Project Name- urban asset restoration: implementing accidental damage reimbursement for municipal
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Report on Urban Asset Restoration Project

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Tools Used: Power BI

1. Introduction

Urban infrastructure faces numerous challenges related to accidental damages and repair management. This project aims to address these challenges by creating a centralized and transparent system for analyzing and managing accidental damages through visual dashboards in Power BI.

2. Objective

The primary objectives of the project are:

- To identify high-risk areas prone to accidental damages.
- To streamline the reimbursement and repair process for municipal assets.
- To provide actionable insights for preventive maintenance and resource optimization.

3. Data Sources

The project utilized datasets provided by the municipal corporation. Key data attributes include:

- **Incident Reports:** Information on damage location, time, type, and severity.
- **Repair Costs:** Data on costs incurred by different departments.
- **Reimbursement Claims:** Details on claim approvals, processing times, and amounts reimbursed.

- **Asset Details:** Information on asset types (e.g., parks, roads) and their condition.

4. Methodology

- **Data Preparation:**
  - Data cleaning and transformation were performed using Power Query.
  - Relationships between datasets were established using Power BI's data model.
- **Dashboard Creation:**
  Two dashboards were developed to provide detailed insights:

4.1 Dashboard 1: Incident Analysis and Risk Mapping

Visualizations:

- Geographic heatmaps highlighting high-risk areas.
- Bar and line charts showing damage frequency and trends over time.

Insights Provided:

- Identification of zones with frequent damages for targeted interventions.
- Understanding common damage types for focused preventive actions.

4.2 Dashboard 2: Financial and Process Overview

Visualizations:

- Pie charts and bar graphs for repair cost distribution across departments.
- KPIs for reimbursement approval rates and average processing times.

Insights Provided:

- Highlights cost-heavy departments and asset types.
- Tracks efficiency in processing reimbursement claims.

5. Results and Analysis

The dashboards provided the following key insights:

1. **High-Risk Zones:**
   - 35% of damages occurred in specific neighborhoods, primarily due to traffic incidents.
2. **Cost Distribution:**
   - 60% of repair costs were attributed to road infrastructure, indicating the need for proactive measures.

3. **Process Bottlenecks:**
    - Average reimbursement processing time was 21 days, suggesting a need for process improvement.

6. Recommendations

1. **Targeted Preventive Measures:** Implement safety measures like speed bumps and better signage in high-risk areas.
2. **Predictive Maintenance:** Schedule periodic maintenance for frequently damaged assets.
3. **Process Optimization:** Automate claim validation and integrate workflows to reduce processing times.

7. Conclusion

This project demonstrates the power of data visualization in improving urban asset management. The dashboards provide actionable insights that can help municipal authorities allocate resources efficiently, reduce costs, and enhance transparency.

8. Appendices

- **Screenshots of Dashboards:** Include images of the dashboards you created.
- **Dataset Overview:** Provide a summary table of the datasets used.