# Customer Segmentation

# Business Science 3/19/2019

#### **Problem Statement**

Marketing would like to increase email campaign engagement by segmenting the customer-base using their buying habbits.

### **Solution Summary**

The data science team has identified 4 customer segments. The 4 customer segments were given descriptions based on the customer's top product purchases.

- 1. **Segment 1 Preferences:** Road Bikes, Below \$3200 (Economical Models)
- 2. Segment 2 Preferences: Mountain Bikes, Above \$3200 (Premium Models)
- 3. Segment 3 Preferences: Road Bikes, Above \$3200 (Premium Models)
- 4. Segment 4 Preferences: Both Road and Mountain, Below \$3200 (Economical Models)

#### **Customer Preferences**

#### Heat Map

Our customer-base consists of 30 bike shops. Several customers have purchasing preferences for Road or Mountain Bikes based on the proportion of bikes purchased by category\_1 and category\_2.

## **Heatmap of Purchasing Habits**

		Mountain						Road			
	Albuquerque Cycles -	16.8%	3.1%	4.5%	12.2%	13.3%		2.4%	24.1%	18.9%	4.5%
Customer	Ann Arbor Speed	5.3%	0.7%	3.2%	7.6%	7.1%		6.6%	37.0%	23.6%	8.8%
	Austin Cruisers	8.5%	0.8%	2.0%	11.8%	6.5%		3.7%	37.4%	19.9%	9.3%
	Cincinnati Speed	15.3%	0.3%	7.2%	0.8%	6.1%		6.1%	30.9%	23.8%	9.5%
	Columbus Race Equipment -	18.0%	0.8%	8.1%	1.5%	7.6%		4.6%	27.7%	23.9%	7.9%
	Dallas Cycles -	17.5%	1.3%	4.7%	18.8%	9.4%		4.7%	20.9%	18.4%	4.3%
	Denver Bike Shop	23.9%	2.7%	9.2%	16.9%	17.9%		3.7%	14.0%	8.8%	3.1%
	Detroit Cycles	17.3%	1.0%	8.7%	9.5%	11.5%		6.3%	22.4%	17.7%	5.6%
	Indianapolis Velocipedes -	10.3%	1.3%	1.3%	11.6%	4.1%		3.8%	37.6%	24.1%	6.0%
	Ithaca Mountain Climbers -	30.0%	2.0%	16.6%	8.6%	18.2%		1.9%	11.3%	8.1%	3.3%
	Kansas City 29ers	25.8%	2.9%	8.9%	16.1%	17.9%		3.1%	12.6%	9.4%	3.3%
	Las Vegas Cycles	17.0%	1.0%	10.4%	0.5%	4.0%		4.2%	28.7%	25.2%	9.1%
	Los Angeles Cycles	14.5%	2.2%	7.2%	14.2%	12.6%		3.5%	21.4%	17.3%	7.2%
	Louisville Race Equipment	14.7%	1.5%	9.1%	0.3%	6.8%		3.5%	36.2%	21.3%	6.6%
	Miami Race Equipment	7.6%	1.3%	2.7%	10.5%	7.0%		7.9%	32.0%	23.5%	7.6%
	Minneapolis Bike Shop -	17.7%	2.1%	3.7%	9.7%	14.2%		6.4%	23.7%	17.0%	5.5%
	Nashville Cruisers	9.8%	0.9%	2.0%	9.0%	9.2%		6.6%	32.7%	22.3%	7.5%
	New Orleans Velocipedes	6.8%	0.7%	3.4%	9.1%	7.8%		6.4%	31.0%	25.5%	9.2%
	New York Cycles	19.0%	1.0%	6.4%	10.1%	12.3%		4.0%	22.7%	18.3%	6.2%
	Oklahoma City Race Equipment	8.4%	1.0%	2.6%	7.5%	9.3%		7.1%	33.1%	24.2%	6.8%
	Philadelphia Bike Shop -	16.7%	1.2%	7.3%	10.6%	11.8%		3.7%	23.3%	15.5%	9.8%
	Phoenix Bi-peds	16.0%	2.0%	6.0%	12.5%	14.4%		5.3%	21.8%	17.2%	4.8%
	Pittsburgh Mountain Machines	29.4%	3.2%	13.8%	8.8%	15.6%		2.1%	12.5%	9.3%	5.3%
	Portland Bi-peds	17.9%	1.9%	5.7%	13.0%	12.9%		5.4%	22.8%	14.4%	5.9%
	Providence Bi-peds	18.5%	1.1%	7.4%	10.0%	13.5%		2.6%	20.1%	21.6%	5.4%
	San Antonio Bike Shop -	15.1%	2.2%	6.5%	12.9%	13.4%		2.2%	23.1%	16.7%	8.1%
	San Francisco Cruisers	10.4%	1.1%	8.8%	1.3%	6.4%		5.3%	32.1%	21.9%	12.6%
	Seattle Race Equipment	6.2%	0.8%	2.3%	3.1%	11.7%		4.7%	24.2%	35.9%	10.9%
	Tampa 29ers	30.1%	2.9%	19.4%	12.6%	15.0%		2.4%	9.7%	5.8%	1.9%
	Wichita Speed	16.6%	2.4%	8.9%	2.0%	4.7%		5.5%	30.8%	21.7%	7.5%
		Race .	2.4%	Intain	Sport	Kail	- '	Hocross Ein	Road	Road	athalon
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Wichita Speed 16.6% 2.4% 8.9% 2.0% 4.7% 5.5% 30.8% 21.											

Bike Type (Category 2)

#### **Customer Segmentation**

This is a 2D Projection based on customer similarity that exposes 4 clusters, which are key segments in the customer base.

#### Customer Segmentation: 2D Projection UMAP 2D Projection with K-Means Cluster Assignment San Antonio Bike Shop Customer: New York Cycles Cluster: 4 Customer: Seattle Race Equipment Cluster: 3 stomer: Austin Cruis 1 Cluster: 3 Customer: Nashville C Customer: Oklahoma City R Cluster: 3 er: Los Angeles Cycles Cluster: 3 Cluster: 4 Cluster: 4 Customer: Tampa 29ers Customer: Albuquerque Cycles Customer: Ann Arbor Speed Cluster: 1 Cluster: 4 Cluster: 3 0 Cluster: 4 Customer: Ithaca Mountain Climbers Customer: Miami Race Equipment Cluster: 3 Customer: Denver Bike Shop Customer: Providence Bi-peds Customer: Pittsburgh Mountain Machines Cluster: 4 : Minneapolis Bike Shop -1Customer: Las Vegas Cycles Cluster: 2 Cluster: 2 Customer: Cincinnati Speed Customer: San Francisco Cruisers Cluster: 2 stomer: Columbus Race Equipment Customer: Louisville Race Equipment -2

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#### Customer Preferences By Segment

The 4 customer segments were given descriptions based on the customer's top product purchases.

1. Segment 1 Preferences: Road Bikes, Below \$3200 (Economical Models)

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- 2. **Segment 2 Preferences:** Mountain Bikes, Above \$3200 (Premium Models)
- 3. Segment 3 Preferences: Road Bikes, Above \$3200 (Premium Models)
- 4. Segment 4 Preferences: Both Road and Mountain, Below \$3200 (Economical Models)

