Team Members:

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Problem Statement:

City administrators have the complex task of allocating limited budgets across a wide range of critical services. Optimizing these budget allocations is crucial to ensure effective delivery of essential services like public safety, infrastructure maintenance, education, healthcare, and more. However, with funds that are often scarce and needs that are continually evolving, budget planning requires dealing with many moving parts. Administrators must juggle appropriations across diverse city departments, ranging from transportation to parks and recreation to utilities and housing. They also oversee a variety of funding sources, from tax revenues to state and federal grants. Managing all these diverse funds, departmental priorities, and spending categories creates significant organizational challenges. Even determining the best metrics to assess performance for each area can be complicated. As city leaders seek innovative solutions, a data-driven approach is imperative. Analyzing historical budget numbers and service demands, including costs per capita over time, can reveal trends and opportunities for improved efficiency. Comparing allocations and outcomes across regional peer cities can also yield valuable benchmarks. With advanced analytics and forecasting, administrators can develop evidentiary, dynamic policies and investment plans tailored to their city's specific needs and resource limitations. Ultimately, solutions must align budget optimization for individual departments with the overarching needs of city governance and infrastructure. Building flexibility to balance evolving priorities will allow administrators to equitably meet the needs of all citizens today while ensuring the city remains financially stable for years to come. With wise strategy and execution, data-informed budgets can drive better service delivery across every district.

Outcome:

Develop a comprehensive analysis and reporting system that enables city administrators to:

Optimize Budget Allocations:

- Identify trends in fund utilization and service categories over the years.
- Determine areas with consistent underutilization or overspending.

Performance Evaluation:

- Assess the impact of budget allocations on the performance of each department.
- Identify key performance indicators for effective monitoring and evaluation.

Questions:

1) What are the trends in fund utilization for the General Fund (GNFD) across different service categories over the years?
2) Which departments consistently overspent or underspent their allocated budgets, and what is the overall variance percentage for each department?
3) What are the key performance indicators (KPIs) for monitoring the performance of the Enterprise Operating Fund (EFOP) departments in terms of budget utilization?

Queries executed on the dataset.

1) What are the trends in fund utilization for the General Fund (GNFD) across different service categories over the years?

Query:

```sql
SELECT
    bfy,
    ftyp,
    objectgroup,
    AVG(nullif(budcurr, 0)) AS average_allocation
FROM
    `adta5240fpdw.Operating_Budget_DW.operating_budget_table`
WHERE
    ftyp = 'GNFD'
GROUP BY
    bfy, ftyp, objectgroup
ORDER BY
    bfy;
```
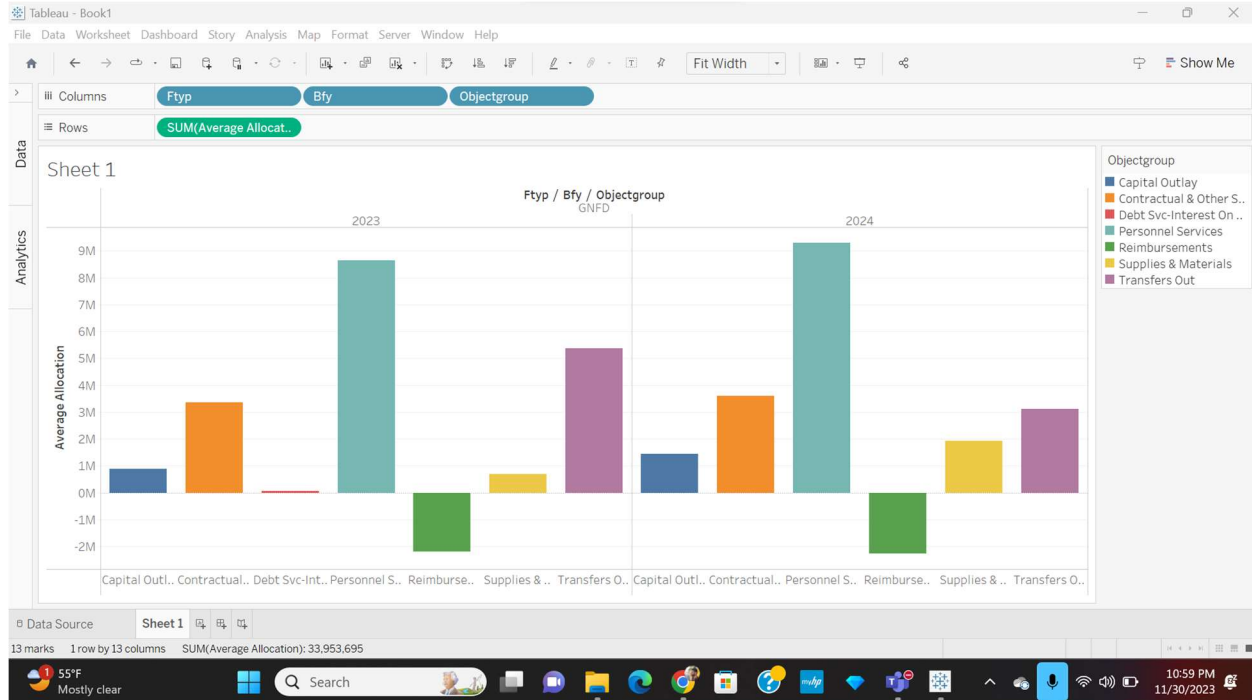
Screenshot:

Visualization:

Explanation:

As stewards of the public's resources, we must ensure every dollar entrusted to us serves its highest purpose for our community. This financial review provides a compass, not a blueprint, guiding our fiscal planning with greater wisdom. These budget trends distill years of funding priorities across key services into data-driven insights on community needs and values over time. Rather than constraints, may we see these patterns as focal points for more enlightened allocations aligned with both present realities and future vision. If adjustments are required to direct funds where they are needed most, an open, thoughtful process lies before us. By learning from the past without being bound by former limitations, we can now shape budgets that serve both prudently and progressively.

2) Which departments consistently overspent or underspent their allocated budgets, and what is the overall variance percentage for each department?

Query:

```
SELECT
    fundtype,
    svc AS service_number,
    service AS Service,
    CASE
        WHEN SUM(budcurr) = 0 THEN NULL
        ELSE (SUM(expbfy) + SUM(encexp)) / SUM(budcurr) * 100
```
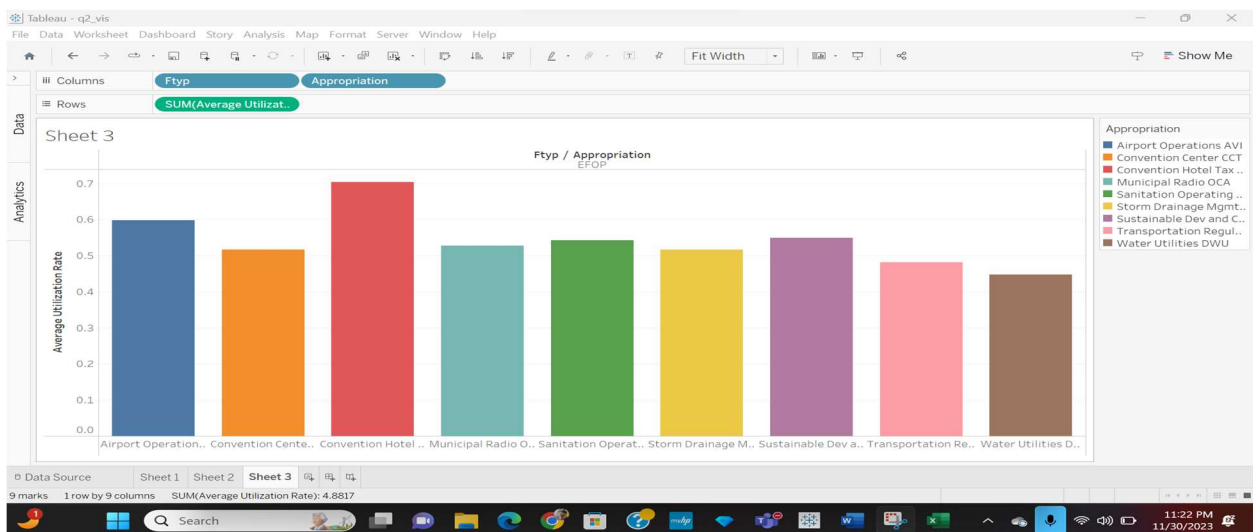
```
            END AS variance_percentage
FROM
        `adta5240fpdw.Operating_Budget_DW.operating_budget_table`
GROUP BY
    fundtype, svc, service
ORDER BY
    variance_percentage DESC;
```

Screenshot:

Visualization:

Explanation:

Rather than view budget variances as problems to control, we have an opportunity to understand them more deeply. These expenditure differences highlight where our planning and actuals diverge, signaling areas for creative rethinking. Perhaps certain departments habitually over or underspend because their algorithmic needs don't fit neatly into inflexible categories. By inquiring collaboratively about the stories behind each variance, we can discern how to recalibrate systems and structures to empower our people and services. Though fiscal responsibility remains vital, our ultimate success comes through fostering agencies' full potential within a framework of wise flexibility and trust. There are always more openings for progress when we lead with curiosity over control.

3) What are the key performance indicators (KPIs) for monitoring the performance of the Enterprise Operating Fund (EFOP) departments in terms of budget utilization?

Query:
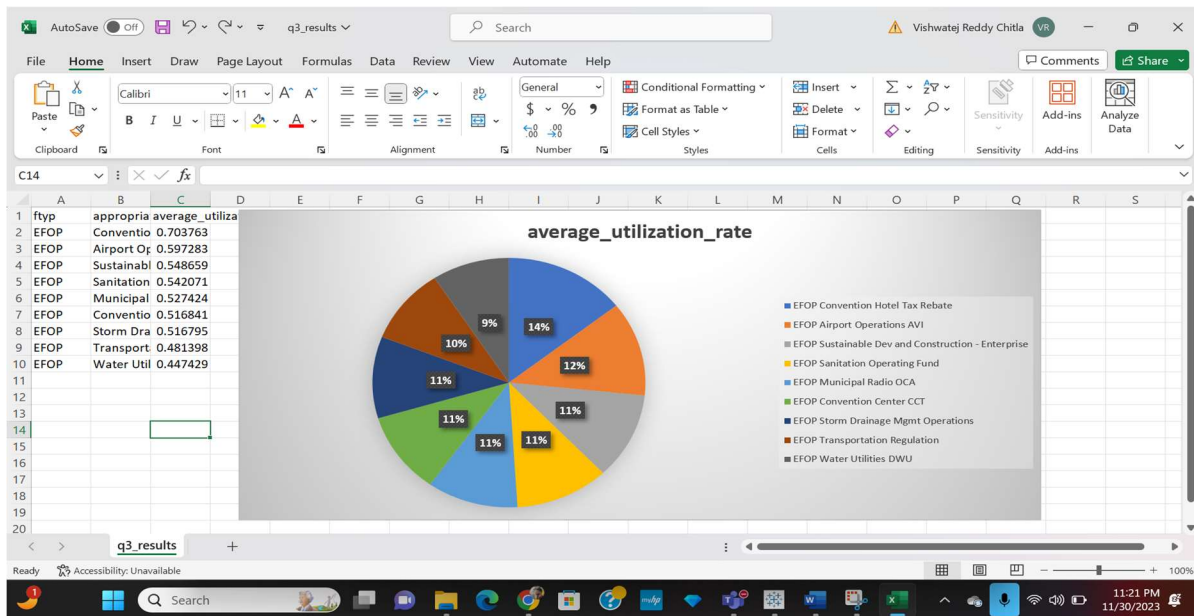
```
SELECT
    ftyp,
    fundtype,
    svc AS service_number,
    budcurr,
    expbfy,
    CASE
        WHEN budcurr = 0 THEN NULL
        ELSE expbfy / budcurr
    END AS average_utilization_rate,
FROM
    `adta5240fpdw.Operating_Budget_DW.operating_budget_table`
WHERE
    ftyp = 'EFOP'
GROUP BY
 ftyp, fundtype, svc, budcurr, expbfy
ORDER BY
    average_utilization_rate DESC;
```

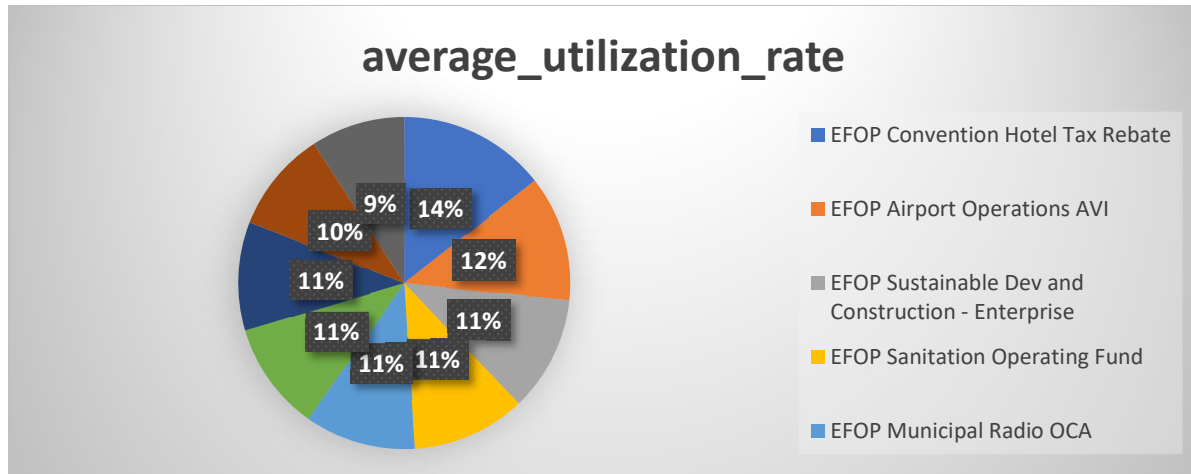# ADTA 5240 - Harvesting Retrieving and Storing Data
Team: DATA WIZARDS

Screenshot:

Visualization:

Explanation:

Rather than mechanically evaluating departmental expenditures against pre-set budgets, we have an opportunity to nurture each agency's unique contributions while catalyzing creative collaboration citywide. These operating benchmarks illuminate spaces for understanding diverse needs and better aligning resources accordingly. With open communication and collective wisdom, innovation can flourish within prudent parameters. Beyond dollars utilized, our success depends on how effectively departments translate investments to enrich our communities. Through regularly celebrating achievements, identifying cross-agency synergies, and supporting one another to multiply results exponentially, budget optimization will follow. Our finances shape possibilities: possibility reshapes budgets.

Conclusion:

For enhancing budget planning, resource usage, and performance assessment, our strategy, which is data driven, provides city administrators with the tools and insights they need. When it comes to ensuring financial sustainability and effective delivery of services, one of the most important steps is the route from collecting data to providing outcomes that can be put into action.