FINANCE EXPENSE OPTIMIZTION PROJECT – POWERBI

1. Identify missing or inconsistent expense data.

The dataset was reviewed to identify missing or inconsistent values in expense amounts, dates, and department mappings. Data validation checks ensured that all expense records had valid Department IDs and dates. No major missing values were found in the Total Expenses field; however, inconsistencies in budget filtering initially affected department-level analysis, which were resolved by clearing unintended filters. Overall, the dataset was cleaned and verified to support accurate financial analysis.

2. Which departments incur the highest total expenses?
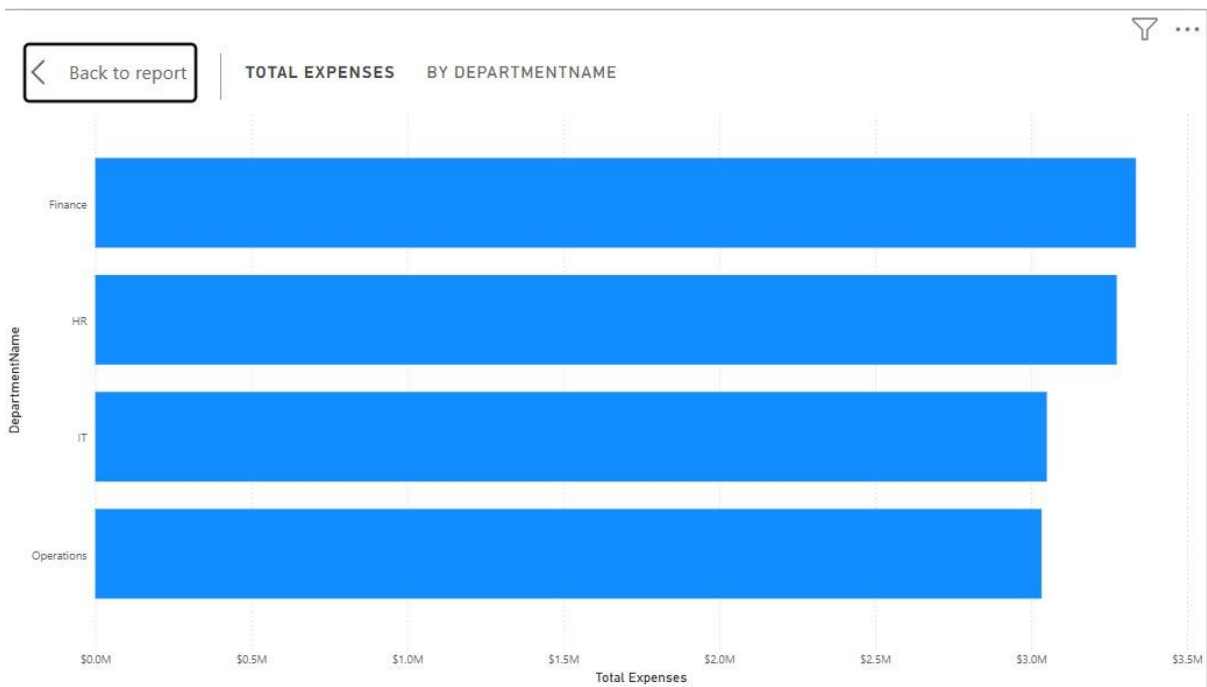
Based on the Total Expenses measure and the Expenses by Department visual, the **Finance department incurs the highest total expenses**, followed by **HR**, **Operations**, and **IT**. This indicates that Finance and HR have higher recurring operational and personnel-related costs compared to other departments.

3. Analyze expense distribution across expense types.

| **TOTAL EXPENSES** BY CATEGORYNAME

$2.36M (18.62%)

$2.65M (20.85%)

$2.49M (19.61%)

$2.62M (20.6%)

$2.58M (20.32%)

CategoryName
- Software
- Travel
- Supplies
- Salaries
- Utilities
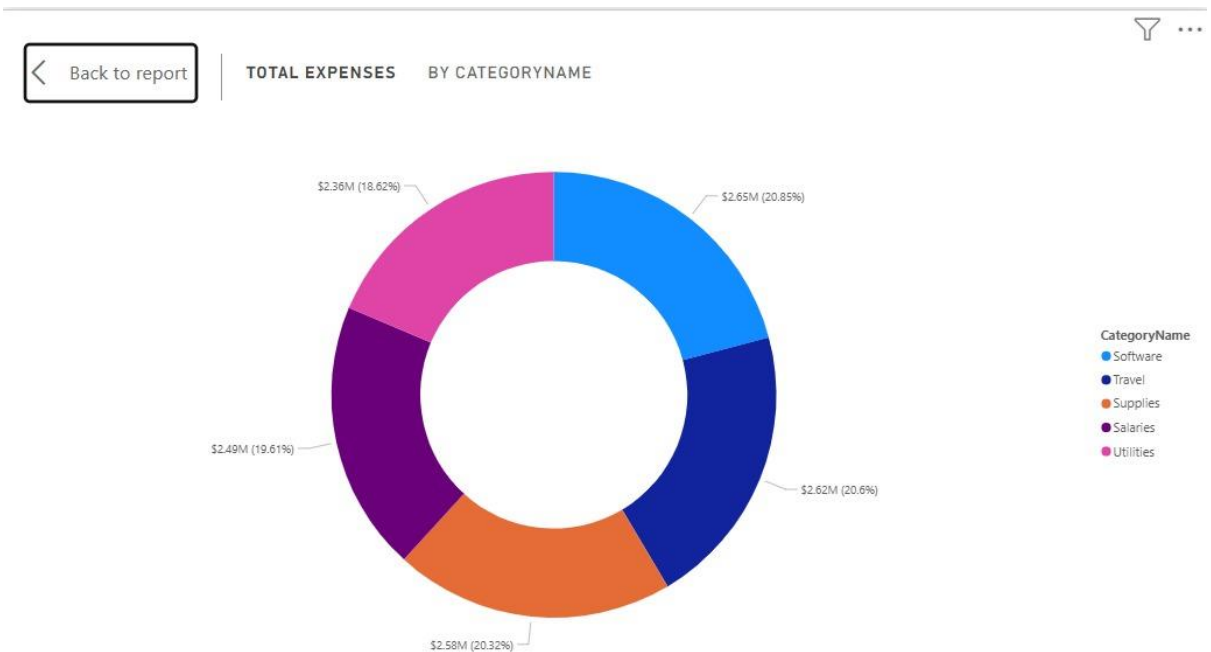
Insights:
1. Salaries = largest share
2. Software = high in IT
3. Travel = spikes in some months
4. Utilities & Supplies = stable

The expense distribution donut chart shows that a significant portion of expenses is concentrated in key categories such as salaries, software costs, and operational expenses. Salary-related expenses form the largest share, highlighting workforce costs as the primary expense driver across departments. Other categories contribute comparatively smaller but consistent portions to total spending.

4. How do monthly expenses trend over time?
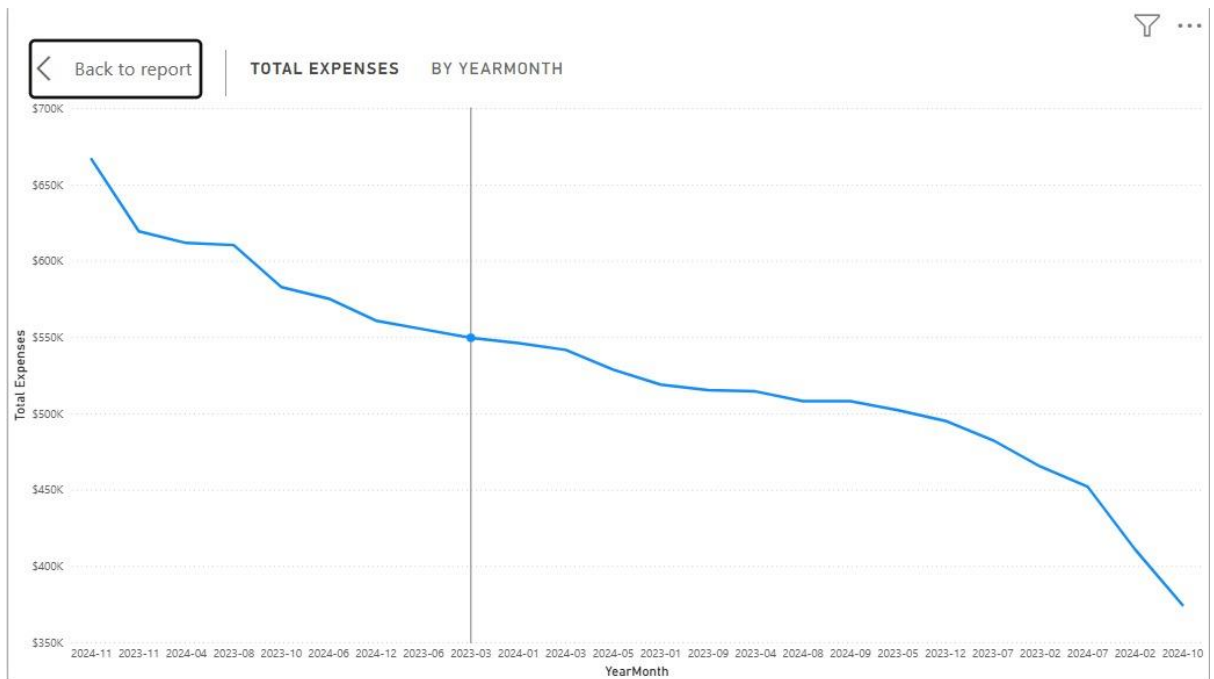
The monthly expense trend line chart reveals fluctuations in spending across months, with a generally stable upward pattern over time. Certain months show noticeable peaks, indicating periods of increased operational or project-related spending. This trend analysis helps identify seasonal patterns and supports better financial forecasting.

- Monthly expenses show a rising trend over time with periodic spikes, indicating increasing operational costs despite stable revenue.

5. Create DAX measures for Total Expenses and Monthly Average Expense.
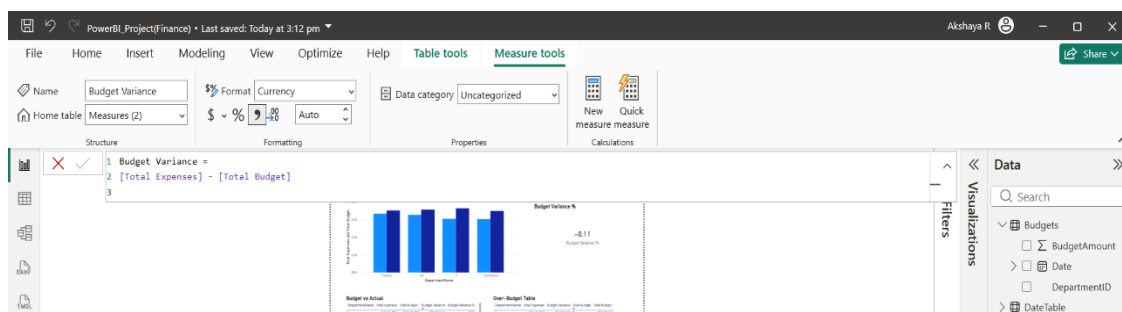
Budget Variance
Budget Variance =
[Total Expenses] - [Total Budget]
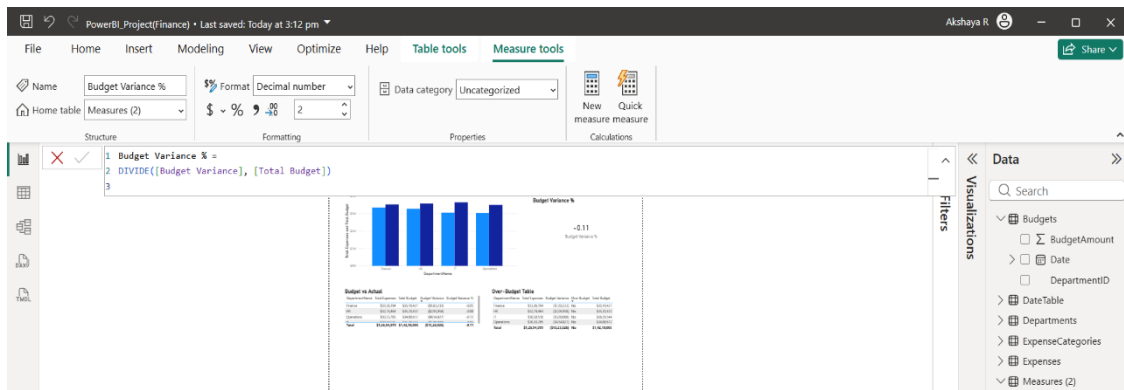
Budget Variance %

Budget Variance % =
DIVIDE([Budget Variance], [Total Budget])
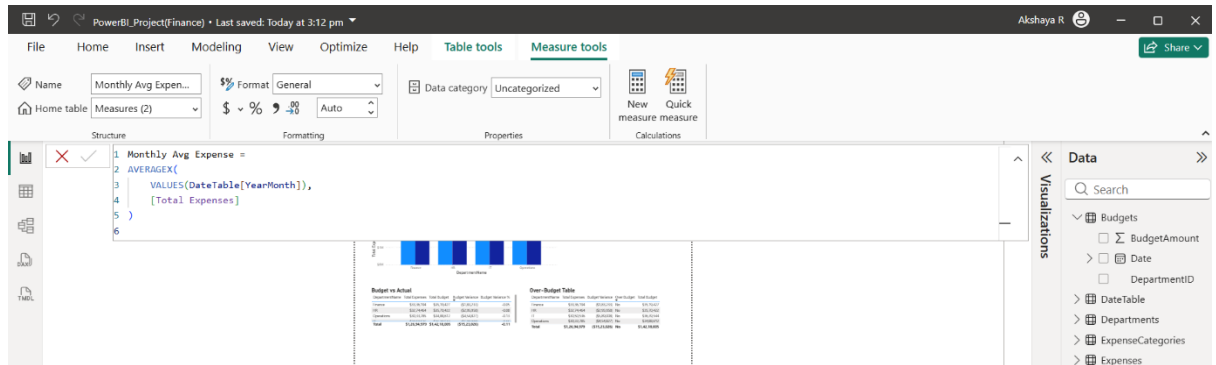
Monthly Average Expense

YearMonth = FORMAT(DateTable[Date], "YYYY-MM")

Over Budget Flag

Over Budget =
IF([Total Expenses] > [Total Budget], "Over Budget", "Within Budget")

Total Budget

Total Budget =
SUM(Budgets[BudgetAmount])

 Total Expenses

Total Expenses =
SUM(Expenses[ExpenseAmount])

DAX measures were created to calculate overall and average spending:
- **Total Expenses** aggregates all actual expense values.
- **Monthly Average Expense** calculates the average expense per month using the Date table.
  These measures enable consistent calculations across all visuals and support KPI reporting.

6. Compare actual expenses against budget using visuals.

Budget Variance %

-0.11
Budget Variance %

Actual expenses were compared against allocated budgets using a clustered column chart and a detailed table. These visuals clearly display differences between budgeted and actual values for each department, enabling quick identification of variances and spending performance.

7. Identify departments exceeding budget limits.

Over-Budget Table
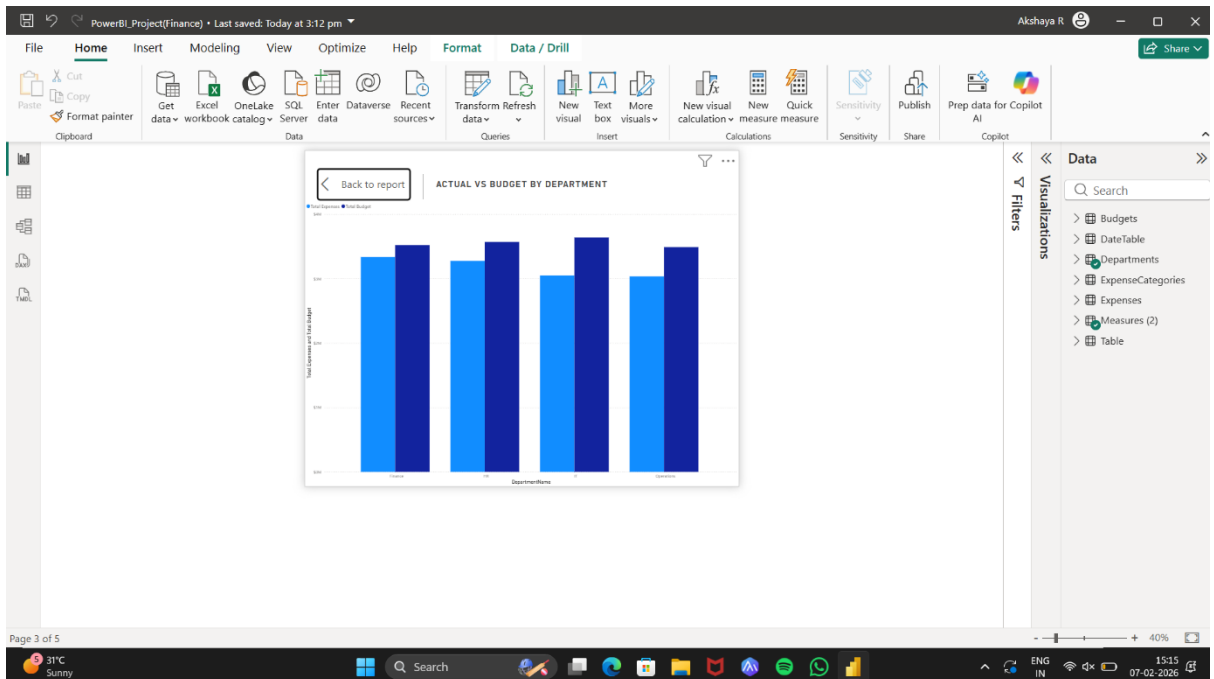
| DepartmentName	Total Expenses	Budget Variance	Over Budget ▾	Total Budget
Finance	$33,36,194	($1,83,233)	No	$35,19,427
HR	$32,74,464	($2,95,958)	No	$35,70,422
IT	$30,50,536	($5,89,008)	No	$36,39,544
Operations	$30,33,785	($4,54,827)	No	$34,88,612
Total	**$1,26,94,979**	**($15,23,026)**	**No**	**$1,42,18,005**

Based on the comparison of actual expenses against allocated budgets, no departments were found to exceed their budget limits during the reporting period. All departments operated within budget, indicating effective cost control.

8. Design a financial monitoring dashboard.
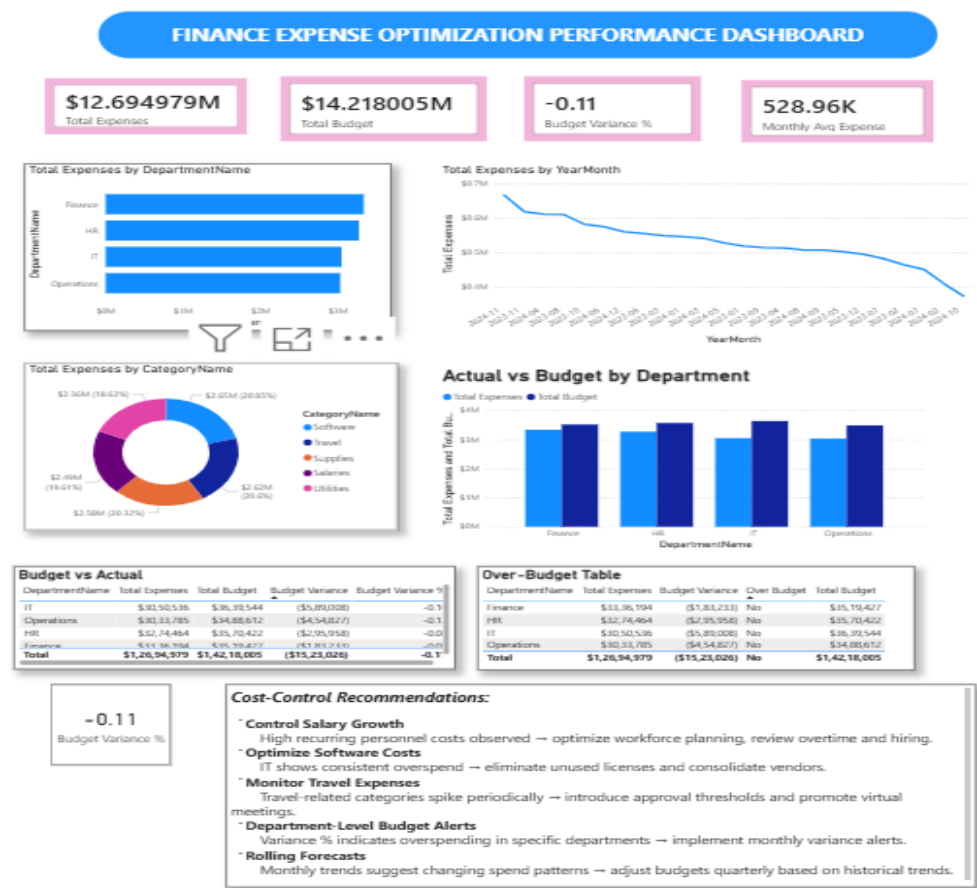
A one-page executive dashboard was designed to provide a comprehensive financial overview. It includes KPI cards, monthly trend analysis, department-wise comparisons, expense category distribution, and interactive slicers for year, department, and expense category. This dashboard enables real-time financial monitoring and informed decision-making.

9. What cost-control actions can be recommended?

Based on insights from the dashboard, several cost-control actions are recommended:
- Control salary growth through optimized workforce planning
- Reduce software costs by eliminating unused licenses
- Monitor travel expenses and promote virtual meetings
- Implement department-level budget alerts
- Track monthly variances and adopt rolling forecasts for proactive budget adjustments
  These actions can help improve financial efficiency and prevent future budget overruns.

Cost-Control Recommendations:

· **Control Salary Growth**
  High recurring personnel costs observed → optimize workforce planning, review overtime and hiring.
· **Optimize Software Costs**
  IT shows consistent overspend → eliminate unused licenses and consolidate vendors.
· **Monitor Travel Expenses**
  Travel-related categories spike periodically → introduce approval thresholds and promote virtual meetings.
· **Department-Level Budget Alerts**
  Variance % indicates overspending in specific departments → implement monthly variance alerts.
· **Rolling Forecasts**
  Monthly trends suggest changing spend patterns → adjust budgets quarterly based on historical trends.