

Machine Learning Model - Unsupervised

K-Means Clustering

6ix Pac Data Hustlers

Cluster Sizes (How many students in each group)

4,962 total students.

Clusters break down as:

CLUSTER	MEANING	COUNT	PERCENT
1	Thriving / High Engagement	2,071	41.7%
0	Moderate Engagement	1,856	37.4%
2	Struggling / Low Engagement	1,035	20.9%

Key Academic & Emotional Outcomes (Means by Cluster)

These are the *most important variables* for understanding groups.

VARIABLE	CLUSTER 1 (THRIVING)	CLUSTER 0 (MODERATE)	CLUSTER 2 (STRUGGLING)
GPA (COLLGPA)	4.75	4.63	4.38
SUCCESS_LATENT	+0.30	-0.14	-0.38
INSTITUTIONAL ENGAGEMENT	+0.25	+0.03	-0.55

Growth Indicators (1–5 scale)

GROWTH ITEM	CLUSTER 1	CLUSTER 0	CLUSTER 2
GENERAL KNOWLEDGE (SLFCHG01)	4.87	4.23	4.14
FIELD KNOWLEDGE (SLFCHG03)	4.95	4.50	4.27
CRITICAL THINKING (SLFCHG04)	4.85	4.01	4.00

Cluster 1 shows the strongest sense of “I learned something here.”

Satisfaction Indicators (1–5 scale)

SATISFACTION ITEM	CLUSTER 1	CLUSTER 0	CLUSTER 2
SENSE OF COMMUNITY (SATIS13)	4.08	3.88	2.84
QUALITY OF INSTRUCTION (SATIS07)	4.44	4.09	3.36
MENTOR ACCESS (SATIS25)	4.34	3.94	3.02
OVERALL EXPERIENCE (SATIS28)	4.51	4.25	3.33

This is where Cluster 2 drops sharply, showing the clearest “struggling” profile.

Study & Engagement Behaviors (Hours per week)

BEHAVIOR (HRS/WEEK)	CLUSTER 1	CLUSTER 0	CLUSTER 2
STUDY/HOMEWORK (CSSHPW01)	5.76	5.08	4.90
ATTEND CLASS (CSSHPW02)	6.03	5.85	5.70
CLUB/STUDENT ACTIVITIES (CSSHPW08)	2.94	2.81	2.28