

GETTING INSIGHTS FROM

PHONE USAGE

DATA USING SQL



DATA-SET

UserID	Age	Gender	Location	PhoneBrand	OS	ScreenTimeHrs	DataUsageGB	CallsDurationMins	AppCount	SocialMediaHrs	EcomSpendINR	StreamingTimeHrs	GamingTimeHrs	RechargeCostINR	PrimaryUse
U00001	53	Male	Mumbai	Vivo	Android	3.7	23.9	37.9	104	3.9	469	5.2	4.1	803	Education
U00002	60	Other	Delhi	Realme	iOS	9.2	28.1	13.7	169	2.8	4997	5.1	0.4	1526	Gaming
U00003	37	Female	Ahmedabad	Nokia	Android	4.5	12.3	66.8	96	3	2381	1.7	2.9	1619	Entertainment
U00004	32	Male	Pune	Samsung	Android	11	25.6	156.2	146	5.2	1185	3.2	0.3	1560	Entertainment
U00005	16	Male	Mumbai	Xiaomi	iOS	2.2	2.5	236.2	86	5.5	106	3.4	2.3	742	Social Media
U00006	21	Male	Jaipur	Oppo	iOS	5.4	10.6	210.6	25	4.2	6285	0.6	4.8	1749	Entertainment
U00007	57	Female	Lucknow	Apple	iOS	6	35.2	154.5	123	0.8	2653	2.9	2.3	1073	Social Media
U00008	56	Other	Kolkata	Realme	iOS	3.1	43.5	125.3	188	2.3	9767	5.2	5	1136	Entertainment
U00009	46	Female	Kolkata	Onno	Android	5.3	46.4	21.3	194	3.7	2870	6.1	2.8	1253	Entertainment

This dataset captures **phone usage trends across India**, offering a detailed view of user behavior with **17,685 rows** of data. Key features include:

- User Details: Age, Gender, Location, and User ID.
- Phone Insights: Preferred Brands and Operating Systems.
- Usage Patterns: Screen Time (hrs/day), Data Usage (GB/month), Calls (mins/day).
- Digital Activities: Social Media, Gaming, and Streaming Time (hrs/day).
- Spending Habits: E-commerce Spend (INR/month) and Monthly Recharge Cost (INR).
- App Metrics: Total Apps Installed.
- Primary Use: Main purpose of phone usage, like work or entertainment.

Do people who spend more time on social media also spend more on e-commerce?

```
SELECT
    CASE
        WHEN SocialMediaHrs < 1 THEN 'less than 1 hour'
        WHEN SocialMediaHrs BETWEEN 1 AND 3 THEN 'between 1 and 3 hours'
        WHEN SocialMediaHrs BETWEEN 3 AND 5 THEN 'between 3 and 5 hours'
        ELSE 'more than 5 hours'
    END AS SocialMediaHrsRange,
    AVG(EcomSpendINR) AS AvgEcomSpend
FROM
    phone_usage
GROUP BY CASE
    WHEN SocialMediaHrs < 1 THEN 'less than 1 hour'
    WHEN SocialMediaHrs BETWEEN 1 AND 3 THEN 'between 1 and 3 hours'
    WHEN SocialMediaHrs BETWEEN 3 AND 5 THEN 'between 3 and 5 hours'
    ELSE 'more than 5 hours'
END
ORDER BY AvgEcomSpend DESC;
```

SocialMediaHrsRange	AvgEcomSpend
between 1 and 3 hours	5118.6268
between 3 and 5 hours	5063.9454
more than 5 hours	5041.7367
less than 1 hour	4998.4786

Social media engagement has a limited correlation with e-commerce spending. Spending patterns depend more on factors like income or interests.

Are there any anomalies, like extremely high screen time or unusual recharge patterns?

```

SELECT
    UserID, ScreenTimeHrs, DataUsageGB, RechargeCostINR
FROM
    phone_usage
WHERE
    ScreenTimeHrs > 24
        OR (DataUsageGB <= 1
            AND RechargeCostINR > 500)
ORDER BY RechargeCostINR ASC;

```

	UserID	ScreenTimeHrs	DataUsageGB	RechargeCostINR
▶	U14842	4.9	1	515
	U00207	7.2	1	541
	U03251	8	1	556
	U10548	7.8	1	742
	U09952	10.7	1	761
	U04065	2.9	1	771
	U12855	7.9	1	986
	U16497	3.5	1	1287
	U03578	3	1	1474
	U13036	9.7	1	1519
	U08147	8.8	1	1620
	U14090	10	1	1750
	U16673	6.8	1	1966

- Users consuming ≤ 1 GB of data are paying significantly high recharge amounts.
- Recharge costs range widely from ₹515 to ₹1966, despite uniformly low data usage, which might indicate misaligned plans or pricing issues.

What are the most cost-effective recharge plans for heavy users?

```
SELECT
    UserID, DataUsageGB, CallsDurationMins, RechargeCostINR
FROM
    phone_usage
WHERE
    DataUsageGB > 45
        AND CallsDurationMins > 100
ORDER BY RechargeCostINR ASC
LIMIT 1;
```

	UserID	DataUsageGB	CallsDurationMins	RechargeCostINR
▶	U06522	49.1	175.4	100

This user gets 49.1GB of data and 175.4 minutes of calls for just ₹100/month, showcasing an incredibly affordable recharge plan.

Which locations have the highest average data usage?

```
SELECT
    Location, AVG(DataUsageGB) AS AvgDataUsage
FROM
    phone_usage
GROUP BY Location
ORDER BY AvgDataUsage DESC;
```

Location	AvgDataUsage
Ahmedabad	26.27742296918767
Delhi	25.7876056338028
Jaipur	25.54095394736843
Lucknow	25.53429411764708
Hyderabad	25.38564705882355
Pune	25.35168044077138
Mumbai	25.340824622531937
Kolkata	25.20525433202902
Bangalore	24.98628219484886
Chennai	24.707709497206718

- Ahmedabad leads in average data usage with 26.28GB/month.
- Chennai has the lowest usage at 24.71GB/month.

What is the most popular phone brand in each city based on user count?

```

SELECT
    Location,
    PhoneBrand AS MostFamousBrand,
    UserCount AS NumberOfUsers
FROM (
    SELECT
        Location,
        PhoneBrand,
        COUNT(UserID) AS UserCount,
        RANK() OVER (PARTITION BY Location ORDER BY COUNT(UserID) DESC) AS `Rank`
    FROM
        phone_usage
    GROUP BY
        Location,
        PhoneBrand
) AS RankedBrands
WHERE
    `Rank` = 1
ORDER BY
    Location ASC;
  
```

	Location	MostFamousBrand	NumberOfUsers
1	Ahmedabad	Google Pixel	196
2	Bangalore	Oppo	196
3	Chennai	Samsung	211
4	Delhi	Realme	188
5	Hyderabad	Nokia	188
6	Jaipur	Motorola	201
7	Kolkata	Xiaomi	213
8	Lucknow	Nokia	195
9	Mumbai	Vivo	194
10	Pune	Nokia	210

- Nokia leads in Hyderabad, Lucknow, and Pune, showing its broad appeal.
- Xiaomi is a favorite in Kolkata, while Samsung dominates Chennai.
- Premium brands like Google Pixel are popular in cities like Ahmedabad.

What We Discovered

Conclusions

- Social Media & E-commerce: No strong link between time spent on social media and e-commerce spending.
- Anomalies: Some users show unusually low data usage with high recharge costs.
- Recharge Plans: Plans around ₹100 are cost-effective for heavy users.
- Data Usage: Ahmedabad leads in average data usage (~26GB/month), followed by Delhi and Jaipur.
- Popular Brands: Phone preferences vary by city, with Google Pixel popular in Ahmedabad and Samsung in Chennai.

Recommendations

- Recharge Plans: Offer ₹100 recharge plans in high data-use cities like Ahmedabad.
- Marketing Strategy: Phone brands can capitalize on city-specific preferences, such as focusing Samsung promotions in Chennai or Oppo in Bangalore.
- User Segmentation: Categorize users by data usage and primary activities (e.g., gaming or streaming) to design tailored plans and promotions.

Thank You



[Get the Data Set](#)

The dataset used in this project was sourced from Kaggle, and I'm grateful for the platform's vast repository of resources. It provided an excellent foundation for exploring phone usage patterns and crafting meaningful insights.