Financial performance report for KAT Insurance

(Based on sales records in 2017)

In 2017, KAT Insurance marked a significant achievement by exceeding a total sales figure of **40 million**. To offer a comprehensive perspective of the company's financial health, the report analyzed these sales numbers in greater detail, categorizing them by state and insurance type. Alongside total sales, this report also delves into the company's profitability and financial ratios, thereby providing a holistic overview of the business's financial wellbeing.

Consequently, the following inquiries were established for more in-depth analysis:

1. Within the USA, which state recorded the highest and lowest sales?
2. What is the total revenue generated from each type of insurance within the USA?
3. What are the variable costs and contribution margins associated with each policy?
4. In terms of insurance types within the USA, which one yielded the highest total contribution margin? And which one yielded the lowest?
5. Among the insurance types in the USA, which one held the highest and the lowest average contribution margin?
6. Which insurance type within the USA recorded the highest and the lowest contribution margin ratio?
7. Does the ranking order of contribution margin ratio for each insurance type align with the contribution margin ratio rankings?
8. Within the USA, which state boasted the highest and the lowest contribution margin ratio?

The original dataset comprises 64,544 insurance policy sales records from 2017, spanning 49 states within the USA, and includes five types of insurance: Professional, Auto, Home, Disability, and Life. In response to these queries, we will classify the total sales by state and by insurance type, thereafter delving into their patterns and rankings for insights. The primary data is saved in an Excel file, which will be imported into PowerBI for advanced manipulation. Within PowerBI, new variables such as variable cost, contribution margin, and contribution margin ratio will be calculated for each state and insurance type. Subsequently, all the data will be graphically represented in PowerBI, providing a more lucid presentation and efficient data communication.

The steps detailed below outline the process adopted to handle the original sales record.

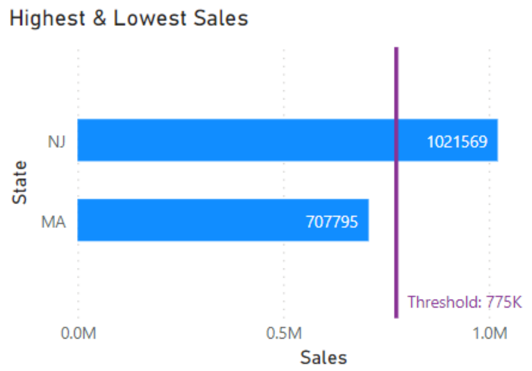
1. Data Cleaning: Corrections were made to typographical errors in the Region and Insurance Type fields: 'wemt' was amended to 'west', 'sotheast' was updated to 'southeast', 'Homme' was corrected to 'Home', and 'Professionall' was revised to 'Professional'.
2. Worksheet Merging: The 'Variable Cost Percentages' in the 'VariableCostPct' worksheet were integrated with the 'MainData' worksheet using their shared variable, 'State Type'.
3. New Variable Creation: Variable Cost, Contribution Margin and Contribution Ratio were calculated for each policy sold. **(Variable cost = Sales × Variable Cost Percentage, Contribution Margin = Sales − Variable Cost, Contribution Margin Ratio = Contribution Margin / Sales)**

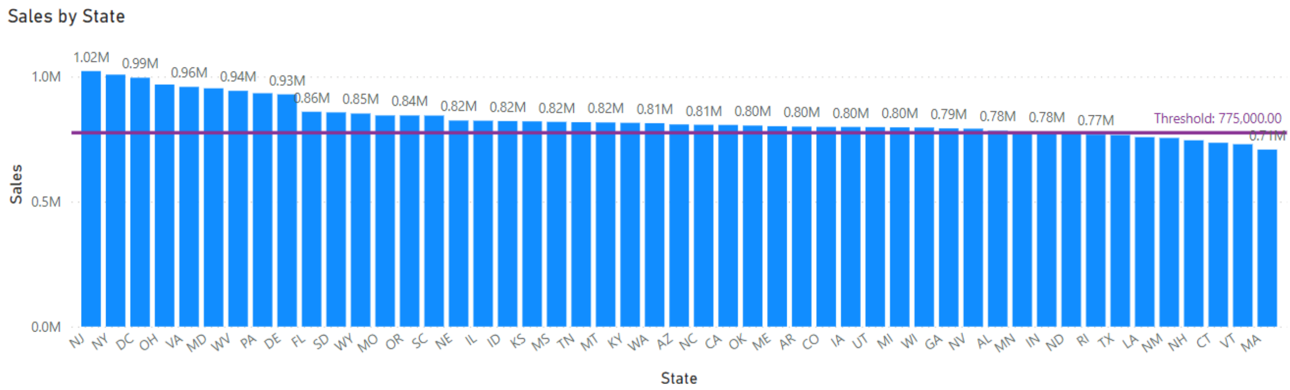
Following data wrangling, the report employs PowerBI to depict the points of interest through the 'group by' function and the 'New Measure' function. Our analysis will extend beyond static figures like total sales to include profitability metrics such as contribution margin and contribution margin ratios. The disparity between the ranking patterns of contribution margin and contribution margin ratio will also be explored to unearth additional insights.

1. Total Sales Breakdown by State

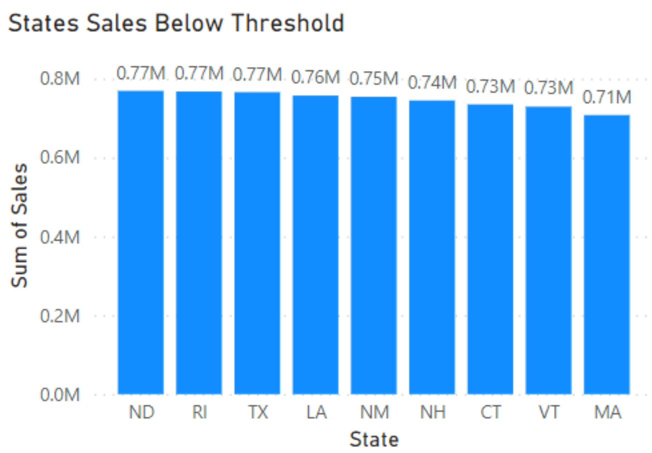
The subsequent bar graphs depict total sales for each state, supplemented with a consistent line demarcating the benchmark of $775K.

After organizing the sales data across the 49 states in the USA, it emerged that New Jersey (NJ) topped the list, recording sales totaling $1,021,569.45. In contrast, Massachusetts (MA) logged the lowest sales for 2017, aggregating to $707,795.11.



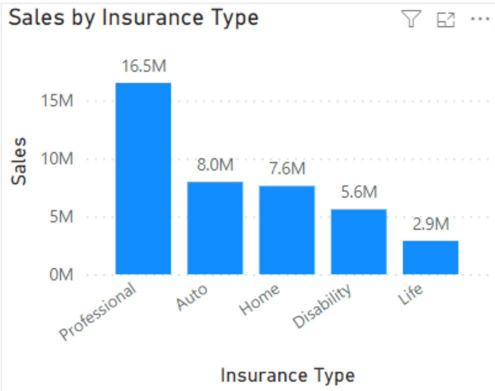


Focusing on sales figures below the $775K benchmark, we identified the following nine states falling short of this threshold, warranting immediate attention.

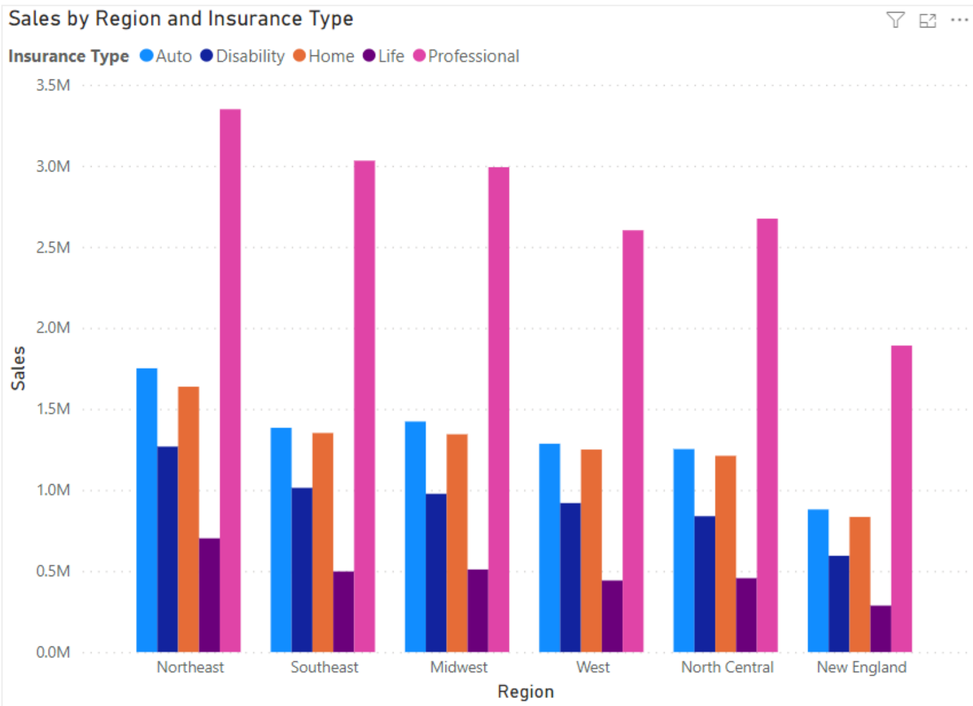


2. Total Sales Breakdown by the type of insurance

When evaluating the total sales by insurance type, we categorized sales according to the specific insurance type. The bar graph below shows the total sales on the y-axis and the Insurance Types on the x-axis. The Professional insurance policy stood out with the highest total sales, approximating $16.5 million. Auto and Home Insurance followed, registering around $8 million and $7.6 million, respectively. Disability Insurance contributed roughly $5.6 million in sales, while Life insurance, with the lowest sales, amounted to about $2.9 million.



Upon further division of sales by Insurance Type and Region, similar patterns emerged. Professional Insurance was the frontrunner in all six regions, accumulating nearly double the total sales of Auto Insurance, the second highest in sales. Life Insurance continued as the policy with the least sales. Notably, the Northeast region outperformed in total sales for each of the five insurance types, followed closely by the Southeast and Midwest regions with similar sales totals. The West and North Central regions came next, with New England being the region reporting the least sales across all insurance types.



3. Profitability analysis by Insurance Type

While total sales serve as a critical indicator of the company's performance, it's equally vital to consider the contribution margin to assess the profitability of each insurance policy.

The subsequent line and column charts exhibit the total contribution margin (columns), the variable cost (dark blue line in figure 1) and the average contribution margin (yellow line in figure 2). These charts facilitate a comparative analysis of the total contribution margin, variable cost, and the average contribution margin for each insurance type.

In 2017, Professional and Auto Insurance shouldered the highest total variable costs, approximating $3.8 million (figure 1). However, the total contribution margin of Professional Insurance was triple that of Auto Insurance, marking $12.7 million and $4.2 million respectively. This implies that the total sales for Professional Insurance exceeded those of Auto Insurance, thus making it the most profitable policy for KAT in 2017. A similar scenario unfolded for Home and Disability Insurance. Despite their comparable total variable costs ($1.6 million), Home Insurance, with a contribution margin of $6.0 million, surpassed Disability Insurance, which reported $4.0 million. Although Life Insurance had the lowest variable cost at about $0.3 million, it also displayed the least contribution margin, indicating it was the least profitable insurance type in 2017. Overall, Professional Insurance enjoyed the highest total contribution margin among the five types of Insurance, with Life Insurance at the other end of the spectrum.

The pattern for the average contribution margin aligns with that for the total contribution margin (figure 2). With Professional Insurance leading with the highest average contribution margin of $0.97 million, Home Insurance followed with $0.46 million. Meanwhile, Life Insurance recorded the lowest average contribution margin at $0.20 million. Auto and Disability Insurance showcased similar average contribution margins, hovering around $0.32 million.

Evidently, Professional Insurance provided the most significant profit to offset the fixed costs, while Life Insurance contributed the least in 2017, whether in terms of total or average contribution margin.

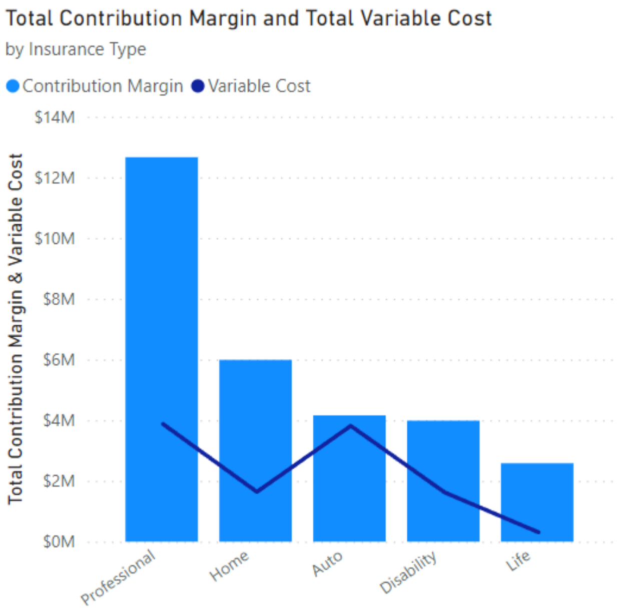


Figure 1

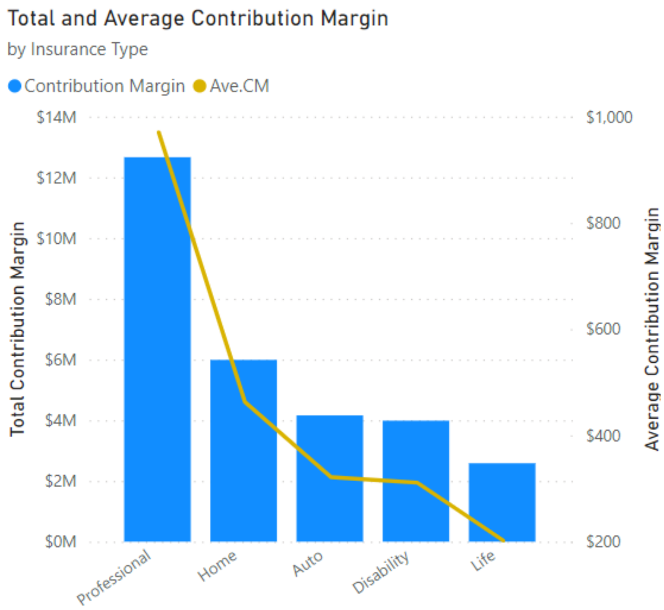


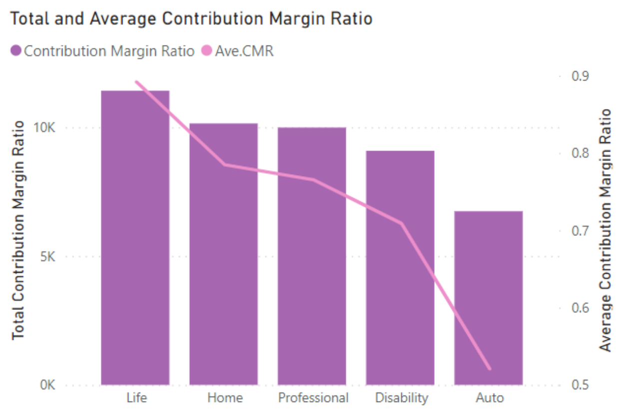
Figure 2

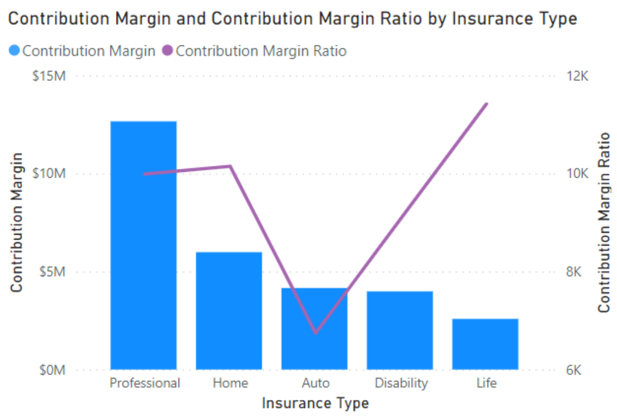
However, a comparison of the contribution margin ratio (CMR = contribution margin / sales) revealed from the subsequent line and column charts indicates a different perspective. Life Insurance comes out on top with the highest CMR, recording 11.4K for total and 0.89 for average. This suggests that an impressive 89% of Life Insurance sales were converted into profit. Home, Professional, and Disability Insurance also demonstrated commendable ability to convert sales into profit, achieving CMRs of 0.78, 0.77, and 0.71, respectively. In stark contrast, Auto Insurance managed to convert only approximately 52% of its sales into profit, attributing to its high variable cost. Despite Auto Insurance securing the second spot in total sales, its CMR was not as promising.

Upon analyzing the second column and line chart, a clear deviation in the rankings for the contribution margin and the contribution margin ratio becomes evident. Even though Life Insurance displayed the lowest contribution margin among the five insurance types, it boasted the highest contribution margin ratio. Conversely, Professional Insurance, despite securing the highest contribution margin, ranked only third in terms of CMR.

This disparity can be traced back to the differing focus of these two financial measures. The contribution margin (sales revenue - variable costs) quantifies the total profit per unit allocated towards covering fixed costs and generating profit, while the contribution margin ratio (contribution margin / sales revenue) signifies the percentage of each sale that contributes towards fixed costs and profit after accounting for variable costs. As a result, a higher contribution margin ratio doesn't necessarily equate to a higher total contribution margin if the sales revenue is comparatively lower.

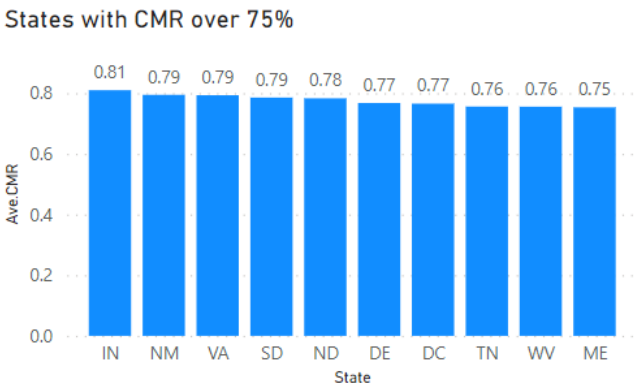
Integrating with the previous analysis, we can deduce that despite Life Insurance recording the lowest total sales in 2017, it remained a profitable offering. This profitability is attributed to its low variable cost, which subsequently led to a relatively high contribution margin ratio.

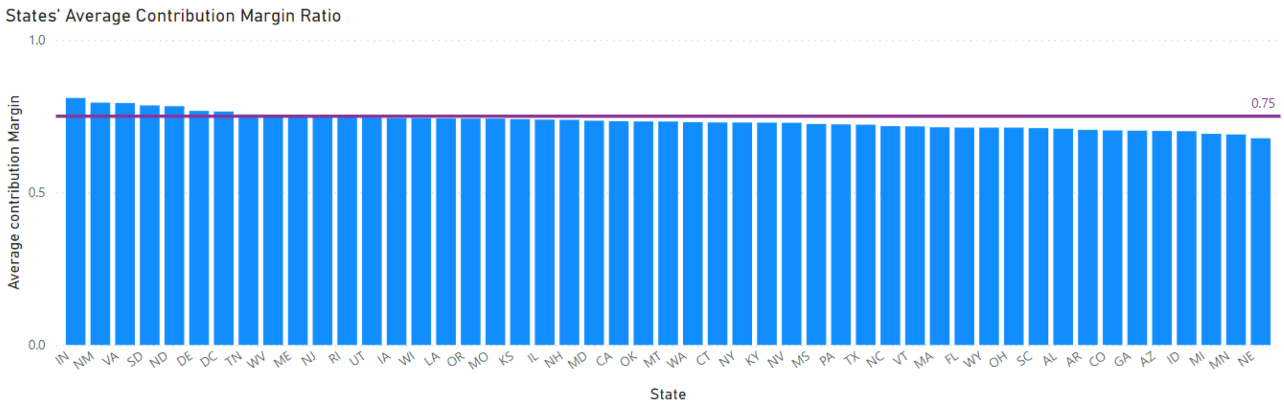




4. State-wise Profitability Analysis

An analysis of the contribution margin ratio by state, as seen in the following bar graphs, showed that all states had commendable performance. Indiana (IN) had the highest contribution margin ratio at 0.81, and Nebraska (NE) had the lowest at 0.68. Among all states, ten met the CMR benchmark of 75%, indicating that over 75% of total sales in these states were converted into profit. These states were Indiana (IN), New Mexico (NM), Virginia (VA), South Dakota (SD), North Dakota (ND), Delaware (DE), District of Columbia (DC), Tennessee (TN), West Virginia (WV), and Maine (ME).





Conclusion and Recommendations

In conclusion, the comprehensive analysis provides significant insights into the performance and profitability of KAT's various insurance products across different states in the USA.

From the total sales breakdown by state, it's evident that New Jersey (NJ) generated the highest sales in 2017, while Massachusetts (MA) had the least. There are nine states where sales fell below the benchmark of $775K, and they warrant further attention for performance improvement.

Looking at the total sales breakdown by insurance type, Professional Insurance emerged as the most lucrative policy, with the highest sales of approximately $16.5 million. On the contrary, Life Insurance had the lowest sales, indicating a potential area for development.

When evaluating profitability by insurance type, it was revealed that Professional Insurance boasted the highest total contribution margin, making it the most profitable policy. However, it's important to note that Life Insurance, despite its lower sales, had the highest contribution margin ratio. This means it had a higher proportion of sales converted into profit, suggesting that it could be a profitable area to expand with the right sales strategies.

Finally, a state-wise profitability analysis showed that ten states managed to exceed the CMR benchmark of 75%, implying a high conversion of sales into profit. The states with lower CMRs may need strategic interventions to enhance their profitability.

In light of these findings, several recommendations can be made to improve KAT's financial performance:

1. Enhance marketing and sales strategies: In states where the sales are below the $775K benchmark, KAT should consider strengthening their marketing and sales efforts to boost performance.
2. Promote Life Insurance: Despite Life Insurance having the lowest total sales, it showed a high CMR, indicating a higher profit per unit of sales revenue. As such, it might be beneficial to focus on expanding the life insurance portfolio through targeted marketing campaigns and customer outreach.
3. Maximize profitable policies: Professional Insurance emerged as the most profitable policy for KAT in terms of the total contribution margin. Therefore, efforts should be made to further exploit this opportunity, potentially focusing on states where this insurance type is underperforming.
4. Evaluate and optimize cost structures: For insurance types like Auto Insurance, which had a significant total sales performance but a lower CMR, a thorough evaluation of the cost structures should be undertaken. If variable costs can be reduced, profitability might be improved.
5. Regional strategies: Regional differences in sales performance across insurance types should be taken into account when developing sales and marketing strategies. Tailoring strategies based on region-specific preferences and trends might lead to higher sales.

By implementing these recommendations, KAT should be able to enhance its overall financial performance, maximize profitability, and ensure a sustainable future.

References

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