Project Theme: Customer Segmentation for an E-commerce Platform

This dataset simulates a **mid-size e-commerce brand** looking to better target its customers.

Variables that we are focusing on: income generated, age, gender

Inputs for Clustering

Variables:	Avg. Age
	Avg. Annual Income K
	Gender
Level of Detail:	Customer ID, Gender
Scaling:	Normalised

Summary Diagnostics

Number of Clusters:	3
Number of Points:	200
Between-group Sum of Squares:	52.135
Within-group Sum of Squares:	8.5687
Total Sum of Squares:	60.703

Clusters	Number of Items	Centres		Most Common
		Avg. Age	Avg. Annual Income K	Gender
Cluster 1	44	32.295	63.773	Male
Cluster 2	87	28.023	48.448	Female
Cluster 3	69	44.362	102.45	Female
Not Clustered	0			

Cluster Interpretations & Personas:

Cluster 1 : "Mid-Income Male Professionals"

- Mid-age, moderate income

- Male-dominated group

Strategy:

- Use career or lifestyle positioning
- Feature product practicality, quality, and performance

Cluster 2: "Young Budget-Conscious Women"

- Lowest income and youngest group

- Majority female

- Likely early-career, cost-sensitive

Strategy:

- Offer student or starter plans or even young membership cards for one year

Cluster 3: "Affluent, Mature Female"

- Oldest and wealthiest cluster

- Primarily female

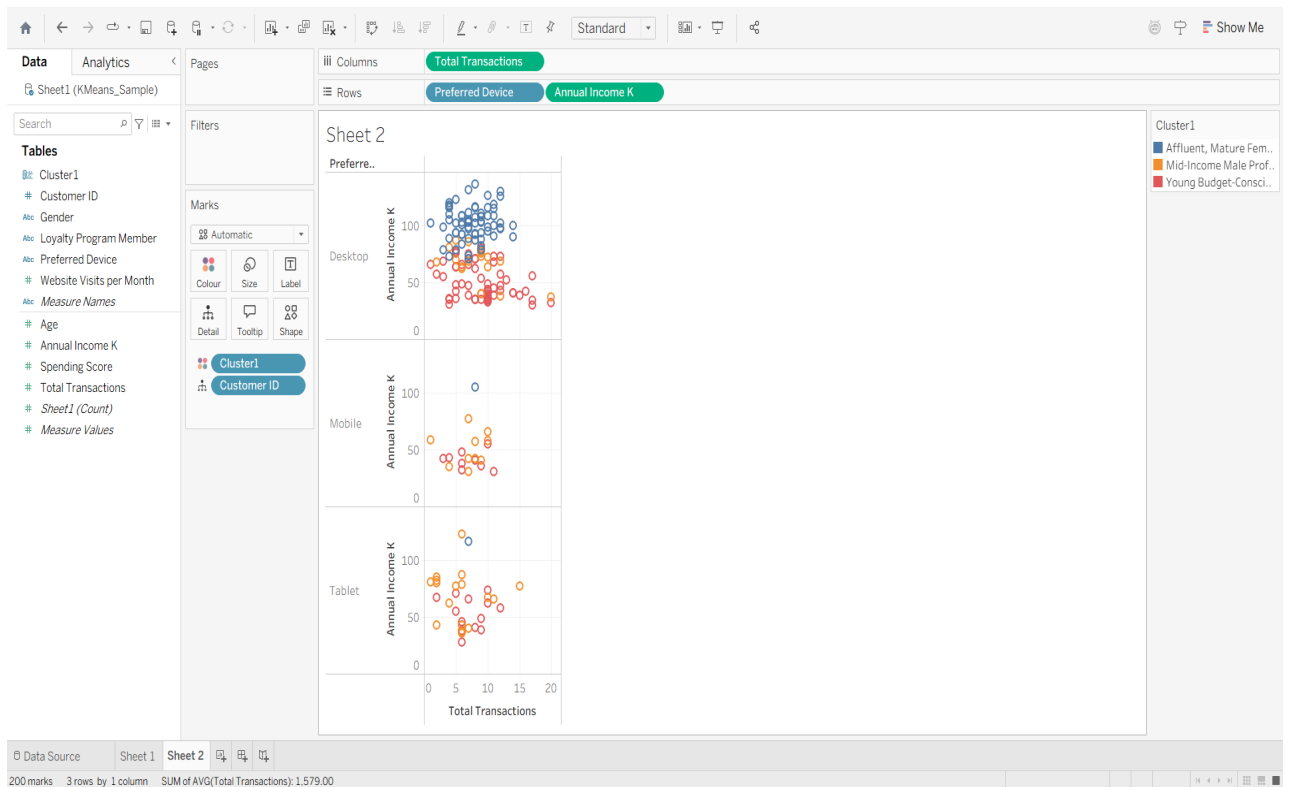- May represent decision-makers, loyal repeat buyers, or luxury-focused

Strategy:

- Premium packages, loyalty perks

- Emphasize convenience, experience, and exclusivity

Is K=3 Appropriate?

BSS / TSS=60.70352.135≈85.9%

Very strong variance. The answer is YES.

Affluent, Mature Female prefers desktop and tends to be high-income, high transaction customers. probably more traditional or professional users.

Mobile users more mix of young budget conscious and mid income male professionals. aligns with **younger or lower-income segments**.

Tablet users, Lower transaction counts overall, spread out more sparsely. Mostly orange and red clusters again.

Affluent, Mature Females:

Focus on Premium Products/Services – tailor offerings around luxury and quality.

Loyalty Program Promotion – emphasize exclusive benefits to convert non-members.

Mid-Income Male Professionals:

Cross-Sell or Upsell – leverage their existing mid-spend pattern with bundle promotions. Then above their average spent experience, membership free.

Young Budget-Conscious Consumers:

Offer Discounts and Flash Deals – they are spending-focused despite lower income.

Strategic Recommendations:

Focus 1: Blue ones in non-members

Consider **targeted acquisition campaigns** via email or personalized ads for high-income non-members. Also find a way to increase their engagement as they have Lower Spending Scores despite high income → cautious spenders or brand loyal but selective.

You're just $... away from Gold status and free shipping for the year!

Focus 2: Mix orange and more red dots in members

retention campaigns.

Maybe they don't have enough money to engage in our membership or gold membership but they have good engagement and high spending score. They are steady shoppers and responsive to offers.

Choose a specific number for example the average rate of engagement or average number of transactions then if in a month they go above that then we offer 50% for gold membership. In this way, they return, they make more profit for us and with the discount they will engage in our gold membership program.