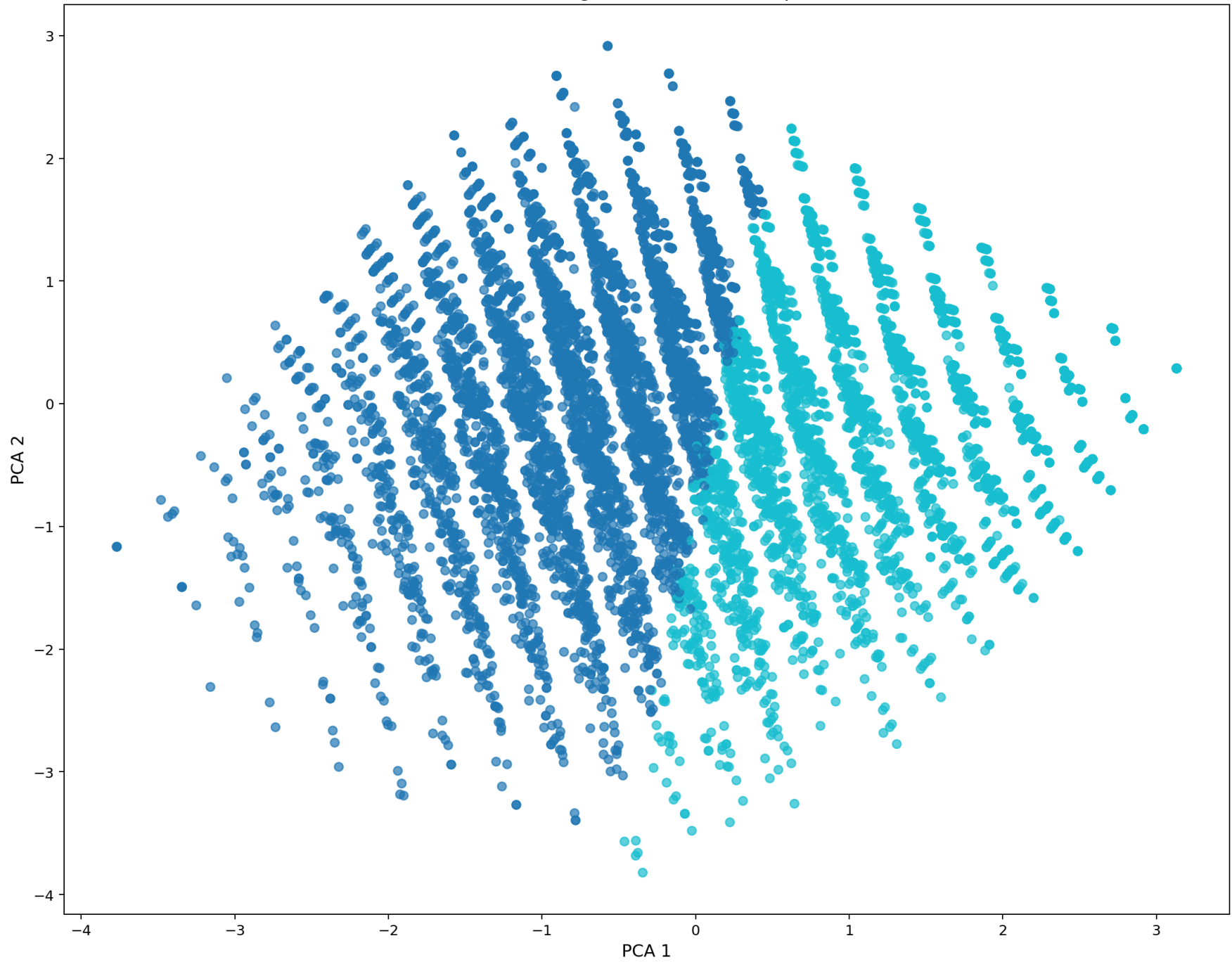


# Clustering & Association Rule Mining Report

Department: All Departments

Dataset: All Datasets

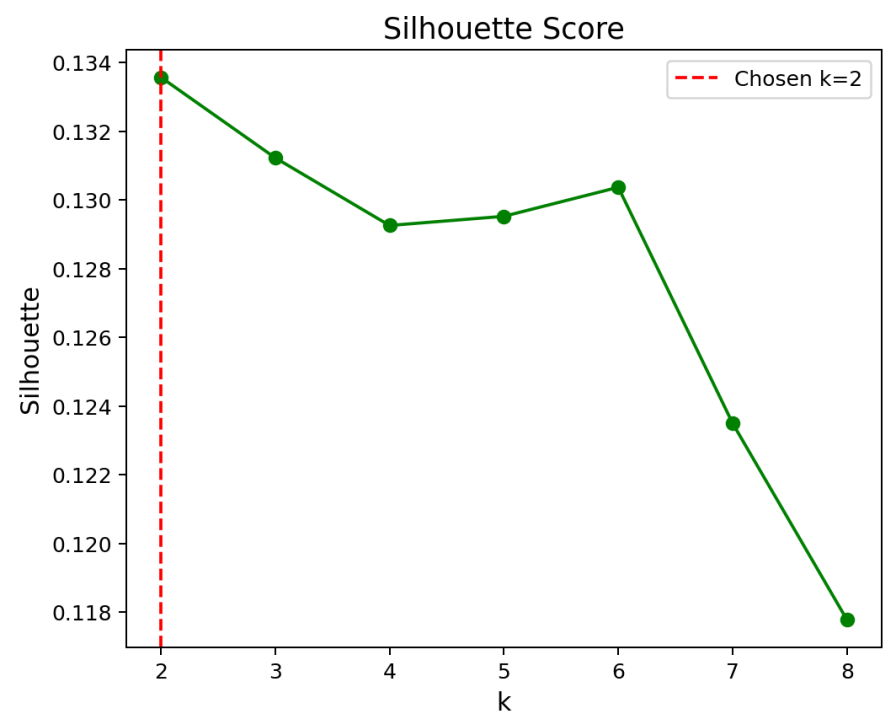
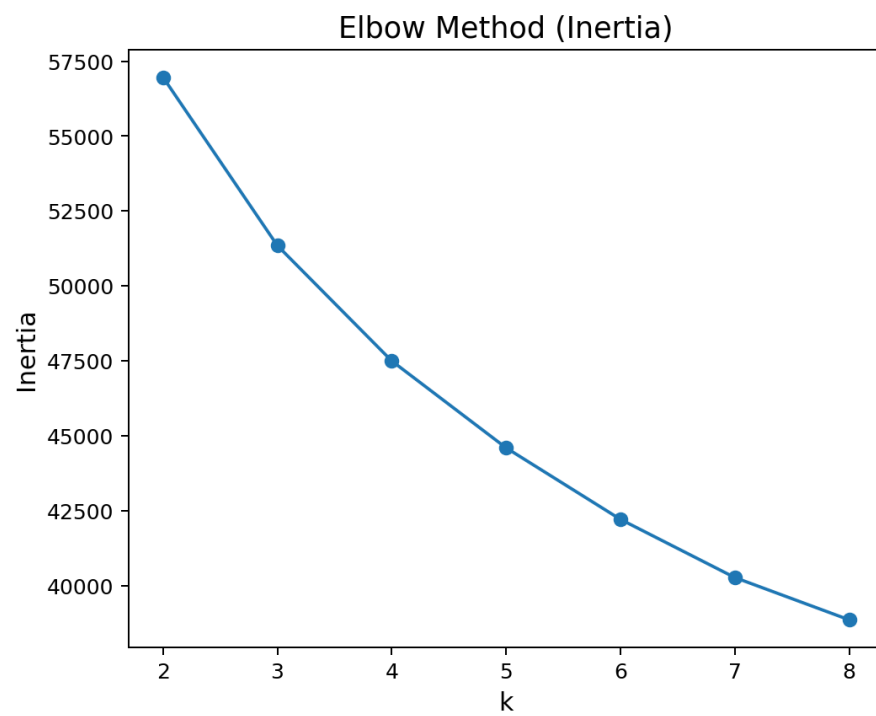
KMeans Clustering (PCA, k=2) - All Departments





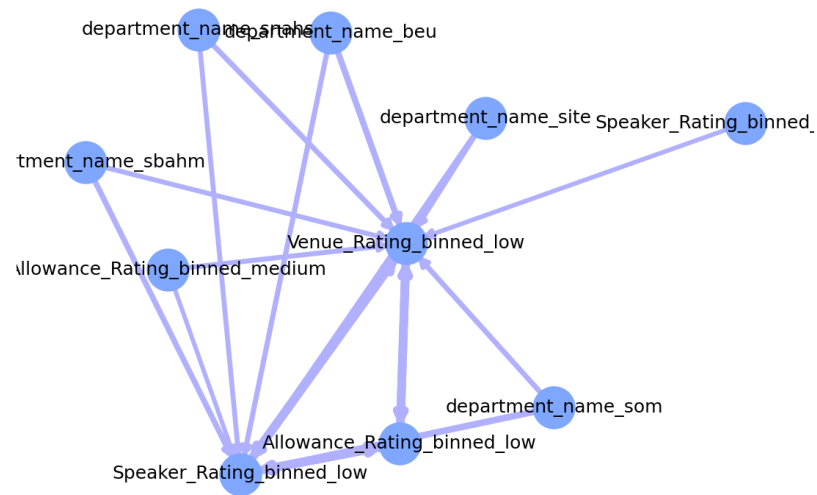
## Cluster Interpretation

Groq API error: Error code: 429 - {'error': {'message': 'Rate limit reached for model `llama-3.3-70b-versatile` in organization `org\_01jx7xvz63exasq8ab8ggzy9e` service tier `on\_demand` on tokens per day (TPD): Limit 100000, Used 100292, Requested 223. Please try again in 7m25.521999999s. Need more tokens? Upgrade to Dev Tier today at <https://console.groq.com/settings/billing>', 'type': 'tokens', 'code': 'rate\_limit\_exceeded'}}





## Association Rule Network (edges: rules, width: lift) - All Departments







## ARM Results Table

Antecedents	Consequents	Support	Confidence	Lift
department_name_beu	Venue_Rating_binned_low	0.114	0.571	1.044
department_name_beu	Speaker_Rating_binned_low	0.106	0.529	0.985
department_name_sbahm	Venue_Rating_binned_low	0.103	0.529	0.968
department_name_sbahm	Speaker_Rating_binned_low	0.106	0.542	1.009
department_name_site	Venue_Rating_binned_low	0.114	0.549	1.005
department_name_site	Speaker_Rating_binned_low	0.109	0.525	0.977
department_name_snaht	Venue_Rating_binned_low	0.110	0.543	0.994
department_name_snaht	Speaker_Rating_binned_low	0.105	0.520	0.968
department_name_som	Venue_Rating_binned_low	0.105	0.539	0.987
department_name_som	Speaker_Rating_binned_low	0.111	0.572	1.064
Venue_Rating_binned_low	Allowance_Rating_binned_low	0.278	0.509	1.126
Allowance_Rating_binned_low	Venue_Rating_binned_low	0.278	0.615	1.126
Allowance_Rating_binned_medium	Venue_Rating_binned_low	0.136	0.531	0.972
Venue_Rating_binned_low	Speaker_Rating_binned_low	0.333	0.609	1.134
Speaker_Rating_binned_low	Venue_Rating_binned_low	0.333	0.620	1.134
Speaker_Rating_binned_medium	Venue_Rating_binned_low	0.123	0.517	0.947
Speaker_Rating_binned_low	Allowance_Rating_binned_low	0.277	0.516	1.140
Allowance_Rating_binned_low	Speaker_Rating_binned_low	0.277	0.612	1.140
Allowance_Rating_binned_medium	Speaker_Rating_binned_low	0.130	0.505	0.941
Venue_Rating_binned_low, Speaker_Rating_binned_low	Allowance_Rating_binned_low	0.179	0.536	1.185
Venue_Rating_binned_low, Allowance_Rating_binned_low	Speaker_Rating_binned_low	0.179	0.642	1.194
Speaker_Rating_binned_low, Allowance_Rating_binned_low	Venue_Rating_binned_low	0.179	0.645	1.180

## Association Rules Analysis

Groq API error: Error code: 429 - {'error': {'message': 'Rate limit reached for model `llama-3.3-70b-versatile` in organization `org\_01jx7xvz63exasq8ab8gigzy9e` service tier `on\_demand` on tokens per day (TPD): Limit 100000, Used 100291, Requested 597. Please try again in 12m47.74s. Need more tokens? Upgrade to Dev Tier today at <https://console.groq.com/settings/billing>', 'type': 'tokens', 'code': 'rate\_limit\_exceeded'}}

## Descriptive Analysis Table

Feature	Min	Max	Mean	Median	Std	Shape
Objectives_Met	0.00	3.00	1.94	2.00	1.04	left-skewed
Venue_Rating	0.00	3.00	1.36	1.00	1.12	symmetric
Schedule_Rating	0.00	3.00	1.90	2.00	1.04	symmetric
Allowance_Rating	0.00	3.00	1.62	2.00	1.12	symmetric
Speaker_Rating	0.00	3.00	1.40	1.00	1.13	symmetric
Facilitator_Rating	0.00	3.00	1.91	2.00	1.04	left-skewed
Participant_Rating	0.00	3.00	1.92	2.00	1.04	left-skewed

## Descriptive Analysis (Categorical)

Descriptive Analysis for: All Departments

Categorical Columns Value Counts:

department\_name value counts:

department\_name

SITE 1964

SNAHS 1909

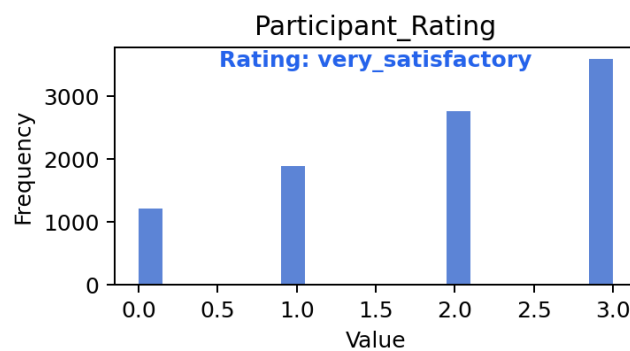
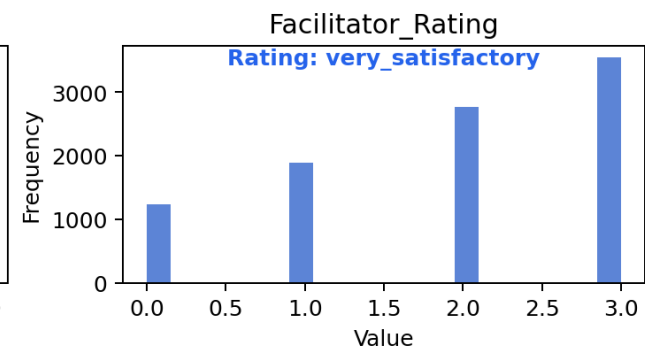
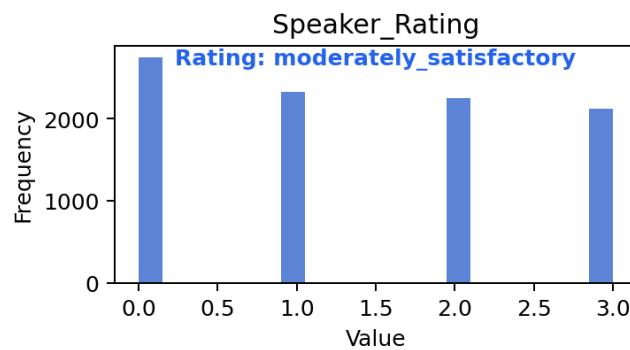
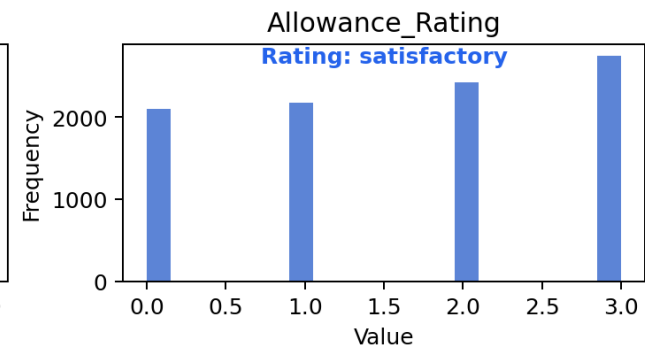
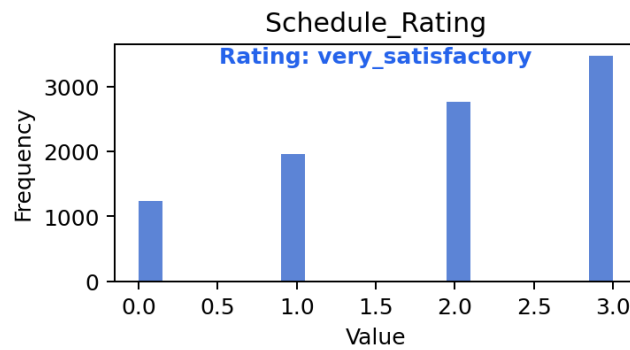
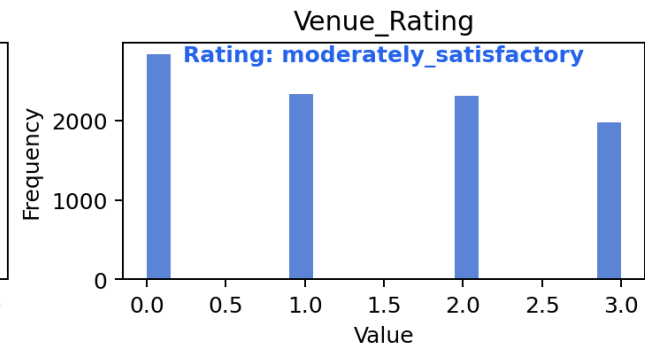
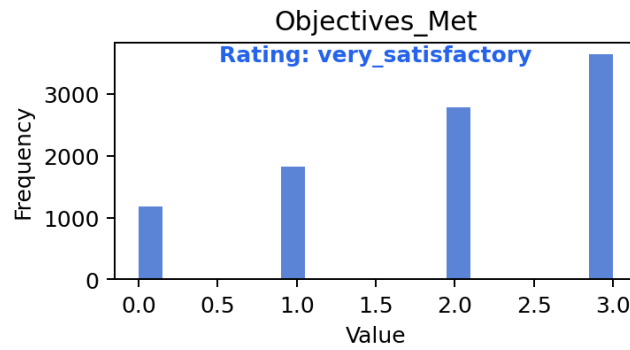
BEU 1893

SBAHM 1840

SOM 1837

AI Analysis:

Groq API error: Error code: 429 - {'error': {'message': 'Rate limit reached for model `llama-3.3-70b-vrsatile` in organization `org\_01jx7xvz63exasq8ab8gigzy9e` service tier `on\_demand` on tokens per day (TPD): Limit 100000, Used 100290, Requested 225. Please try again in 7m25.551s. Need more tokens? Upgrade to Dev Tier today at <https://console.groq.com/settings/billing>', 'type': 'tokens', 'code': 'rate\_limit\_exceeded'}}

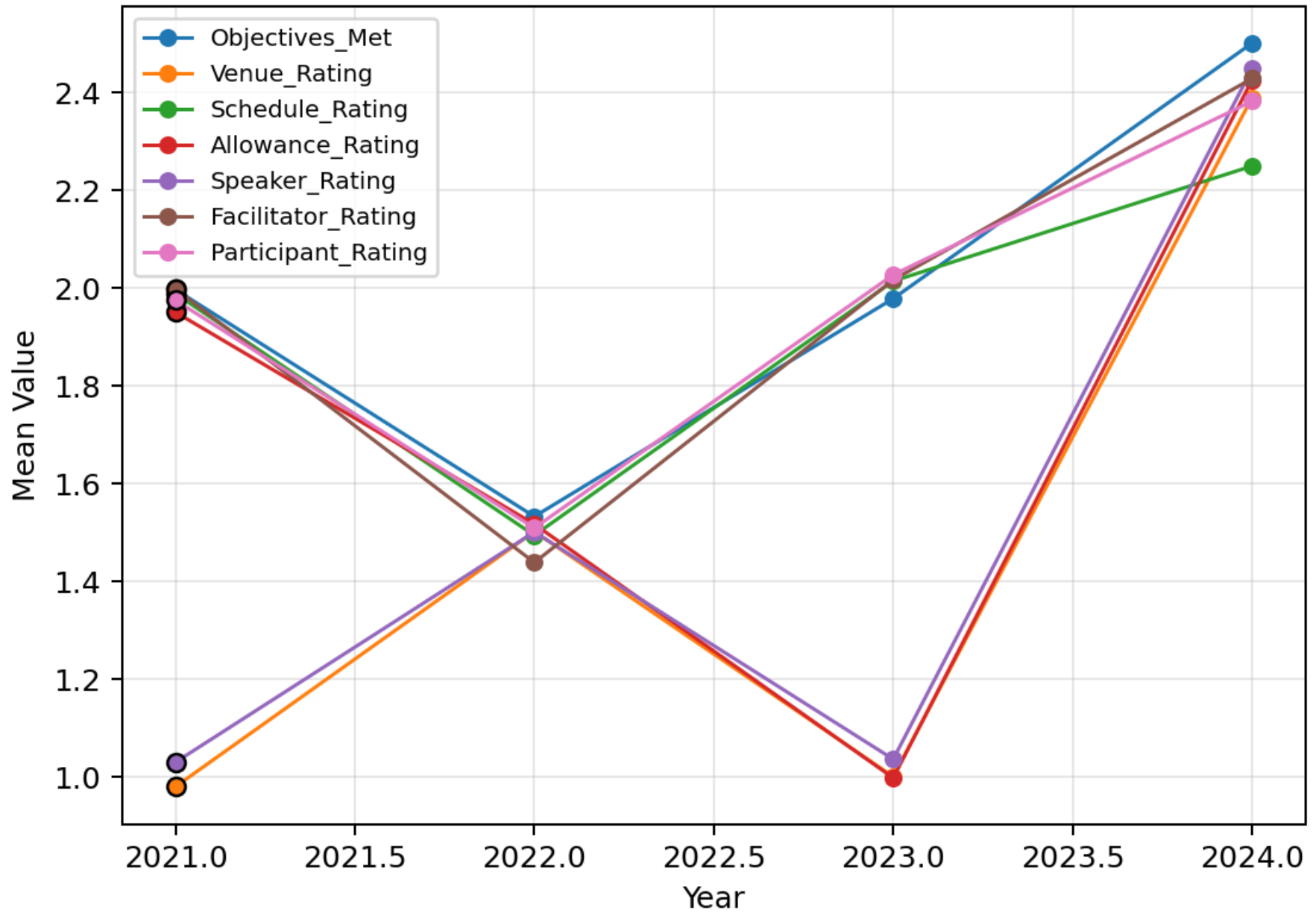




## Recommendations

Groq API error: Error code: 429 - {'error': {'message': 'Rate limit reached for model `llama-3.3-70b-versatile` in organization `org\_01jx7xvz63exasq8ab8gigzy9e` service tier `on\_demand` on tokens per day (TPD): Limit 100000, Used 100289, Requested 117. Please try again in 5m51.067s. Need more tokens? Upgrade to Dev Tier today at <https://console.groq.com/settings/billing>', 'type': 'tokens', 'code': 'rate\_limit\_exceeded'}}

Feature Means Across Years (Baseline: Oldest Year)







## Trends Analysis

Groq API error: Error code: 429 - {'error': {'message': 'Rate limit reached for model `llama-3.3-70b-versatile` in organization `org\_01jx7xvz63exasq8ab8gigzy9e` service tier `on\_demand` on tokens per day (TPD): Limit 100000, Used 100288, Requested 224. Please try again in 7m22.668999999s. Need more tokens? Upgrade to Dev Tier today at <https://console.groq.com/settings/billing>', 'type': 'tokens', 'code': 'rate\_limit\_exceeded'}}