

INTRODUCTION-

The dataset captures phone usage patterns among individuals in metropolitan cities across India. It comprises over 17,000 records and 16 distinct columns, including metrics such as Screen Time and Monthly Recharge Amount. The primary objective of this analysis is to explore usage behaviours and spending patterns across different age groups, ranging from 15 to 60 years old.

Data is collected from [Kaggle](#). → [Licence](#).

DATA CLEANING-

- First checked if the data has any bias. Data taken from individuals are unbiased and equally taken.

Users	Column Labels			
Location	Female	Male	Other	Grand Total
Jaipur	626	593	605	1824
Pune	623	610	582	1815
Chennai	598	595	597	1790
Kolkata	608	581	600	1789
Bangalore	588	590	608	1786
Ahmedabad	579	616	590	1785
Delhi	614	568	593	1775
Mumbai	586	556	580	1722
Lucknow	590	545	565	1700
Hyderabad	557	571	572	1700
Grand Total	5969	5825	5892	17686

- The brands and the operating systems were differing. Corrected it by using a formula

```
=IF(E2 = "Nokia", "Feature", IF(E2 = "Apple", "iOS", "Android"))
```

OS	Users	Brands	Users
Android	8851	Nokia	1816
iOS	8835	OnePlus	1807
Grand Total	17686	Xiaomi	1803
		Vivo	1797
OS	Users	Apple	1775
Android	14095	Samsung	1764
Feature	1816	Realme	1762
iOS	1775	Google Pixel	1729
Grand Total	17686	Motorola	1717
		Oppo	1716
		Grand Total	17686

In India Nokia only sells 'Feature' phones, 'iOS' is only available with 'Apple'.

ANALYSIS AND VISUALIZATION-

➔ Created Pivot Table for each column.

Age	Users	Sum of Screen Time (hrs/day)	Sum of Social Media Time (hrs/day)	Sum of Streaming Time (hrs/day)	Sum of Gaming Time (hrs/day)	Sum of Data Usage (GB/month)	Sum of Calls Duration (mins/day)	Sum of Number of Apps Installed	Sum of E-commerce Spend (INR/month)	Sum of Monthly Recharge Cost (INR)
18	458	2219.4	1230.9	1189.4	187.8	9169.1	10991.7	81792	₹ 11,59,896.00	₹ 1,76,977.00
19	496	2295.9	1243.9	1888.7	951.2	9169.1	10264.6	42689	₹ 11,59,896.00	₹ 1,76,977.00
20	480	2086.35	1076.6	1888.6	1035.6	10889.8	8077.96	43889	₹ 11,59,896.00	₹ 1,76,977.00
21	587	2454.1	1281	1875.4	1305	13828.2	9180.5	38887	₹ 11,59,896.00	₹ 1,76,977.00
22	101	2179.4	1352.4	1471.1	801.1	9177.9	10391.1	18677	₹ 11,59,896.00	₹ 1,76,977.00
23	577	2426.2	1205.3	1925.5	845.5	1058.8	6474.5	43186	₹ 11,59,896.00	₹ 1,76,977.00
24	123	2854.1	1239.6	1742.3	1262.8	10609.1	10895.9	43810	₹ 11,59,896.00	₹ 1,76,977.00
25	275	2501.5	1484.6	1611.5	911	8275.5	10218.9	43645	₹ 11,59,896.00	₹ 1,76,977.00
26	387	2501.1	1254.5	1726.1	951.7	10395.1	10870.1	43999	₹ 11,59,896.00	₹ 1,76,977.00
27	103	2401.1	1204	1811.1	1091.1	9718.1	10991.2	43979	₹ 11,59,896.00	₹ 1,76,977.00
28	427	2881.1	1213.9	1740.7	1078.5	10901	10888.1	41181	₹ 11,59,896.00	₹ 1,76,977.00
29	878	2871.1	1130.7	1251.1	1098	8421.2	17781.8	43756	₹ 11,59,896.00	₹ 1,76,977.00
30	180	2925.1	1461.3	1275.6	881.5	10218.5	10111.5	43995	₹ 11,59,896.00	₹ 1,76,977.00
31	489	2951.1	1354.5	1751	1313.5	13831.8	10475.9	43815	₹ 11,59,896.00	₹ 1,76,977.00
32	191	2888.8	1053.1	1791	1351.1	10318.1	10191.6	43605	₹ 11,59,896.00	₹ 1,76,977.00
33	268	2428.5	1173.3	1580.7	913	8751.1	10518.6	43891	₹ 11,59,896.00	₹ 1,76,977.00
34	375	2467	1100.7	1451.7	1011	9715.5	10718.1	43751	₹ 11,59,896.00	₹ 1,76,977.00
35	467	2277.8	1160.7	1618.8	891	1057.1	10108	43955	₹ 11,59,896.00	₹ 1,76,977.00
36	854	2461.5	1180.1	1878.1	884.1	1011.5	10811.5	43891	₹ 11,59,896.00	₹ 1,76,977.00
37	180	2101.1	1203.7	1807.8	1017.7	10811.5	10811.5	43891	₹ 11,59,896.00	₹ 1,76,977.00
38	431	2591.9	1299.3	1701.1	102.5	10801.1	10701.2	43181	₹ 11,59,896.00	₹ 1,76,977.00
39	378	2591	1250.1	1653.1	111.1	1091.2	10811.5	43811	₹ 11,59,896.00	₹ 1,76,977.00
40	156	2109.1	1171.1	1101	911.2	1051.8	10417	43111	₹ 11,59,896.00	₹ 1,76,977.00
41	375	2401.6	1164	1451.2	942.7	1011.5	10411.5	43111	₹ 11,59,896.00	₹ 1,76,977.00
42	111	2101.5	1087.1	1101.1	1011.1	1011.1	1011.1	43111	₹ 11,59,896.00	₹ 1,76,977.00
43	491	2401	1101.1	1701.1	911.9	911.9	1011.1	43111	₹ 11,59,896.00	₹ 1,76,977.00
44	875	2461.1	1211.9	1581.2	1011.1	911.1	1011.1	43111	₹ 11,59,896.00	₹ 1,76,977.00
45	171	2467.6	1101.1	1461.1	1011.1	1011.1	1011.1	43111	₹ 11,59,896.00	₹ 1,76,977.00
46	387	2421.1	1101	1101	1011.1	1011.1	1011.1	43111	₹ 11,59,896.00	₹ 1,76,977.00
47	171	2101.1	1101.1	1101.1	1011.1	1011.1	1011.1	43111	₹ 11,59,896.00	₹ 1,76,977.00
48	381	2591.2	1177.7	1476.1	976.1	1011.1	1011.1	43111	₹ 11,59,896.00	₹ 1,76,977.00
49	389	2287.7	1101.1	1578	1011.1	1011.1	1011.1	43111	₹ 11,59,896.00	₹ 1,76,977.00
50	387	2421.6	1111.1	1711	971.5	1011.1	1011.1	43111	₹ 11,59,896.00	₹ 1,76,977.00
51	883	2451.7	1208.7	1511.1	1011.1	1011.1	1011.1	43111	₹ 11,59,896.00	₹ 1,76,977.00
52	171	2101.1	1101.1	1101.1	1011.1	1011.1	1011.1	43111	₹ 11,59,896.00	₹ 1,76,977.00
53	883	2481.1	1101.1	1101.1	1011.1	1011.1	1011.1	43111	₹ 11,59,896.00	₹ 1,76,977.00
54	171	2101.1	1101.1	1101.1	1011.1	1011.1	1011.1	43111	₹ 11,59,896.00	₹ 1,76,977.00
55	171	2101.1	1101.1	1101.1	1011.1	1011.1	1011.1	43111	₹ 11,59,896.00	₹ 1,76,977.00
56	171	2101.1	1101.1	1101.1	1011.1	1011.1	1011.1	43111	₹ 11,59,896.00	₹ 1,76,977.00
57	171	2101.1	1101.1	1101.1	1011.1	1011.1	1011.1	43111	₹ 11,59,896.00	₹ 1,76,977.00
58	171	2101.1	1101.1	1101.1	1011.1	1011.1	1011.1	43111	₹ 11,59,896.00	₹ 1,76,977.00
59	171	2101.1	1101.1	1101.1	1011.1	1011.1	1011.1	43111	₹ 11,59,896.00	₹ 1,76,977.00
60	171	2101.1	1101.1	1101.1	1011.1	1011.1	1011.1	43111	₹ 11,59,896.00	₹ 1,76,977.00
Grand Total	17486	115779.2	64613.1	75111.1	75111.1	41011.1	41011.1	267779.8	₹ 1,16,08,961.00	₹ 1,16,08,961.00

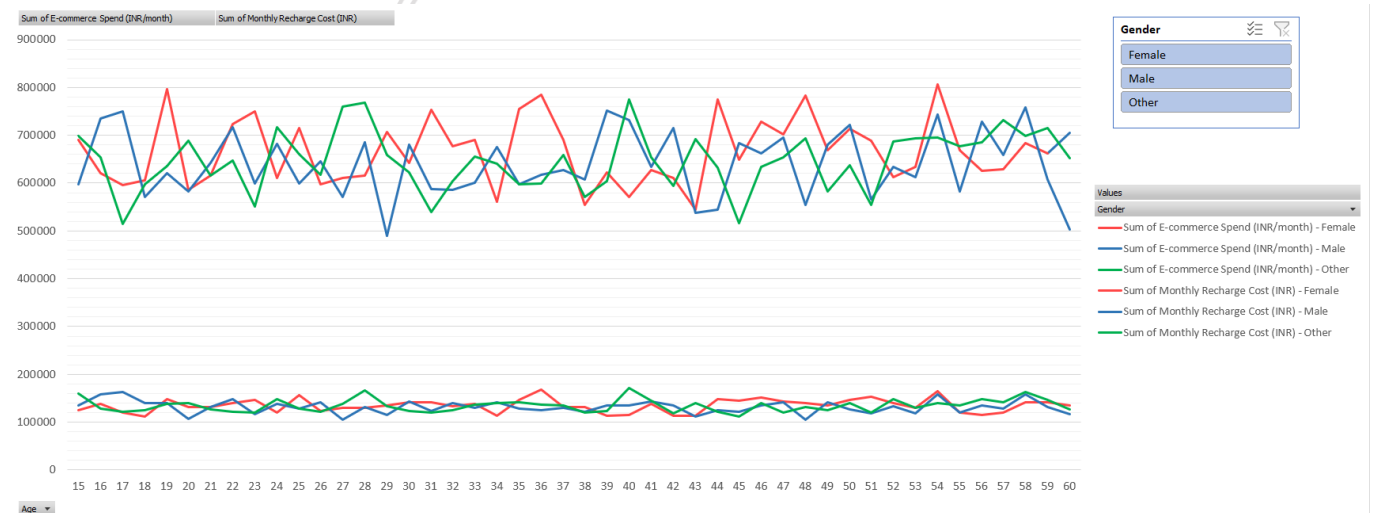
Applied conditional formatting from largest to smallest by age.

➔ Using 'SUMIFS' to calculate the metrics in different age groups – 50s, 40s, 30s, 20s and teens.

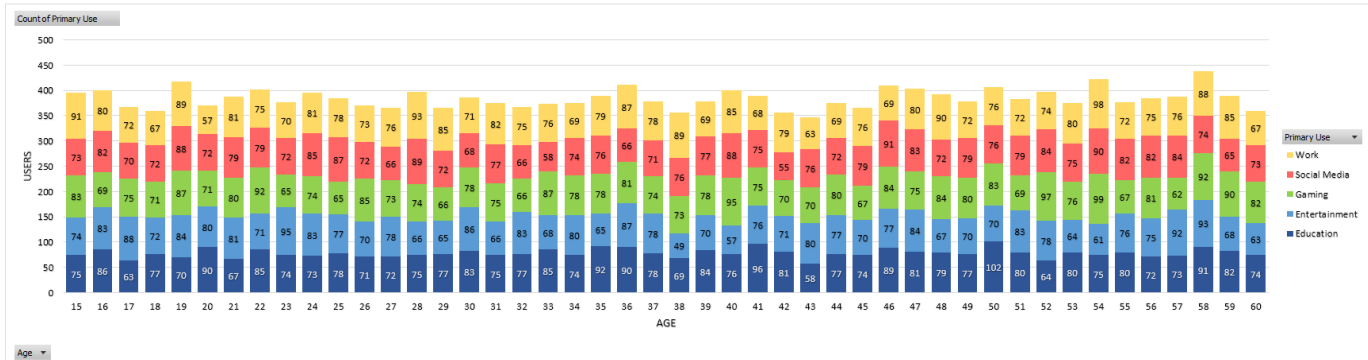
```
=SUMIFS(L$4:L$49,$K$4:$K$49,">=50")  
=SUMIFS(L$4:L$49,$K$4:$K$49,">=40", $K$4:$K$49,"<50")  
=SUMIFS(L$4:L$49,$K$4:$K$49,">=30", $K$4:$K$49,"<40")  
=SUMIFS(L$4:L$49,$K$4:$K$49,">=20", $K$4:$K$49,"<30")  
=SUMIFS(L$4:L$49,$K$4:$K$49,"<20")
```

AGE	USERS	SCREEN TIME (Hrs)	SOCIAL MEDIA (Hrs)	STREAMING TIME (Hrs)	GAMING TIME (Hrs)	DATA USAGE (GB)	CALLS (MINS)	APPS	E COM SPEND	MONTHLY RECHARGE
>=50	4,321.00	27,984.80	13,912.70	18,443.80	10,819.20	1,09,436.80	6,46,455.80	4,50,660.00	₹ 2,19,74,511.00	₹ 44,89,856.00
40 - 49	3,818.00	24,969.50	12,467.30	16,238.20	9,426.10	96,329.70	5,84,582.00	3,96,217.00	₹ 1,95,28,123.00	₹ 39,64,948.00
30 - 39	3,791.00	25,103.70	12,289.90	16,305.50	9,477.00	95,967.60	5,74,352.90	3,95,561.00	₹ 1,91,55,734.00	₹ 39,81,367.00
20 - 29	3,815.00	25,018.90	12,510.90	15,891.70	9,428.80	98,427.10	5,73,997.70	4,03,344.00	₹ 1,94,27,269.00	₹ 39,55,336.00
<20	1,941.00	12,702.30	6,340.60	8,297.20	4,902.50	49,262.30	2,98,375.40	2,03,906.00	₹ 96,83,332.00	₹ 20,51,195.00

➔ Created Pivot Chart to identify buying patterns.



➔ Created Pivot Chart for Primary Use Case.



CONCLUSION-

The findings from the dataset reveal notable differences in phone usage and spending patterns across various age groups. Individuals aged 58 exhibit the highest metrics, while those aged 43 show the lowest engagement. Overall, users in their 50s spend significantly more time on their phones than other age groups, whereas individuals in their 40s, 30s, and 20s display relatively similar usage patterns.

Spending Behaviour:

- E-commerce purchases are led by female users, followed by other gender identities, with male users spending the least.
- Monthly recharge expenditures remain fairly linear across all groups.

Primary Usage Trends:

- People in their 50s dominate phone usage, unexpectedly leading not just in general engagement but also in Education and Gaming-related activities.

Market Leadership:

- Nokia leads the market, maintaining a strong presence even after not being a smartphone.
- Chinese brands dominate overall, showing widespread adoption among consumers.