



Organic Products Case Study

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Agenda

1. Address Business Problem
2. Introduce Questions
3. Exploratory Analysis
4. Summary of the Models
5. Describe the image of a customer who buys organic
6. Give recommendations



Organic
vs.

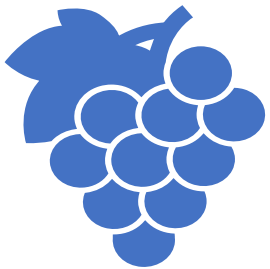
Non-Organic



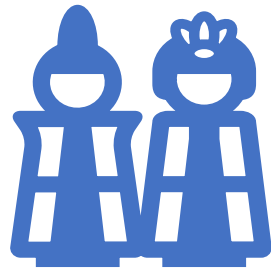
Business
Problem?

Are customers who buy organic products highly profitable and if so, how can we increase the sales of organic products?

Questions



Are there any noticeable differences between customers that purchase organic products versus those who don't purchase organic products?



Are there any noticeable differences in the percentage of customers who purchase organic products across the different loyalty status groups?

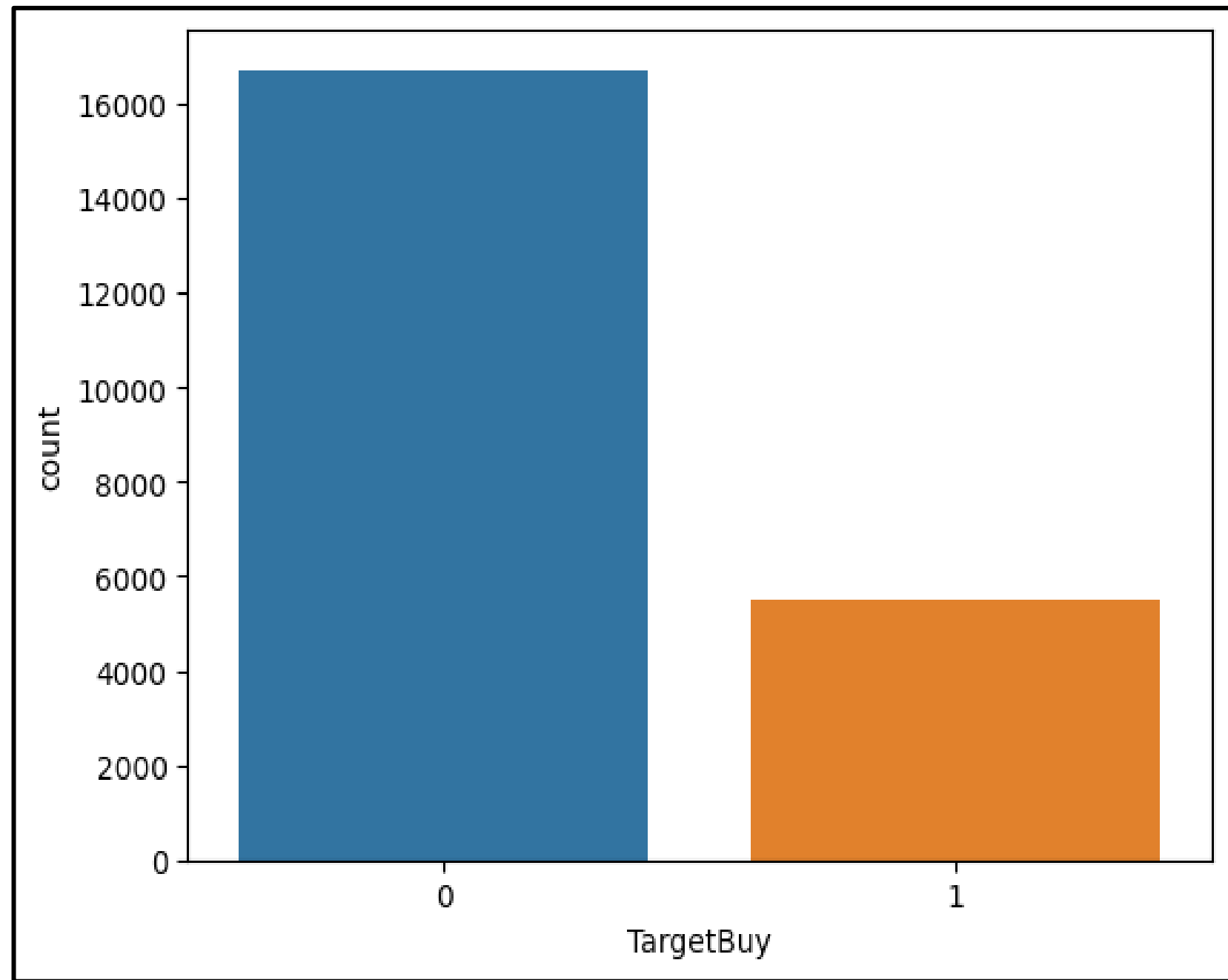


What factors seem to have the most impact on a customer's likelihood to purchase organic products?

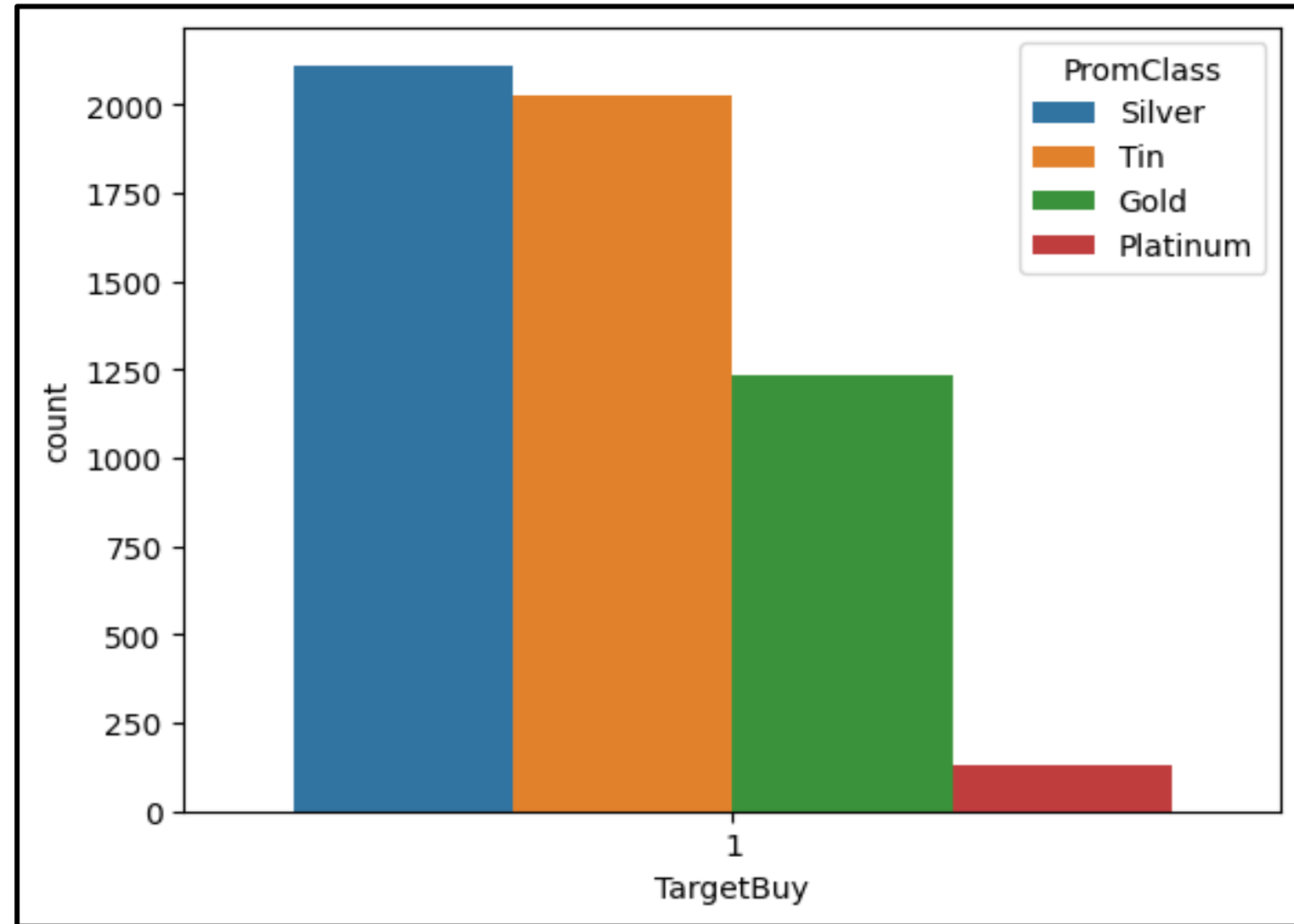


Can you identify certain groups of customers who are more likely to purchase organic products? How would you describe those customers?

1. Are there any noticeable differences between customers that purchase organic products versus those who don't purchase organic products?



2. Are there any noticeable differences in the percentage of customers who purchase organic products across the different loyalty status groups?



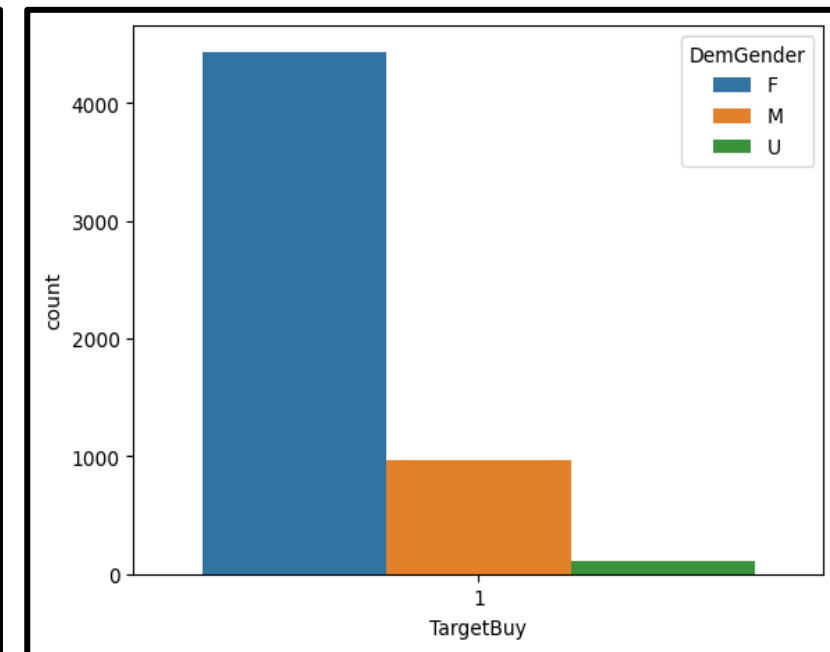
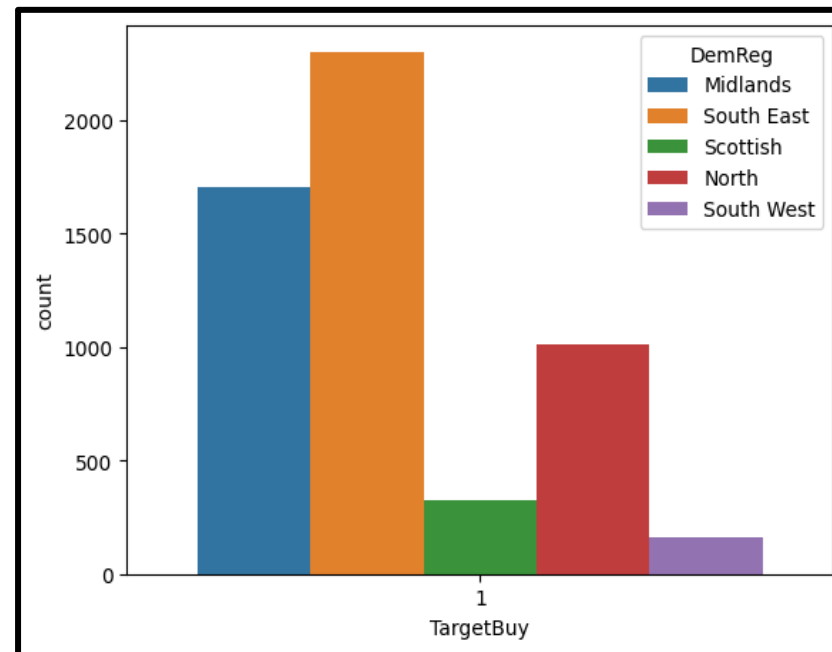
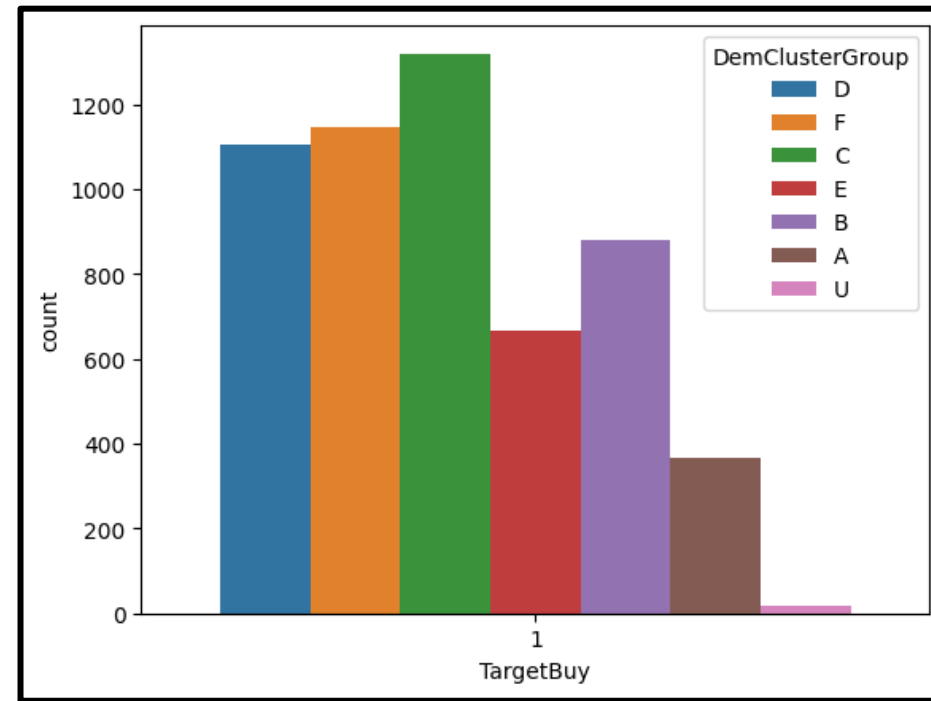
Silver Percent: 38.4%

Tin Percent: 36.9%

Gold Percent: 22.5%

Platinum Percent: 2.3%

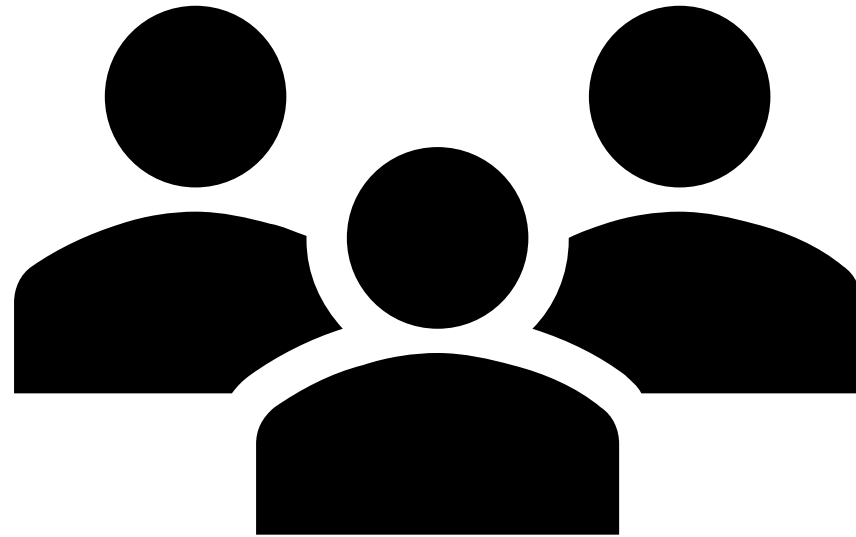
3. What factors seem to have the most impact on a customer's likelihood to purchase organic products?



4. Can you identify certain groups of customers who are more likely to purchase organic products? How would you describe those customers?

Yes, we can!

However, we should wait to see what the models will say and how they'll predict what customers will buy organic products.





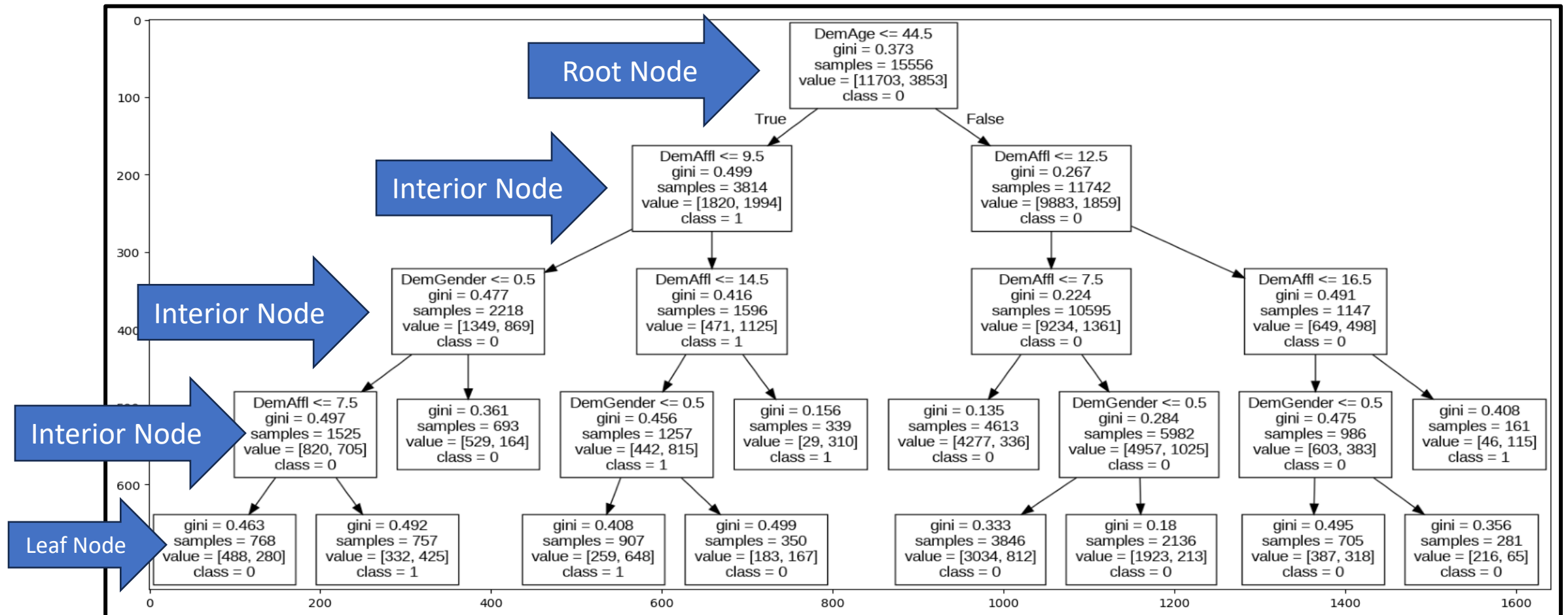
How many models were
used?

A lot

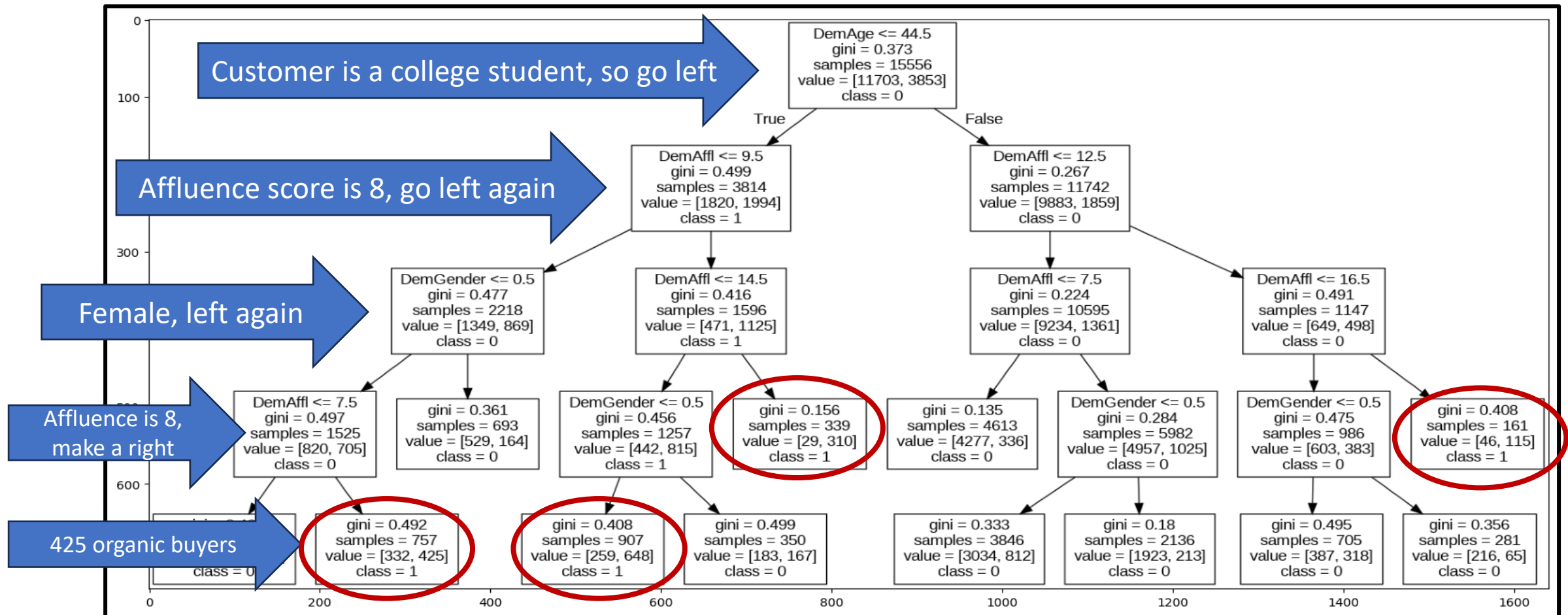
Model Comparison

Model	Accuracy (Train)	Precision (Train)	Recall (Train)	AUC (Train)	Accuracy (Test)	Precision (Train)	Recall (Train)	AUC (Test)
Logistic Full	.8008	.6919	.3532	.7853	.8083	.7149	.3765	.7912
Logistic Step-Wise	.8008	.6919	.3532	.7853	.8083	.7149	.3765	.7912
L1, c=0.1	.8002	.6911	.3496	.7848	.8085	.7153	.3771	.7914
L2 Ridge	.7996	.6939	.3413	.7655	.8043	.7098	.3553	.7726
Elastic Net	.7523	.0000	.0000	.5988	.7522	.0000	.0000	.6036
Decision Tree	.8091	.6887	.4186	.8040	.8040	.6657	.4195	.8055
Tuned Tree	.8058	.6922	.3888	.7885	.8044	.6790	.3995	.7944

Decision Tree?



Decision Tree?



Description of typical organic customers

Customer 1:

- Age is less than 44.5, Affluence Grade is between 7.5 and 9.5, and identifies as female.

Customer 2:

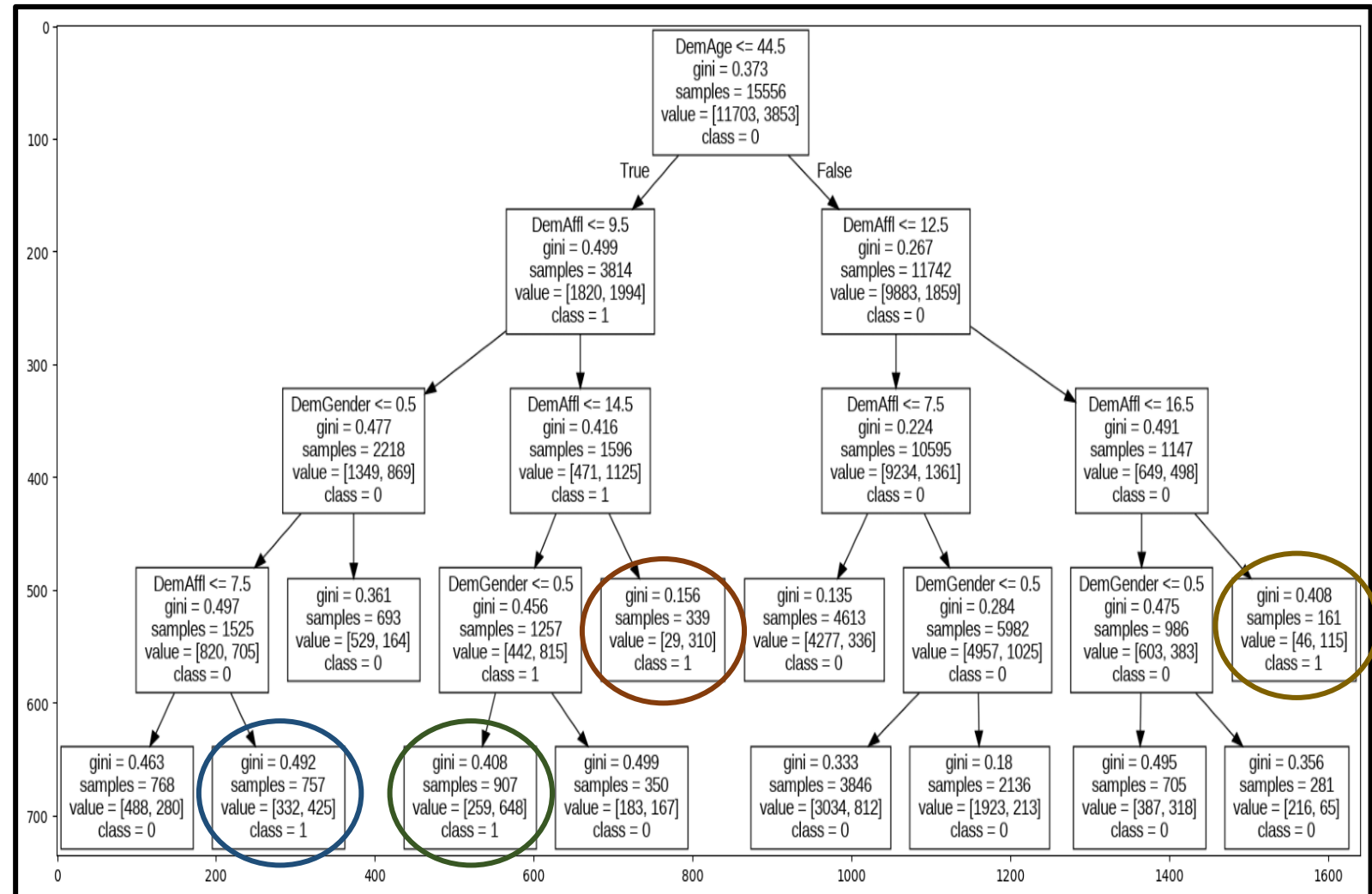
- Age is less than 44.5, affluence grade is between 9.5 and 14.5.

Customer 3:

- Age is less than 44.5, affluence grade is greater than 9.5 but less than 14.5 and identifies as female.

Customer 4:

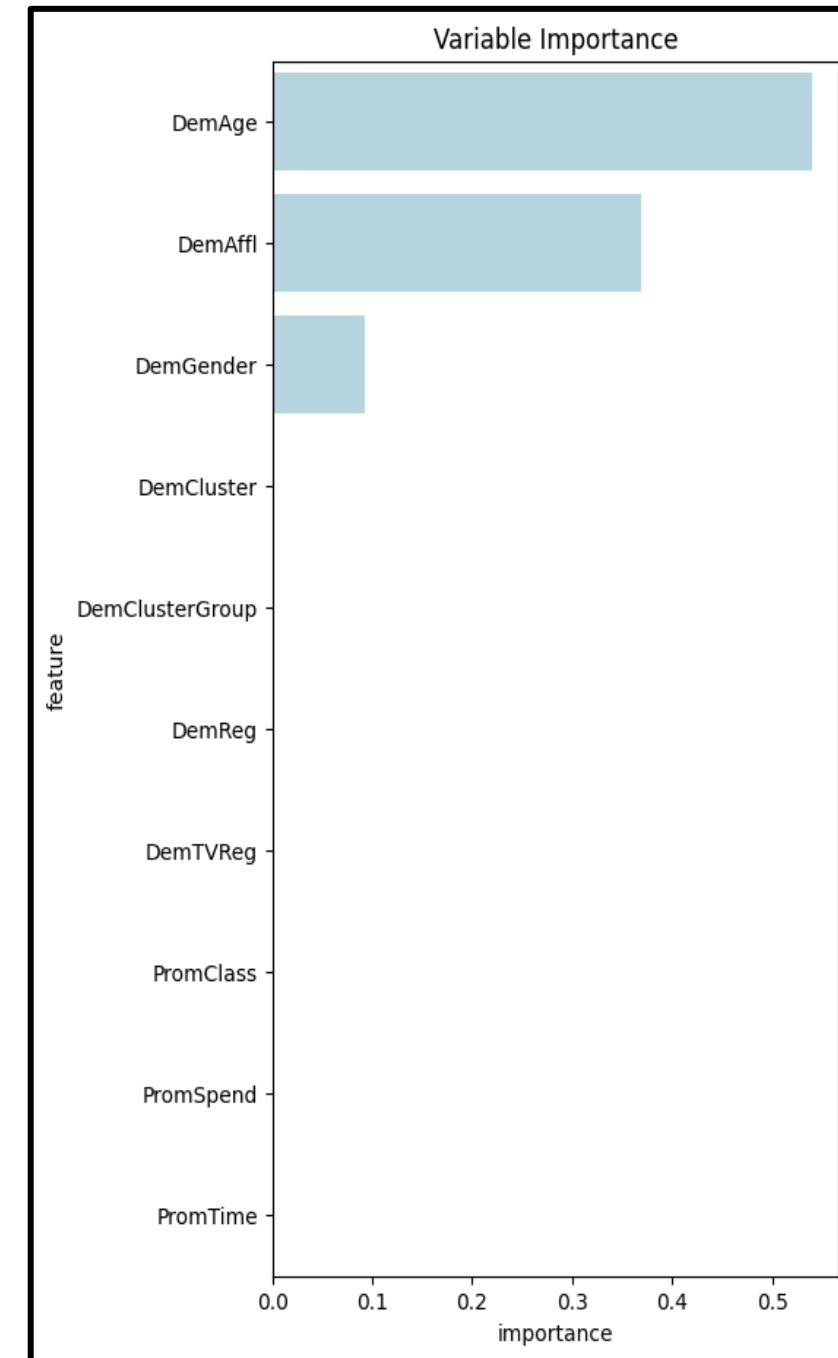
- Age is greater than 44.5, affluence grade is between greater than 12.5 and 16.5.



Back to questions 3 and 4, what factors influence buying organic products and what groups are more likely to buy organic products?

Total customers
150
How many customers were predicted to buy organic?
17
Average Probability of predicted customers who buy organic?
0.71
Percentage of Customers predicted to buy organic?
11%

Of the organic buyers, what is the average age?
36
Of the organic buyers, what is the average affluence grade?
13
Of the organic buyers, how many are female?
16
Of the organic buyers, how many are male?
1
Of the organic buyers, how many are unknown?
0
Of the organic buyers, what is the average amount spent?
\$1,855.76
Of the non-organic buyers, what is the average amount spent?
\$3,728.28
Of the organic buyers, how many have tin loyalty?
8
Of the organic buyers, how many have silver loyalty?
7



Recommendations:

1. Improve marketing by changing the focusing a specific group of customers at our supermarket.
2. Grant more tin and silver loyalty memberships
3. Consider increasing inventory on certain regions and neighborhoods
4. Decrease the cost of organic products



Questions?

