

Usability of Analysis & Data Visualization in Economic Decision-Making

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Effective economic policy decisions rely on robust data analysis and visualization techniques. The usability of these methods determines how efficiently policymakers, analysts, and stakeholders interpret insights, make informed decisions, and implement strategic interventions. This report explores the usability, impact, and best practices of analytical and visualization techniques in economic policymaking, particularly in inflation forecasting, fiscal planning, and sectoral analysis.

1. Enhancing Usability Through Data Analysis

Role of Statistical & Machine Learning Models : Time-series forecasting methods like ARIMA and LSTM analyze historical economic data to predict future trends, such as inflation rates. These models help policymakers anticipate economic shifts and make informed decisions. Regression analysis examines relationships between variables, identifying key factors influencing inflation, including fuel prices, global trade, and monetary policies. By understanding these drivers, policymakers can design targeted economic strategies. Clustering and classification techniques, such as K-Means and Decision Trees, categorize sectors based on their inflation behavior, enabling more precise and sector-specific policy interventions to stabilize prices and manage inflation effectively.

Improving Decision-Making with Analytical Usability : Automating data processing minimizes human errors and accelerates decision-making by quickly analyzing large datasets. Interactive and accessible dashboards with real-time updates provide policymakers, including those at RBI and MOSPI, with instant insights for timely actions. Scenario analysis and AI-driven simulations help evaluate the potential impact of various fiscal policies before implementation, ensuring data-backed, effective economic strategies.

2. The Power of Data Visualization

Why Visualization Matters in Government Analytics : Data visualization simplifies complex datasets by converting raw economic data into clear and easy-to-understand insights. It enhances pattern recognition by quickly identifying trends, outliers, and correlations, helping policymakers detect economic shifts early. Additionally, it improves communication by presenting information in a visually engaging way, making it accessible to non-technical stakeholders for better decision-making.

3. Best Practices for Usability in Data Analysis & Visualization

Maintain clarity and simplicity by using clean layouts and intuitive color schemes to avoid clutter. Enhance usability with interactive dashboards that allow users to explore data in depth. Ensure real-time data updates for timely and informed decision-making. Customize reports to meet the needs of different stakeholders, including policymakers, economists, and citizens. Implement AI-driven anomaly detection to automatically flag unexpected economic shifts, enabling proactive responses.

Conclusion & Recommendations

Combining advanced data analysis techniques with intuitive visualization enhances economic decision-making, making it more effective, accessible, and actionable. The Government of India can improve policy efficiency by integrating real-time dashboards, AI-driven forecasting, and interactive visual tools into its economic planning frameworks. A centralized economic intelligence system with user-friendly visualization and AI-driven analytics can support better decision-making in inflation control and fiscal policies.