FORD KA CASE

Traditionally, car manufacturers segmented their market by categorizing products first and then aligning them with customer profiles. Vehicles were classified by size, with smaller cars (A or B segments) targeting younger or budget-conscious buyers, and larger, more advanced models (C, D, E, F segments) appealing to older, higher-income families, corporate buyers, or larger households. Marketing for small cars often emphasized affordability, minimal features, and practicality as a "one size fits all" solution. Over time, changing lifestyles, diverse consumer needs, and growing interest in design, safety, and technology led to a shift. The small car segment diversified into sub-categories like Basic-B, Trend-B, and Other-B, catering to varied preferences. Renault's Twingo demonstrated that buyers would pay a premium for innovative styling, smart space utilization, and a distinctive personality, challenging the assumption that small cars must be purely budget-oriented. Instead of segmenting the market by products, manufacturers now focus on analyzing customer needs first. Vehicles are then developed to match these needs, aligning closely with modern buyers' preferences and lifestyles. This customer-centric approach replaces the traditional product-first strategy, ensuring better resonance with target audiences.

Exploratory Analysis of the data:

The cross-tabulation analysis reveals distinct patterns in the distribution of responses to Q1 across the three PreferenceGroups. PreferenceGroup 1 (Ka Choosers) demonstrated a significant concentration of respondents selecting higher scores for Q1, highlighting the importance of trendiness for this group. In contrast, PreferenceGroup 2 (Ka Non-Choosers) shows responses spread more evenly across a range of Q1 values, with fewer respondents selecting the highest scores. For PreferenceGroup 3 (Middle), there is some inclination toward higher Q1 scores, but the distribution is more balanced compared to PreferenceGroup 1. This analysis indicates a strong association between higher Q1 scores and membership in PreferenceGroup 1. Respondents who strongly agree with the statement "I want a car that is trendy" are more likely to prefer the Ford Ka, while those with lower Q1 scores are underrepresented in this group and more commonly found in the other preference groups. These findings suggest that trendiness could be a key factor influencing the preference for the Ford Ka.

To further explore the relationship between trendiness and preference for the Ford Ka, summary statistics such as the mean and standard deviation of Q1 scores for each PreferenceGroup can provide a clearer understanding of the differences between groups. A one-way ANOVA (Analysis of Variance) should also be conducted to test whether the mean Q1 scores differ significantly between the three preference groups. It is also worth analyzing correlations

between Q1 and other psychographic or demographic variables to determine whether the perception of trendiness is associated with other relevant factors. Finally, comparing psychographic clusters with Q1 scores can help assess whether "trendiness" plays a significant role in driving the clustering results.

k-Means Clustering for Demographic data: We performed k-means clustering on the demographic data available to us and after looking at the scree plots (Exhibit A) and analyzing for the hockey-stick effect, we tried for multiple values of k. The best differentiation was found for k=7. For each demographic feature, the interpretation column in EXHIBIT E provides insight into how we interpreted the centroids (EXHIBIT C) as the data was categorical.

k-Means Clustering for Psychographic data: We performed k-means clustering on the psychographic data available to us and after looking at the scree plots (Exhibit B) and analyzing for the hockey-stick effect, we tried for multiple values of k. The best differentiation was found for k=6. Clusters were classified by treating scores 4+ as high preference and those below 4 as low preference (Reference scores in EXHIBIT G & centroids in EXHIBIT D).

Recommendation:

Based on the results and customer profiles from the demographic (Exhibit F) and psychographic (Exhibit G) cluster analyses, **we recommend focusing on psychographic based cluster analysis.** This approach provides deeper insights into customer needs and preferences before a car purchase. We believe that solely segmenting customers based on demographics would not help us identify how they align with the product in an effective manner. Customers with identical demographics may have vastly different priorities. For example, one might value performance over brand origin, while another may prioritize buying a national brand regardless of performance or features. Psychographic segmentation better captures these nuances, enabling more tailored product offerings.

Perception of Ford Ka for Choosers: Based on exploratory analysis, we see that the Ford Ka is perceived as a trendier and bolder car. While it may not offer the same level of comfort or advanced technical features as the Renault Twingo, it stands out with its focus on design, styling, practical features, and maneuverability.

Psychographic Analysis:

Looking at the psychographic clusters and the features of Ford Ka, we recommend targeting **clusters 2 (Stylish &**

Prestige-Seeking Buyer) and 3 (Balanced, Modern Buyer). Amongst the two clusters, we believe that the primary focus should be on cluster 3.

> **Why Cluster 3?:** This customer segment is made up of balanced, modern buyers who want a somewhat trendy car with a "nippy and zippy" feel. They value moderate practicality and city-friendly design. These are needs that align perfectly with the Ford Ka's compact, urban-focused setup. Their preference for fuel efficiency is also well-served by the Ka, making it a strong alternative to the Twingo, whose styling may be less appealing and trendier by comparison. In fact, we feel that this is the most important segment for us as these buyers strive to strike a balance between style and practicality. They appreciate a modern look and "fun-to-drive" qualities without demanding extreme performance or luxury.
>
> **Why Cluster 2?:** This customer segment prioritizes a car's design and exterior aesthetics, looking for a fashionable, attention-grabbing vehicle that makes a statement. They place less emphasis on features and practicality—areas where the Ka might not excel. However, despite not being a traditional luxury car, the Ka's distinctive design and strong brand heritage can still deliver the unique sense of personal expression they desire.

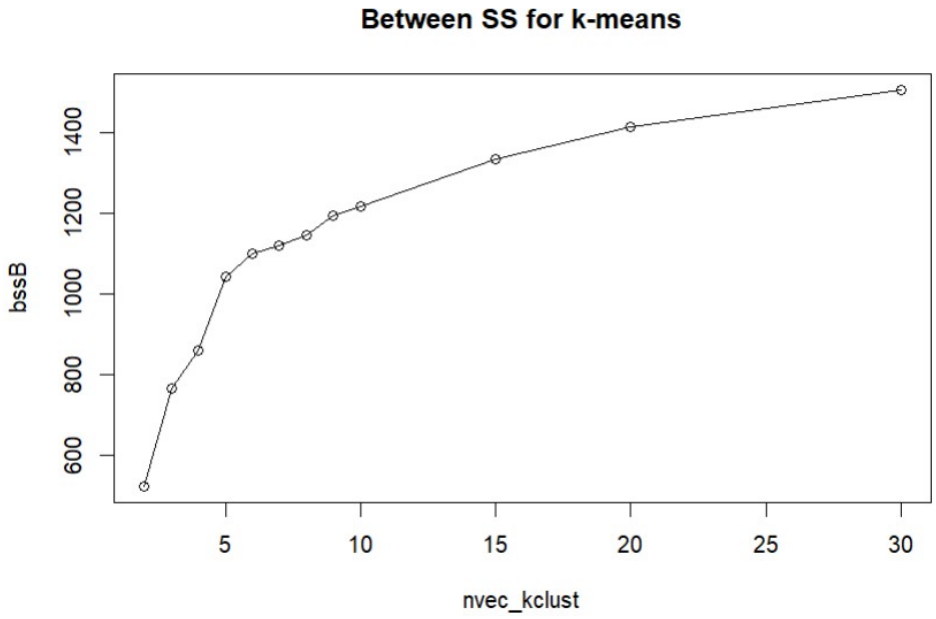
Finally, the balloon plot after psychographic analysis (Exhibit I) shows that there is a good number of respondents that prefer the Ka and also, the PreferenceGroup 3 could be made aware of the features of the Ka and potentially be turned into customers.

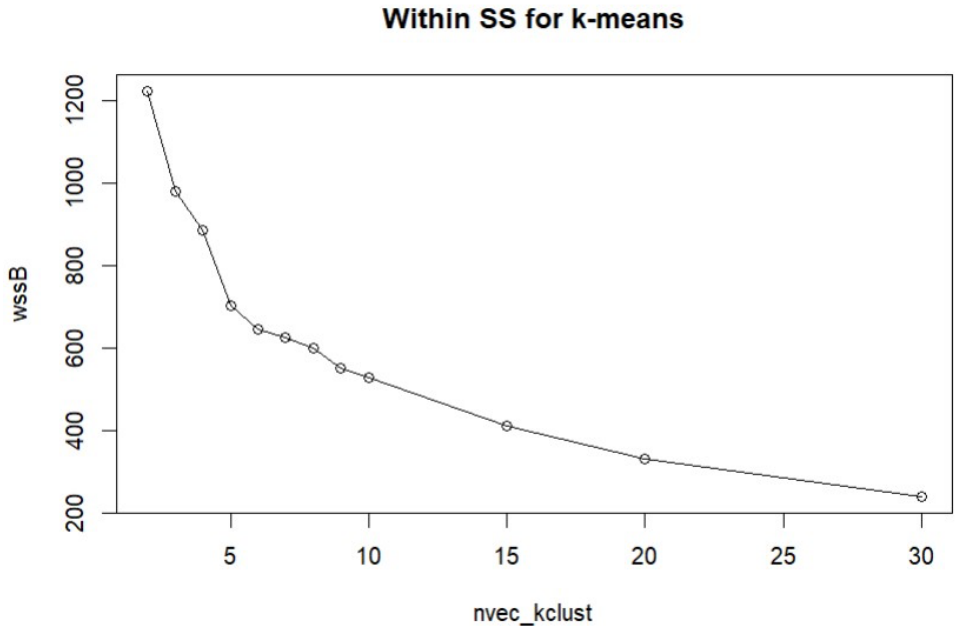
Demographic Analysis: Although our primary focus is on psychographic segmentation, if we would want to find the overlap between both the cluster analysis, we believe that demographic **clusters 1 (Established Married Middle-Income Professionals) and 5 (Young, Moderate-Income Urbanites)** align best with the Ka's features. Specifically, we plan to focus on targeting individuals and couples (married or not) around the 25–40 age range who earn between $100K–$150K annually, for whom the Ka's compact size and pricing is assumed to be well-suited and affordable. This includes both male and female drivers whose lifestyles and incomes match the car's design and value proposition. The balloon plot after demographic analysis (Exhibit H) also shows that Cluster 1 usually prefers the Ka while a good chunk of PreferenceGroup 3 in Cluster 5 may potentially be turned into customers.

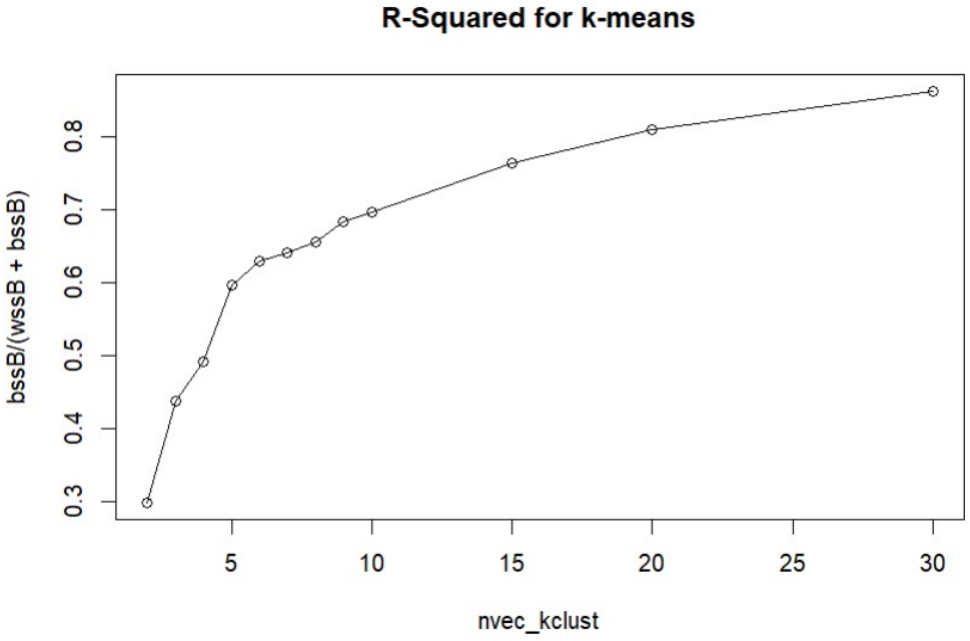
Advertising Message:

The Ford Ka - Where Karacter meets Konvenience. It turns heads as effortlessly as it navigates the urban streets!

EXHIBIT A: Finding the ideal k for Demographic data






R-Squared for k-means
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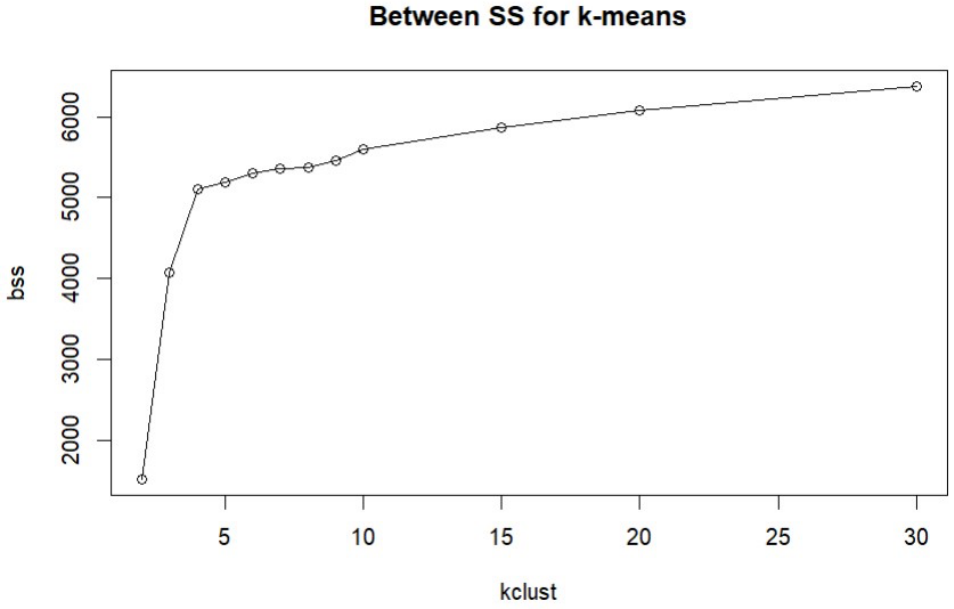
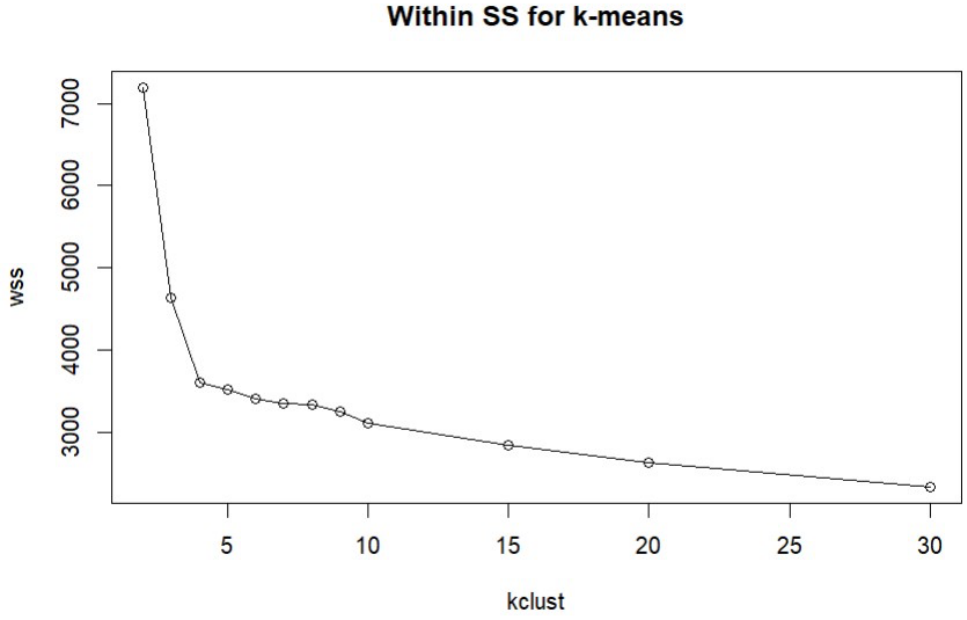
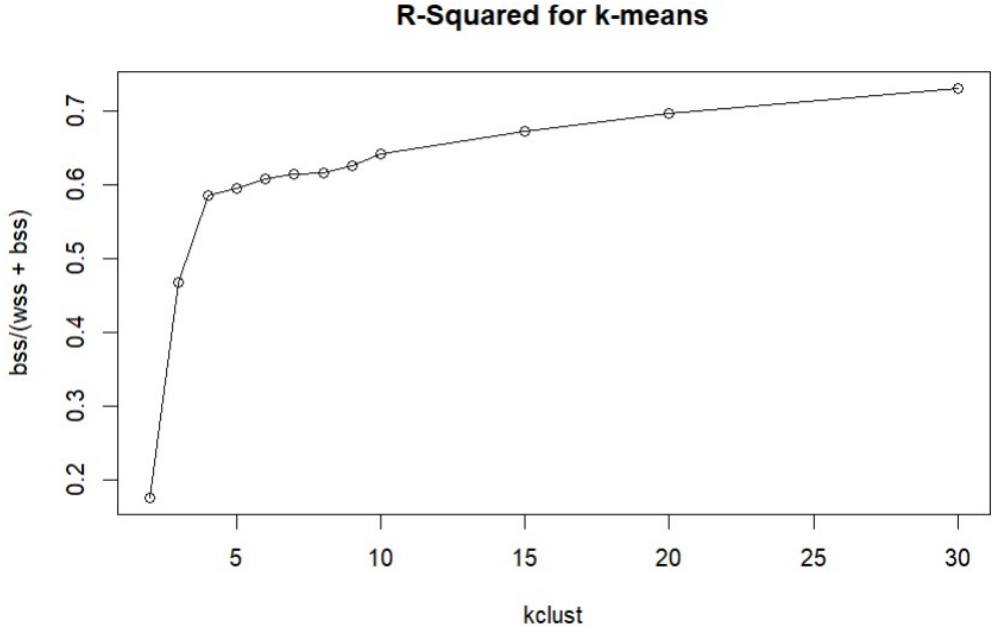
0.4
0.5
0.6
0.7
0.8
5
10
15
20
25
30
nvec_kclust

EXHIBIT B: Finding the ideal k for Psychographic data






R-Squared for k-means
bss/(wss + bss)
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0.3
0.4
0.5
0.6
0.7
5
10
15
20
25
30
kclust

EXHIBIT C: Cluster Centroids and Parallel Plot for Demographic data

Cluster	1	2	3	4	5	6	7
AgeCategory	4.17	5.26	2.21	5.13	1.84	5.22	2.67
MaritalStatus	1.17	2.77	2.00	1.70	2.09	1.96	1.40
Gender	1.63	1.48	1.47	1.37	1.43	1.56	1.53
ChildrenCategory	0.37	0.10	0.12	0.48	0.27	1.78	1.73
IncomeCategory	1.97	3.29	4.97	5.30	2.00	2.81	4.67
FirstTimePurchase	1.77	1.94	1.79	1.94	1.75	1.85	1.90
Count	**30**	**31**	**34**	**54**	**44**	**27**	**30**

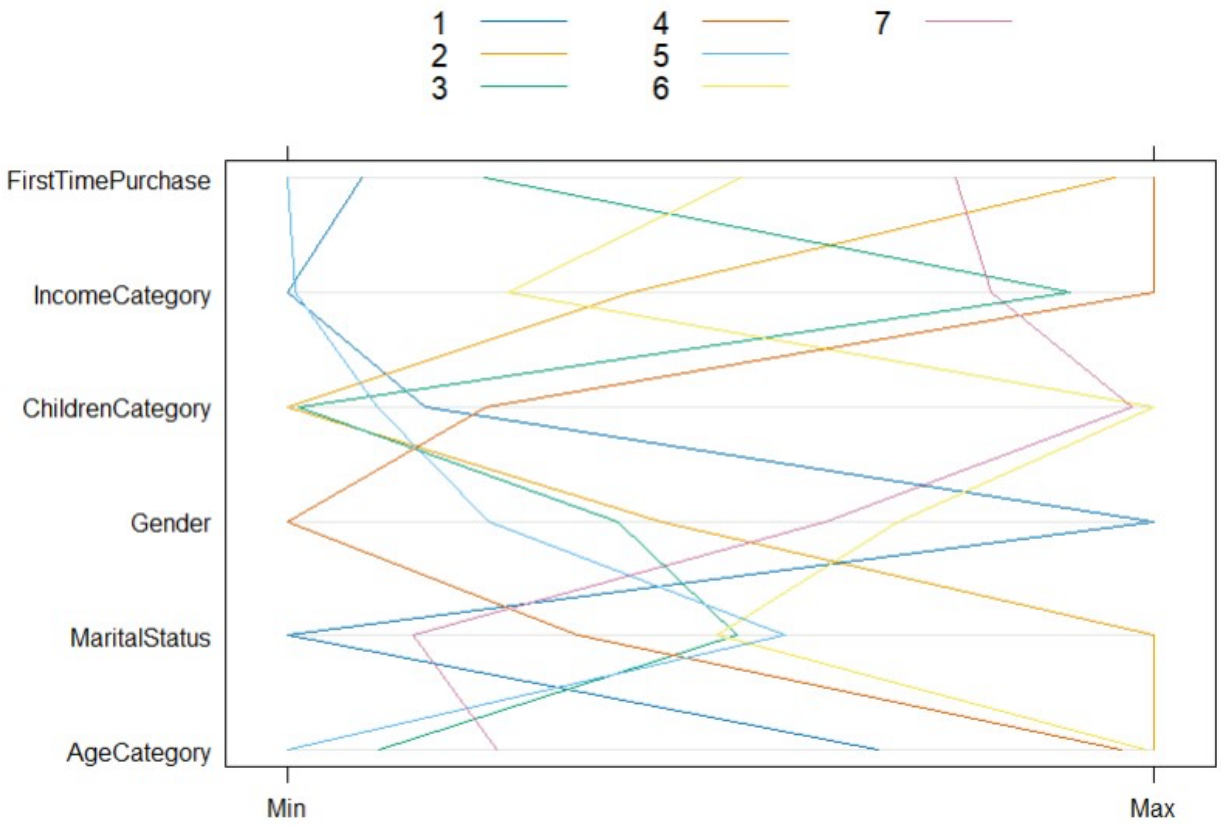

EXHIBIT D: Cluster Centroids and Parallel Plot for Psychographic data

Cluster	1	2	3	4	5	6
Q1	6.50	6.52	6.57	6.42	4.02	3.97
Q3	3.78	3.76	4.00	3.89	5.94	4.01
Q4	1.50	4.34	3.80	3.89	6.02	4.08
Q8	3.84	3.03	4.47	3.74	4.11	3.95
Q12	3.88	3.83	4.37	3.68	4.14	4.17
Q13	3.84	4.21	3.90	3.47	4.17	3.97
Q15	6.56	4.17	3.53	4.16	4.17	6.08
Q31	6.56	1.52	1.70	1.42	6.03	3.87
Q32	3.94	4.97	3.77	3.21	6.05	4.19
Q34	4.00	4.14	4.27	3.16	5.94	4.03
Q37	6.66	4.31	3.43	3.68	6.09	4.03
Q44	4.38	6.52	6.50	6.53	2.00	3.83
Q53	6.47	1.59	1.33	1.79	3.98	4.24
Q55	3.66	1.31	1.40	1.32	3.86	4.15
Q57	6.47	3.83	4.73	3.11	3.86	4.12
Q60	1.50	4.14	4.63	3.37	3.91	4.24
Count	**32**	**29**	**30**	**19**	**65**	**75**

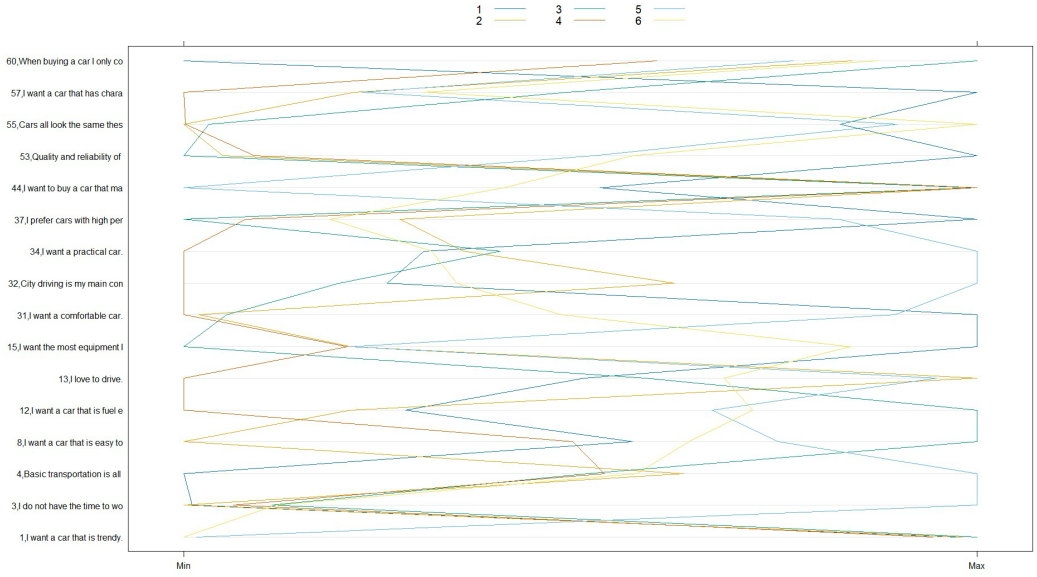

EXHIBIT E: Interpretation of Centroids for Demographic Data

Attribute	Interpretation of Centroids
Age	Closeness to that number indicates a higher proportion of people from that category (refer demographic codes)
Marital Status	Married: 1 to 1.5 Living Together: 2 to 2.5 Single: above 2.5
Gender	Male: <1.5 Female: >= 1.5
Children	Centroids closer to 0 were interpreted as no children; higher values indicate households with one or more children
Income	Closeness to that number indicates a higher proportion of people from that category (refer demographic codes)
First-Time Purchase	A smaller number (away from 2) indicates more proportion of first time buyers compared to centroid at 2

EXHIBIT F: Cluster Profiles for Demographic Data

Attribute	Cluster 1: Established Married Middle-Income Professionals	Cluster 2: High-Earning Older Singles	Cluster 3: Young Urban Professionals (DINKAts)	Cluster 4: High-Income Dual-Earner Households	Cluster 5: Young, Moderate-Income Urbanites	Cluster 6: Older Family-Oriented Buyers	Cluster 7: High-Income Young Professionals
Age	35-39 years old	40-44 years old	25-29 years old	40-44 years old	25-29 years old	40-44 years old	30-34 years old
Marital Status	Married	Single	Living together (unmarried couples)	Living together (unmarried couples)	Living together (unmarried couples)	Married	Married
Gender	Female	Male	Male	Male	Male	Male	Male
Children	Likely has no children	Does not have children	Does not have children	Likely has at least one child	Likely has no children	Likely has multiple children	Likely has multiple children
Income	Between $100K - $150K	$150K - $200K	$250K - $300K	$250K - $300K	$100K - $150K	$150K - $200K	$200K - $250K
First-Time Purchase	More likely not a first-time buyer	More likely not a first-time buyer	More likely not a first-time buyer	More likely not a first-time buyer	More likely not a first-time buyer	More likely not a first-time buyer	More likely not a first-time buyer
Buyer Summary	Established professionals in their late 30s, often married and earning a stable middle-class income. Likely repeat buyers.	High-earning professionals in their early 40s, single, and financially stable, likely purchasing luxury or high-quality items.	Young, successful professionals with high income, likely upgrading their purchases to match increasing wealth.	High-earning professionals with families, focusing on repeat purchases for family needs.	Young professionals early in their careers with stable incomes, likely upgrading or making secondary purchases.	Family-oriented buyers prioritizing financial stability and repeat purchases for growing family needs.	Young, successful professionals upgrading purchases or making family-related investments.

EXHIBIT G: Cluster Profiles for Psychographic Data

Attribute	Cluster 1: Performance-Oriented Trendsetter	Cluster 2: Stylish & Prestige-Seeking Buyer	Cluster 3: Balanced, Modern Buyer	Cluster 4: Conservative & Budget-Conscious Buyer	Cluster 5: Practical & Value-Seeking Buyer	Cluster 6: Utility & Functionality-Oriented Buyer
Trendiness	Strongly values trendy cars (Q1: 6.50)	Highly trend-focused (Q1: 6.52)	Finds trendiness important (Q1: 6.57)	Style is a minor consideration (Q1: 6.42)	Does not strongly care about trendiness (Q1: 4.02)	Does not prioritize style or trendiness (Q1: 3.97)
Performance Orientation	Loves driving and prefers high-performance cars (Q37: 6.66)	Moderate performance focus; enjoys driving but not strongly (Q37: 4.21)	Enjoys fun, "nippy and zippy" cars (Q37: 3.43)	Less focused on performance; doesn't care much about it (Q37: 3.68)	Does not prioritize performance; less focused (Q37: 6.09)	Balanced view; enjoys performance but not obsessed (Q37: 4.03)
Comfort	Highly values comfort and advanced features (Q31: 6.56, Q53: 6.47)	Less comfort-driven (Q31: 1.52)	Slight concern for comfort (Q31: 1.70)	Moderate comfort consideration (Q31: moderate focus)	Values comfort highly (Q31: 6.03)	Strong priority for comfort and reliability (Q31: 3.87)
Practicality	Not practical or budget-conscious; focuses on style and performance (Q4: 1.50)	Less concerned about practicality (Q4: 4.34)	Moderately considers practicality (Q4: 3.80)	Highly practical; values transportation utility (Q4: 3.89)	Strongly prioritizes practicality and comfort (Q4: 6.02)	Somewhat values practicality and utility (Q4: 4.08)
Fuel Economy	Not a priority	Not a priority	Somewhat eco-conscious; values fuel efficiency moderately (Q12: 4.37)	Not a focus	Believes in fuel economy for value and savings (Q12: 4.14)	Does not prioritize but prefers reliable and economical cars (Q12: moderate focus)
National Loyalty	Less concerned about car being a national make (Q60: 1.50)	Moderate preference for national make (Q60: 4.14)	Slight preference for national make (Q60: 4.63)	Prefers national brands (Q60: 3.37)	Prefers buying national brands (Q60: 3.91)	Strongly prefers buying national brands (Q60: 4.24)

Statement Orientation	Wants a car with personality and uniqueness (Q57: 6.47, Q44: 4.38)	Prefers a car that makes a statement (Q44: 6.52)	Moderate focus on making a statement (Q44: moderate focus)	Moderate focus on making a statement (Q44: 6.53)	Low priority on making a statement; prefers function over style	Less interested in making a statement; focuses on utility (Q44: 3.83)
City Driving Focus	Not a focus	Concerned with city driving; prioritizes urban usability (Q32: 4.97)	Slight concern for city driving (Q32: 3.77)	Low concern for city driving (Q32: minimal focus)	Strong concern for urban driving; values maneuverability (Q32: 6.05)	Balanced concern for city driving; considers urban needs (Q32: moderate focus)
Equipment & Features	Wants the latest features and equipment for the price (Q15: 6.56, Q53: 6.47)	Moderate interest in advanced features	Moderate focus on features and equipment	Low focus on advanced features	Moderate focus on features that enhance comfort and utility	Wants advanced features; values reliability and modernity (Q15: 6.08)
Buyer Summary	Trend-conscious, performance-driven individual who enjoys high-end vehicles with style and power.	Style-focused individual prioritizing prestige and luxury for urban driving.	Balanced buyer who appreciates trendy cars while considering practicality and fun.	Conservative buyer focused on practicality, moderate comfort, and low prestige needs.	Practical and value-driven buyer prioritizing economy and comfort for city driving.	Functionality-driven buyer prioritizing reliability, comfort, and advanced features.

EXHIBIT H: Balloon Plot after Demographic Analysis

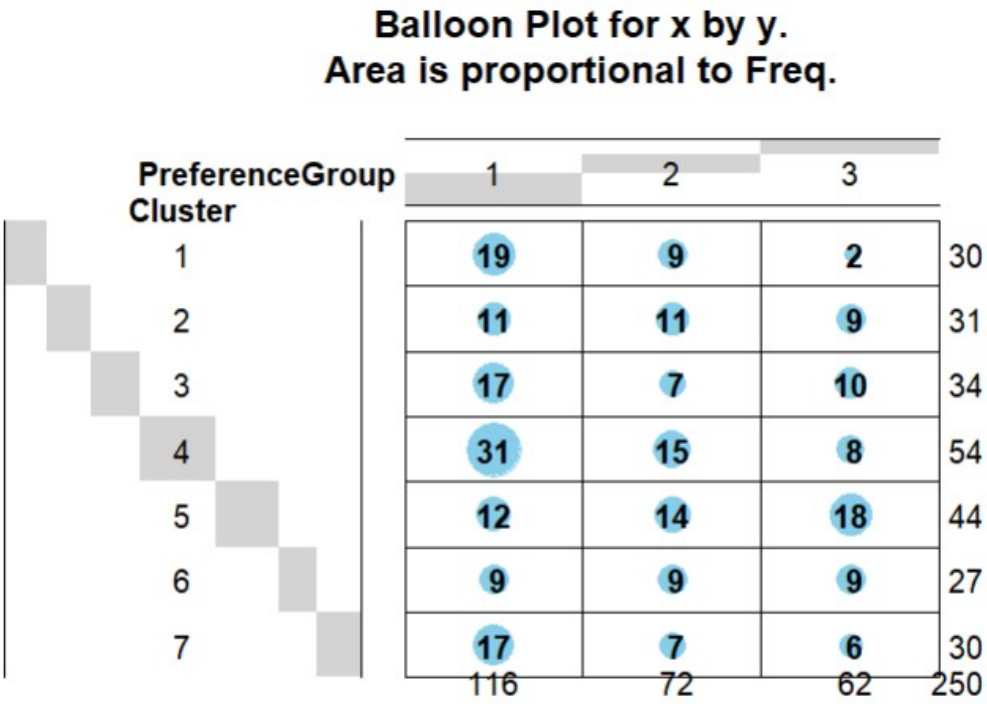

EXHIBIT I: Balloon Plot after Psychographic Analysis