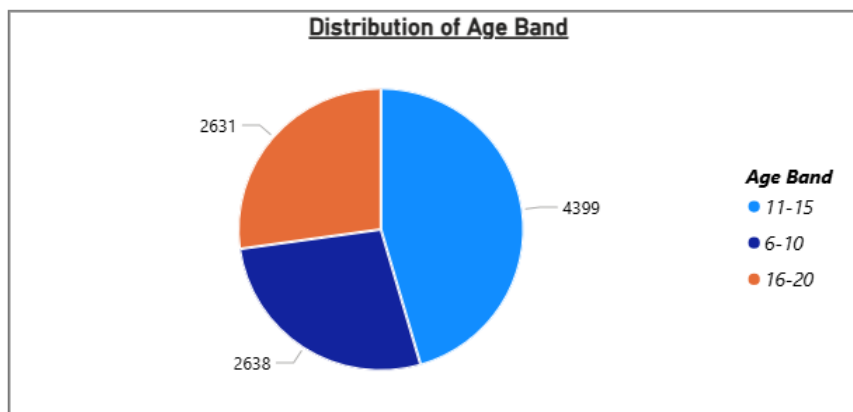
### Univariate and Bivariate Visual Analysis:

- I used Power BI to perform the univariate visual analysis and identify the peak usage cohorts based on different demographic and behavioural variables.
- **Distributions of daily hours**



The **Distribution of Daily Hours** visualization, created using a histogram in Power BI, illustrates how users' daily screen time is spread across different time ranges. The chart shows a clear peak between **3 to 6 hours per day**, indicating that the majority of users spend a moderate amount of time on screens. The distribution gradually tapers off after 6 hours, with only a small number of users exceeding **10 hours of daily screen usage**, suggesting that excessive screen exposure is relatively rare. This pattern reflects a **right-skewed distribution**, where most users maintain average screen time while a few engage in prolonged device use. Overall, the analysis highlights that **3–6 hours of daily screen time** represents the most common or **peak usage range** among users in the dataset.

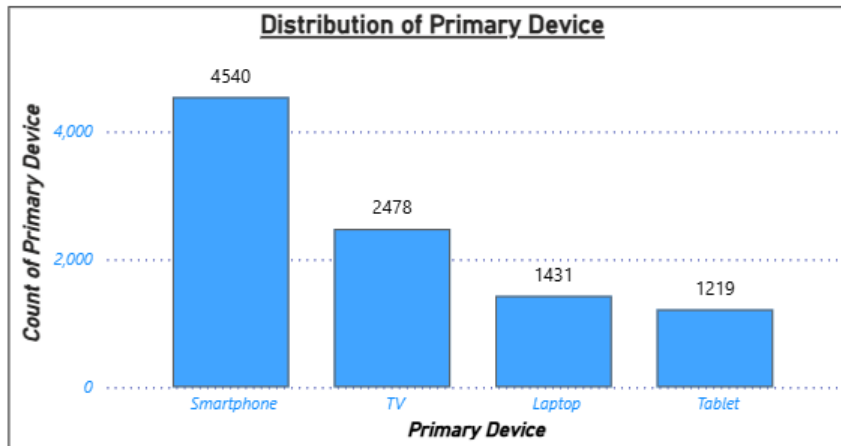
- **Distributions of Age Bands**



The **Distribution of Age Band** visualization, developed using a pie chart in Power BI, represents how users are grouped across different age categories. The chart reveals

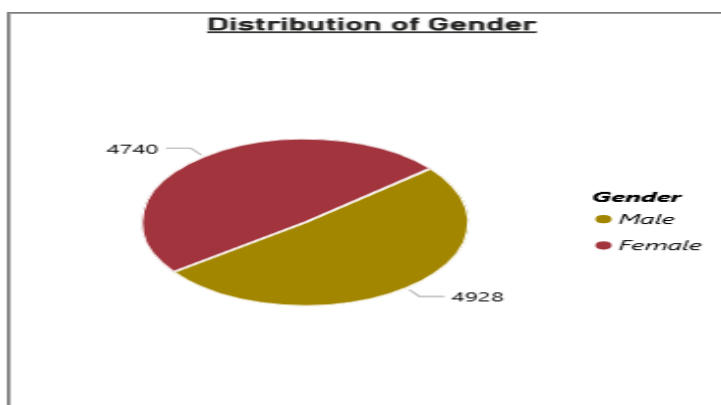
that the **11–15 age group** forms the largest portion of users, followed by the **6–10** and **16–20** categories. This indicates that **mid-teen users** are the most active in terms of screen engagement. The dominance of this age range suggests that adolescents tend to spend more time using digital devices for entertainment, communication, and learning. In contrast, younger children (6–10) and older teens (16–20) show relatively lower participation levels. Overall, the analysis highlights that the **11–15 age group** forms the **peak user segment**, reflecting the highest concentration of screen users within the dataset.

- **Distributions of Primary Device**



The **Distribution of Primary Device** visualization, created using a bar chart in Power BI, shows the types of devices most commonly used by users for screen activities. The chart clearly indicates that **smartphones** are the most dominant device, accounting for the largest number of users, followed by **televisions** and **laptops**, while **tablets** have the least usage. This pattern reflects the increasing dependency on mobile devices due to their accessibility, portability, and wide range of entertainment and communication options. The prominence of smartphones as the primary device suggests that users prefer compact, on-the-go digital access rather than traditional screen mediums. Overall, the analysis highlights that **smartphone users** form the **peak device usage cohort**, emphasizing the central role of mobile technology in daily screen engagement.

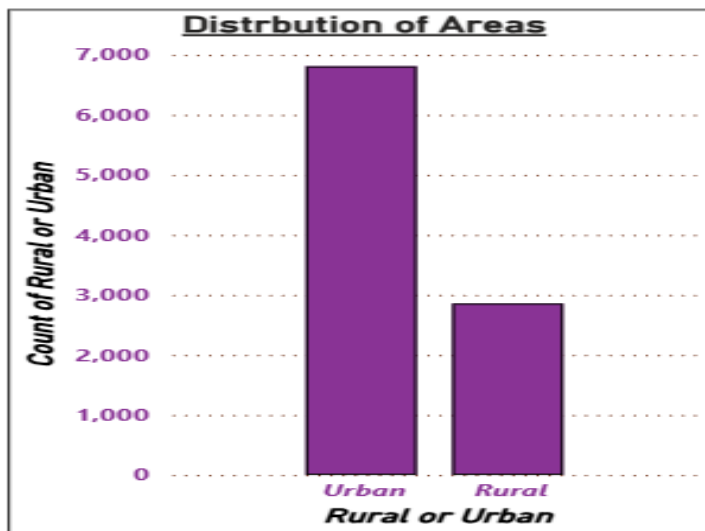
- **Distributions of Gender**



The **Distribution of Gender** visualization, designed using a pie chart in Power BI, depicts the proportion of male and female users in the dataset. The chart reveals a

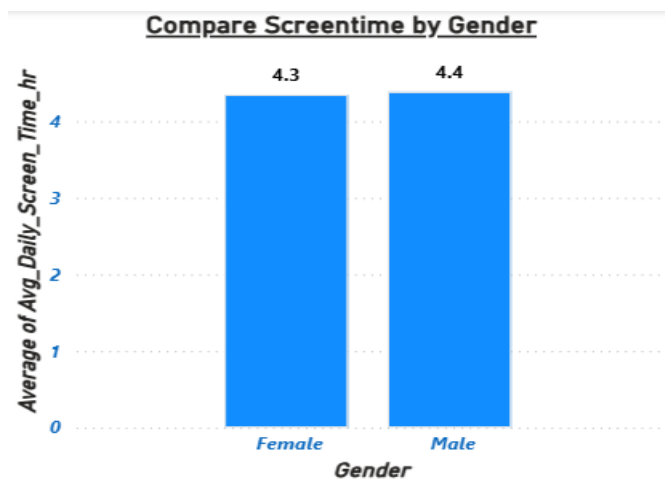
**nearly balanced distribution** between the two genders, with both male and female users showing similar levels of screen engagement. This indicates that screen usage habits are **not significantly influenced by gender**, as both groups contribute almost equally to overall digital activity. The balanced participation suggests that access to devices and exposure to digital platforms are fairly uniform across genders. Overall, the analysis highlights that there is **no major gender disparity** in screen time behavior, reflecting an equal tendency toward screen usage among both male and female users.

- **Distribution of Areas**



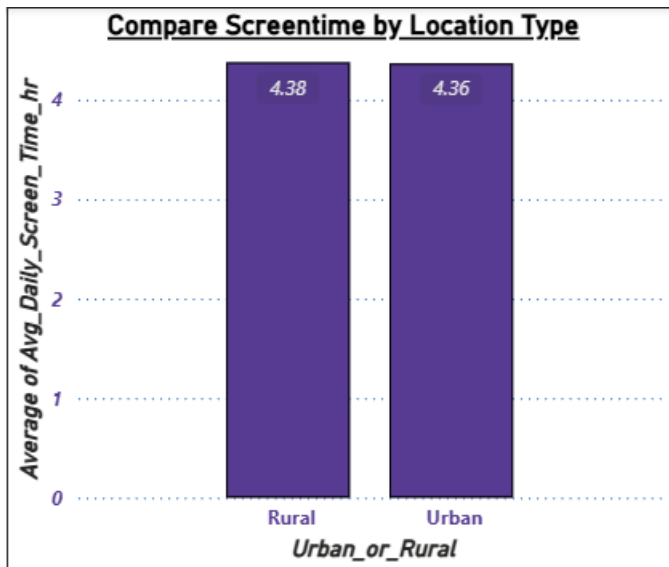
The **Distribution by Area** visualization, created using a bar chart in Power BI, illustrates how users are distributed across different location types such as **urban** and **rural** areas. The chart shows that **urban users** make up the majority of the dataset, while **rural users** represent a smaller portion. This indicates that individuals residing in urban regions tend to have higher screen usage, likely due to better access to digital devices, stable internet connectivity, and greater exposure to technology-driven lifestyles. In contrast, rural users display comparatively lower engagement, which may be influenced by limited digital infrastructure or differing lifestyle patterns. Overall, the analysis highlights that **urban users** form the **peak geographic usage cohort**, demonstrating higher levels of digital activity compared to their rural counterparts.

- **Compare Screenshot by Gender**



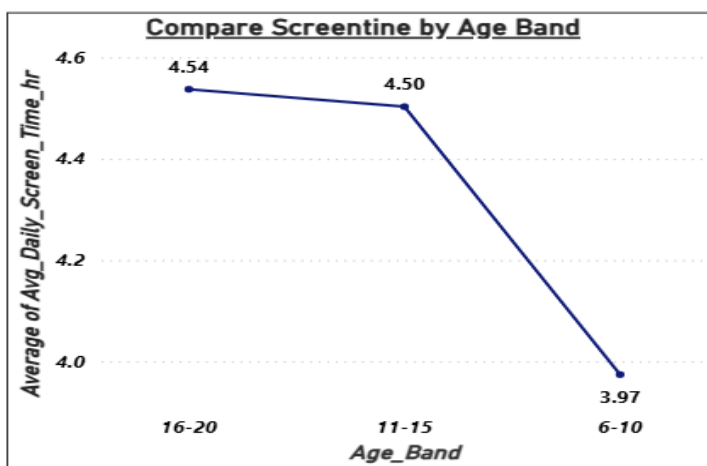
Using a **clustered column chart** in Power BI, the **average daily screen time (in hours)** was compared between **male** and **female** users. The visualization shows that **male users spend slightly more time on screens**, averaging around **4.4 hours per day**, while **female users average about 4.3 hours**. This small variation indicates that both genders engage in digital device usage at almost similar levels, though males exhibit marginally higher screen exposure. This could be attributed to factors such as gaming preferences, longer working or study durations on devices, or social media engagement.

- **Compare Screenshot by Location Type**



A **clustered column chart** was created in Power BI to compare the **average daily screen time (in hours)** between users living in **urban** and **rural** areas. The visualization shows that **rural users record an average of 4.38 hours**, while **urban users record 4.36 hours** of daily screen time. The difference between the two categories is minimal, indicating that people in both regions spend nearly equal amounts of time on screens. This suggests that the gap in digital engagement between rural and urban populations has narrowed, likely due to increased internet availability, affordable smartphones, and the growing influence of digital media across all areas.

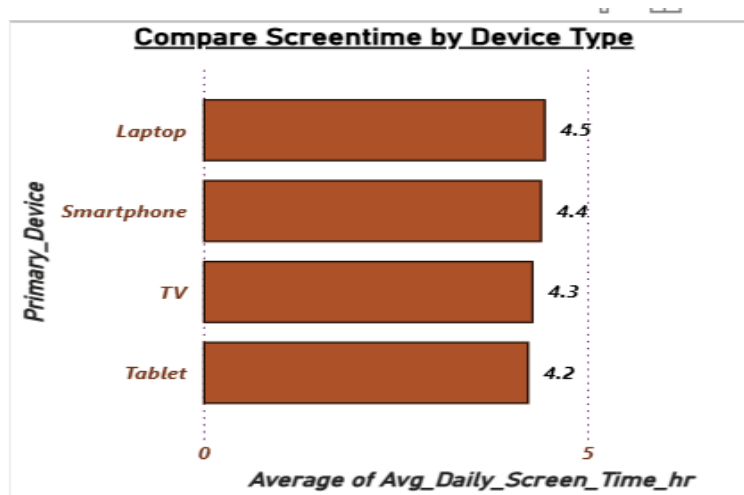
- **Compare Screenshot by Age Band**



In Power BI, a **line chart** was created to compare the **average daily screen time (in hours)** across different **age bands** — **6–10 years**, **11–15 years**, and **16–20 years**. The

visualization shows a gradual increase in screen time with age. Users aged **16–20 years** record the highest average screen time of **4.54 hours**, followed by the **11–15 age group** with **4.50 hours**, and the **6–10 age group** with the lowest average of **3.97 hours**. This trend indicates that as individuals grow older, their screen exposure tends to increase, likely due to greater academic, social media, and entertainment usage. The chart highlights a clear positive correlation between age and screen time.

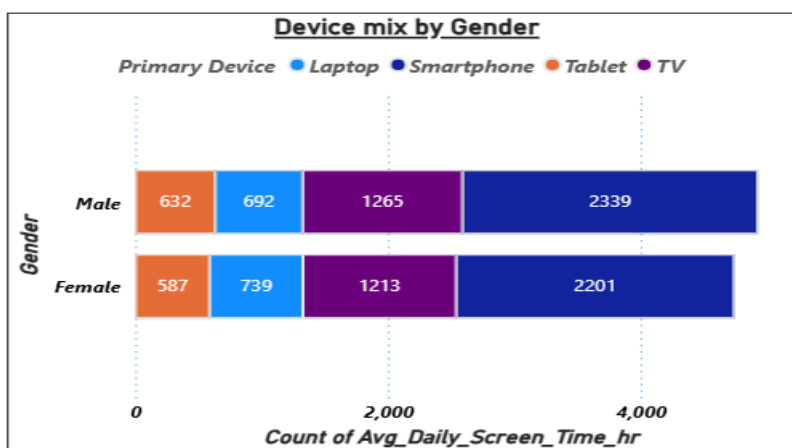
- **Compare Screenshot by Device Type**



A horizontal bar chart was developed in Power BI to analyze the **average daily screen time (in hours)** across different **device types** — *Laptop*, *Smartphone*, *TV*, and *Tablet*. The visualization shows that **laptop users have the highest average screen time (4.50 hours)**, followed by **smartphone users (4.40 hours)**, **TV users (4.30 hours)**, and **tablet users (4.20 hours)**. This pattern indicates that laptops are the most intensively used devices, likely due to multitasking purposes such as study, work, and entertainment. Smartphones also show significant engagement, reflecting their essential role in daily communication and social interaction. Overall, the chart highlights how screen usage differs slightly by device type, with laptops leading as the dominant medium of digital engagement.

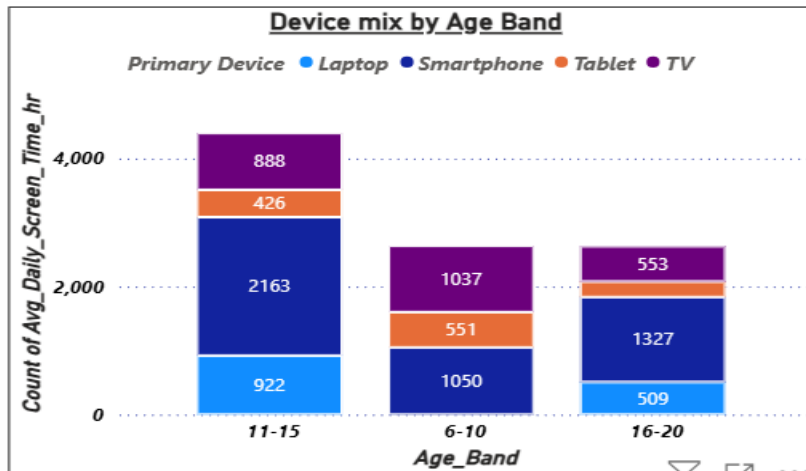
### Device/Activity and Weekday/Weekend Analysis:

- **Device Mix by Gender**



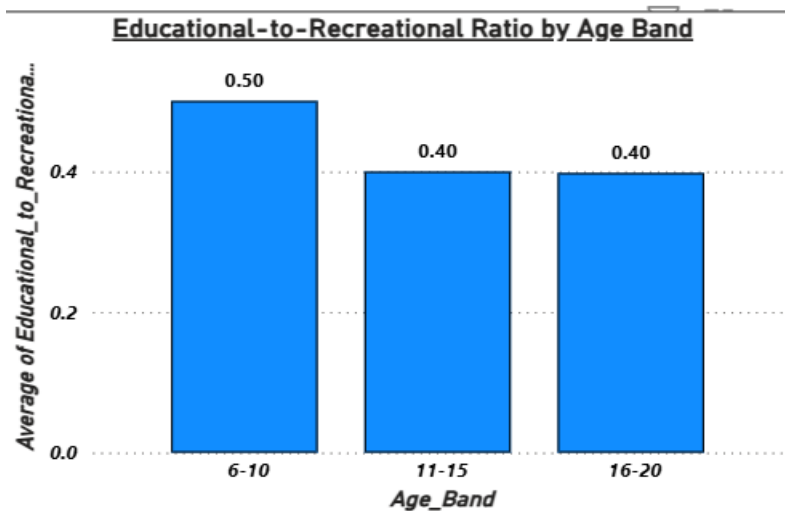
The stacked bar chart shows that both males and females primarily use **TV and smartphones** as their main devices, followed by laptops and tablets. Males have a slightly higher overall screen usage across all devices compared to females, especially in smartphone and TV usage. This indicates that screen habits are quite similar across genders, with only a minimal variation in device preference.

- **Device Mix by Age Band**



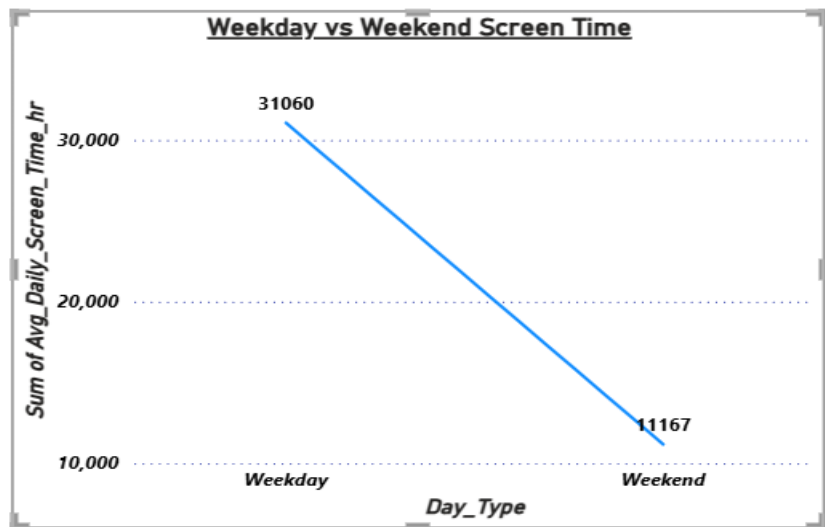
The column chart illustrates that **younger users (ages 11–15)** have the highest overall screen time across all device types, particularly on **TV and smartphones**. The **6–10** and **16–20** groups show slightly lower usage, with 6–10-year-olds leaning more toward TV and older teens (16–20) preferring laptops and smartphones. This pattern suggests that mid-teen users (11–15) are the most active across multiple devices

- **Educational-to-Recreational Ratio by Age Band**



This chart highlights that the **6–10 age group** has the **highest educational-to-recreational ratio (0.50)**, indicating they spend relatively more screen time on educational activities. In contrast, older groups (11–15 and 16–20) both show a lower ratio of **0.40**, suggesting a shift toward entertainment-based usage as age increases. The trend reflects how learning-related screen time declines with age.

- Weekday vs Weekend Screen Time



The line chart clearly shows a significant drop in screen time during weekends compared to weekdays. The total screen time during **weekdays (31,060 hours)** is nearly **three times higher** than on **weekends (11,167 hours)**. This pattern suggests that users engage more with screens during weekdays, possibly due to educational or structured activities, while weekends are spent more offline or on non-digital recreation.