

Surf and Ice Cream Seasonal Analysis

Description of Analysis

W. Avy has asked for additional “seasonal data.” He wants to know:

* Can the seasons affect the surf and ice cream shop business?

* Specifically are there certain times of year when business might be slower, or the type of customer could be different?

Resources and Methodology

Using the additional dependency “from sqlalchemy import extract” a filter was added to our select statements such that we looked across all years and all stations, but only extracted June and Dec data. Converting that to a panda DataFrame, we then used the “describe” function to pull statistical information on our data. The stats are shown below.

June Data		Dec Data	
	precipitation		precipitation
count	1574.000000	count	1405.000000
mean	0.136360	mean	0.216819
std	0.335731	std	0.541399
min	0.000000	min	0.000000
25%	0.000000	25%	0.000000
50%	0.020000	50%	0.030000
75%	0.120000	75%	0.150000
max	4.430000	max	6.420000

Conclusions from Statistics

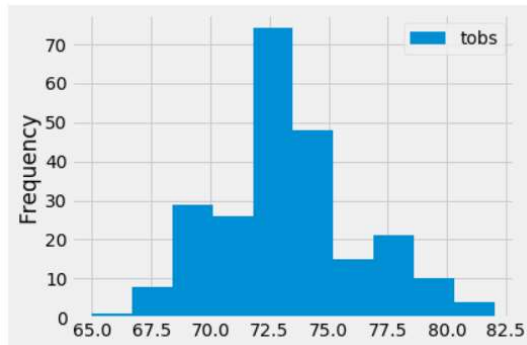
From these statistics we made the following conclusions regarding **precipitation**:

- 1) The average rainfall increased by about 80% between June and Dec, but is still relatively low.
- 2) Dec data showed a higher standard deviation, therefore indicating a bit higher variation between the precipitation data.
- 3) In both June and Dec, there were plenty of days with near “0” rainfall as indicated by the 1st and 2nd Quartiles.

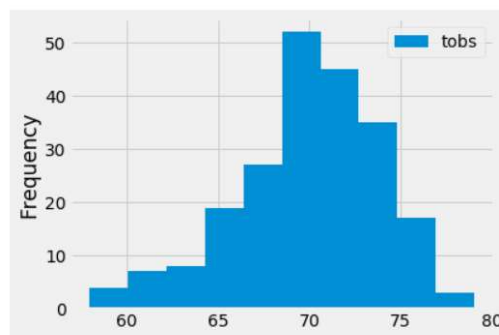
- 4) We can see that almost all the extra variation – and heavier rain – came slightly in the 3rd quartile, but mostly in the 4th quartile with about 50% higher maximum rain.

From the histograms below, we can draw the following conclusions regarding **temperature**:

June Temperatures



December Temperatures



- Dec Temperatures ranged from 60-80 with the median of around 70 on slightly over 50 days.
- June Temperatures ranged a bit hotter from about 65 – 82 but saw a median of about 72-73 on over 70 days.
- Although overall temperatures were quite good during both seasons for surfing, we might expect a higher level of “ice cream” sales during the summer months.

Further Analysis Recommended

There are several other aspects suggested for analysis to strengthen the decision making process regarding this business such as:

- Travel and Tourist data on number of visitors during the seasons.
- Wind and Surf Data (specifically wave and swell height) by seasons.
 - Winter tends to be larger waves and more experienced professional surfers coming from the mainland.
 - Summer tends to be smaller waves, with more tourist type individuals.
 - This may suggest the types of boards required for rentals or other services such as board transporting for professional surfers bringing their own boards.
- Competitive Surf Rental and Ice Cream shops near area where W. Avy wants to setup shop.
- Pricing Data on competitors (what they charge and what services they offer).