ToyCraft Tales: Tableau's Vision into Toy Manufacturer Data

1. Introduction

1.1. Project Overview

The ToyCraft Tales project focuses on analyzing toy manufacturing data across various US states. By leveraging Tableau, the project visualizes patterns, trends, and insights into the toy manufacturing industry, helping businesses make data-driven decisions.

1.2. Objectives

- Identify the top US states with the highest number of toy manufacturers.
- Analyze the distribution of manufacturers over the years.
- Examine correlations between the number of manufacturers and index values.
- Visualize data through interactive dashboards for better insights.

2. Project Initialization and Planning Phase

2.1. Define Problem Statement

The goal of this project is to analyze toy manufacturing data to identify major hubs, year-wise trends, and correlations, aiding strategic decision-making for stakeholders.

2.2. Project Proposal (Proposed Solution)

Utilizing Tableau for data visualization offers an effective solution to represent large datasets with interactive and easy-to-understand visual insights.

2.3. Initial Project Planning

- Data collection from reliable sources.
- Preprocessing to clean and structure the data.
- Creating interactive dashboards with Tableau.
- Drawing business insights from visualizations.

3. Data Collection and Preprocessing Phase

3.1. Data Collection Plan and Raw Data Sources Identified

- The dataset contains information on states, years, and the number of toy manufacturers.
- Data sourced from industry reports and toy manufacturer directories.

3.2. Data Quality Report

- Checked for missing values and inconsistencies.
- Ensured data consistency across years and states.
- Verified accuracy of manufacturer counts.

3.3. Data Exploration and Preprocessing

- Cleaned the dataset by removing duplicates.
- Standardized the date formats and state names.
- Filtered irrelevant or incomplete data entries.

4. Data Visualization

4.1. Framing Business Questions

- Which states have the highest number of toy manufacturers?
- How has the number of manufacturers changed over the years?
- Is there a correlation between manufacturers and index values?

4.2. Developing Visualizations

- **Bar Chart: Analysis on toy Manufacturer in US state By Index.**
- **Pie Chart: Analysis on toy Manufacturer in US state By Index.**
- **Horizontal Bar Chart: Top 10 states toy manufacturer in US state**
- **Gantt Chart: Analysis on Toy Manufacturer by index**
- **Area Chart: *Analysis on number of Manufacturer by Year***

5. Dashboard

5.1. Dashboard Design File

- Integrated multiple visualizations into a single dashboard.
- Used filters and tooltips for better interactivity.
- Applied color coding and labels for better readability.

6. Report

6.1. Story Design File

- Created a structured story in Tableau with a step-by-step walkthrough of insights.
- Added captions and descriptions for each visualization.

7. Performance Testing

7.1. Utilization of Data Filters

- Applied filters by year and state for focused analysis.

7.2. Number of Calculation Fields

- Included calculated fields for year-wise growth percentage.
- Added custom aggregations for better insights.

7.3. Number of Visualizations

- Six visualizations used to represent different aspects of the dataset.

8. Conclusion/Observation

- **Top States:** The United States, California, and New York have the highest toy manufacturers.
- **Year-wise Trend:** The number of manufacturers shows a gradual increase over the years.
- **Correlation:** There is a visible correlation between the number of manufacturers and index values, indicating larger markets attract more manufacturers.

9. Future Scope

- Integrate sales data for revenue analysis.
- Include manufacturer-specific data for company-wise analysis.
- Develop predictive models for market trends.

10. Appendix

10.1. Source Code (if any)

- No source code applicable, as this is a Tableau-based visualization project.

10.2. GitHub & Project Demo Link

- https://github.com/BallalaRaju/ToyCraft_Tales
- https://drive.google.com/file/d/1jQcTjOg0_KTRsltZiNHbEaZa9pqNji_m/view?usp=drive_link