VA2-Practice1.2

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## What are the characteristics of Customer Satisfaction?

Customer Satisfaction ranges from 19% to 100%. Average Customer Satisfaction is 47%. Most cases (202K of 252K) have a Customer Satisfaction between 30% and 71%. Customer Distance best differentiates the highest (top 10%) and the lowest (bottom 10%) Customer Satisfaction cases. There are 14K cases that might be outliers, with Customer Satisfaction above 85%.

What factors are most related to Customer Satisfaction?

- Customer Country
- Product Make
- Product Line
- Product Brand
- Customer Distance
- Product Cost of Sale
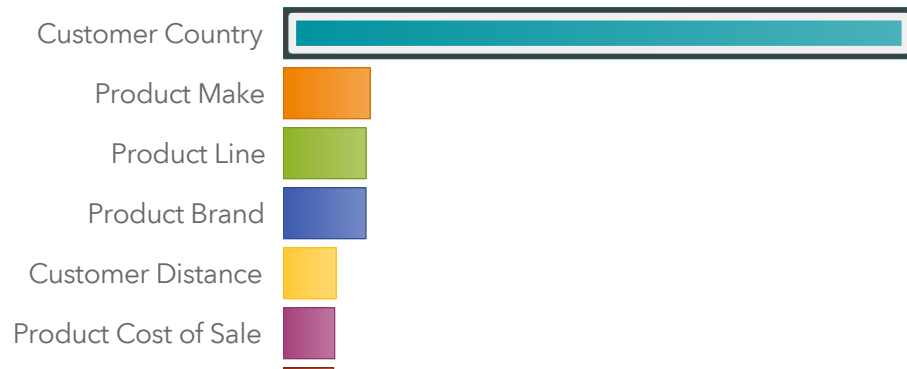
What are the groups based on Customer Country by the average value of Customer Satisfaction?

96% If Customer Country is CO, MA, NG, or PE, Customer Distance is less than 5.5, then the 4.9K cases have a predicted Customer Satisfaction of 96%.

94% If Customer Country is CO, then the 2.2K cases have a predicted Customer Satisfaction of 94%.

94% If Product Sale is greater than or equal to 14, Customer Country is CO, MA, NG, or PE, then the 10K cases have a

What is the relationship between Customer Satisfaction and Customer Country?

Customer Country

Customer Satisfaction
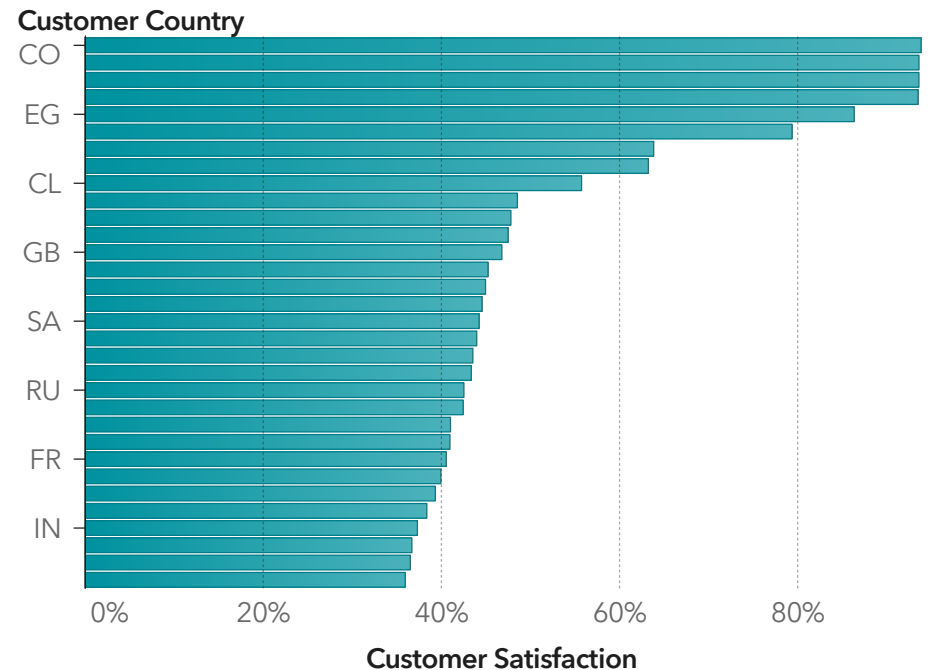
When Customer Country is CO, PE, NG, MA, EG or ZA, the average of Customer Satisfaction is a high value. When Customer Country is DK, SE, ES, GB, NZ, IL, SG, SA, CA, US, AU, RU, ID, DE, JP, FR, NO, MX, AR, IN, KR, IT or CN, the average of Customer Satisfaction is a low value. The most common Customer Country value is US.

What are the characteristics of Product Sale?

Product Sale ranges from 0 to 162. Average Product Sale is 25. Most cases (202K of 252K) have a Product Sale between 3.9 and 62. Product Price (target) best differentiates the highest (top 10%) and the lowest (bottom 10%) Product Sale cases. There are 22K cases that might be outliers, with Product Sale above 71.

What factors are most related to Product Sale?

Product Cost of Sale

Product Make

Product Price (target)

Product Material Cost

Product Line

Product Brand

What is the relationship between Product Sale and Product Make?

Product Make

Backpack

Puzzle (II)

Bat Mitzvah

Frame (3x5)

Frame (2x2)

0   50   100   150

Product Sale

What are the groups based on Product Make by the average value of Product Sale ?

161   If Product Make is Backpack , Product Cost of Sale is greater than or equal to 125, then the 253 cases have a predicted Product Sale of 161.
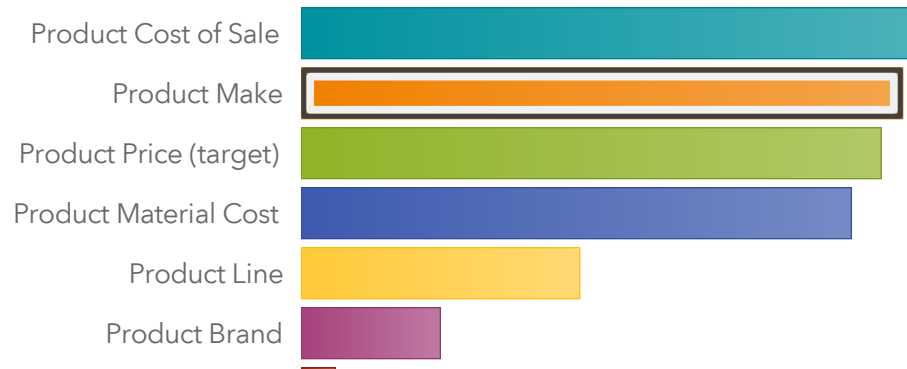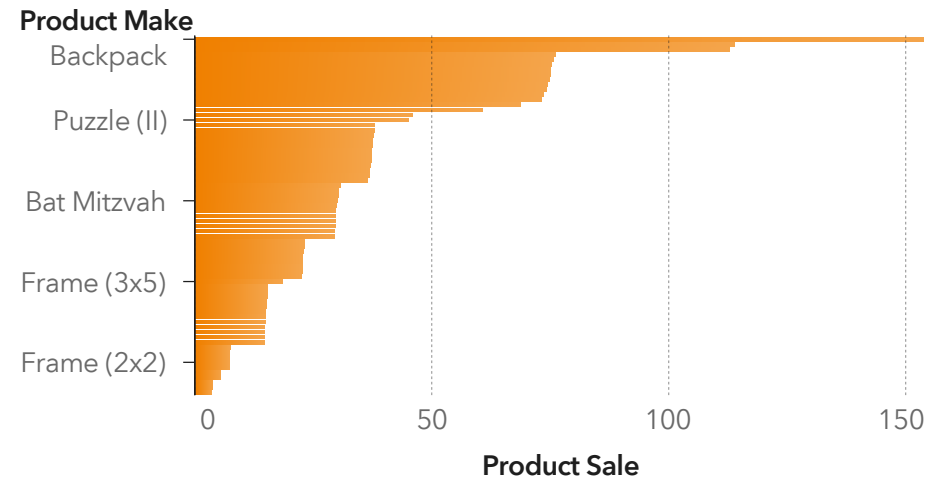
157   If Product Make is Backpack , Product Cost of Sale is between 119 and 125 , then the 252 cases have a predicted Product Sale of 157.

154   If Product Material Cost is greater than or equal to 20 , Product Make is Backpack , then the 833 cases have a

When Product Make is Backpack, the average of Product Sale is a high value. When Product Make is Plastic Bead (l), Bar Mitzvah, Cup (l), Bat Mitzvah, Firefighter, Musician, Soldier, Athlete, Movie Star, Police, Super Hero, Cup (m), Coffee Cup, Container (s), Water Bottle, Gag, Plastic Bead (m), Birthday, Puzzle (I), Frame (3x5), Pen, Plastic Bead (s), Cup (s), Card Game, Primate (s), Bear (s), Cat (s), Elephant (s), Big Cats (s), Dog (s), Horse (s), Inflatable (l), Dice, Clip (l), Inflatable (m), Frame (2x2), Ball (l), Ball (m), Clip (m), Clip (s), Ball (s) or Inflatable (s), the average of Product Sale is a low value. The most common Product Make value is Ball (l).

1. Select response for Automated Explanation.	A report author selected Customer Satisfaction as the response.
2. Screen factors.	Automated Explanation modified or removed 5 of 14 factors. See the Screening Results tab for details.
3. Determine most related factors.	Automated Explanation used a one-level decision tree for each factor to determine its relative importance to Customer Satisfaction. For example, the input Product Make has a relative importance of 0.14 which means it is 0.14 times as important as Customer Country.
4. Find groups based on selected related factor.	Automated Explanation ran 9 decision trees with response Customer Satisfaction. The trees used Customer Country and another important factor as predictors. The trees had 6 levels and 2 branches. Each group describes a leaf from one of these trees.

Factor	Action Taken
Customer	The category was rejected because too many distinct levels were detected.
Customer Country	
Customer Distance	
Order	The category was rejected because too many distinct levels were detected.
Product	The category was rejected because too many distinct levels were detected.
Product Brand	
Product Cost of Sale	
Product Line	
Product Make	
Product Material Cost	
Product Price (target)	The measure was converted to category because relatively few distinct levels were detected.
Product Quality	
Product Sale	
Product Style	The category was rejected because too many distinct levels were detected.

Factor	Importance
Customer Country	1.0000
Product Make	0.1377
Product Line	0.1311
Product Brand	0.1309
Customer Distance	0.0838
Product Cost of Sale	0.0813
Product Sale	0.0796
Product Price (target)	0.0717
Product Material Cost	0.0654
Product Quality	0.0250
Customer	0.0000
Order	0.0000
Product	0.0000
Product Style	0.0000

1. Select response for Automated Explanation.	A report author selected Product Sale as the response.
2. Screen factors.	Automated Explanation modified or removed 5 of 16 factors. See the Screening Results tab for details.
3. Determine most related factors.	Automated Explanation used a one-level decision tree for each factor to determine its relative importance to Product Sale. For example, the input Product Make has a relative importance of 0.98 which means it is 0.98 times as important as Product Cost of Sale.
4. Find groups based on selected related factor.	Automated Explanation ran 9 decision trees with response Product Sale. The trees used Product Make and another important factor as predictors. The trees had 6 levels and 2 branches. Each group describes a leaf from one of these trees.

Factor	Action Taken
Customer	The category was rejected because too many distinct levels were detected.
Customer Country	
Customer Distance	
Customer Satisfaction	
Order	The category was rejected because too many distinct levels were detected.
Product	The category was rejected because too many distinct levels were detected.
Product Brand	
Product Cost of Sale	
Product Line	
Product Make	
Product Material Cost	
Product Price (target)	The measure was converted to category because relatively few distinct levels were detected.
Product Quality	
Product Style	The category was rejected because too many distinct levels were detected.
xyCustomer Lat	
xyCustomer Lon	

Factor	Importance
Product Cost of Sale	1.0000
Product Make	0.9810
Product Price (target)	0.9460
Product Material Cost	0.8972
Product Line	0.4542
Product Brand	0.2268
Customer Country	0.0555
xyCustomer Lat	0.0367
Product Quality	0.0313
xyCustomer Lon	0.0264
Customer Satisfaction	0.0251
Customer Distance	0.0048
Customer	0.0000
Order	0.0000
Product	0.0000
Product Style	0.0000