Marketing Insights from Data

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Movie Rating Trends: Insights by Age Group and Gender

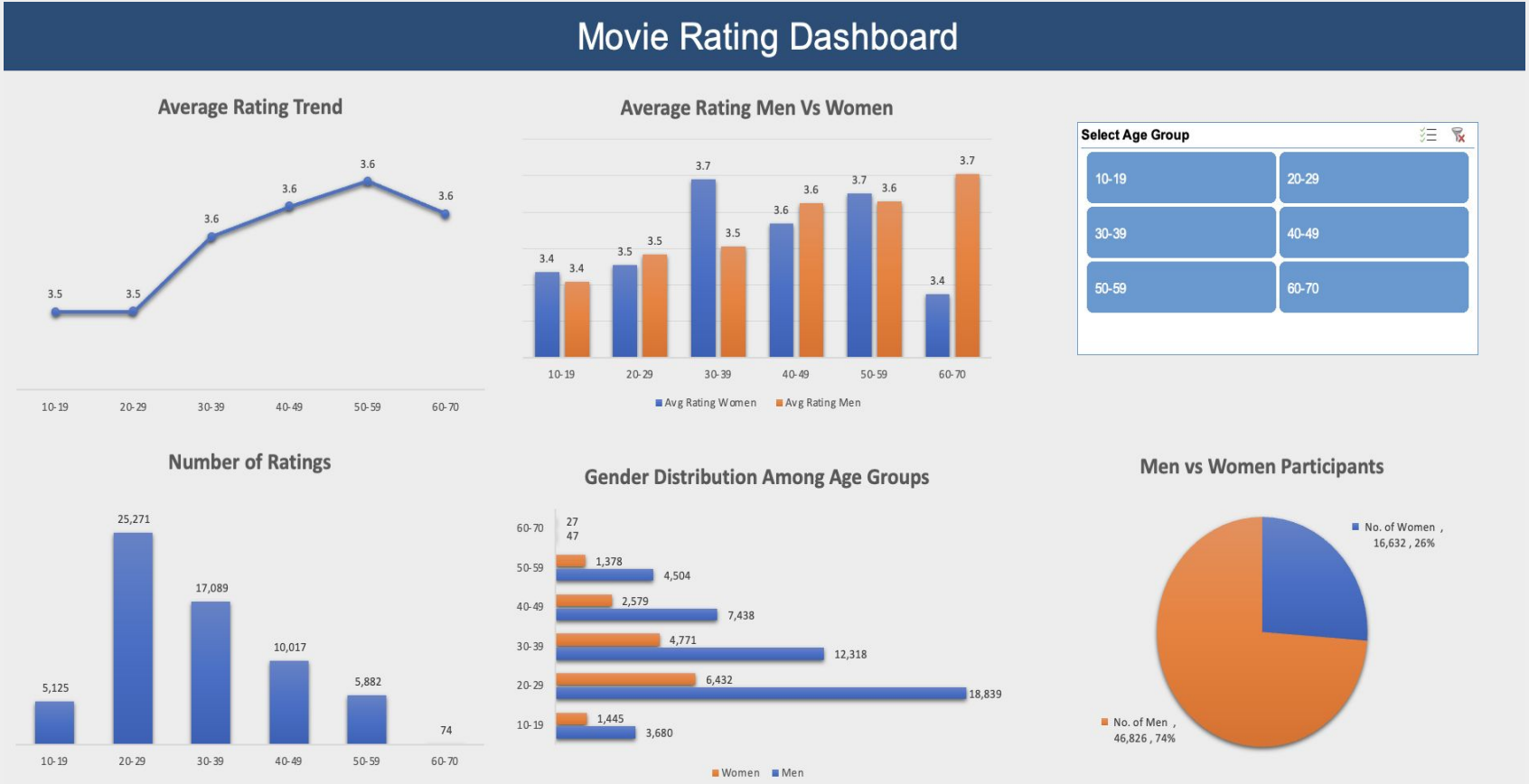

Fig.1:Performed analysis on an extensive data set using Excel's pivot tables and statistical functions to identify trends in movie ratings across age and gender

Identifying Shopper Segments and Trends Through Efficient Cluster Analysis: Social vs. Research-Driven Buyers

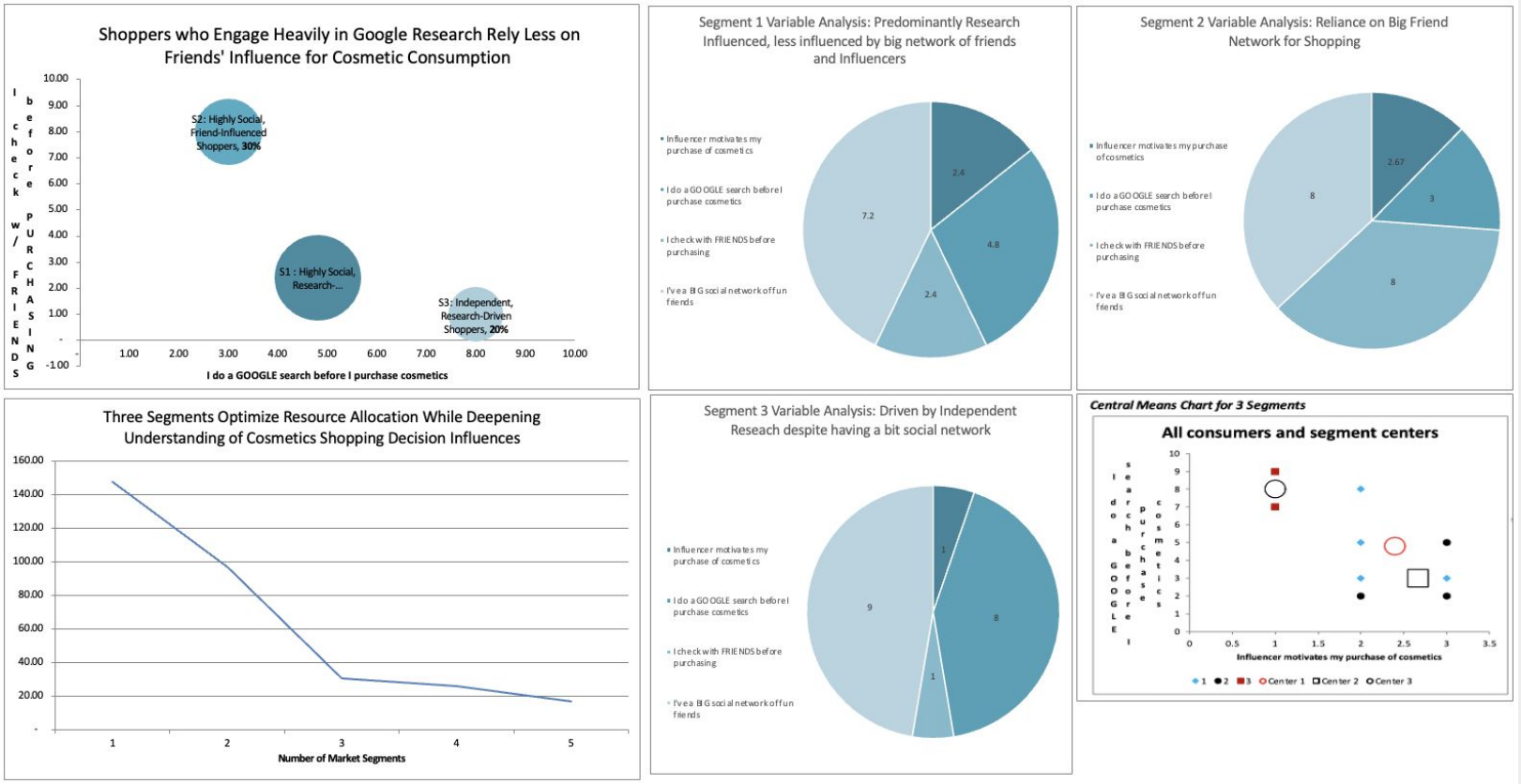

Fig. 2: Used Excel's pivot tables and statistical tools to analyze shopper behavior. Ran cluster analysis and calculated SSE error to drive efficient segmentation

Chi Square test shows vehicle type and family size to be associated with each other

Count of Column2	Column Labels		
Row Labels	Large	Small	Grand Total
No	48	147	195
Yes	138	10	148
Grand Total	**186**	**157**	**343**
Expected Distriubution			
	Large	**Small**	**Total**
No	105.7434402	89.2566	195
Yes	80.25655977	67.7434	148
	186	**157**	**343**
Sample's frequency:			
48	147		
138	10		
CHI.TEST=	0.0000		

Figure 3:Performed analysis on an extensive data set using Excel's statistical tools (Chi-Square test) to uncover a significant association between family size and vehicle type preference

People from larger families are significantly more likely to purchase station wagons, especially larger ones.

- The Chi-Square test resulted in a very small p-value (<0.05) indicating a statistically significant relationship between family size and vehicle type.

Recommendation: Target large families in station wagon marketing by emphasizing space, safety, and family-friendly features.

Income Isn’t Driving Station Wagon Purchases—Rethink Segmentation

Count of Column3	Column Labels		
Row Labels	High	Low	Grand Total
No	138	57	195
Yes	108	40	148
Grand Total	**246**	**97**	**343**
Expected Distriubution			
	High	Low	total
no	139.85	55.15	195
yes	106.15	41.85	148
	246	**97**	**343**
Sample's frequency:			
48	147		
138	10		
CHI.TEST=	**0.65353885142156**		

Figure 4: Performed analysis on an extensive data set using Excel’s statistical tools (Chi-Square test) to uncover a significant association between family income and vehicle type preference; ; no significant association was found.

Since the p-value > 0.05, we fail to reject the null hypothesis.Therefore, there is no statistically significant relationship between income level and station wagon purchase decision.

- **Income is not a good segmentation variable**

Recommendations: Marketers should explore other variables—such as lifestyle, geography, or family size—for better segmentation opportunities.

Fuel Efficiency Gap: Indiana Plant Significantly Outperforms Alabama Plant

Miles per gallon - Honda cars from Alabama plant	Miles per gallon - Honda cars from Indiana plant		*Miles per gallon - Alabama plant*	*Miles per gallon - Indiana plant*
18	24	Mean	20.14458	30.48101
15	27	Variance	41.14837	37.30412
18	27	Observations	249.00000	79.00000
16	25	Hypothesized Mean Difference	0.00000	
17	31	df	137.00000	
15	35	t Stat	-12.94627	
14	24	P(T<=t) one-tail	0.00000	
14	19	t Critical one-tail	1.65605	
14	28	P(T<=t) two-tail	0.00000	
15	23	t Critical two-tail	1.97743	

Figure 5: Based on a provided dataset, I conducted a two-sample t-test in Excel to compare the average fuel efficiency of Honda cars from the Alabama and Indiana plants.

Statistical testing reveals a **highly significant difference** in fuel efficiency between the two plants

- **Indiana plant cars average ~10 more miles per gallon** than Alabama plant cars.
- This suggests operational or design advantages at the Indiana facility.