# ODISHA CIGARETTE MARKET PENETRATION ANALYSIS

Creating Database and creating table

```
Table – 1 #Odisha_Smoker
CREATE DATABASE Odisha;
use Odisha;
CREATE TABLE Smoker
(Id VARCHAR(50) PRIMARY KEY,
Shop_id int,
Gender VARCHAR (10),
Age INT,
Products VARCHAR(100),
Brands VARCHAR(100),
Reason_for_Consuming VARCHAR(100),
Purchase_Behavior VARCHAR(100),
Liked_Aspect VARCHAR (100),
Previous_Tried_Brand VARCHAR(100),
Area VARCHAR(50),
Urban_Rural VARCHAR (10),
Consumption_per_day VARCHAR(100),
Amount_per_Day INT,
Market_Trend VARCHAR(100))
Table- 2 #Odisha Retail
CREATE TABLE RETAIL
(Unique_ID INT,
Shop_name varchar(50),
Location VARCHAR (50),
```

```
Urban_Rural VARCHAR(50),
How_do_you_usually_get_ITC_Cigarettes VARCHAR(100),
Available_Brands VARCHAR(250)
);
##1 Lifetime Value (LTV) Estimation
SELECT
    ID,
        (SUM(Amount_per_Day) * 365 * 3) AS Estimated_Lifetime_Value_3_Yrs
FROM
    Smoker
GROUP BY
    ID;
```

	ID	Estimated_Lifetime_Value_3_Yrs
Þ	12011	183960
	12012	183960
	12013	157680
	12014	275940
	12015	52560
	12016	65700
	12017	54750
	12018	98550
	12019	36135
	12020	15330
	12021	12045
	12022	49275
	12023	199290
	12024	32850
	12025	76650
	12026	137970
	12027	65700
	12028	84315
	12029	199290
	12030	30660
	12031	279225
	12032	65700
	12033	85410
	12034	180675
	12035	39420

```
##3 Brand Loyalty Index

SELECT

ID,

CASE

WHEN Previous_Tried_Brand IS NOT NULL AND Brands IS NOT NULL THEN 1.0

WHEN Previous_Tried_Brand IS NULL AND Brands IS NOT NULL THEN 0.5

ELSE 0.0

END AS Loyalty_Index

FROM
```

# Smoker;

	ID	Loyalty_Index
•	12011	1.0
	12012	1.0
	12013	1.0
	12014	1.0
	12015	1.0
	12016	1.0
	12017	1.0
	12018	1.0
	12019	1.0
	12020	1.0
	12021	1.0
	12022	1.0
	12023	1.0
	12024	1.0
	12025	1.0
	12026	1.0
	12027	1.0
	12028	1.0
	12029	1.0
	12030	1.0
	12031	1.0
	12032	1.0
	12033	1.0
	12034	1.0
	12035	1.0

# ##4 Trend Analysis by Demographics

```
SELECT
Age,
Gender,
Market_Trend,
COUNT(*) AS Trend_Count
FROM
Smoker
GROUP BY
Age, Gender, Market_Trend
ORDER BY
Trend_Count DESC;
```

	Age	Gender	Market_Trend	Trend_Count
Þ	54	Male	Shift to alternative products	7
	52	Male	Shift to alternative products	6
	39	Male	Stable	6
	37	Male	Decrease in demand	5
	34	Male	Increase in demand	5
	48	Male	Stable	5
	22	Male	Stable	5
	38	Male	Decrease in demand	5
	56	Male	Stable	5
	40	Male	Increase in demand	5
	45	Male	Stable	4
	41	Male	Stable	4
	29	Male	Shift to alternative products	4
	58	Male	Increase in demand	4
	57	Male	Stable	4
	21	Male	Decrease in demand	4
	31	Male	Stable	4
	22	Male	Shift to alternative products	4
	31	Male	Shift to alternative products	4
	41	Male	Decrease in demand	4
	38	Male	Shift to alternative products	4
	40	Male	Stable	4
	21	Male	Increase in demand	4
	37	Male	Stable	4
	47	Male	Decrease in demand	4

# ##5 Consumption Intensity Index (CII)

# SELECT

Area,

SUM(Consumption\_per\_Day) / COUNT(DISTINCT ID) AS Consumption\_Intensity\_Index

#### FROM

Smoker

## GROUP BY

Area;

	Area	Consumption_Intensity_Index
•	Anandapur	8.85135135135135
	Balasore	6.938271604938271
	Baripada	9.464788732394366
	Bhadrak	8.271428571428572
	Jajpur	8.246753246753247
	Patamundai	7.705882352941177

# ##6 Cost of Addiction Analysis

# SELECT

ID,

(Amount\_per\_Day\* 365) AS Annual\_Cost\_of\_Addiction

## FROM

# Smoker;

	ID	Annual_Cost_of_Addiction
•	12011	61320
	12012	61320
	12013	52560
	12014	91980
	12015	17520
	12016	21900
	12017	18250
	12018	32850
	12019	12045
	12020	5110
	12021	4015
	12022	16425
	12023	66430
	12024	10950
	12025	25550
	12026	45990
	12027	21900
	12028	28105
	12029	66430
	12030	10220
		93075
	12032	21900
	12033	28470
	12034	60225
	12035	13140

```
##7 Most Preferred Product Aspects
```

```
SELECT
Liked_Aspect,
COUNT(*) AS Preference_Count
FROM
Smoker
GROUP BY
Liked_Aspect
ORDER BY
Preference_Count DESC;
```

	Liked_Aspect	Preference_Count
•	Flavor	96
	Brand loyalty	93
	Packaging	90
	Availability	81
	Price	81

# ##8 Predictive Analysis: Shift to Alternative Products

```
SELECT
Gender,
Age,
Area,
COUNT(*) AS Shift_Count

FROM
smoker
WHERE
Market_Trend = 'Shift to alternative products'
GROUP BY
Gender, Age, Area
ORDER BY
Shift_Count DESC;
```

	Gender	Age	Area	Shift_Count
•	Male	31	Anandapur	2
	Male	21	Patamundai	2
	Male	52	Bhadrak	2
	Female	45	Balasore	2
	Male	22	Bhadrak	2
	Male	40	Bhadrak	2
	Male	34	Patamundai	2
	Male	28	Anandapur	2
	Male	32	Patamundai	2
	Male	54	Jajpur	2
	Male	52	Patamundai	2
	Male	44	Bhadrak	1
	Male	29	Baripada	1
	Male	26	Baripada	1
	Male	26	Jajpur	1
	Male	50	Baripada	1
	Male	40	Jajpur	1
	Male	19	Anandapur	1
	Male	29	Anandapur	1
	Male	25	Balasore	1
	Male	22	Balasore	1
	Male	31	Balasore	1
	Male	52	Anandapur	1
	Male	37	Baripada	1
	Male	47	Patamundai	1

##9 Average Daily Consumption by Age Group

```
SELECT
     Age_Group,
     AVG(Consumption_per_day) AS Avg_Consumption
 FROM
)
     (SELECT
9
          CASE
              WHEN Age BETWEEN 18 AND 25 THEN '18-25'
              WHEN Age BETWEEN 26 AND 35 THEN '26-35'
              WHEN Age BETWEEN 36 AND 45 THEN '36-45'
              ELSE '46+'
          END AS Age_Group,
          Consumption_per_day
      FROM Smoker) AS AgeConsumption
 GROUP BY
     Age_Group;
```

	Age_Group	Avg_Consumption
•	46+	8.356643356643357
	18-25	7.9010989010989015
	36-45	7.981481481481482
	26-35	8.595959595959595

# ##10 Join query

```
SELECT
```

```
s.ID, s.Shop_Id, s.Gender, s.Age, s.Products, s.Brands,
s.Reason_for_Consuming,
s.Purchase_Behavior,
s.Liked_Aspect,
s.Previous_Tried_Brand,
s.Area AS Smoker_Area,
s.Urban_Rural AS Smoker_Urban_Rural,
s.Consumption_per_Day,
s.Amount_per_Day,
s.Amount_per_Day,
s.Market_Trend,
re.Shop_Name, re.Location AS Shop_Location,
re.Urban_Rural AS Shop_Urban_Rural,
re.How_do_you_usually_get_ITC_Cigarettes,
re.Available_Brands
FROM Smoker s
```

JOIN retail re ON s.shop\_ID = re.Unique\_ID;

ID	Shop_Id	Gender	Age	Products	Brands	Reason_for_Consuming	Purchase_Behavior	Liked_Aspect	Previous_Tried_Brand	Smoker_Area	Smoker_Urban_Rural	Consumption_per_Day	Amount_per_Day	Market_Trend
12011	1001	Male	49	Four Square	Godfrey Phillips India	Addiction	Single stick	Availability	Flake	Patamundai	Urban	12	168	Shift to alternative products
12012	1001	Male	21	Navy Cut	ITC Limited	Stress relief	Bulk	Flavor	None	Patamundai	Urban	12	168	Shift to alternative products
12013	1001	Male	47	Marlboro	Godfrey Philips India	Stress relief	Pack	Price	Navy Cut	Jajpur	Rural	12	144	Stable
12014	1002	Male	55	Flake	Unknown	Addiction	Pack	Flavor	Pall Mall	Anandapur	Urban	18	252	Stable
12015	1002	Male	52	Flake	Unknown	Enjoyment	Single stick	Brand loyalty	Classic	Bhadrak	Urban	4	48	Shift to alternative products
12016	1002	Male	51	B&H	Godfrey Philips India	Stress relief	Bulk	Brand loyalty	None	Patamundai	Urban	5	60	Shift to alternative products
12017	1003	Female	41	Four Square	Godfrey Philips India	Enjoyment	Bulk	Flavor	Four Square	Bhadrak	Urban	5	50	Decrease in demand
12018	1003	Female	52	Navy Cut	ITC Limited	Enjoyment	Single stick	Packaging	Mariboro	Patamundai	Urban	6	90	Shift to alternative products
12019	1003	Male	23	Flake	Unknown	Stress relief	Single stick	Packaging	Pall Mall	Balasore	Rural	3	33	Increase in demand
12020	1004	Male	52	Four Square	Godfrey Philips India	Social influence	Pack	Brand loyalty	Mariboro	Jajpur	Rural	1	14	Increase in demand
12021	1004	Male	45	Four Square	Godfrey Phillips India	Stress relief	Bulk	Price	Gold Flake	Patamundai	Urban	1	11	Stable
12022	1004	Female	20	Gold Flake	ITC Limited	Stress relief	Single stick	Brand loyalty	B8H	Jajpur	Rural	3	45	Stable
12023	1005	Male	39	Classic	ITC Limited	Stress relief	Pack	Packaging	Gold Flake	Bhadrak	Urban	13	182	Stable
12024	1005	Male	19	Marlboro	Godfrey Philips India	Addiction	Pack	Flavor	B8H	Anandapur	Urban	2	30	Increase in demand
12025	1005	Male	37	Classic	ITC Limited	Addiction	Single stick	Flavor	Flake	Jajpur	Rural	5	70	Decrease in demand
12026	1006	Male	35	Pall Mall	Unknown	Habit	Bulk	Flavor	Pall Mall	Anandapur	Urban	9	126	Stable
12027	1006	Male	39	Four Square	Godfrey Philips India	Habit	Single stick	Price	Flake	Anandapur	Urban	4	60	Increase in demand
12028	1006	Male	19	Marlboro	Godfrey Phillips India	Enjoyment	Bulk	Availability	Four Square	Bhadrak	Urban	7	77	Stable
12029	1007	Male	41	Flake	Unknown	Habit	Bulk	Packaging	BSH	Anandapur	Urban	13	182	Stable
12030	1007	Male	42	Flake	Unknown	Stress relief	Bulk	Price	Pall Mall	Jajpur	Rural	2	28	Stable
12031	1007	Male	50	Navy Cut	ITC Limited	Social influence	Pack	Brand loyalty	Classic	Jajpur	Rural	17	255	Stable
12032	1008	Male	41	Pall Mall	Unknown	Enjoyment	Single stick	Availability	Flake	Balasore	Rural	4	60	Shift to alternative products
12033	1008	Male	44	Navy Cut	ITC Limited	Social influence	Single stick	Packaging	B8H	Bhadrak	Urban	6	78	Shift to alternative products
12034	1008	Male	29	B&H	Godfrey Philips India	Habit	Single stick	Price	Flake	Baripada	Urban	11	165	Shift to alternative products
12035	1009	Male	41	Gold Flake	ITC Limited	Habit	Single stick	Price	B8H	Jajpur	Rural	3	36	Stable
12036	1009	Male	58	Navy Cut	ITC Limited	Enjoyment	Single stick	Price	Classic	Bhadrak	Urban	2	26	Increase in demand

# ##11 Average Purchase Frequency per Smoker by Shop SELECT

s.Shop\_Id,
AVG(s.Consumption\_per\_day) AS Avg\_Quantity\_Purchase
FROM Smoker s
JOIN retail re ON s.shop\_ID = re.Unique\_ID
GROUP BY s.Shop\_Id;

	Shop_Id	Avg_Quantity_Purchase
•	1001	12
	1002	9
	1003	4.66666666666667
	1004	1.666666666666667
	1005	6.66666666666667
	1006	6.66666666666667
	1007	10.66666666666666
	1008	7
	1009	3.666666666666665
	1010	14.333333333333334
	1011	11.333333333333334
	1012	7.33333333333333
	1013	6.66666666666667
	1014	12.66666666666666
	1015	10.66666666666666
	1016	8.6666666666666
	1017	10.333333333333334
	1018	7.66666666666667
	1019	8.6666666666666
	1020	8.33333333333334
	1021	10.66666666666666
	1022	6.66666666666667
	1023	12
	1024	4.333333333333333

# ##12 Total Consumption per Shop

```
SELECT
```

```
s.Shop_Id,
SUM(s.Consumption_per_Day) AS Total_Consumption
FROM Smoker s
JOIN retail re ON s.shop_ID = re.Unique_ID
GROUP BY s.Shop_Id;
```

	Shop_Id	Total_Consumption
•	1001	36
	1002	27
	1003	14
	1004	5
	1005	20
	1006	20
	1007	32
	1008	21
	1009	11
	1010	43
	1011	34
	1012	22
	1013	20
	1014	38
	1015	32
	1016	26
	1017	31
	1018	23
	1019	26
	1020	25
	1021	32
	1022	20
	1023	36
	1024	13
	1025	19
	1026	13
	1027	18

```
SELECT re.unique_id,

COUNT(re.unique_id) / (SELECT COUNT(*) FROM Smoker) * 100 AS retention_rate

FROM Smoker s

JOIN Retail re ON s.shop_id = re.unique_id

GROUP BY re.unique_id

ORDER BY retention_rate DESC

LIMIT 10;
```

	unique_id	retention_rate		
٠	1001	0.6803		
	1002	0.6803		
	1003	0.6803		
	1004	0.6803		
	1005	0.6803		
	1006	0.6803		
	1007	0.6803		
	1008	0.6803		
	1009	0.6803		
	1010	0.6803		

# ##14 Top 3 Most Popular Brands in Urban vs. Rural Areas

```
SELECT
s.Urban_Rural,
s.Brands,
COUNT(*) AS Brand_Popularity

FROM
Smoker s

JOIN
retail re ON s.Shop_Id = re.Unique_ID

GROUP BY
s.Urban_Rural, s.Brands

ORDER BY
s.Urban_Rural, Brand_Popularity DESC

LIMIT 3;
```

	Urban_Rural	Brands	Brand_Popularity
•	Rural	ITC Limited	62
	Rural	Godfrey Phillips India	58
	Rural	Unknown	38

```
##15 Brand Switching Rate per Shop
```

```
SELECT
    s.Shop_Id,
    SUM(CASE WHEN s.Previous_Tried_Brand <> s.Brands THEN 1 ELSE 0 END) * 100.0 / COUNT(*) AS Brand_Switching_Rate
FROM
    Smoker s

JOIN
    retail re ON s.Shop_Id = re.Unique_ID
GROUP BY
    s.Shop_Id;
```

	Shop_Id	Brand_Switching_Rate
•	1001	100.00000
	1002	100.00000
	1003	100.00000
	1004	100.00000
	1005	100.00000
	1006	100.00000
	1007	100.00000
	1008	100.00000
	1009	100.00000
	1010	100.00000
	1011	100.00000
	1012	100.00000
	1013	100.00000
	1014	100.00000
	1015	100.00000
	1016	100.00000
	1017	100.00000
	1018	100.00000
	1019	100.00000
	1020	100.00000
	1021	100.00000
	1022	100.00000
	1023	100.00000
	1024	100.00000
	1025	100.00000
	1026	100.00000
	1027	100.00000

```
##16 Favorite Purchase Channel for ITC Cigarettes by Smoker Region (Urban vs. Rural)
```

#### SELECT

```
s.Urban_Rural,
re.How_do_you_usually_get_ITC_Cigarettes,
COUNT(*) AS Channel_Preference_Count
```

#### FROM

Smoker s

#### JOIN

retail re ON s.Shop\_Id = re.Unique\_ID

## GROUP BY

s.Urban\_Rural, re.How\_do\_you\_usually\_get\_ITC\_Cigarettes

#### OPDED BY

Channel Preference Count DESC;

	Urban_Rural	How_do_you_usually_get_ITC_Cigarettes	Channel_Preference_Count
•	Urban	Wholesellers	127
	Urban	Private hawkers	83
	Rural	Wholesellers	77
	Urban	company salesman	73
	Rural	Private hawkers	49
	Rural	company salesman	32

# ##17 Revenue Impact by Reason for Consumption

## SELECT

```
s.Reason_for_Consuming,
AVG(s.Amount_per_Day) AS Avg_Revenue_Impact
```

### FROM

Smoker s

## GROUP BY

s.Reason\_for\_Consuming

## ORDER BY

Avg\_Revenue\_Impact DESC;

	Reason_for_Consuming	Avg_Revenue_Impact
١	Social influence	108.7849
	Enjoyment	107.3250
	Habit	106.1515
	Addiction	101.9176
	Stress relief	94.3690

```
##2 Customer Segmentation by Consumption and Spending Behavior
   ID,
   CASE
       WHEN Consumption_per_Day >= 15 AND Amount_per_Day>= 200 THEN 'Heavy User - High Spender'
       WHEN Consumption_per_Day >= 15 AND Amount_per_Day < 200 THEN 'Heavy User - Low Spender'
       WHEN Consumption_per_Day < 15 AND Amount_per_Day >= 200 THEN 'Light User - High Spender'
       ELSE 'Light User - Low Spender'
   END AS Customer_Segment
FROM
   smoker;
 ##18 Customer Satisfaction Analysis by 'Liked Aspect' of the Product
 SELECT
      s.Liked Aspect,
      COUNT(*) AS Satisfaction_Count
 FROM
      Smoker s
 GROUP BY
      s.Liked_Aspect
 ORDER BY
      catiofication court proc.
```

	Liked_Aspect	Satisfaction_Count
•	Flavor	96
	Brand loyalty	93
	Packaging	90
	Availability	81
	Price	81

GROUP BY

s.Brands;

##19 Market Share Prediction for Each Brand

```
s.Brands,
COUNT(s.ID) AS Current_Market_Share,
(COUNT(s.ID) * 1.05) AS Predicted_Market_Share_Next_Year ##Assuming a 5% growth rate
FROM
Smoker s
JOIN
retail re ON s.Shop_Id = re.Unique_ID
```

	Brands	Current_Market_Share	Predicted_Market_Share_Next_Year
•	Godfrey Phillips India	169	177.45
	ITC Limited	162	170.10
	Unknown	110	115.50

##20 Brand Loyalty Prediction (Retention Rate)

```
SELECT

s.Brands,

SUM(CASE WHEN s.Previous_Tried_Brand = s.Brands THEN 1 ELSE 0 END) * 100.0 / COUNT(*) AS Current_Retention_Rate,

(SUM(CASE WHEN s.Previous_Tried_Brand = s.Brands THEN 1 ELSE 0 END) * 1.03) * 100.0 / COUNT(*) AS Predicted_Retention_Rate -- Assuming a 3% increase
FROM

Smoker s

GROUP BY

s.Brands;
```

	Brands	Current_Retention_Rate	Predicted_Retention_Rate
•	Godfrey Phillips India	0.00000	0.0000000
	ITC Limited	0.00000	0.0000000
	Unknown	0.00000	0.0000000

##21 Consumption Trend Prediction Based on Market Trend Perception

```
SELECT
```

```
s.Market_Trend,
AVG(s.Consumption_per_Day) AS Current_Consumption,
  (AVG(s.Consumption_per_Day) * 1.06) AS Predicted_Consumption -- Assuming a 6% increase
FROM
    Smoker s
GROUP BY
    s.Market_Trend;
```

	Market_Trend	Current_Consumption	Predicted_Consumption
•	Shift to alternative products	7.803738317757009	8.27196261682243
	Stable	8.223880597014926	8.717313432835821
	Decrease in demand	9.410526315789474	9.975157894736842
	Increase in demand	7.580952380952381	8.035809523809524

## ##22 Projected Customer Shift by Brand Based on Liked Aspects

```
SELECT
```

```
s.Liked_Aspect,
s.Brands,
COUNT(s.ID) AS Current_Customer_Count,
(COUNT(s.ID) * 1.04) AS Predicted_Customer_Count -- Assuming a 4% increase
FROM
Smoker s
GROUP BY
s.Liked_Aspect, s.Brands;
```

	Liked_Aspect	Brands	Current_Customer_Count	Predicted_Customer_Count
•	Availability	Godfrey Phillips India	34	35.36
	Flavor	ITC Limited	35	36.40
	Price	Godfrey Phillips India	34	35.36
	Flavor	Unknown	25	26.00
	Brand loyalty	Unknown	19	19.76
	Brand loyalty	Godfrey Phillips India	38	39.52
	Flavor	Godfrey Phillips India	36	37.44
	Packaging	ITC Limited	36	37.44
	Packaging	Unknown	27	28.08
	Brand loyalty	ITC Limited	36	37.44
	Price	Unknown	20	20.80
	Availability	Unknown	19	19.76
	Price	ITC Limited	27	28.08
	Packaging	Godfrey Phillips India	27	28.08
	Availability	ITC Limited	28	29.12