Presentation on Cosmetic Hypothesis Analysis

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Objectives

1. To analyze the consumers brand preferences for cosmetic products.

2. To evaluate consumers attitude towards the usage of cosmetic products.

3. To evaluate consumers perception about the important factors pertaining to cosmetic products purchase decision.

Hypotheses

1. Sales of different brand of cosmetic products are uniformly distributed i.e there is no significant difference in the sales of different cosmetic products brands.

2. There is no significant difference among the consumers of cosmetic products on the factors like age, marital status and income etc.

3. Different factors which are important in the purchase decision of cosmetic products do not differ significantly.

4. There is no significant difference in the ranking of different cosmetic product brands by consumers.

Hypothesis -1

Sales of different brand of cosmetic products are uniformly distributed i.e there is no significant difference in the sales of different cosmetic products brands.

To test the hypothesis, chi square test was applied.

Brand	Count
Lakme	18
L'Oreal	8
Oriflame	4
Revlon	4
Amway	8
Himalaya	8
Maybelline	4
Elle 18	15
Total	**69**

Chi square value (calculated) = 21.66

Critical Chi square value (0.05, 7) = 14.06

Chi square value (calculated) is greater than critical chi square value, hence this hypothesis is rejected and it can be concluded that sales of different brand of cosmetic products are not uniformly distributed.

Hypothesis- 2

Hypothesis 2 (a): *Consumes of the different age group (age group 18-25 & 26-35) do not differ significantly on their attitude towards usage of cosmetic products.*
To test this hypothesis z test was applied with following results:

AGE	MEAN	N	Z VALUE	Z VALUE CRITICAL AT 0. 5 & 125 DF	RESULT
Age 18-25	44.06	50	-0.576	1.95	Insignificant
Age 26-35	44.88	17			Accept Null Hypothesis

Since the calculated z value is less than z critical (two tailed) at .05 significance level, hence null hypothesis is accepted and it can be said that there is no significant difference in the attitude of consumes of the different age group (age group 18-25 & 26-35) towards usage of cosmetic products.

Hypothesis 2 (b): *Married and unmarried consumers do not differ significantly in their attitude towards the use of cosmetic products. To test this hypothesis z test was applied with following results:*

Status	Mean	N	Z Value	Z Value critical at .05 and 125 df	Result
Married	44.24	21	0.02	1.95	Insignificant
Unmarried	44.21	25			Accept Null Hypothesis

Since the calculated z value is less than z critical (two tailed) at .05 significance level, hence null hypothesis is accepted and it can be said that there is no significant difference in the attitude of married and unmarried consumers towards usage of cosmetic products.

Hypothesis 2 (c): *Consumers of different income bracket do not differ significantly on their attitude towards the use of cosmetic products. To test this hypothesis ANOVA was applied with following results:*

ANOVA : Single Factor Summary

Groups	Count	Sum	Average	Variance
Below 20000	6	288	48	4
20000-40000	24	1060	44.16667	35.01449
40001-60000	19	851	44.78947	21.84211
Above 60000	23	985	42.82609	22.69565

Source of Variation	SS	df	MS	F	P-value	F Crit
Between Groups	136.64886	3	45.5496	1.80311	0.154861	2.73950
Within Groups	1717.79557	68	25.2617			
Total	1854.4444	71				

Since F calculated is less than F critical at 95% significance level, hence null hypothesis is accepted.

So, it can be concluded that consumers of different income bracket do not differ significantly on their attitude towards the use of cosmetic products.

Hypothesis 2 (d): *Consumers holding different qualifications do not differ significantly on their attitude towards the use of cosmetic products.*
To test this hypothesis ANOVA was applied with following results:

ANOVA : Single Factor Summary

Groups	Counts	Sum	Average	Variance
Under-Graduate	18	778	43.22222	25.47712
Graduate	28	1258	44.92857	25.69841
Post-Graduate	25	1113	44.52	25.34333

Source Of Variation	SS	df	MS	F	p-value	F- Crit
Between Groups	32.9889291	2	16.49446	0.646391	0.527122	3.131672
Within Groups	1735.20825	68	25.51777			
Total	1768.19718	70				

Since F calculated is less than F critical at 95% significance level, hence null hypothesis is accepted.

So, it can be concluded that consumers holding different qualification do not differ significantly on their attitude towards the use of cosmetic products.

**Hypothesis 2 (e):** _Consumers of different occupations do not differ significantly on their attitude towards the use of cosmetic products._

ANOVA: Single Factor Summary

Groups	Count	Sum	Average	Variance
Student	42	1849	44.02381	22.17015
Housewife	10	456	45.6	18.04444
Service	9	425	47.22222	28.44444
Business	6	250	41.66667	23.46667
Professionals	5	204	40.8	59.7

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	199.3794	4	49.84484	2.017808	0.101874	2.508695
Within Groups	1655.065	67	24.70246			
Total	1854.444	71				

Since F calculated is less than F critical at 95% significance level, hence null hypothesis is accepted.

So, it can be concluded that consumers of different occupation do not differ significantly on their attitude towards the use of cosmetic products.

Hypothesis 3:

Different factors which are important in the purchase decision of cosmetic products for consumers do not differ significantly.
To test this hypothesis ANOVA was applied with following results:

ANOVA: Single Factor Summary

Groups	Count	Sum	Average	Variance
Price	72	280	3.888889	1.536776
Brand	72	319	4.430556	0.473983
Reputation	72	293	4.069444	0.769757
Recommendation	72	266	3.694444	0.834898
Special Offers	72	232	3.222222	1.161189
Packaging	72	234	3.25	1.373239

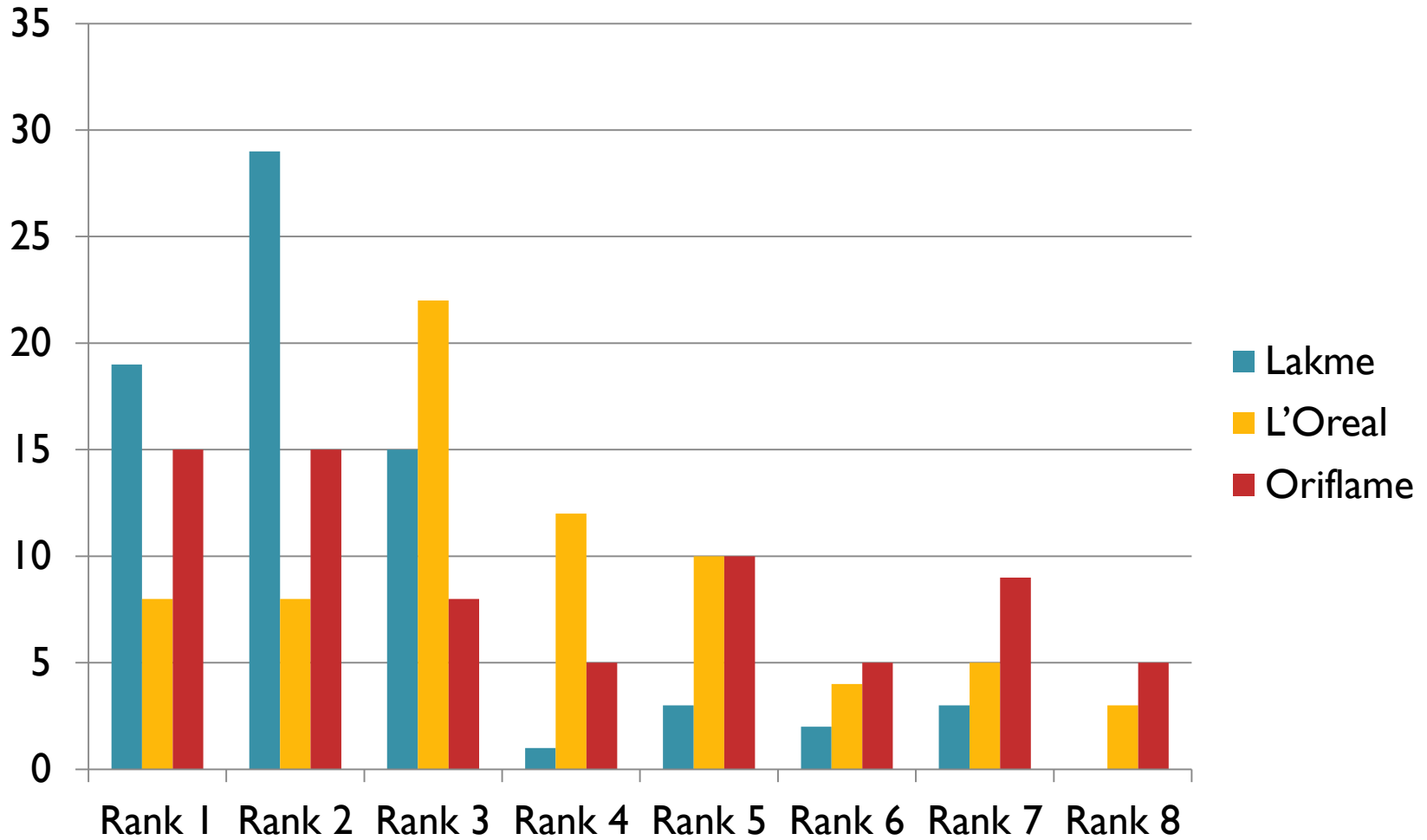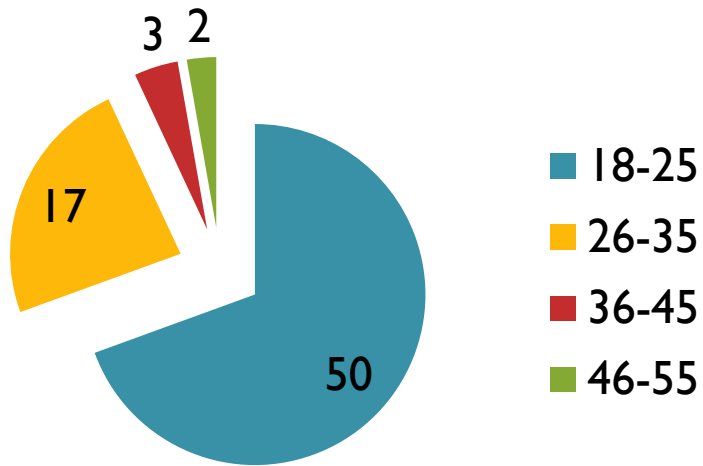| Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	80.32407	5	16.06481	15.67339	3.59E-14	2.235174
Within Groups	436.6389	426	1.024974			
Total	516.963	431				

Since F calculated is greater than F critical at 95% significance level, hence null hypothesis is rejected.

So, it can be concluded that different factors which are important in the purchase decision of cosmetic products for consumers differ significantly.

Descriptive statistics analysis

Brand	**Count**
Lakme	18
L'Oreal	08
Oriflame	04
Revlon	04
Amway	08
Himalaya	08
Maybelline	04
Elle 18	15
Total	**69**

RANKING PERFORMANCE

CUSTOMER PROFILES

AGE PROFILE

- 18-25
- 26-35
- 36-45
- 46-55

GENDER

- FEMALE
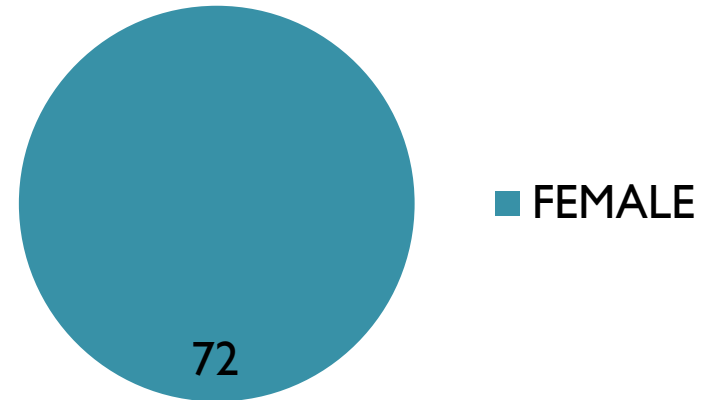
MARITAL STATUS

MONTHLY FAMILY INCOME(Rs.):

Marital Status:
- 21 — Married
- 51 — Unmarried

Monthly Family Income (Rs.):
- 6 — BELOW 20,000
- 24 — 20,000-40,000
- 19 — 40,001-60,000
- 23 — ABOVE 60,000
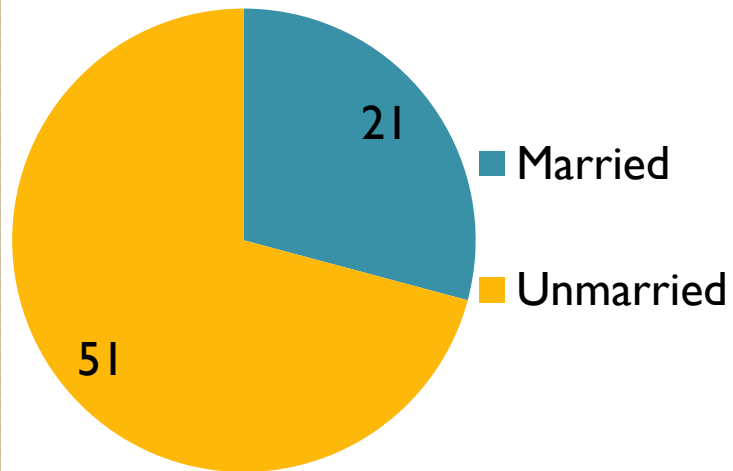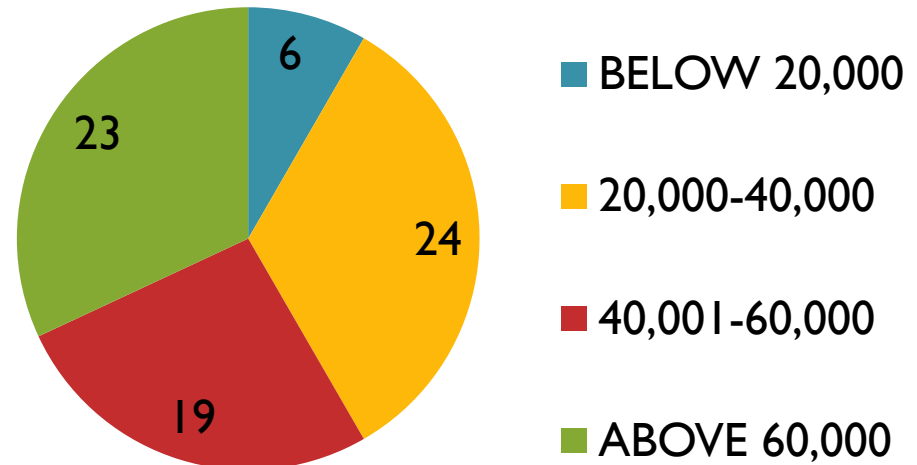
EDUCATIONAL QUALIFICATION

OCCUPATION

Sales

- Under -Graduate
- Graduate
- Post-Graduate
- Others

Pie chart values: 18, 28, 25, 2
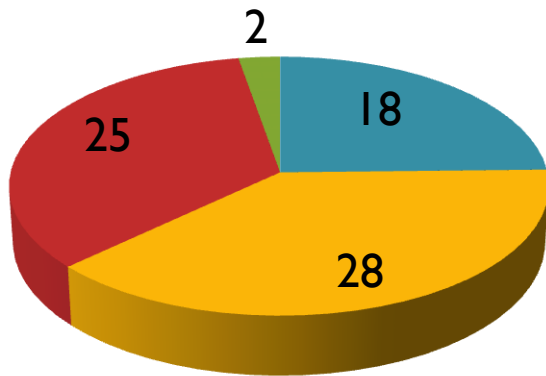
- Student
- Service
- Business
- Professionals
- Others

Pie chart values: 42, 10, 9, 6, 6