

Analysis of Pelican Stores Promotion Using Descriptive Statistics

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Introduction

Pelican Stores is a nationwide network of women's clothing retailers that is a part of National Clothing. Discount vouchers distributed to consumers of other National Clothing stores were part of a recent offer run by the store. A study of 100 in-store credit card transactions that occurred during the offer is provided in this report. The goals are to understand the clientele and assess the promotion's efficacy. Descriptive information on net sales by client category and the correlation between net sales and age will be included in the study.

Descriptive Statistics on Net Sales

Overall Net Sales

The 100 transactions resulted in an aggregate net sale mean of \$77.60 and a standard deviation of \$55.66. With a median net sales amount of \$59.71, half of the transactions fell below this threshold, and the other half exceeded it. Net sales figures showed that the minimum was \$13.23, and the maximum was \$287.59.

Net Sales by Customer Classification

A pivot table was made to summarize net sales by kind of client (promotional vs. ordinary), as shown in Descriptive statistics: Numerical measures (Chapter 3).

(See Table 1).

Row Labels	Sum of Net Sales	Average of Net Sales2	Count of Net Sales2	Max of Net Sales2	Min of Net Sales2	StdDev of Net Sales2
Promotional	5900.3	84.29	70	287.59	13.23	61.46229694
Regular	1859.75	61.99166667	30	159.75	22.5	35.06794411
Grand Total	7760.05	77.6005	100	287.59	13.23	55.66493843

Table 1: Pivot Table

The average net sales of promotional consumers were more significant (\$84.29) than those of ordinary customers (\$61.99). Moreover, the net sales standard deviation for promotional

customers is more prominent (\$61.46) than for ordinary customers (\$35.07), suggesting more variation in the net sales amounts for promotional consumers.

Relationship Between Age and Net Sales

Descriptive Statistics

Customers' ages ranged from 43.08 years on average to 12.33 years on standard. The youngest client was twenty years old, and the oldest was seventy-eight. The median age of the customers was 42 (See Table 2).

	Net sale	Age
Mean	77.60	43.08
Median	59.71	42
Standard Deviation	55.664938	12.32695
Minimum	13.23	20
Max	287.59	78
correlation	-0.010636	

Table 2: Descriptive Statistics of Net Sales VS Age

Correlation Analysis

A very modest negative link exists between age and net sales, as indicated by the correlation value of -0.0106 (See Table 2). This shows that the link between age and net sales amount is not linear.

Scatter Plot and Trendline

A scatter plot was made to see how age and net sales related to each other. The scatter plot was enhanced with a trendline, resulting in the linear equation that follows:

$$y = -0.0024x + 43.264$$

Age explains almost none of the variance in net sales, according to the trendline's R-squared value of 0.0001 (See Figure 1).

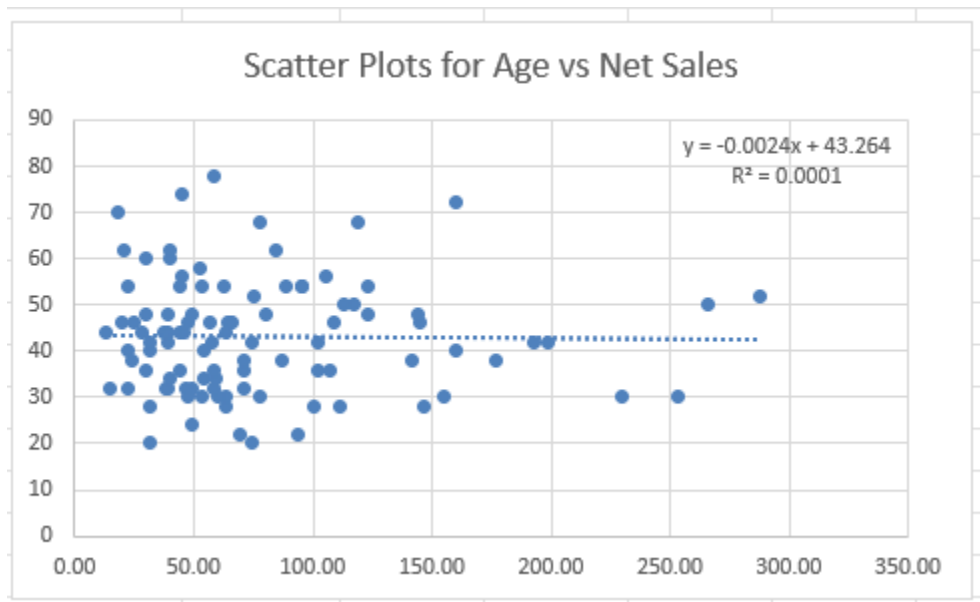


Figure 1: Scatter plots showing the relationship between Age and Net Sales

According to the scatter plot and the linear trendline, there is no discernible correlation between a customer's age and the amount they spend during the campaign. The minimum R-squared value and the almost zero correlation coefficient confirm this conclusion.

Summary and Recommendations

Summary

According to the data, clients involved in promotions often spend more money overall than ordinary customers. Nonetheless, there is a great deal of variation in clients' spending habits on promotions. Furthermore, a customer's age does not seem to affect how much they spend during an offer.

Recommendations

Targeted Promotions: Future promotions might target those more likely to utilize the coupons and spend more money, given the increased average spending of promotional consumers.

Further Analysis: further variables beyond age, such as the kind of goods bought, when they were bought, and client demographics, may provide further light on consumer purchasing patterns.

Customer Retention: Through loyalty programs or further specials, efforts should be made to turn promotional consumers into regular customers since they represent new business for Pelican Stores.

Pelican Stores may increase sales by utilizing these analytics to analyze consumer behavior better and enhance promotional activities.

Reference

Descriptive statistics: Numerical measures (Chapter 3).