Analysis of Pastas R Us’ Marketing Strategy

Student Name

Name of Institution

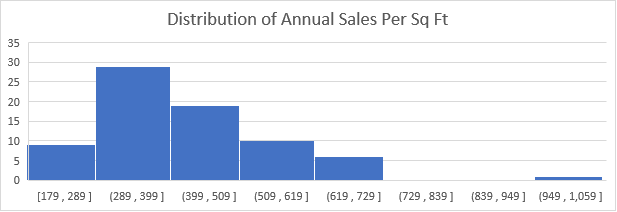
Analysis of Pastas R Us’ Marketing Strategy

**Section 1 - Scope and Descriptive Statistics**

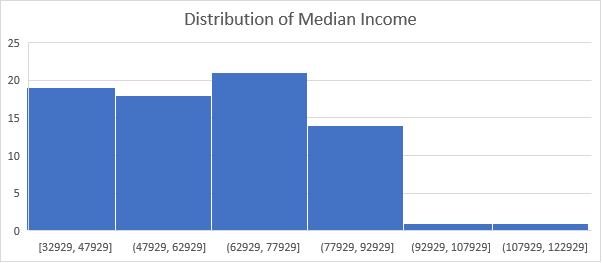
The objective of the current report is to determine whether the current expansion criteria at Pastas R Us can be improved, by evaluating the extent to which the variables considered during expansion influence annual sales per sq ft. The database used for the current analysis comprises of 74 observations across 8 variables. The 74 observations represent each of the company’s 74 restaurants. The variables include restaurant size in sq ft, per person average spending, annual sales growth (in %), loyalty card sales as a percentage of net sales, annual sales per sq ft, and median household income, median age, and percentage of the population with a Bachelor’s degree for the region within 3 miles of the restaurant. The company bases its expansion decisions on three criteria: median age, household median income, and proportion of adult population that is college educated. The effect of these three variables on the key financial performance metric (annual sales per sq. ft) will be evaluated. Before performing the inferential analysis, the three explanatory variables and the response variable (annual sales per sq. ft) were described using descriptive statistics and histograms presented below.

The sales per sq ft ranged between $178.56 and $987.12, indicating significant variation in the key performance measure across the restaurants. The median was $396 meaning that half of the restaurants had sales/sq ft of between $178.56 and $396. The mean (420.31) was higher than the median, which is suggestive of a positively skewed distribution. The positive skew is established from the high skewness statistic (1.24) and the longer right tail of the histogram depicting the sales/ sq ft distribution.

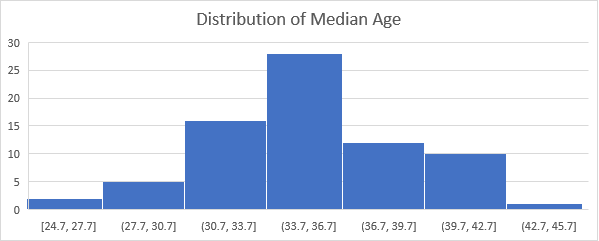
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Statistics | Sales/Sq ft | Median Income | Median Age | % w/ Bachelors’ Degree |
| Mean | 420.31 | 62807.70 | 35.20 | 26.31 |
| Median | 396.01 | 62757.00 | 35.00 | 26.50 |
| Standard deviation | 137.24 | 17904.27 | 3.65 | 7.00 |
| Kurtosis | 2.88 | -0.51 | 0.16 | -0.94 |
| Skewness | 1.24 | 0.30 | -0.17 | 0.14 |
| Minimum | 178.56 | 32929.00 | 24.70 | 14.00 |
| Maximum | 987.12 | 114353.00 | 43.50 | 40.00 |



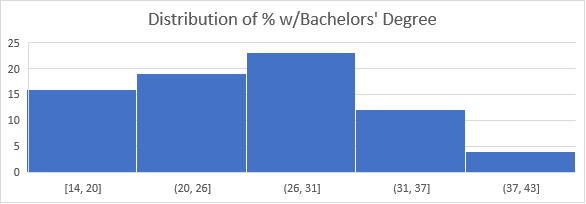
Median income was fairly varied with values ranging from $32,929 to $114,353. The mean and median were roughly equal at $62,807.70 and $62,757.00, respectively. From the histogram, the distribution was roughly uniform except that the frequency of median income values greater than $92,929 is relatively rare.



The median age of the population within 3 miles of the restaurants ranged between 24.70 and 43.50 years. The mean and median were roughly equal at 35.2 and 35 years. The distribution is roughly symmetric as indicated by the bell-shaped histogram and small skewness value, which is close to zero.



The percentage of the population within 3 miles of the restaurant with bachelor’s degrees ranged between 14% and 40%. The mean and median percentage with bachelor’s degrees was 26.31% and 26.50%. The distribution is slightly right-skewed as indicated by the small positive skewness statistic and the relative infrequency of values to the right of the distribution as indicated by the accompanying histogram.



**Section 2 – Analysis**

The relationship between sales/ sq ft and each of the three decision variables is depicted in the scatterplots below. There is no discernible trend in observations in the median income vs. sales per sq ft and median age vs. sales/sq ft scatterplots indicating no relationship between median income and sales/sq ft nor between median age and sales/ sq ft. The absence of a relationship is confirmed in the small R2 values that are close to zero, indicating that the variation in median age and median income explains roughly 0% of the variation in sales/ sq ft.

In contrast, there was a weak but discernible increasing trend in the percent with bachelor’s degree versus sales/sq ft scatterplot. This is indicative of the presence of a weak to moderate positive relation between bachelor’s degree and sales/ sq ft. The presence of a relationship between the two variables is confirmed by the R2 value, which indicates that the variation in percent with bachelor’s degree explains 11.7% of the variation in sales/ sq ft. From the regression equation, a percentage increase in the population within 3 miles of the restaurant with bachelor’s degrees is associated with a $6.7 increase in the sales/ sq ft.

The loyalty card percentage versus sales growth scatterplot shows a weak but discernible decreasing trend in observations, which is indicative of a negative relationship between the variables. The variation in the percentage of loyalty card sales explained 8.8% of the variation in the sales growth rate. From the regression equation, a percentage increase in the loyalty card sales as a percentage of net sales is associated with a 3.56% reduction in the sales growth rate.

**Section 3: Recommendations and implementation**

Based on the analysis results, percent of population with Bachelor’s degree was the only effective expansion criterion. Median household income and median age had negligible effect on sales per sq ft and should not be considered in expansion decisions. The restaurant’s choice to target regions with at least 15% college educated adult population is supported by the data as sales per sq ft was shown to increase with an increase in the college educated population. However, from the scatterplot depicting the relationship between percent of population with college education and sales/ sq ft, the gain in the latter from increasing the former was limited. Furthermore, there was substantial variation in sales/ sq ft for restaurants with comparable populations of college educated adults. For example, the sales per sq ft for restaurants with more than 30% college educated adult population ranged between $351 and $987. The restaurant should identify the other factors responsible for the variation and evaluate the usefulness of these factors as expansion criteria.

Given that loyalty card was negatively correlated with sales growth, I would recommend changing the loyalty card marketing strategy. The effectiveness of targeting college educated adults could be evaluated by comparing the average spending per person for college-educated customers and customers with lesser educational qualifications. This data would be collected by sampling a given number of customers across all 74 regions and dividing the sample into college-educated and high-school educated or below.