ABC Pharmacy: 6 Month Data Analysis

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Merrimack College

DSE5011 Final Project

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# Executive Summary

## Overview

For this project months of sales data was given from a Pharmacy Chain with locations over several states. I was tasked with looking into the data and determining some goals and recommendations for the company. I decided to look at the sales in each major category from each state and how they relate to one another as well as how the sales change from month to month. In doing this analysis I will be giving the company a better evaluation of both the geography and time variations of their sales, so they know how to stock their shelves at different times and locations, as well as what products to market in various regions.

## Business Goals

One goal of this analysis will be to increase shipping efficiency by understanding what items are being sold in different regions and targeting those regions more than those that aren’t selling as well. The other goal is to understand what categories may be underperforming in certain states so another approach can be used for these, whether that be trimming the fat and removing them from shelves, or marketing them differently, or another solution. In general, this analysis looks to develop knowledge of sales trends over both spatial and temporal data.

## Data Description

The data given for this task was originally given in 3 spreadsheets, each with sheets containing relevant data. Each table of data included things such as products, categories, major categories, sub-categories, segments, pharmacy information, and finally each transaction line-item. For my analysis only the products, categories, major categories, pharmacies, and sales information were included in the data model.

## Methodological Summary

The 3 spreadsheets (each with multiple sheets with tables of relevant information) were first converted into comma separated value files (.csv) for import into Python. Then the tables were insected visually and using data checks built into Python such as the .describe() command. This gave univariate statistics that could be used to determine if the data made sense from a broad perspective.

## Results

Adsf

## Recommendations

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# Core Report

## Overview

For this project months of sales data was given from a Pharmacy Chain with locations over several states. I was tasked with looking into the data and determining some goals and recommendations for the company. I decided to look at the sales (from Major Categories, Categories, and Products) and determine the dependence of these sales on geography (state by state) and time (month by month). This analysis was split into three groups of analyses: state by state statistics, a combined state/month analysis and finally a month by month analysis.

The state by state analysis will give general trends in what categories and products are being sold in different states. This can lead to increased efficiency in shipping and stocking shelves, as different areas will need more particular items based on sales history while other areas may not need to be stocked with those items at all. Some of the information looked at in this analysis is top selling Major Categories for each state (as well as the variation state to state for each major category), the top selling Categories for each state and finally the top selling product for each state. In addition, the sales for each state will be analyzed as well as sales per store, giving insight into what areas are struggling. Finally, zip code sales information was looked at in order to determine the top zip code in sales for each state, as well as the zip code with the least sales. This can show where operations need to be focused to reach the customer base as well as where stores may need to be closed.

The combined state and month analysis will show how each states sales change month to month. This again can lead to operational changes by knowing when to ship various products to given areas, as well as what times sales slow down so that measures can be taken to reduce headcount during these times or marketing measures implemented to attempt to increase sales. This analysis included gathering the leading major category, category and product for each state and each month. Also, the month to month variation for each state was analyzed in order to determine when some states thrive while others struggle.

Lastly, the month to month analysis will show general trends in sales across the entire chain throughout the year. This will show what times of year may be important for national marketing rather than a local focus. It will also show when sales are higher, leading to changes in financial operations. This analysis will include a look at the leading major categories, categories and products, as well as how the major categories vary month to month for the entire store network. Each month total sales will be tabulated as well as the variation across all six months. Finally, the top 10 dates for sales will be calculated.

This analysis will give the company knowledge and insight into variation in sales across the various regions they serve and throughout the year. This can lead to various improvements including shipping operations, marketing priorities, and franchising for ABC Pharmacy.

## Business Goals

The goals for this analysis include giving ABC Pharmacy sales information for each state and month so recommendations can be made in order to increase efficiency and trim fat. Some of these recommendations may include focusing on certain areas for shipping certain products, marketing different products in different areas and at different times, reducing headcount at certain stores during slow times or closing stores altogether, etc. The goals for this analysis is not primarily to look at specific stores, but to look at general trends across states and throughout the year to give a sense of where changes may need to take place. By looking at both geography and time, ABC Pharmacy will get a better understanding of the categories they are struggling in as well as where they are thriving.

### Business Questions

#### State Analysis

* What are the leading major categories, categories and products sold in each state?
* What major product categories vary the most in sales from state to state?
* What state has the highest/lowest sales per store (only including stores with transactions)?
* What zip code in each state has the highest sales?

#### State/Month Analysis

* What are the highest/lowest selling months in each state?
* How do state sales vary month to month?
* What are the leading major categories, categories and products sold in each state each month?

#### Month Analysis

* What major product categories vary the most in sales from month to month?
* What month has the highest sales for each major category?
* What month has the highest total sales?
* What are the 10 days with highest amount of sales?

These questions were chosen because I believe they will give thorough insight into how ABC Pharmacy sales are affected by geography and time of year. By splitting into three groups of questions and analyses, ABC Pharmacy management will gain general knowledge about how sales are generally affected over their markets, how sales are affected over the six months in question, and finally more specifically how these two variables may affect one another in the combined state/month analysis.

## Data Description

The data given for this task was originally given in 3 spreadsheets, each with sheets containing relevant data. These tables each were converted to csv files for use in Python. Each table of data included things such as products, categories, major categories, sub-categories, segments, pharmacy information, and finally each transaction line-item. For my analysis only the products, categories, major categories, pharmacies, and sales information were included in the data model. In order to ensure this data was sufficient for my analysis certain measures were taken to validate the data visually. This included a univariate analysis of each table. It should be noted that during analysis it was realized that Delaware had particularly low sales and only one store so that state was dropped from some of the variation analyses. This will be discussed later in Results.

### Data Quality

As introduced in the previous paragraph, each table’s data was visually inspected using the .describe() command in Python. This command gives basic information such as number of unique values, which values appear the most, etc. By using this command for univariate statistics on all relevant tables, I was able to ensure the data I was using made sense and could be used effectively. An example of this information is here:

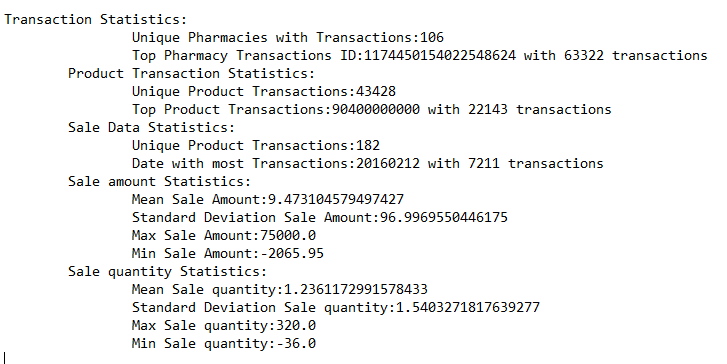


Figure 1: Transaction Data Quality Check

In this example Transaction data was inspected and generally makes sense in terms of days, products, pharmacies, etc. This univariate analysis data quality check was sufficient for this level of analysis.

### Data Model

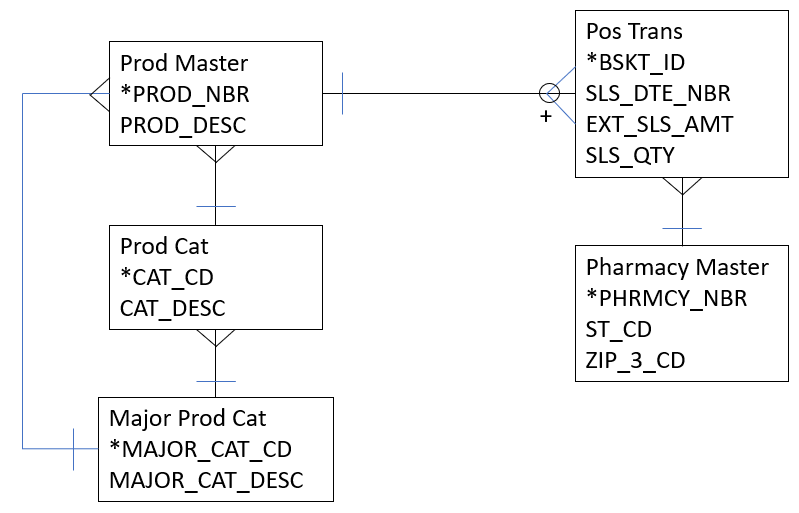


Figure 2: ABC Pharmacy Data Model

## Methodological Summary

The first step in the analysis was to convert the spreadsheets given with the ABC Pharmacy sales data from sheets within 3 master spreadsheets into separate csv files. This was done in Microsoft Excel by simply saving each sheet as a csv and naming it accordingly. Next, each of the tables, now in their own csv, were read into python using the Pandas module. Each csv was loaded with their corresponding column titles into their own data frame. At this point each of the tables could be inspected using univariate statistics from the describe command as previously mentioned in Data Quality. Once this inspection was completed, all data was properly imported into Python and ready for analysis.

The next step was to merge the tables into one master transaction table that could be analyzed. The base transaction data frame, ‘pos\_trans’ was merged to prod\_master and phrmcy\_master in order to bring in category and major category ids as well as pharmacy information. This new data frame, ‘merged\_df,’ would be the data frame used for the rest of the analysis. Before beginning the main analysis, the dates in the transaction data were converted into the proper Pandas format so the month data could be reviewed. A new column for month was created for each transactional line item row. Finally, a column for line item sale was created for each line item by multiplying the extended sales amount and the quantity of the product.

For the state by state analysis, the states were derived from the merged data frame by dropping all duplicate states, essentially selecting only states that were in the transaction data. Then, for each state, the following steps were taken. First, the transactions specific for the given state were extracted from the merged data frame. This new data frame, ‘state\_df’ would be the data frame used for the state by state analysis. The first analysis run was calculating the total sales by summing all line item sales and calculating the number of stores in the state (note this includes *only* stores with sales, some stores in the pharmacy master table may not be used for the analysis if they did not have any sales). At this point a state average sales per store was calculated to be later compared to other states. It is assumed that only Pharmacies with sales are relevant to average on. The major category, category and product information where then gathered from the state transaction data to calculate the largest selling group in each of these. This was done by calculating a sum on only values with a certain major category, category or product. Next, the total sales were calculated for each zip code in the state by summing on the state data for each zip code. Max and min sales per zip code could then be calculated. Throughout this state analysis, combined data frames were being filled with results for each state, allowing for later use in determining the variance between the states. The Major Category standard deviation from state to state was calculated using the describe command. Finally, a major category data frame with sales data from each state was sorted by major category and sales amount for use in determining the max and min state sales for each major category. All relevant output data frames were then exported as csv files to a report folder for use in the Results section.

The combined month/state analysis was done in the same for loop as the state by state analysis. A nested for loop over all six months was created to evaluate various information for each month for a given state. First, a data frame was created by extracting the month data from the state data frame. Then, the total sales could be calculated by summing the line item sales of each transaction line item in that new state/month data frame. Next, the major category, category and product data frames were all created by extracting sums for each of these groups. At this point the largest within each of these three groups could be calculated and stored for use in later analysis. Once these two for loops had been completed over states and months, the data could be analyzed in order to find the variation in each state’s sales month to month as well as how the total sales for each state vary amongst other states. Once the data frames had been created, the output data was exported to csv files.

For the month by month analysis, a for loop over each month was run in order to gather each months data from the total transactions. Again, the major categories, categories and products were tabulated for each month in order to find which value had the highest sales. Additionally, the sum of all sales within the month was calculated and the standard of this value over each month was calculated using the describe function. Additionally, as in the state by state analysis, the major category variation was calculated using the describe command over all of the months combined data. Once the relevant output data had been created, it was all output to various csv files for use in the Results section.

## Results

### State Results

The total sales for each state were as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| **ST\_CD** | **total\_sales** | **number\_stores** | **average\_sales** |
| **NJ** | $ 6,413,468.42 | 32 | $ 200,420.89 |
| **PA** | $ 4,277,291.77 | 34 | $ 125,802.70 |
| **NY** | $ 2,733,151.59 | 16 | $ 170,821.97 |
| **CT** | $ 2,665,387.18 | 8 | $ 333,173.40 |
| **MA** | $ 798,851.27 | 4 | $ 199,712.82 |
| **ME** | $ 388,652.02 | 11 | $ 35,332.00 |
| **DE** | $ 7,050.33 | 1 | $ 7,050.33 |

Table 1: State Sales Per Store

The Largest and Smallest Zip Code Sales for each state were as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| **ST\_CD** | **ZIP\_3\_CD** | **SLS\_AMT** | **pct\_state** |
| **NJ** | **77** | $3,075,832.04 | 48% |
| **PA** | **170** | $2,208,388.27 | 52% |
| **NY** | **110** | $1,743,900.83 | 64% |
| **CT** | **65** | $2,243,062.89 | 84% |
| **MA** | **25** | $397,611.05 | 50% |
| **ME** | **46** | $210,521.68 | 54% |
| **DE** | **199** | $7,050.33 | 100% |

Table 2: Highest Selling Zip Code Per State

|  |  |  |  |
| --- | --- | --- | --- |
| **ST\_CD** | **ZIP\_3\_CD** | **SLS\_AMT** | **pct\_state** |
| **NJ** | **78** | $ 260.98 | 0.00% |
| **PA** | **196** | $ 8,482.51 | 0.20% |
| **NY** | **125** | $ 1,075.47 | 0.04% |
| **CT** | **68** | $ 14,503.37 | 0.54% |
| **MA** | **18** | $ 13,487.88 | 1.69% |
| **ME** | **49** | $ 3,325.08 | 0.86% |
| **DE** | **199** | $ 7,050.33 | 100.00% |

Table 3: Lowest Selling Zip Code Per State

The major category data in each state were as follows, NOTE Delaware was excluded from standard deviation calculation due to low sales:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ST\_CD | MAJOR\_CAT\_DESC | MAJOR\_CAT\_CD | SLS\_QTY | SLS\_AMT | pct\_state |
| NJ | GENERAL MERCHANDISE | 6137 | 75546 | $2,418,315.47 | 38% |
| PA | HEALTH CARE | 5228 | 123723 | $2,097,707.66 | 49% |
| NY | HEALTH CARE | 5228 | 43054 | $1,525,171.89 | 56% |
| CT | GENERAL MERCHANDISE | 6137 | 25139 | $2,096,804.32 | 79% |
| MA | HEALTH CARE | 5228 | 35972 | $345,217.16 | 43% |
| ME | HEALTH CARE | 5228 | 21952 | $199,914.36 | 51% |
| DE | HEALTH CARE | 5228 | 619 | $4,573.27 | 65% |

Table 4: Highest Selling Major Category By State

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **MAJOR\_CAT\_DESC** | **count** | **mean** | **std** | **min** | **max** |
| **GENERAL MERCHANDISE** | 6 | $896,739 | $1,076,150 | $50,698 | $2,418,315 |
| **HEALTH CARE** | 6 | $1,051,144 | $920,767 | $148,701 | $2,097,708 |
| **HOME HEALTH CARE** | 6 | $345,083 | $270,246 | $47,415 | $765,478 |
| **GREETING CARDS** | 6 | $185,951 | $244,855 | $10,405 | $605,092 |
| **EDIBLES** | 6 | $162,218 | $172,036 | $23,303 | $418,542 |
| **PERSONAL CARE** | 6 | $106,851 | $93,551 | $22,590 | $275,719 |
| **PHOTO** | 5 | $42,299 | $80,652 | $24 | $185,457 |
| **BEAUTY** | 6 | $62,979 | $64,564 | $7,847 | $186,669 |
| **DIABETES** | 6 | $28,688 | $27,129 | $5,066 | $64,014 |
| **MISC** | 6 | $4,565 | $4,717 | $311 | $10,576 |

Table 5: Major Category Standard Deviation By State

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ST\_CD | MAJOR\_CAT\_DESC | MAJOR\_CAT\_CD | SLS\_QTY | SLS\_AMT | pct\_state |
| NJ | GENERAL MERCHANDISE | 6137 | 75546 | $2,418,315 | 38% |
| CT | GENERAL MERCHANDISE | 6137 | 25139 | $2,096,804 | 79% |
| PA | GENERAL MERCHANDISE | 6137 | 16560 | $584,285 | 14% |
| NY | GENERAL MERCHANDISE | 6137 | 9347 | $118,397 | 4% |
| MA | GENERAL MERCHANDISE | 6137 | 18986 | $111,936 | 14% |
| ME | GENERAL MERCHANDISE | 6137 | 5384 | $50,698 | 13% |
| DE | GENERAL MERCHANDISE | 6137 | 30 | $103 | 1% |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ST\_CD | MAJOR\_CAT\_DESC | MAJOR\_CAT\_CD | SLS\_QTY | SLS\_AMT | pct\_state |
| PA | HEALTH CARE | 5228 | 123723 | $2,097,708 | 49% |
| NJ | HEALTH CARE | 5228 | 179473 | $1,990,151 | 31% |
| NY | HEALTH CARE | 5228 | 43054 | $1,525,172 | 56% |
| MA | HEALTH CARE | 5228 | 35972 | $345,217 | 43% |
| ME | HEALTH CARE | 5228 | 21952 | $199,914 | 51% |
| CT | HEALTH CARE | 5228 | 15070 | $148,701 | 6% |
| DE | HEALTH CARE | 5228 | 619 | $4,573 | 65% |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ST\_CD | MAJOR\_CAT\_DESC | MAJOR\_CAT\_CD | SLS\_QTY | SLS\_AMT | pct\_state |
| NY | HOME HEALTH CARE | 3391 | 9357 | $765,478 | 28% |
| PA | HOME HEALTH CARE | 3391 | 27361 | $552,674 | 13% |
| NJ | HOME HEALTH CARE | 3391 | 18030 | $336,553 | 5% |
| CT | HOME HEALTH CARE | 3391 | 14107 | $233,602 | 9% |
| MA | HOME HEALTH CARE | 3391 | 9927 | $134,773 | 17% |
| ME | HOME HEALTH CARE | 3391 | 6663 | $47,415 | 12% |
| DE | HOME HEALTH CARE | 3391 | 52 | $973 | 14% |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ST\_CD | MAJOR\_CAT\_DESC | MAJOR\_CAT\_CD | SLS\_QTY | SLS\_AMT | pct\_state |
| NJ | GREETING CARDS | 9687 | 86414 | $605,092 | 9% |
| PA | GREETING CARDS | 9687 | 32866 | $367,384 | 9% |
| NY | GREETING CARDS | 9687 | 4805 | $49,109 | 2% |
| CT | GREETING CARDS | 9687 | 4315 | $49,081 | 2% |
| MA | GREETING CARDS | 9687 | 9345 | $34,633 | 4% |
| ME | GREETING CARDS | 9687 | 2312 | $10,405 | 3% |

The highest selling categories and products in each state are as follows:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ST\_CD | CAT\_DESC | CAT\_CD | SLS\_QTY | SLS\_AMT | pct\_state | MAJOR\_CAT\_CD |
| NJ | MISC GENERAL MERCHANDISE | 6300 | 23574 | $1,696,273.80 | 26% | 6137 |
| PA | VITAMINS/DIETARY SUPPLEMENTS | 4100 | 29923 | $937,260.73 | 22% | 5228 |
| NY | FOOT CARE | 2700 | 3552 | $758,387.43 | 28% | 5228 |
| CT | MISC GENERAL MERCHANDISE | 6300 | 13312 | $1,964,685.47 | 74% | 6137 |
| MA | HOME HEALTH CARE | 9300 | 7774 | $92,946.06 | 12% | 3391 |
| ME | COLD & ALLERGY | 700 | 6319 | $53,687.81 | 14% | 5228 |
| DE | PAIN RELIEF | 100 | 146 | $1,204.45 | 17% | 5228 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| PROD\_DESC | MAJOR\_CAT\_CD | CAT\_CD | SLS\_AMT | pct\_state | ST\_CD |
| GIFT CARD VISA $20-$500 | 6137 | 6300 | $ 425,150.60 | 7% | NJ |
| VITAMINS/SUPPLEMENTS | 5228 | 4100 | $ 698,619.49 | 16% | PA |
| STRUTZ PRO | 5228 | 2700 | $ 745,804.90 | 27% | NY |
| MONEY ORDER | 6137 | 6300 | $ 1,662,010.26 | 62% | CT |
| DME SALES | 3391 | 9300 | $ 88,670.05 | 11% | MA |
| DME | 3391 | 9300 | $ 29,959.37 | 8% | ME |
| RELIEF 20-30 KH CT W/SIL XLF | 3391 | 1600 | $ 375.00 | 5% | DE |

### Combined State/Month Results

Each states month-to-month standard deviation and highest selling and lowest selling months are as follows:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ST\_CD | count | mean | std | min | min\_month | max | max\_month |
| PA | 6 | $ 712,882 | $ 346,058 | $ 380,056 | 6 | $ 1,113,197 | 1 |
| NY | 6 | $ 455,525 | $ 241,997 | $ 257,063 | 2 | $ 872,986 | 3 |
| NJ | 6 | $ 1,068,911 | $ 93,820 | $ 914,813 | 1 | $ 1,170,820 | 5 |
| CT | 6 | $ 444,231 | $ 31,744 | $ 412,526 | 5 | $ 501,438 | 3 |
| MA | 6 | $ 133,142 | $ 31,666 | $ 104,414 | 2 | $ 193,269 | 6 |
| ME | 6 | $ 64,775 | $ 12,791 | $ 50,393 | 1 | $ 87,255 | 6 |
| DE | 6 | $ 1,175 | $ 167 | $ 889 | 6 | $ 1,380 | 1 |

Every state had the same highest selling major category every month except one, New York, which highest selling major category was Home Health Care in June (instead of Health Care):

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ST\_CD | month | MAJOR\_CAT\_DESC | MAJOR\_CAT\_CD | SLS\_AMT |
| NY | 1 | HEALTH CARE | 5228 | $209,571.53 |
| NY | 2 | HEALTH CARE | 5228 | $116,215.71 |
| NY | 3 | HEALTH CARE | 5228 | $704,862.57 |
| NY | 4 | HEALTH CARE | 5228 | $148,275.62 |
| NY | 5 | HEALTH CARE | 5228 | $124,745.08 |
| NY | 6 | HOME HEALTH CARE | 3391 | $313,334.23 |

Many states showed similar leading categories each month. The following are some examples where the category changed month to month:

|  |  |  |  |
| --- | --- | --- | --- |
| ST\_CD | month | CAT\_DESC | SLS\_AMT |
| MA | 1 | HOME HEALTH CARE | $20,047.34 |
| MA | 2 | HOME HEALTH CARE | $12,949.58 |
| MA | 3 | COLD & ALLERGY | $13,807.08 |
| MA | 4 | HOME HEALTH CARE | $14,347.80 |
| MA | 5 | HOME HEALTH CARE | $16,131.66 |
| MA | 6 | COLD & ALLERGY | $17,409.92 |
|  |  |  |  |
| NY | 1 | FOOT CARE | $80,522.00 |
| NY | 2 | HOME HEALTH CARE | $64,298.64 |
| NY | 3 | FOOT CARE | $488,537.43 |
| NY | 4 | FOOT CARE | $64,255.88 |
| NY | 5 | HOME HEALTH CARE | $82,592.41 |
| NY | 6 | HOME HEALTH CARE | $296,388.07 |
|  |  |  |  |
| PA | 1 | VITAMINS/DIETARY SUPPLEMENTS | $257,213.27 |
| PA | 2 | VITAMINS/DIETARY SUPPLEMENTS | $271,577.16 |
| PA | 3 | VITAMINS/DIETARY SUPPLEMENTS | $315,913.45 |
| PA | 4 | GREETING CARDS & OTHER ASSOCIATED MANUFACTURER ITEMS | $48,600.70 |
| PA | 5 | COLD & ALLERGY | $69,688.57 |
| PA | 6 | MISC GENERAL MERCHANDISE | $43,936.17 |

The highest selling products in each state show there are clearly different markets in each state, some of the state results are as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| ST\_CD | month | PROD\_DESC | SLS\_AMT |
| CT | 1 | MONEY ORDER | $285,105.40 |
| CT | 2 | MONEY ORDER | $295,810.64 |
| CT | 3 | MONEY ORDER | $317,152.29 |
| CT | 4 | MONEY ORDER | $282,460.10 |
| CT | 5 | MONEY ORDER | $240,010.39 |
| CT | 6 | MONEY ORDER | $241,471.44 |
|  |  |  |  |
| MA | 1 | DME SALES | $19,104.35 |
| MA | 2 | DME SALES | $12,535.02 |
| MA | 3 | DME SALES | $12,920.81 |
| MA | 4 | DME SALES | $13,856.50 |
| MA | 5 | DME SALES | $15,048.35 |
| MA | 6 | DME SALES | $15,205.02 |
|  |  |  |  |
| ME | 1 | DME | $4,725.15 |
| ME | 2 | DME | $5,317.05 |
| ME | 3 | DME | $5,236.23 |
| ME | 4 | MAGAZINES OPEN DEPARTMENT | $5,523.29 |
| ME | 5 | DME | $4,923.07 |
| ME | 6 | CANDY OPEN DEPARTMENT | $12,853.50 |
|  |  |  |  |
| NJ | 1 | INST LOTTERY ALL CASH MILL $20 | $51,560.00 |
| NJ | 2 | BALLOONS | $106,090.85 |
| NJ | 3 | INST LOTTERY 50X THE CASH $10 | $69,900.00 |
| NJ | 4 | INST LOTTERY CASH EXTRA $30 | $75,690.00 |
| NJ | 5 | GIFT CARD VISA $20-$500 | $195,254.45 |
| NJ | 6 | GIFT CARD VISA $20-$500 | $149,390.10 |
|  |  |  |  |
| NY | 1 | STRUTZ PRO | $78,135.50 |
| NY | 2 | WHEELED WALKER BRA/SEAT | $60,757.13 |
| NY | 3 | STRUTZ PRO | $486,103.66 |
| NY | 4 | STRUTZ PRO | $62,177.11 |
| NY | 5 | WHEELED WALKER BRA/SEAT | $69,093.73 |
| NY | 6 | WHEELED WALKER BRA/SEAT | $174,781.22 |
|  |  |  |  |
| PA | 1 | LOTTO | $231,696.00 |
| PA | 2 | VITAMINS/SUPPLEMENTS | $237,285.05 |
| PA | 3 | VITAMINS/SUPPLEMENTS | $231,557.45 |
| PA | 4 | CARDS | $45,061.51 |
| PA | 5 | CARDS | $38,862.49 |
| PA | 6 | LOTTO | $39,661.22 |

### Month Results

The month-to-month variation for total sales across the chain is shown below:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| count | mean | std | min | min\_month | max | max\_month |
| 6 | $2,880,642 | $483,251 | $2,304,948 | 4 | $3,707,182 | 3 |

The highest selling major categories in each month are as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| month | MAJOR\_CAT\_DESC | SLS\_QTY | SLS\_AMT |
| 1 | HEALTH CARE | 70065 | $ 1,174,733.93 |
| 2 | HEALTH CARE | 71045 | $ 967,824.38 |
| 3 | HEALTH CARE | 77166 | $ 1,672,327.10 |
| 4 | GENERAL MERCHANDISE | 24196 | $ 832,910.43 |
| 5 | GENERAL MERCHANDISE | 25446 | $ 852,617.24 |
| 6 | HEALTH CARE | 69517 | $ 897,074.03 |