**Variance Analysis Report – Budget vs Actuals (2023–2024)**

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**Overview**

This project is a hands-on variance analysis built using realistic, department-level financial data. The dataset covers budgeted vs. actual spending across multiple accounts, months, and two fiscal years (2023–2024). The objective was to track cost deviations, highlight key areas of over- or under-spending, and uncover trends over time. Using Excel and Tableau, I created clear visualizations and summaries to support decision-making. This project helped me appreciate how small variances can uncover deeper operational patterns. It also pushed me to become more comfortable with Tableau’s Level of Detail (LOD) expressions.

**Summary of the data**

* **Records**: 750
* **Fields**:
* Department: HR, Finance, IT, Marketing, etc.
* Account: Salaries, Advertising, Training, Utilities, etc.
* Month and Year: Spanning January 2023 – December 2024
* Budget and Actual expenditures
* Variance: Actual – Budget
* Variance %: (Actual - Budget) / Budget \* 100

**Sample Record**

| **Department** | **Account** | **Month** | **Year** | **Budget** | **Actual** | **Variance** | **Variance %** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| HR | Utilities | March | 2024 | 27,318 | 23,098 | -4,220 | -15% |

**Objectives**

1. Compare Budget vs Actuals at multiple levels (department, account, time).
2. Quantify deviations and detect over- or under-spending.
3. Visualize performance trends for decision-making.
4. Build an interactive Tableau dashboard for dynamic reporting.

**Analysis**

**1. Variance Breakdown by Department**

I have conducted department-level variance analysis to highlight consistent over- or under-spending trends.  
Using a horizontal bar chart to visualize variance by department, the analysis clearly showed that IT and Sales regularly exceeded their budgets, indicating overspending patterns that warrant further investigation.

* IT Department: Overspending was primarily tied to elevated training and software costs, suggesting potential scope creep in tech initiatives or underbudgeted digital transformation efforts.
* Sales Department: Higher-than-expected advertising and travel expenses contributed to the variance, possibly tied to aggressive revenue growth targets or expanded market outreach.

On the other hand, the HR Department consistently operated under budget. This cost efficiency could indicate effective resource management or delayed hiring plans, though it also raises questions about whether all planned HR programs were fully executed.

**2. Monthly Trend Analysis (YoY)**

Built time-series visuals using line charts to compare Total Budget against Total Actuals on a monthly basis. This helped identify not only seasonal fluctuations but also unexpected spikes in expenditures.

A notable insight emerged in Q3 2024, where there was a sharp increase in actual spending. Upon further breakdown, it was evident that the Training and Advertising accounts, particularly within the IT and Finance departments, were the primary drivers of this variance. This could indicate either an investment in upskilling initiatives or an aggressive marketing push during that quarter.

These findings are critical as they prompt further investigation into whether the overspend was planned, strategic, or potentially inefficient. It also aids in reforecasting and budget realignment for future periods

**3. Account-Level Drilldown**

Performed in-depth analysis to identify which cost accounts contributed most significantly to overall budget variances.

I have used stacked bar charts to break down variances by account category, making it easier to spot where deviations were concentrated.

The analysis revealed that “Training” and “Utilities” stood out as the top variance drivers—but in opposite directions.

* Training expenses consistently exceeded the budget, resulting in the highest negative variance. This points to increased investment in employee development or unplanned training initiatives, possibly linked to new system rollouts or upskilling programs during the year.
* In contrast, Utilities recorded a strong positive variance, meaning actual spending was well below the budgeted amount. This may reflect energy efficiency efforts, better vendor contracts, or overestimation during budget planning.

These findings highlight areas where the organization may need to tighten forecasting or reevaluate cost assumptions. These insights are crucial for improving future budgeting accuracy and supporting strategic cost management.

**3. Dashboard**

Built an interactive Tableau dashboard to streamline financial review and enhance decision-making.  
The dashboard featured dynamic filters for Year, Month, and Department, allowing us to easily drill down into specific time periods or cost centres. A parameter toggle was added to switch between Budget, Actual, and Variance % views, giving stakeholders flexibility to analyse data from multiple perspectives.

This setup helped finance teams quickly identify which departments or accounts were off track, monitor spending trends, and take corrective actions more efficiently. It will improve both the speed and accuracy of variance tracking across the organization.

**Tools & Techniques**

**1. Microsoft Excel (Data Cleaning & Preprocessing):**  
The raw synthetic dataset was first prepared in Excel, where I organized data by department, account, month, and year. I used basic formulas (such as =Actual - Budget and = (Actual - Budget)/Budget) to calculate variance and variance percentages. I also applied number formatting, conditional formatting, and created pivot tables to get early-stage insights before importing to Tableau.

**2. Tableau (Data Visualization & Interactive Reporting):**  
Once cleaned, the dataset was imported into Tableau to create a professional, interactive dashboard. I used multiple chart types—line charts for trend analysis, bar charts for variance by department and account, and heatmaps to visualize performance patterns. Filters for year, month, and department, along with parameters to switch between Actual, Budget, and Variance %, were integrated to allow us to explore the data from different angles.

**3. Data Aggregation & KPI Calculation:**  
I aggregated data by department and month to track high-level trends over time. KPIs like cumulative variance, variance percentage, and average monthly spend were calculated in Tableau using calculated fields to offer a snapshot of financial performance.

**4. Visual Analysis Techniques:**

* Line Charts for spotting time-based trends in actual vs budgeted expenses
* Stacked Bar Charts to show contribution of different accounts to total variance
* Horizontal Bars for easy comparison of overspending/underspending by department
* Interactive Filters to isolate problems by category or timeframe

**5. Insight Generation & Business Interpretation:**  
Beyond the visuals, the focus was on deriving actionable insights—identifying which departments frequently overshot budgets, which expense categories were most volatile, and how spending behaviour shifted between fiscal years. These interpretations will be useful in budget realignment, forecasting accuracy, and performance monitoring.

**Conclusion**

This variance analysis provided a clear view into how departmental spending aligned with budget expectations over the fiscal years 2023 and 2024. By comparing budgeted versus actual figures across various accounts and departments, the analysis uncovered meaningful trends and potential areas for financial improvement.

A few key insights stood out:

* Spending Trends Over Time:  
  During Q3 of FY2024, actual expenses spiked significantly driven primarily by higher-than-expected costs in training and advertising. This suggests potential under-budgeting in these areas or possible one-time initiatives that increased costs.
* Top Variance Drivers:  
  Accounts such as Training and Utilities showed the highest variances. Training exceeded budget consistently, pointing to potential gaps in planning or increased investment in upskilling. On the other hand, Utilities spending was consistently below budget, which may indicate cost-saving initiatives or overestimations in the original budget.
* Departmental Performance:  
  The IT and Sales departments showed frequent overspending, while departments like HR remained largely within or under budget. This may reflect operational discipline or differences in cost control mechanisms across departments.
* Overall Budget Control:  
  While certain accounts and departments exceeded their budgets, others underspent, partially offsetting the impact. However, the inconsistencies highlight opportunities to improve forecasting accuracy and allocate resources more strategically.

The interactive Tableau dashboard built for this analysis enables stakeholders to drill into the data and monitor performance in real time, helping finance teams to take corrective actions quickly. This level of transparency and insight is essential for effective planning, forecasting, and financial decision-making.