# Customer Segmentation

### Business Science

#### 2023-02-24

#### **Problem Statement**

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

### **Solution Summary**

The Data Science team has identified four customer segments. The segments were given descriptions based on the top product purchases within the segment.

- 1. Segment 1 Preferences: Mountain Bikes, Above \$3,200 (Premium Models)
- 2. **Segment 2 Preferences:** Road Bikes, Above \$3,200 (Premium Models)
- 3. Segment 3 Preferences: Road Bikes, Below \$3,200 (Economical Models)
- 4. Segment 4 Preferences: Both Road and Mountain, Below \$3,200 (Economical Models)

#### Customer Preferences

#### Heat Map

Our customer base consists of 30 bike shops. Based on the proportion of bikes purchased by category\_1 and category\_2, we can observe that several customers have strong preferences for Road or Mountain Bikes

## **Heatmap of Purchasing Habits**

Albuquerque Cycles 16,8% 3.1% 4.5% 12.2% 13.3% 2.4% 24.1% 18.9% 4.5% Ann Artor Speed 5.3% 0.7% 3.2% 7.6% 7.1% 6.6% 37.0% 23.6% 8.8% Cincinnati Speed 16,5% 0.8% 2.0% 11.8% 6.5% 3.7% 27.0% 3.7% 19.9% 9.3% Cincinnati Speed 16,5% 0.8% 2.0% 11.8% 6.5% 3.7% 23.6% 8.8% 1.5% 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% 14.0% 18.9% 18.9%			Mountain						Road			
Austin Cruisers 8.5% 0.8% 2.0% 11.8% 6.5% 6.5% 6.1% 30.9% 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% Deriver Bike Shop 23.9% 2.7% 9.2% 16.9% 17.9% 3.7% 14.0% 8.8% 3.1% Deriver 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 90.0% 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% Louisville Race Equipment 14.7% 1.5% 9.1% 0.3% 6.8% 3.5% 32.2% 21.3% 6.6% Nashville Cruisers 9.8% 0.9% 2.0% 9.0% 9.2% 6.6% 32.7% 12.3% 7.5% New Orleans Velocipedes 6.8% 0.7% 3.4% 9.1% 7.8% 6.4% 33.0% 22.3% 7.5% 9.2% Oklahoma City Race Equipment 8.4% 1.0% 2.6% 7.5% 9.3% 7.8% 9.2% 18.9% 19.0% 10.0% 6.4% 10.1% 12.3% 4.0% 22.7% 18.3% 6.2% Pholenix Bi-peds 16.0% 2.0% 6.0% 12.5% 14.4% 5.3% 21.8% 17.2% 4.8% Phoenix Bi-peds 16.0% 2.0% 6.0% 12.5% 14.4% 5.3% 21.8% 17.2% 4.8% Providence Bi-peds 15.5% 1.9% 5.7% 13.0% 12.9% 5.3% 22.9% 23.1% 5.3% 24.9% 5.3% 29.9% 5.3% San Antonio Bike Shop 15.1% 2.2% 6.5% 12.9% 13.4% 2.2% 23.1% 5.5% 8.1% San Antonio Bike Shop 15.1% 2.2% 6.5% 12.9% 13.4% 2.2% 23.1% 15.5% 8.1% San Francisco Cruisers 10.4% 1.1% 8.8% 1.3% 6.4% 5.3% 32.1% 12.5% 5.3% 21.6%		Albuquerque Cycles	16.8%	3.1%	4.5%	12.2%	13.3%		2.4%	24.1%	18.9%	4.5%
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%     27.0%   23.9%   7.9%	Customer	Ann Arbor Speed	5.3%	0.7%	3.2%	7.6%	7.1%		6.6%	37.0%	23.6%	8.8%
Delias Cycles		Austin Cruisers	8.5%	0.8%	2.0%	11.8%	6.5%		3.7%	37.4%	19.9%	9.3%
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 7.6% 1.3% 2.7% 10.5% 7.0% 7.9% 32.0% 23.5% 7.6% 1.3% 1.42% 12.6% 1.3% 3.5% 21.4% 17.3% 7.2% 1.5% 1.5% 1.5% 1.5% 1.5% 1.5% 1.5% 1.5		Cincinnati Speed	15.3%	0.3%	7.2%	0.8%	6.1%		6.1%	30.9%	23.8%	9.5%
Denver Bike Shop  23.9% 2.7% 9.2% 16.9% 17.9%  Detroit Cycles 17.3% 1.0% 8.7% 9.5% 11.5%  Indianapolis Velocipedes 10.3% 1.3% 1.3% 11.8% 4.1%  Ithaca Mountain Climbers 30.0% 2.0% 16.6% 8.6% 18.2%  Kansas City 29ers 25.8% 2.9% 8.9% 16.1% 17.9%  Las Vegas Cycles 17.0% 1.0% 10.4% 0.5% 4.0%  Los Angeles Cycles 14.5% 2.2% 7.2% 14.2% 12.6%  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%  Nashville Cruisers 9.8% 0.9% 2.0% 9.0% 9.2% 6.6% 32.7% 17.0% 5.5%  New Orleans Velocipedes 6.8% 0.7% 3.4% 9.1% 7.8% 6.4% 31.0% 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%  Portland Bi-peds 16.0% 2.0% 6.0% 12.5% 14.4% 5.3% 21.8% 17.2% 4.8%  Providence Bi-peds 18.5% 1.1% 7.4% 10.0% 13.5% 2.6% 20.1% 21.9% 5.5% 5.9%  San Antonio Bike Shop 15.1% 2.2% 6.5% 12.9% 13.4% 2.2% 2.31% 16.7% 8.1% 5.9%  San Francisco Cruisers 10.4% 1.1% 8.8% 1.3% 6.4% 5.3% 32.1% 21.9% 12.9% 5.5% 30.8% 21.9% 1.9% 5.5% 10.9%  Vichita Speed 16.6% 2.4% 8.8% 1.3% 6.4% 5.5% 30.8% 21.7% 5.5% 10.9%  Wilchita Speed 16.6% 2.4% 8.8% 15.6% 5.5% 30.8% 21.7% 5.5% 5.5% 30.8% 21.7% 5.5%		Columbus Race Equipment	18.0%	0.8%	8.1%	1.5%	7.6%		4.6%	27.7%	23.9%	7.9%
Detroit Cycles   17.3%   1.0%   8.7%   9.5%   11.5%   6.3%   22.4%   17.7%   5.6%   1.01		Dallas Cycles -	17.5%	1.3%	4.7%	18.8%	9.4%		4.7%	20.9%	18.4%	4.3%
Indianapolis Velocipedes 10.3% 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% Louisville Race Equipment 14.7% 1.5% 9.1% 0.3% 6.8% 3.5% 36.2% 21.3% 6.6% 14.2% 12.6% 14.2% 12.6% 14.5% 2.2% 7.2% 10.5% 7.0% 7.9% 32.0% 23.5% 7.6% 10.5% 7.0% 10.5% 7.0% 10.5% 7.0% 10.5% 7.0% 10.5% 7.0% 10.5% 7.0% 10.5% 7.0% 10.5% 10.5% 7.0% 10.5% 7.0% 10.5% 10		Denver Bike Shop	23.9%	2.7%	9.2%	16.9%	17.9%		3.7%	14.0%	8.8%	3.1%
Ithaca Mountain Climbers   30.0%   2.0%   16.6%   8.6%   18.2%   1.9%   11.3%   8.1%   3.3%		Detroit Cycles	17.3%	1.0%	8.7%	9.5%	11.5%		6.3%	22.4%	17.7%	5.6%
Las Vegas Cycles   17.0%   1.0%   10.4%   0.5%   4.0%   4.2%   28.7%   25.2%   9.1%   14.5%   2.2%   7.2%   14.2%   12.6%   3.5%   36.2%   21.3%   6.6%   32.7%   22.3%   7.5%   3.5%   36.2%   21.3%   6.6%   32.7%   22.3%   7.5%   3.2%   32.7%   32.3%   32.5%   7.6%   3.2%   32.7%   32.3%   32.5%   7.6%   3.2%   32.7%   32.3%   32.5%   7.6%   32.7%   32.3%   32.5%   7.6%   32.7%   32.3%   32.5%   32.		Indianapolis Velocipedes -	10.3%	1.3%	1.3%	11.6%	4.1%		3.8%	37.6%	24.1%	6.0%
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% Nashville Cruisers 9.8% 0.9% 2.0% 9.0% 9.2% 6.6% 32.7% 17.0% 5.5% 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% 6.4% 31.0% 25.5% 9.2% Philadelphia Bike Shop 16.7% 1.2% 7.3% 10.6% 11.8% 7.1% 33.1% 24.2% 6.8% Philadelphia Bike Shop 16.7% 1.2% 7.3% 10.6% 11.8% 7.3% 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% Portland Bi–peds 17.9% 1.9% 5.7% 13.0% 12.9% 5.4% 22.8% 14.4% 5.9% San Antonio Bike Shop 15.1% 2.2% 6.5% 12.9% 13.4% 2.2% 23.1% 16.7% 8.1% 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% 10.9%		Ithaca Mountain Climbers -	30.0%	2.0%	16.6%	8.6%	18.2%		1.9%	11.3%	8.1%	3.3%
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% Almost Partial Race Equipment 7.6% 1.3% 2.7% 10.5% 7.0% 7.9% 32.0% 23.5% 7.6% Nashville Cruisers 9.8% 0.9% 2.0% 9.0% 9.2% 6.6% 32.7% 17.0% 5.5% 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% 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% Providence Bi-peds 17.9% 1.9% 5.7% 13.0% 12.9% 5.4% 22.8% 14.4% 5.9% 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% 5.3% 32.1% 21.9% 12.6% 5.3% 32.1% 21.9% 12.6% 5.3% 32.1% 21.9% 12.6% 5.3% 32.1% 21.9% 12.6% 5.3% 32.1% 21.9% 12.6% 5.3% 32.1% 21.9% 5.8% 10.9% Tampa 29ers 30.1% 2.9% 19.4% 12.6% 15.0% 5.5% 30.8% 21.7% 7.5% 5.5% 30.8% 21.7		Kansas City 29ers	25.8%	2.9%	8.9%	16.1%	17.9%		3.1%	12.6%	9.4%	3.3%
Louisville Race Equipment   14.7%   1.5%   9.1%   0.3%   6.8%		Las Vegas Cycles	17.0%	1.0%	10.4%	0.5%	4.0%		4.2%	28.7%	25.2%	9.1%
Miami Race Equipment 7.6% 1.3% 2.7% 10.5% 7.0% 7.9% 32.0% 23.5% 7.6% 7.6% 1.3% 2.7% 10.5% 7.0% 7.9% 32.0% 23.5% 7.6% 1.3% 2.7% 14.2% 6.4% 23.7% 17.0% 5.5% 14.2% 16.6% 32.7% 17.0% 5.5% 16.6% 32.7% 17.0% 5.5% 16.6% 32.7% 17.0% 5.5% 16.6% 32.7% 17.0% 5.5% 16.6% 32.7% 17.0% 5.5% 16.6% 32.7% 17.0% 5.5% 16.6% 18.2% 19.0% 1.0% 6.4% 10.1% 12.3% 10.0% 22.7% 18.3% 6.2% 19.0% 1.0% 6.4% 10.1% 12.3% 10.6% 11.8% 11.8% 11.6% 11.8% 10.6% 11.8%		Los Angeles Cycles	14.5%	2.2%	7.2%	14.2%	12.6%		3.5%	21.4%	17.3%	7.2%
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%   6.4%  31.0%  25.5%  9.2%   6.8%  0.7%  3.4%  9.1%  7.8%   6.4%  31.0%  25.5%  9.2%   6.8%  0.7%  3.4%  9.1%  7.8%   6.4%  31.0%  25.5%  9.2%   6.8%  0.7%  3.4%  10.1%  12.3%   6.4%  31.0%  25.5%  9.2%   6.8%  0.7%  3.4%  10.1%  12.3%   7.1%  33.1%  24.2%  6.8%   7.1%  33.1%  24.2%  6.8%   7.1%  33.1%  24.2%  6.8%   7.1%  33.1%  24.2%  6.8%   7.1%  33.1%  24.2%  6.8%   7.1%  33.1%  24.2%  6.8%   7.5%  9.8%   7.1%  33.1%  24.2%  6.8%   7.5%  9.3%  1.5%  1.2%  1.3%  1.5%   7.1%  33.1%  24.2%  6.8%   7.5%  9.8%   7.1%  33.1%  24.2%  6.8%   7.5%  9.8%   7.1%  33.1%  24.2%  6.8%   7.5%  9.8%   7.5%  9.3%  1.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%    7.5%  23.3%  1		Louisville Race Equipment	14.7%	1.5%	9.1%	0.3%	6.8%		3.5%	36.2%	21.3%	6.6%
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%   6.4%  31.0%  25.5%  9.2%   6.8%  0.7%  3.4%  9.1%  7.8%   6.4%  31.0%  25.5%  9.2%   6.8%  0.7%  3.4%  9.1%  7.8%   6.4%  31.0%  25.5%  9.2%   6.8%  0.7%  3.4%  10.1%  12.3%   6.4%  31.0%  25.5%  9.2%   6.8%  0.7%  3.4%  10.1%  12.3%   7.1%  33.1%  24.2%  6.8%   7.1%  33.1%  24.2%  6.8%   7.1%  33.1%  24.2%  6.8%   7.1%  33.1%  24.2%  6.8%   7.1%  33.1%  24.2%  6.8%   7.1%  33.1%  24.2%  6.8%   7.5%  9.8%   7.1%  33.1%  24.2%  6.8%   7.5%  9.3%  1.5%  1.2%  1.3%  1.5%   7.1%  33.1%  24.2%  6.8%   7.5%  9.8%   7.1%  33.1%  24.2%  6.8%   7.5%  9.8%   7.1%  33.1%  24.2%  6.8%   7.5%  9.8%   7.5%  9.3%  1.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%   7.5%  23.3%  15.5%  9.8%    7.5%  23.3%  1		Miami Race Equipment -	7.6%	1.3%	2.7%	10.5%	7.0%		7.9%	32.0%	23.5%	7.6%
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 Francisco Cruisers       10.4%       1.1%       8.8% <t< td=""><td>Minneapolis Bike Shop</td><td>17.7%</td><td>2.1%</td><td>3.7%</td><td>9.7%</td><td>14.2%</td><td></td><td>6.4%</td><td>23.7%</td><td>17.0%</td><td>5.5%</td></t<>		Minneapolis Bike Shop	17.7%	2.1%	3.7%	9.7%	14.2%		6.4%	23.7%	17.0%	5.5%
New York Cycles		Nashville Cruisers	9.8%	0.9%	2.0%	9.0%	9.2%		6.6%	32.7%	22.3%	7.5%
Oklahoma City Race Equipment		New Orleans Velocipedes	6.8%	0.7%	3.4%	9.1%	7.8%		6.4%	31.0%	25.5%	9.2%
Philadelphia Bike Shop		New York Cycles -	19.0%	1.0%	6.4%	10.1%	12.3%		4.0%	22.7%	18.3%	6.2%
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% 5.3% 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% 1.5%		Oklahoma City Race Equipment	8.4%	1.0%	2.6%	7.5%	9.3%		7.1%	33.1%	24.2%	6.8%
Pittsburgh Mountain Machines - 29.4% 3.2% 13.8% 8.8% 15.6% - 2.1% 12.5% 9.3% 5.3% - 5.4% 22.8% 14.4% 5.9% - 5.4% 22.8% 14.4% 5.9% - 5.4% 22.8% 14.4% 5.9% - 2.6% 20.1% 21.6% 5.4% - 2.6% 20.1% 21.6% 5.4% - 2.6% 20.1% 21.6% 5.4% - 2.2% 23.1% 16.7% 8.1% - 2.2% 23.1% 16.7% 8.1% - 2.2% 23.1% 16.7% 8.1% - 2.2% 23.1% 16.7% 21.6% - 2.2% 23.1% 16.7% 21.6% - 2.2% 23.1% 16.7% 21.9% 12.6% - 2.2% 23.1% 16.7% 21.9% 12.6% - 2.2% 23.1% 16.7% 21.9% 12.6% - 2.2% 23.1% 21.9% 12.6% 12.9% 12.6% 12.9% 12.9% 12.6% 12.9% 12.9% 12.6% 12.9%		Philadelphia Bike Shop	16.7%	1.2%	7.3%	10.6%	11.8%		3.7%	23.3%	15.5%	9.8%
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% 5.4% San Antonio Bike Shop 15.1% 2.2% 6.5% 12.9% 13.4% 2.2% 23.1% 16.7% 8.1% 2.2% San Francisco Cruisers 10.4% 1.1% 8.8% 1.3% 6.4% 5.3% 32.1% 21.9% 12.6% 5.3% 32.1%		Phoenix Bi-peds	16.0%	2.0%	6.0%	12.5%	14.4%		5.3%	21.8%	17.2%	4.8%
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% 2.2% 23.1% 16.7% 8.1% 3.4% 2.2% 2.3% 3.1% 1.3% 6.4% 5.3% 32.1% 21.9% 12.6% 3.2% 3.1% 11.7% 4.7% 24.2% 35.9% 10.9% 3.4% 3.4% 3.4% 3.4% 3.4% 3.5% 3.4% 3.5% 3.5% 3.5% 3.5% 3.5% 3.5% 3.5% 3.5		Pittsburgh Mountain Machines	29.4%	3.2%	13.8%	8.8%	15.6%		2.1%	12.5%	9.3%	5.3%
San Antonio Bike Shop - 15.1% 2.2% 6.5% 12.9% 13.4% - 2.2% 23.1% 16.7% 8.1% - 2.2% 23.1% 8.1% - 2.2% 23.1% 8.1% 23.1% 8.1% 23.		Portland Bi-peds	17.9%	1.9%	5.7%	13.0%	12.9%		5.4%	22.8%	14.4%	5.9%
San Francisco Cruisers - 10.4% 1.1% 8.8% 1.3% 6.4% - 5.3% 32.1% 21.9% 12.6% - 5.3% Seattle Race Equipment - 6.2% 0.8% 2.3% 3.1% 11.7% - 4.7% 24.2% 35.9% 10.9% - 4.7% 24.2% 35.9% 10.9% - 2.4% 9.7% 5.8% 1.9% - 5.5% 30.8% 21.7% 7.5% - 5.5% 21.0% - 5.5% 21.0% - 5.5% 21.0% - 5.5% 21.0% - 5.5% 21.0% - 5.5% 21.0% - 5.5% 21.		Providence Bi-peds	18.5%	1.1%	7.4%	10.0%	13.5%		2.6%	20.1%	21.6%	5.4%
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% -		San Antonio Bike Shop	15.1%	2.2%	6.5%	12.9%	13.4%		2.2%	23.1%	16.7%	8.1%
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%		San Francisco Cruisers	10.4%	1.1%	8.8%	1.3%	6.4%		5.3%	32.1%	21.9%	12.6%
Wichita Speed - 16.6% 2.4% 8.9% 2.0% 4.7% - 5.5% 30.8% 21.7% 7.5% -		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%
Country Race Lat Bike One Mouthout Stort Trail		•		2.4%	8.9%	2.0%	4.7%		5.5%	30.8%	21.7%	7.5%
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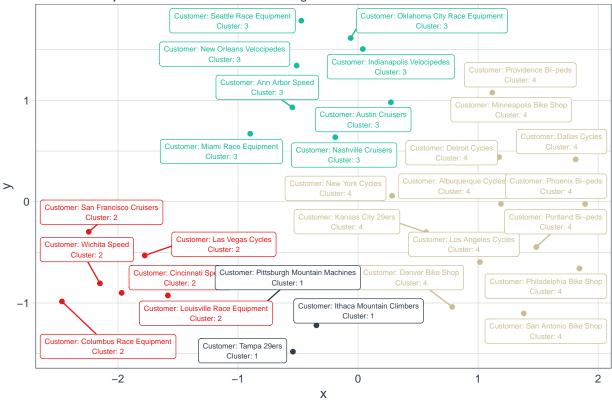
Bike Type (Category 2)

#### **Customer Segmentation**

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

# Customer Segmentation: 2D Projection

UMAP 2D Projection with K-Means Cluster Assignment



#### Customer Preferences by Segment

The four customer segments were given descriptions based on the top product purchases within the segment.

- 1. **Segment 1 Preferences:** Mountain Bikes, Above \$3,200 (Premium Models)
- 2. **Segment 2 Preferences:** Road Bikes, Above \$3,200 (Premium Models)
- 3. Segment 3 Preferences: Road Bikes, Below \$3,200 (Economical Models)
- 4. Segment 4 Preferences: Both Road and Mountain, Below \$3,200 (Economical Models)

