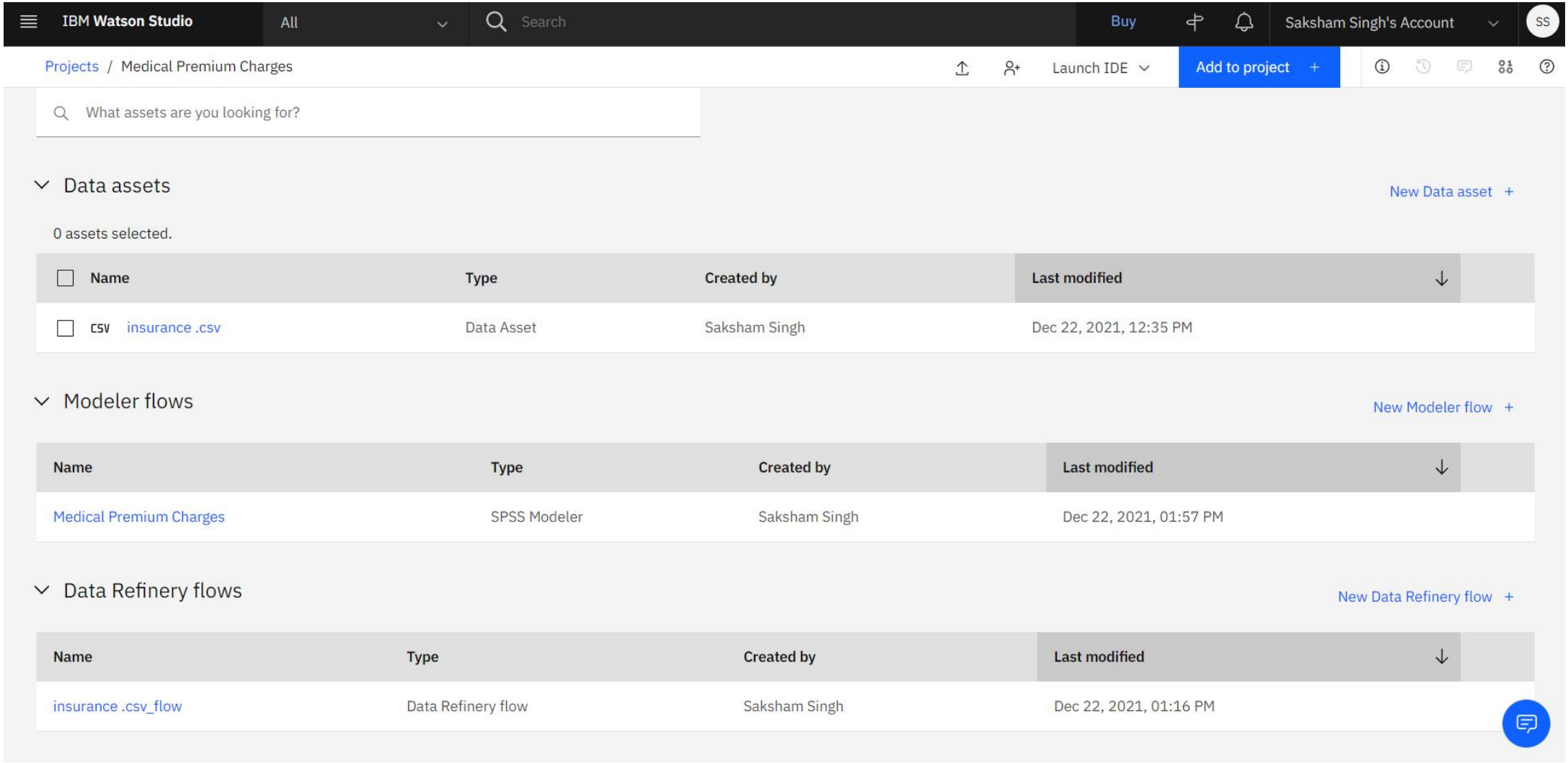
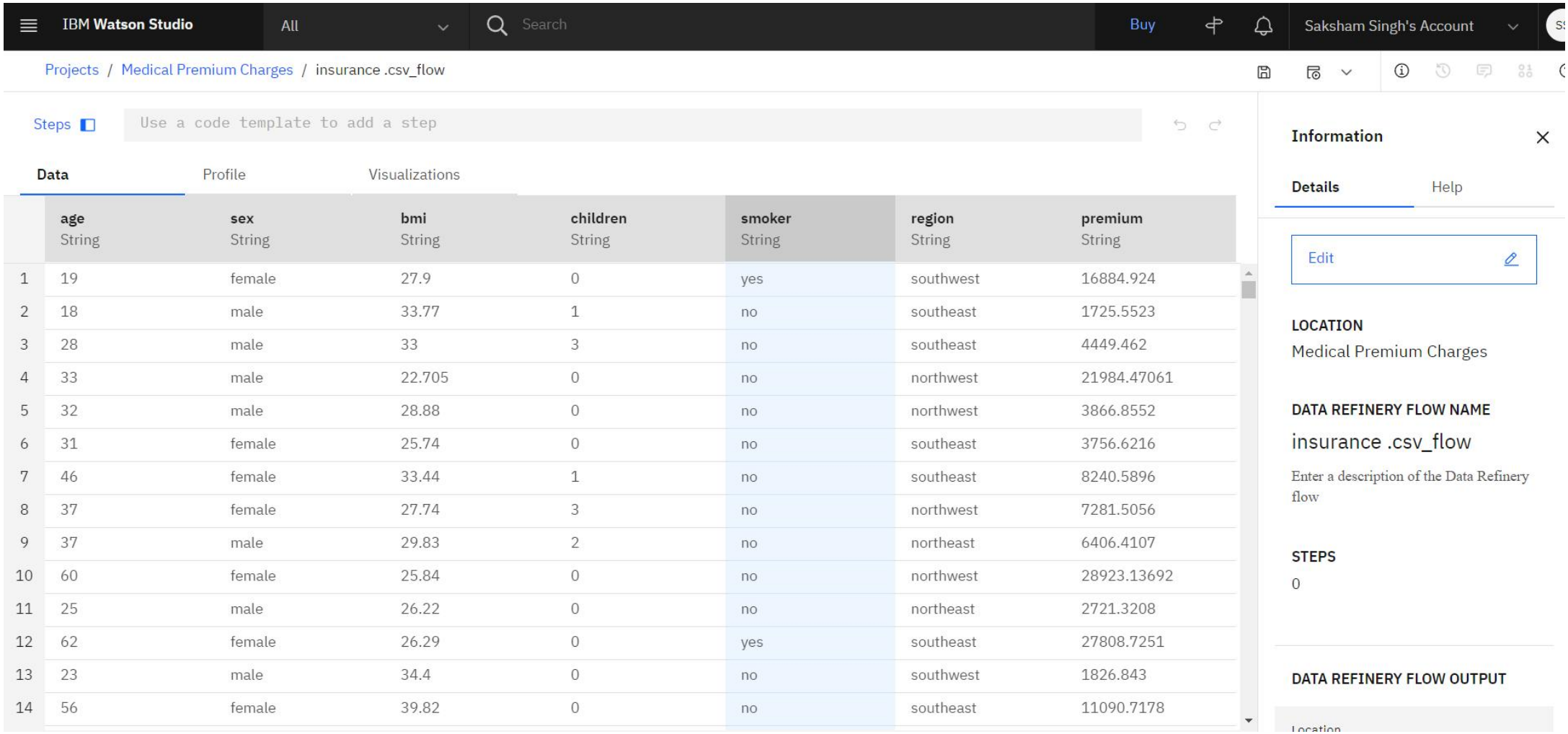
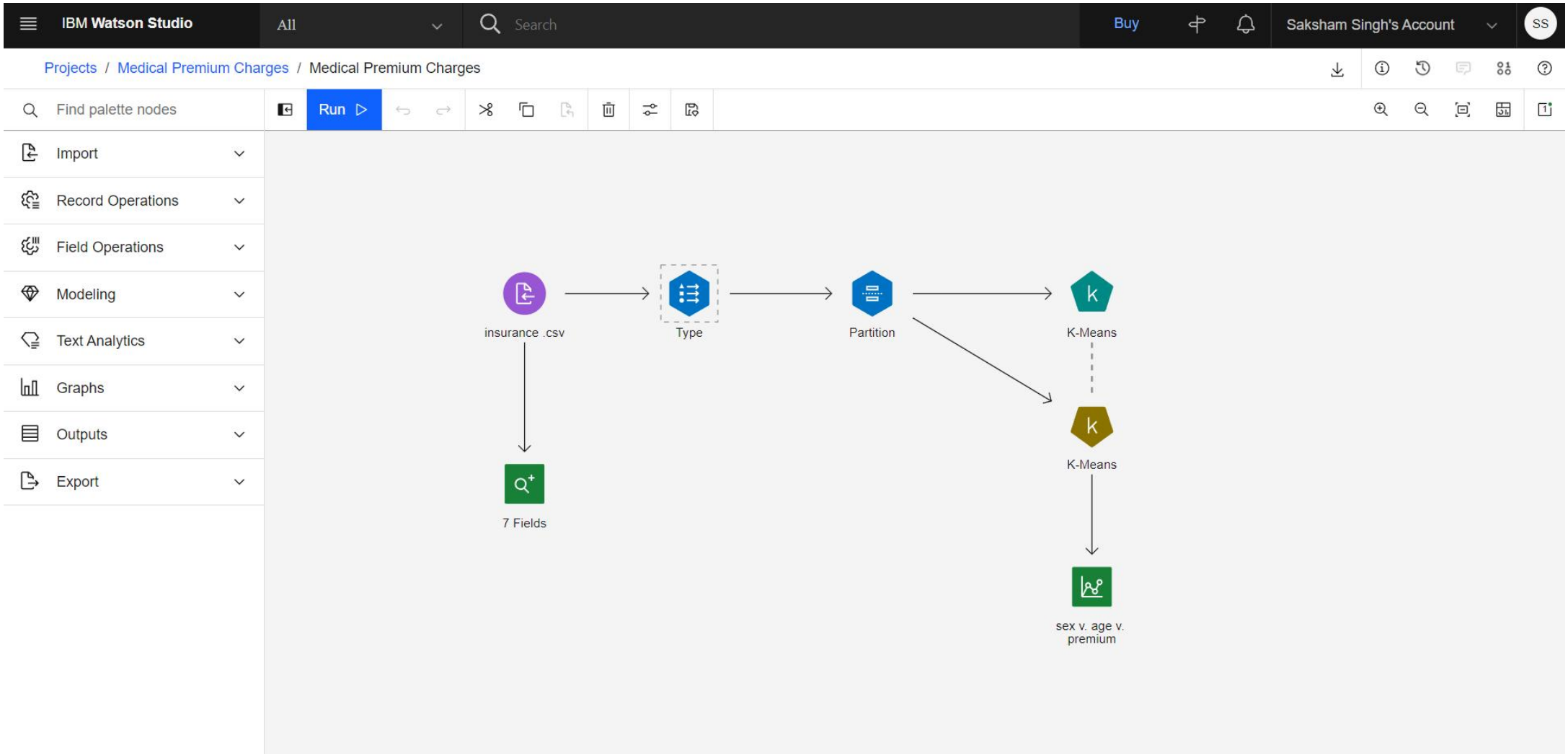

IBM Watson Studio
All
Search
Buy
Saksham Singh's Account
SS
Projects / Medical Premium Charges
Launch IDE
Add to project +
What assets are you looking for?
Data assets
New Data asset +
0 assets selected.
Name
Type
Created by
Last modified
CSV insurance .csv
Data Asset
Saksham Singh
Dec 22, 2021, 12:35 PM
Modeler flows
New Modeler flow +
Name
Type
Created by
Last modified
Medical Premium Charges
SPSS Modeler
Saksham Singh
Dec 22, 2021, 01:57 PM
Data Refinery flows
New Data Refinery flow +
Name
Type
Created by
Last modified
insurance .csv_flow
Data Refinery flow
Saksham Singh
Dec 22, 2021, 01:16 PM

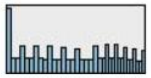
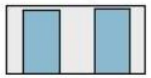
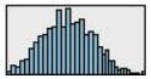
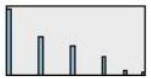
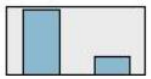
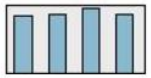

IBM Watson Studio
All
Search
Buy
Saksham Singh's Account
Projects / Medical Premium Charges / insurance .csv_flow
Steps
Use a code template to add a step
Data
Profile
Visualizations
age String
sex String
bmi String
children String
smoker String
region String
premium String
1 19 female 27.9 0 yes southwest 16884.924
2 18 male 33.77 1 no southeast 1725.5523
3 28 male 33 3 no southeast 4449.462
4 33 male 22.705 0 no northwest 21984.47061
5 32 male 28.88 0 no northwest 3866.8552
6 31 female 25.74 0 no southeast 3756.6216
7 46 female 33.44 1 no southeast 8240.5896
8 37 female 27.74 3 no northwest 7281.5056
9 37 male 29.83 2 no northeast 6406.4107
10 60 female 25.84 0 no northwest 28923.13692
11 25 male 26.22 0 no northeast 2721.3208
12 62 female 26.29 0 yes southeast 27808.7251
13 23 male 34.4 0 no southwest 1826.843
14 56 female 39.82 0 no southeast 11090.7178
Information
Details
Help
Edit
LOCATION
Medical Premium Charges
DATA REFINERY FLOW NAME
insurance .csv_flow
Enter a description of the Data Refinery flow
STEPS
0
DATA REFINERY FLOW OUTPUT


IBM Watson Studio
All
Search
Buy
Saksham Singh's Account
SS
Projects / Medical Premium Charges / Medical Premium Charges
Find palette nodes
Run
Import
Record Operations
Field Operations
Modeling
Text Analytics
Graphs
Outputs
Export
insurance .csv
Type
Partition
K-Means
K-Means
7 Fields
sex v. age v. premium

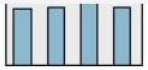
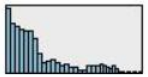
Find in column Field

Field	Measure	Role	Value mode	Values	Check
age	Continuous	Input	Instantiated	18, 64	None
sex	Flag	Input	Instantiated	female, male	None
bmi	Continuous	Input	Instantiated	15.96, 53.13	None
children	Continuous	Input	Instantiated	0, 5	None
smoker	Flag	Input	Instantiated	no, yes	None
region	Nominal	Input	Instantiated	northeast, northwe…	None
premium	Continuous	Input	Instantiated	1121.8739, 63770.…	None

View Output: Data Audit of [7 fields]

	Field	Graph	Measurement	Min	Max	Mean	Std. Dev	Skewness	Unique	Valid
1	age		Continuous	18	64	39.207	14.050	0.056	--	1338
2	sex		Categorical	--	--	--	--	--	2	1338
3	bmi		Continuous	15.960	53.130	30.663	6.098	0.284	--	1338
4	children		Continuous	0	5	1.095	1.205	0.938	--	1338
5	smoker		Categorical	--	--	--	--	--	2	1338
6	region		Categorical	--	--	--	--	--	4	1338

View Output: Data Audit of [7 fields]

6	region		Categorical	--	--	--	--	--	4	1338
7	premium		Continuous	1121.874	63770.428	13270.422	12110.011	1.516	--	1338

	Field	Measurement	Outliers	Extremes	Action	Impute Missing	Method	% Complete	Valid Records	Null Value	Empty String
1	age	Continuous	0	0	None	Never	Fixed	100.000	1338	0	0
2	sex	Categorical	--	--	--	Never	Fixed	100.000	1338	0	0
3	bmi	Continuous	4	0	None	Never	Fixed	100.000	1338	0	0
4	children	Continuous	18	0	None	Never	Fixed	100.000	1338	0	0
5	smoker	Categorical	--	--	--	Never	Fixed	100.000	1338	0	0
6	region	Categorical	--	--	--	Never	Fixed	100.000	1338	0	0
7	premium	Continuous	7	0	None	Never	Fixed	100.000	1338	0	0

View Model: K-Means

K-Means Clustering Model ⓘ

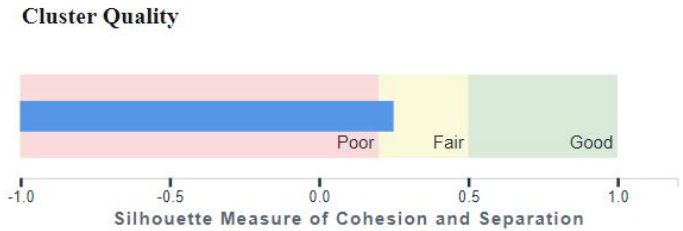
EVALUATION

- **Cluster Quality**

MODEL VIEWER

- Model Information
- Feature Importance
- Cluster Sizes
- Cluster Comparison
- Clusters
- Cell Distributions (Absolute)
- Cell Distributions (Relative)
- Build Settings
- Training Summary

Cluster Quality ⓘ



Cluster Quality Parameters

Overall Clustering Quality (Avg. Silhouette)	0.249
Total Within Clusters Sum of Squares	0.132
Average Within Cluster Sum of Squares	0.026

View Model: K-Means

K-Means Clustering Model

EVALUATION

Cluster Quality

MODEL VIEWER

Model Information

Feature Importance

Cluster Sizes

Cluster Comparison

Clusters

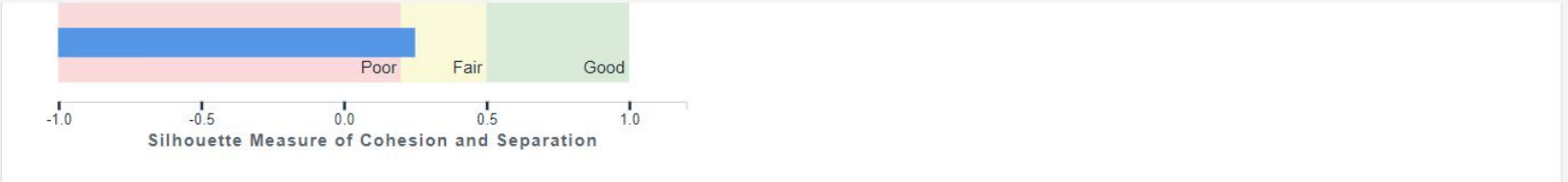
Cell Distributions (Absolute)

Cell Distributions (Relative)

Build Settings

Training Summary

Cluster Quality



Cluster Quality Parameters

Overall Clustering Quality (Avg. Silhouette)	0.249
Total Within Clusters Sum of Squares	0.132
Average Within Cluster Sum of Squares	0.026
Average SSB (Between ss)	0.075

View Model: K-Means

K-Means Clustering Model ⓘ

EVALUATION

Cluster Quality

MODEL VIEWER

Model Information

Feature Importance

Cluster Sizes

Cluster Comparison

Clusters

Cell Distributions (Absolute)

Cell Distributions (Relative)

Build Settings

Training Summary

Model Information ⓘ

Algorithm		K-Means
Model Class		Center Based
Number of Features		7
Distance Measure		Euclidean
Number of Clusters		5
	Cluster 1	81 (8.7%)
	Cluster 2	368 (39.53%)

View Model: K-Means

K-Means Clustering Model

EVALUATION

Cluster Quality

MODEL VIEWER

Model Information

Feature Importance

Cluster Sizes

Cluster Comparison

Clusters

Cell Distributions (Absolute)

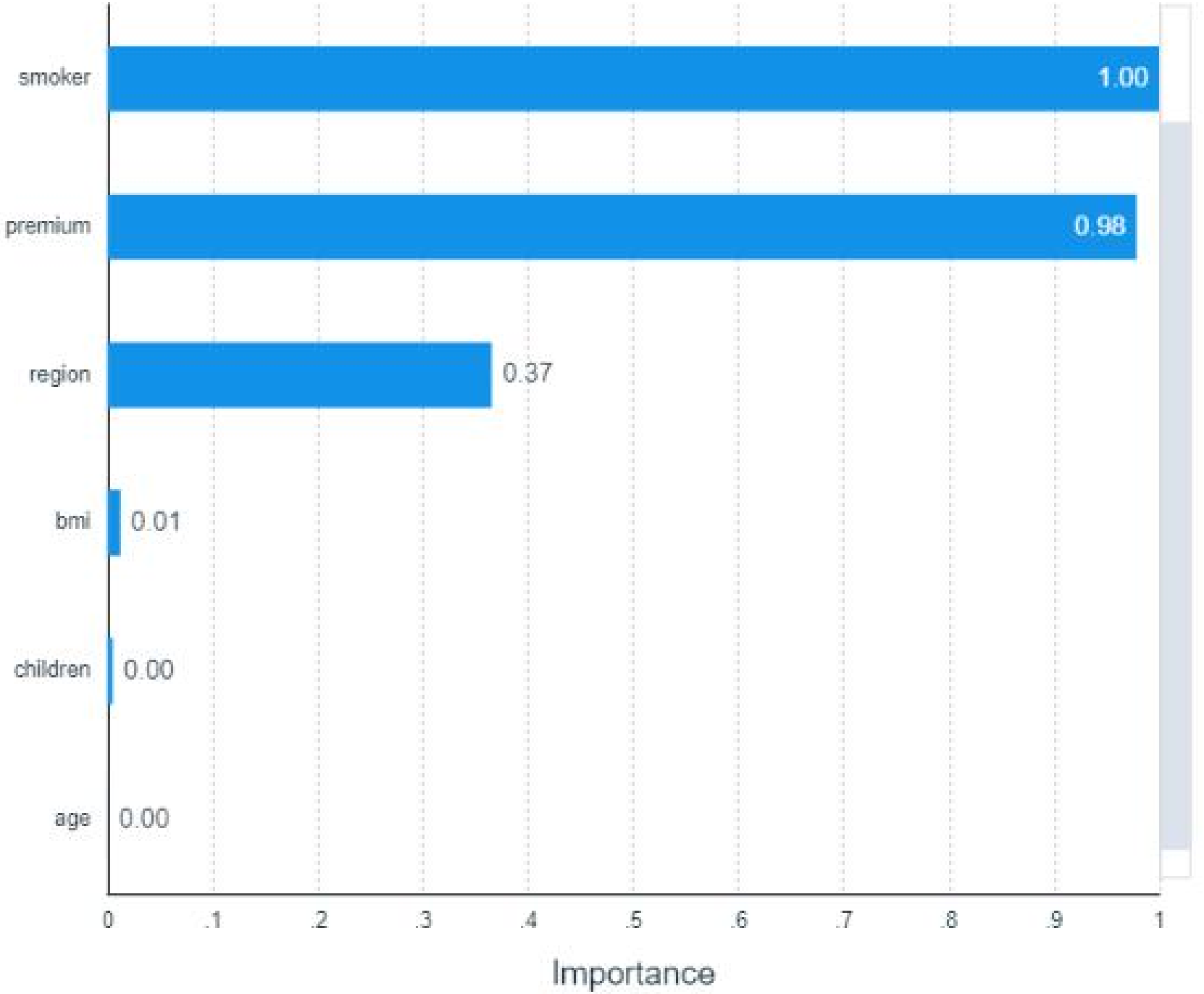
Cell Distributions (Relative)

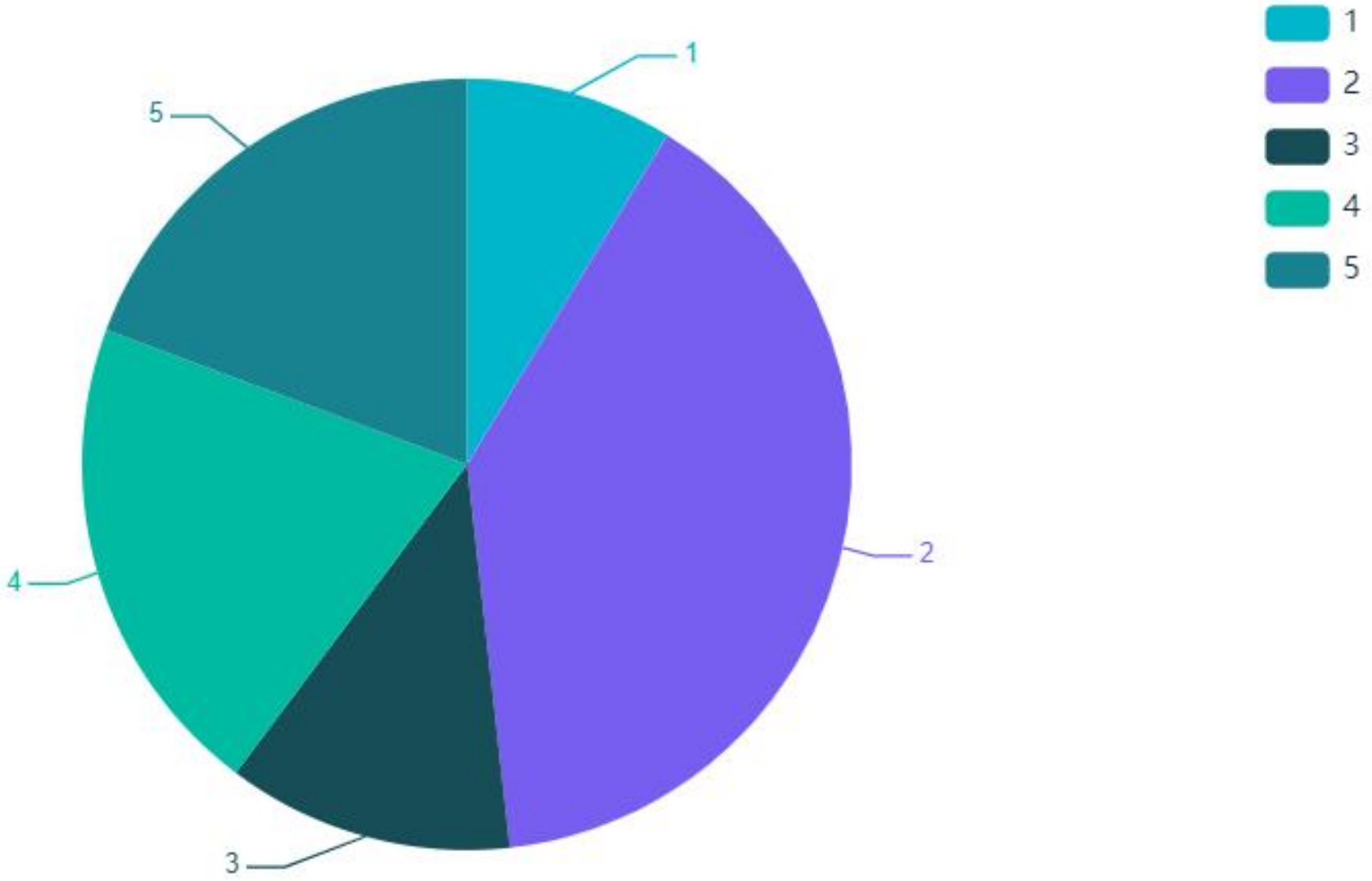
Build Settings

Training Summary

Model Information

Number of Clusters		5
Number of instances in each cluster	Cluster 1	81 (8.7%)
	Cluster 2	368 (39.53%)
	Cluster 3	112 (12.03%)
	Cluster 4	190 (20.41%)
	Cluster 5	180 (19.33%)
Ratio of sizes (Largest to smallest)		4.543


smoker
premium
region
bmi
children
age
1.00
0.98
0.37
0.01
0.00
0.00
0
.1
.2
.3
.4
.5
.6
.7
.8
.9
1
Importance


1
2
3
4
5
1
2
3
4
5

View Model: K-Means

K-Means Clustering Model ⓘ

EVALUATION

Cluster Quality

MODEL VIEWER

Model Information

Feature Importance

Cluster Sizes

Cluster Comparison

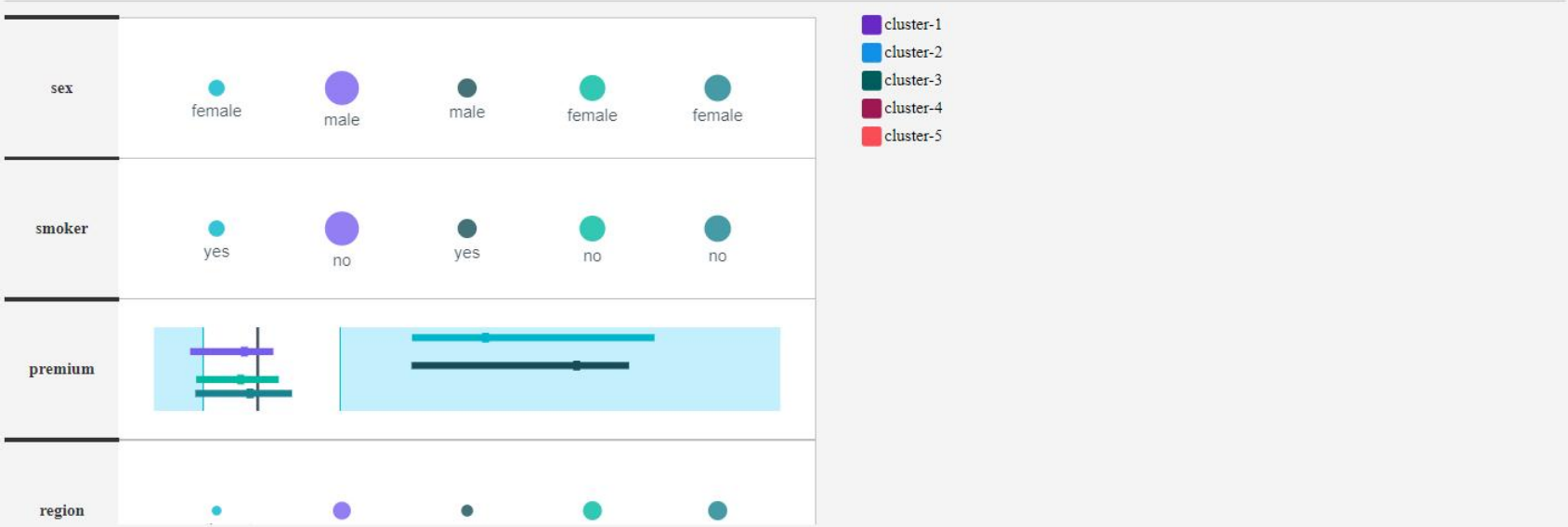
Clusters

Cell Distributions (Absolute)

Cell Distributions (Relative)

Build Settings

Cluster Comparison ⓘ



View Model: K-Means

K-Means Clustering Model

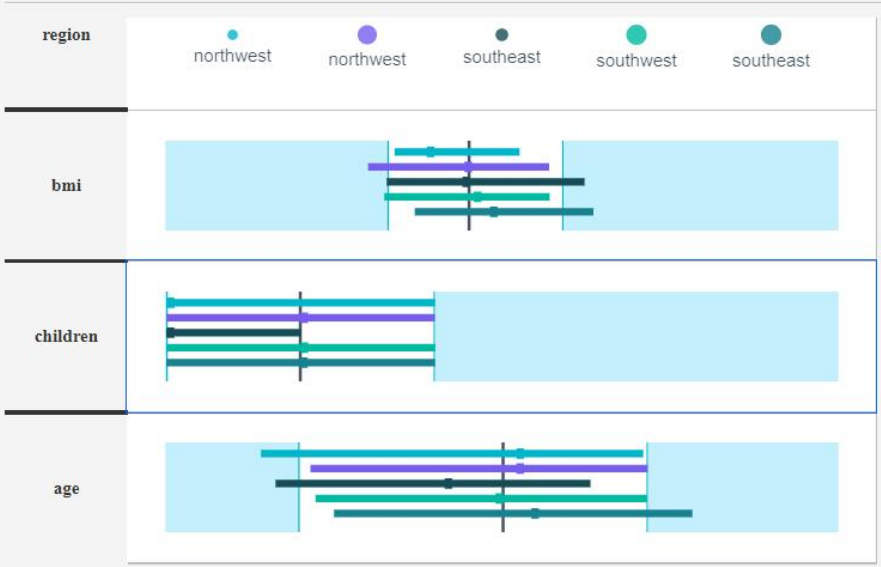
EVALUATION

- Cluster Quality

MODEL VIEWER

- Model Information
- Feature Importance
- Cluster Sizes
- **Cluster Comparison**
- Clusters
- Cell Distributions (Absolute)
- Cell Distributions (Relative)
- Build Settings

Cluster Comparison



View Model: K-Means

K-Means Clustering Model

EVALUATION

- Cluster Quality

MODEL VIEWER

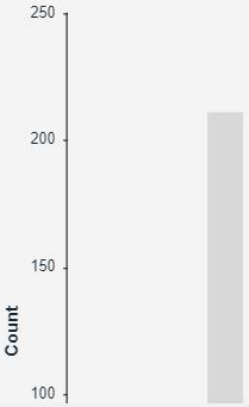
- Model Information
- Feature Importance
- Cluster Sizes
- Cluster Comparison
- **Clusters**
- Cell Distributions (Absolute)
- Cell Distributions (Relative)
- Build Settings

Clusters

Input Importance

1.0 0.8 0.6 0.4 0.2 0.0

Cluster	cluster_1	cluster_2	cluster_3	cluster_4	cluster_5
Size					
Inputs	sex **female (100.00%)**	sex **male (100.00%)**	sex **male (100.00%)**	sex **female (100.00%)**	sex **female (100.00%)**
	smoker **yes (100.00%)**	smoker **no (100.00%)**	smoker **yes (100.00%)**	smoker **no (100.00%)**	smoker **no (100.00%)**



View Model: K-Means

K-Means Clustering Model ⓘ

EVALUATION

- Cluster Quality

MODEL VIEWER

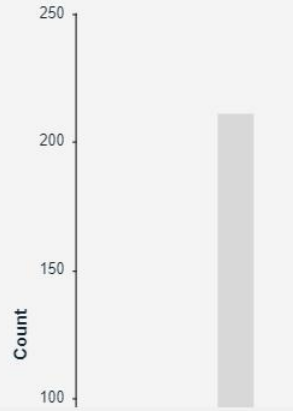
- Model Information
- Feature Importance
- Cluster Sizes
- Cluster Comparison
- **Clusters**
- Cell Distributions (Absolute)
- Cell Distributions (Relative)
- Build Settings

Clusters ⓘ

Input Importance

1.0 0.8 0.6 0.4 0.2 0.0

Cluster	cluster_1	cluster_2	cluster_3	cluster_4	cluster_5
	premium **30921.55**	premium **8866.62**	premium **31714.55**	premium **8191.76**	premium **8842.23**
	region **northwest (35.29%)**	region **northwest (27.52%)**	region **southeast (38.30%)**	region **southwest (53.49%)**	region **southeast (51.65%)**
	bmi **29.95**	bmi **30.52**	bmi **30.70**	bmi **30.39**	bmi **31.77**



View Model: K-Means

K-Means Clustering Model ⓘ

EVALUATION

Cluster Quality

MODEL VIEWER

Model Information

Feature Importance

Cluster Sizes

Cluster Comparison

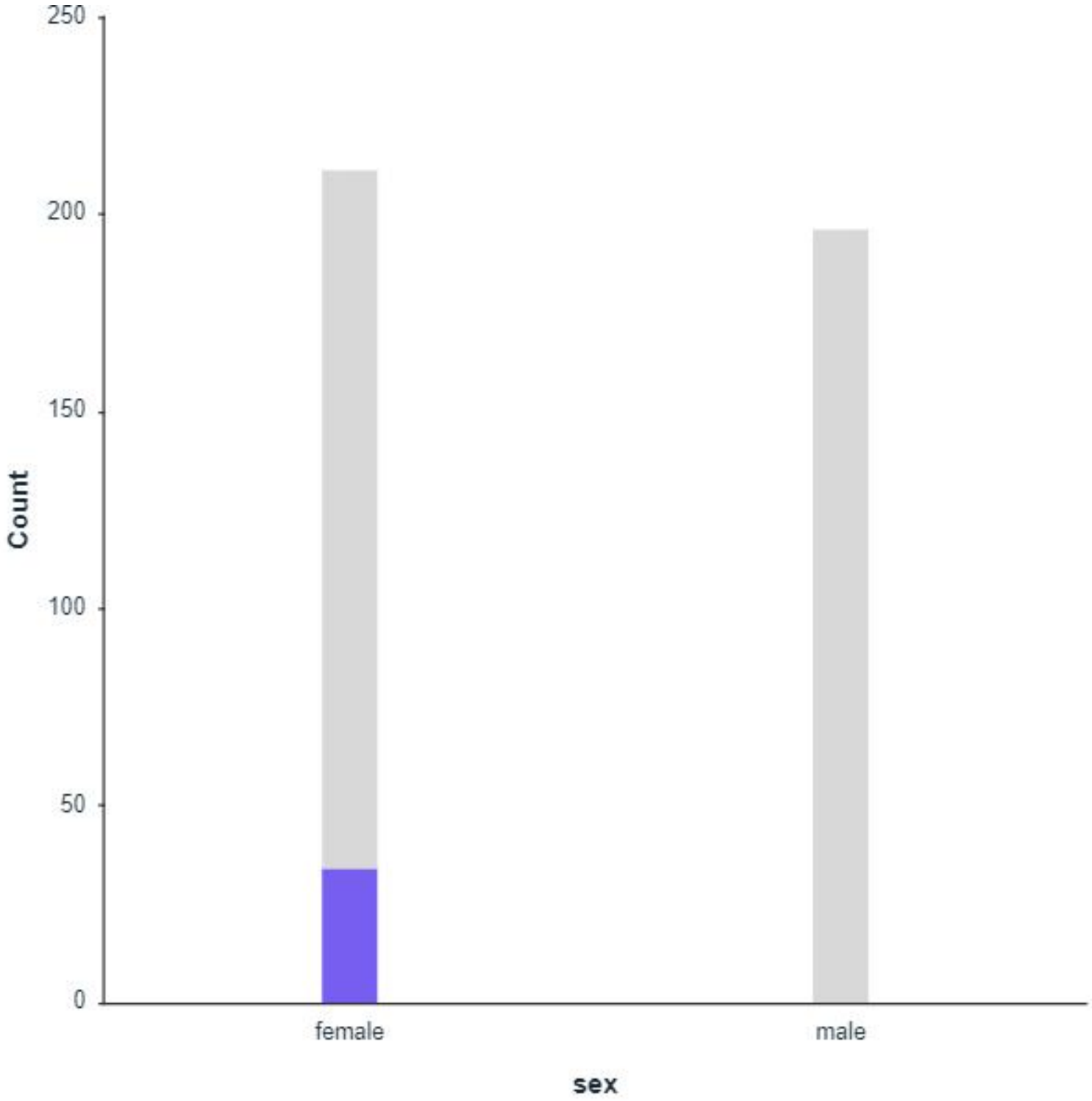
Clusters

Cell Distributions (Absolute)

Cell Distributions (Relative)

Clusters ⓘ

	bmi **29.95**	bmi **30.52**	bmi **30.70**	bmi **30.39**	bmi **31.77**
	children **.91**	children **1.11**	children **.77**	children **1.16**	children **1.07**
	age **39.65**	age **40.22**	age **37.79**	age **40.50**	age **41.43**


250
200
150
100
50
0
Count
female
male
sex

View Model: K-Means

K-Means Clustering Model ⓘ

Cluster Quality

MODEL VIEWER

Model Information

Feature Importance

Cluster Sizes

Cluster Comparison

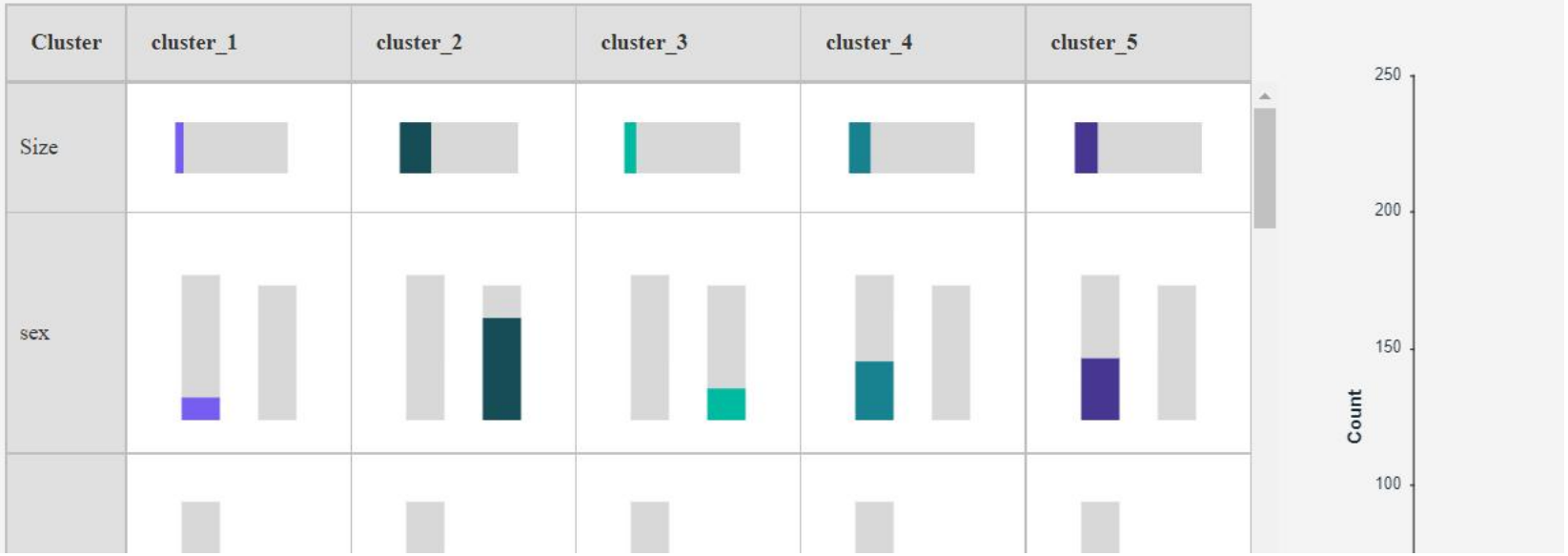
Clusters

Cell Distributions (Absolute)

Cell Distributions (Relative)

Build Settings

Cell Distributions (Absolute) ⓘ



View Model: K-Means

K-Means Clustering Model ⓘ

Cluster Quality

MODEL VIEWER

Model Information

Feature Importance

Cluster Sizes

Cluster Comparison

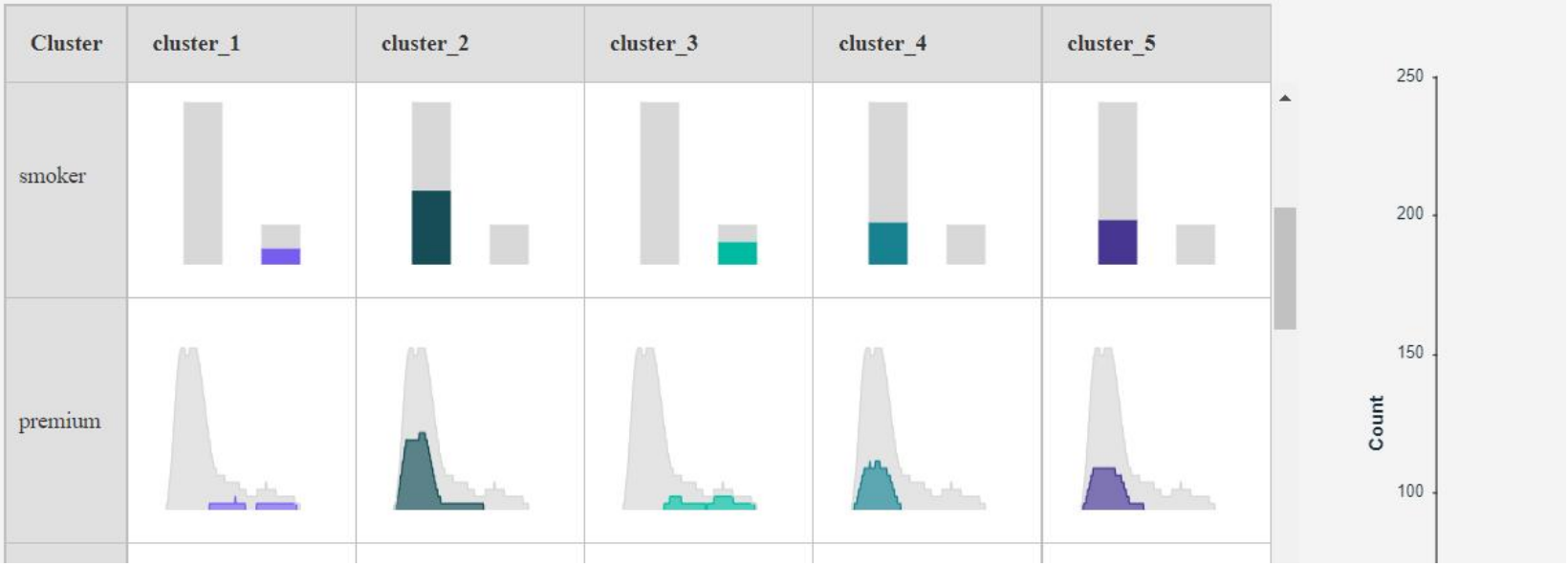
Clusters

Cell Distributions (Absolute)

Cell Distributions (Relative)

Build Settings

Cell Distributions (Absolute) ⓘ



View Model: K-Means

K-Means Clustering Model ⓘ

Cluster Quality

MODEL VIEWER

Model Information

Feature Importance

Cluster Sizes

Cluster Comparison

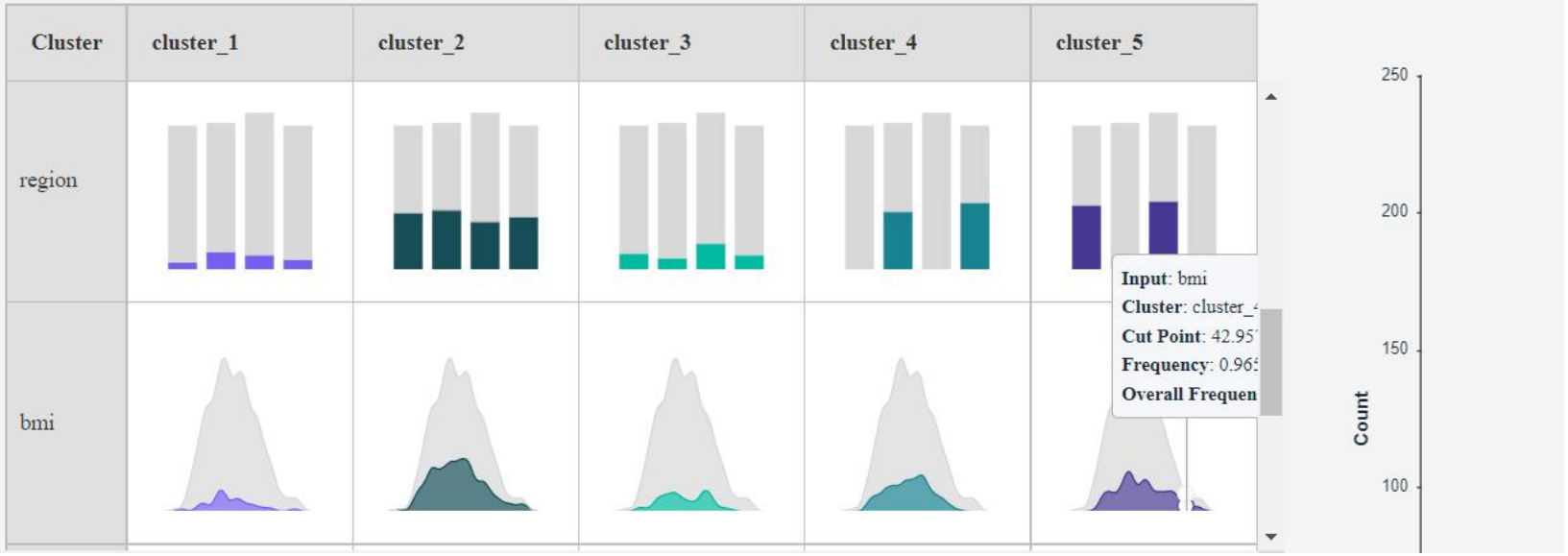
Clusters

Cell Distributions (Absolute)

Cell Distributions (Relative)

Build Settings

Cell Distributions (Absolute) ⓘ



View Model: K-Means

K-Means Clustering Model ⓘ

Cluster Quality

MODEL VIEWER

Model Information

Feature Importance

Cluster Sizes

Cluster Comparison

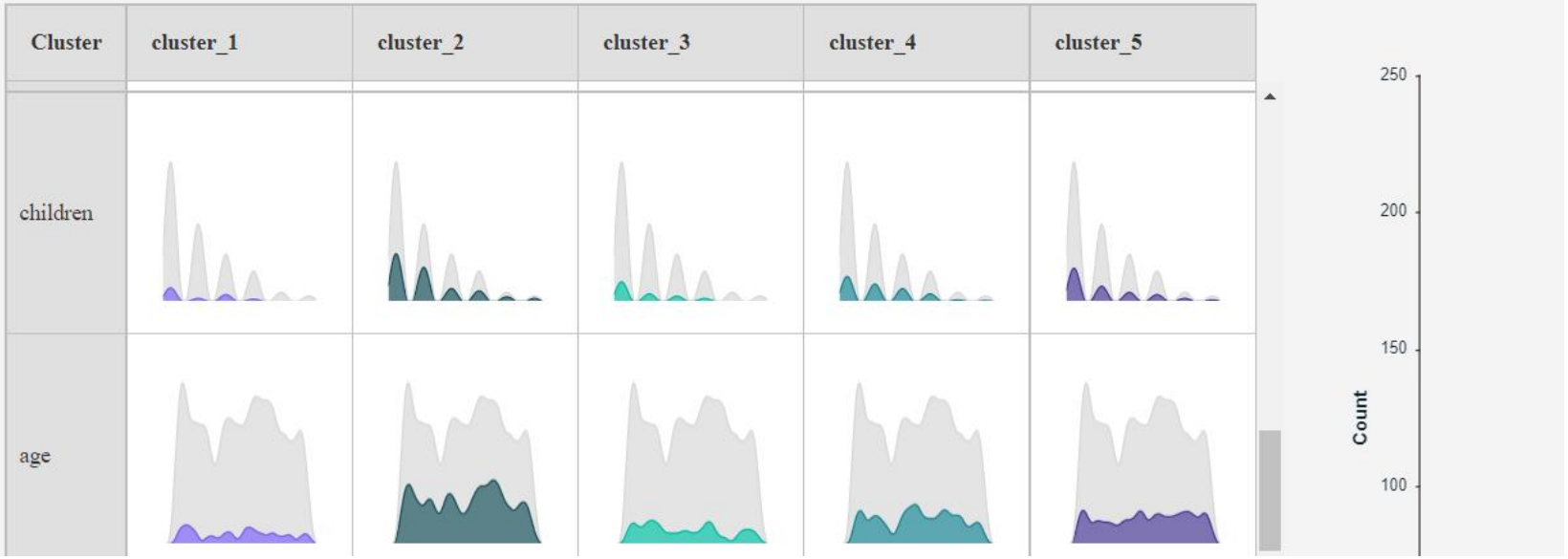
Clusters

Cell Distributions (Absolute)

Cell Distributions (Relative)

Build Settings

Cell Distributions (Absolute) ⓘ



View Model: K-Means

K-Means Clustering Model ⓘ

Cluster Quality

MODEL VIEWER

Model Information

Feature Importance

Cluster Sizes

Cluster Comparison

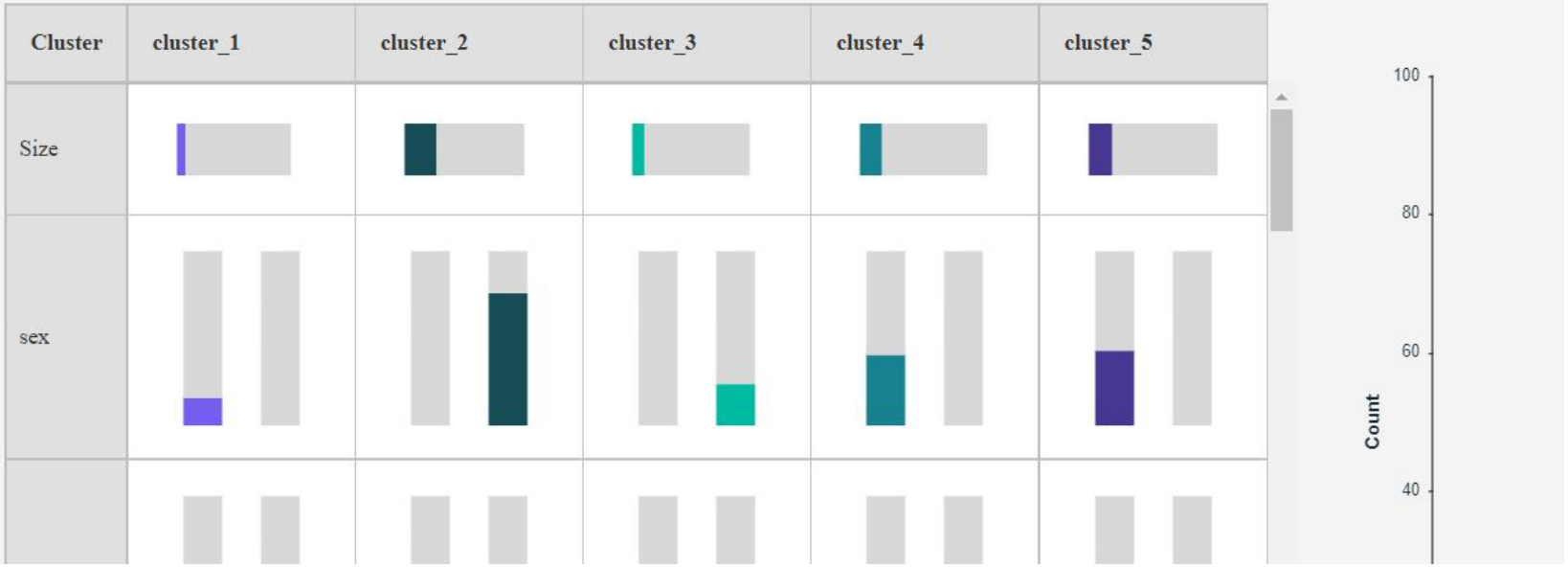
Clusters

Cell Distributions (Absolute)

Cell Distributions (Relative)

Build Settings

Cell Distributions (Relative) ⓘ



View Model: K-Means

K-Means Clustering Model ⓘ

Cluster Quality

MODEL VIEWER

Model Information

Feature Importance

Cluster Sizes

Cluster Comparison

Clusters

Cell Distributions (Absolute)

Cell Distributions (Relative)

Build Settings

Cell Distributions (Relative) ⓘ

View Model: K-Means

K-Means Clustering Model ⓘ

Cluster Quality

MODEL VIEWER

Model Information

Feature Importance

Cluster Sizes

Cluster Comparison

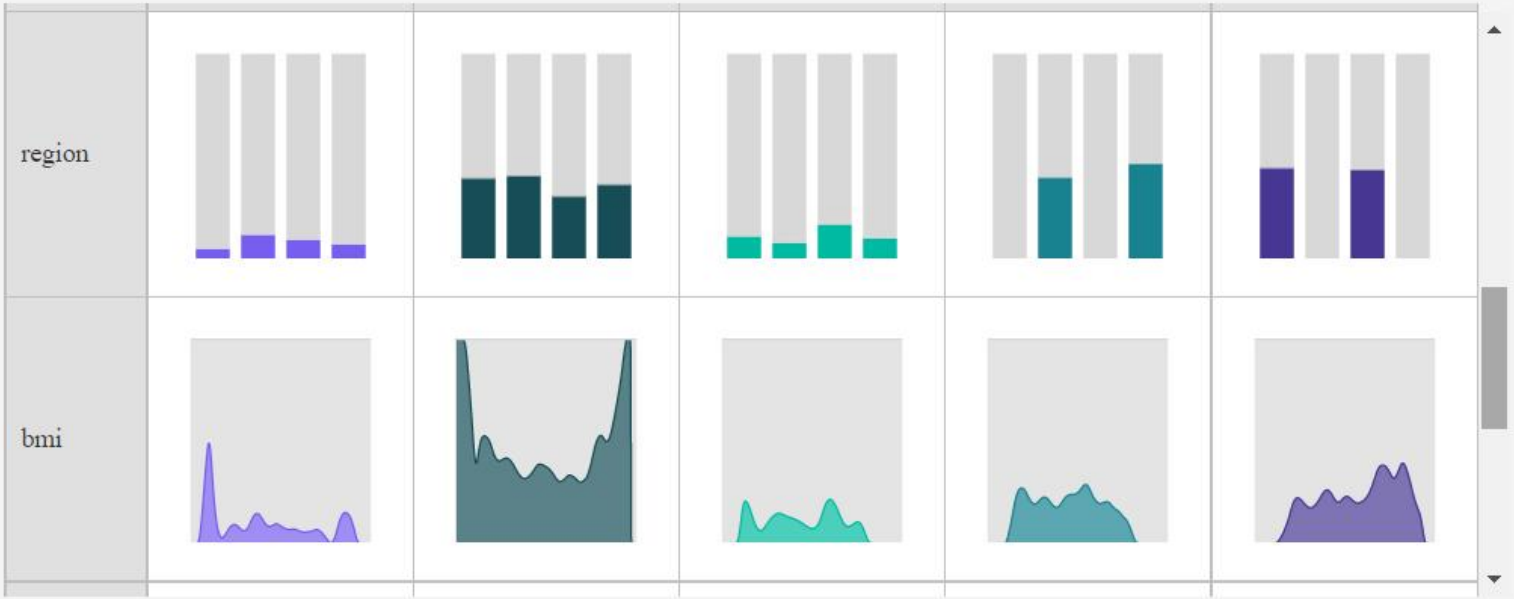
Clusters

Cell Distributions (Absolute)

Cell Distributions (Relative)

Build Settings

Cell Distributions (Relative) ⓘ



View Model: K-Means

K-Means Clustering Model ⓘ

Cluster Quality

MODEL VIEWER

Model Information

Feature Importance

Cluster Sizes

Cluster Comparison

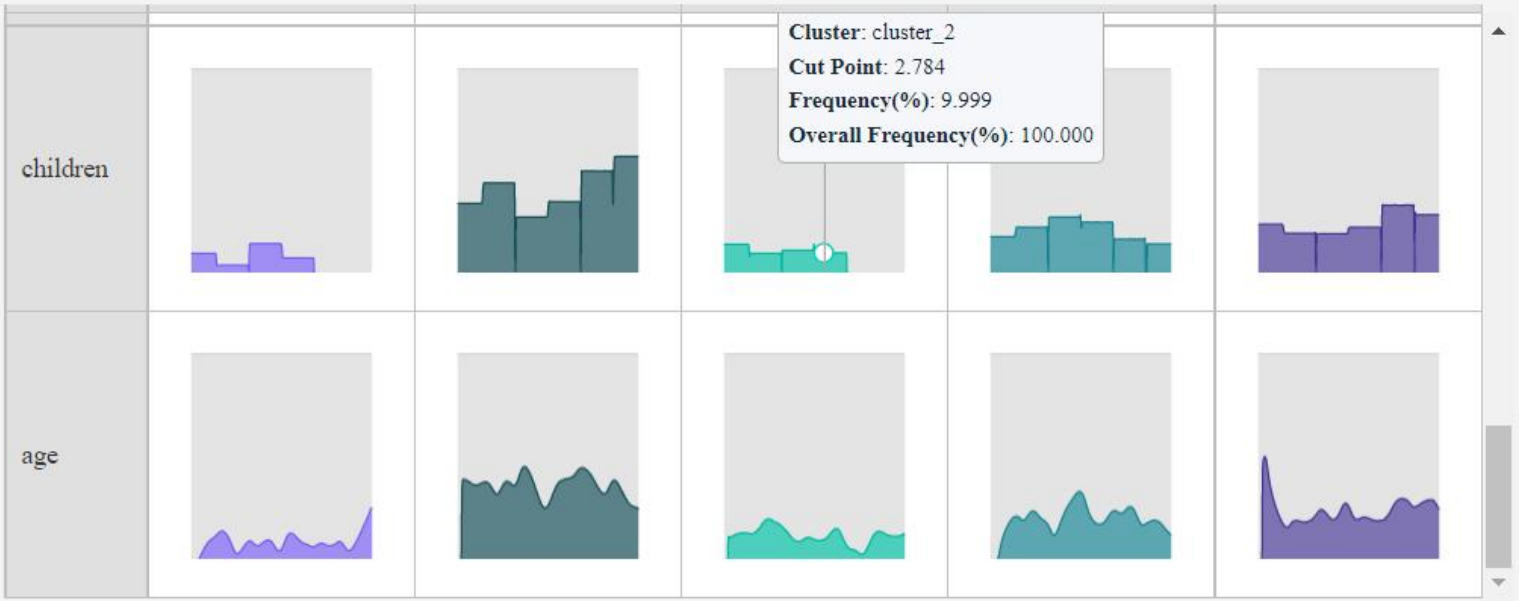
Clusters

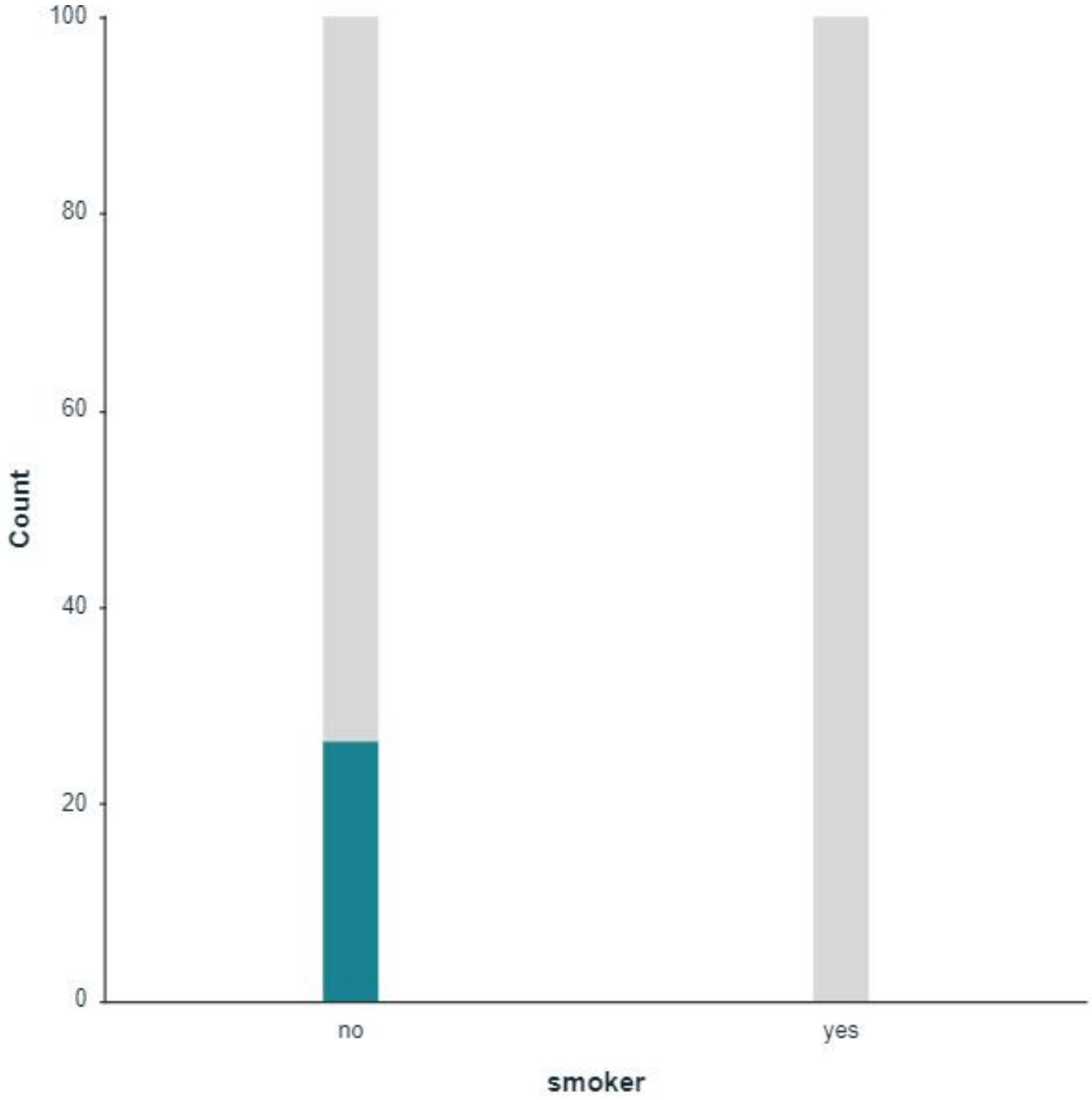
Cell Distributions (Absolute)

Cell Distributions (Relative)

Build Settings

Cell Distributions (Relative) ⓘ




100
80
60
40
20
0
Count
no
yes
smoker

View Model: K-Means

K-Means Clustering Model ⓘ

Cluster Quality

MODEL VIEWER

Model Information

Feature Importance

Cluster Sizes

Cluster Comparison

Clusters

Cell Distributions (Absolute)

Cell Distributions (Relative)

Build Settings

Build Settings ⓘ

Use partitioned data	true
Calculate raw propensity scores	false
Calculate adjusted propensity scores	false
Number of clusters	5
Generate distance field	false
Cluster label	String

View Model: K-Means

K-Means Clustering Model ⓘ

Cluster Quality

MODEL VIEWER

Model Information

Feature Importance

Cluster Sizes

Cluster Comparison

Clusters

Cell Distributions (Absolute)

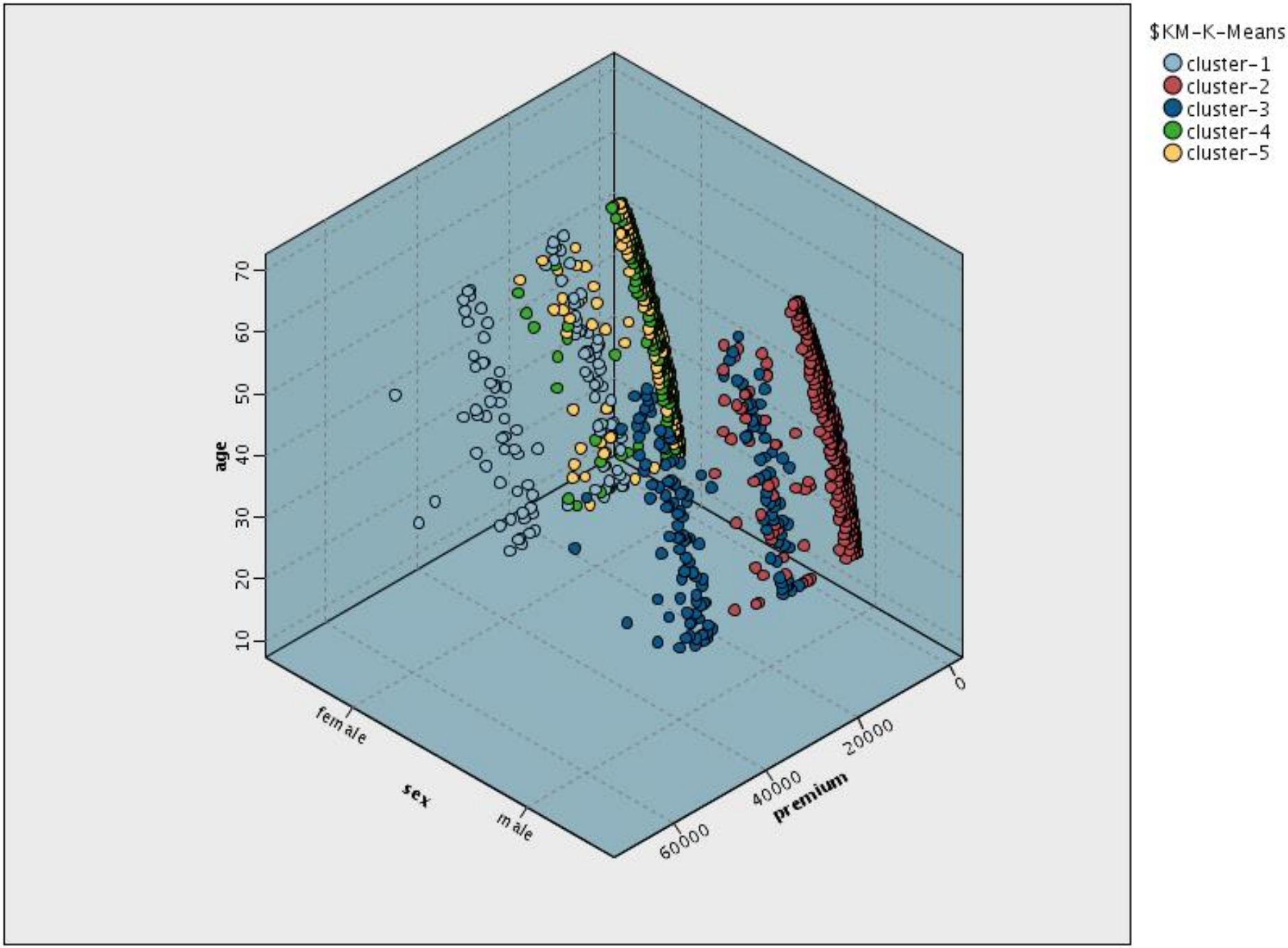
Cell Distributions (Relative)

Build Settings

Training Summary

Training Summary ⓘ

Algorithm	K-means
Model type	Clustering
Date built	Tue Dec 28 10:43:11 UTC 2021
Elapsed time for model build	0 hours, 0 mins, 0 secs


$KM-K-Means
cluster-1
cluster-2
cluster-3
cluster-4
cluster-5
age
10
20
30
40
50
60
70
sex
female
male
premium
60000
40000
20000
0