Supply Chain Optimization Analysis

Executive summary report for United States AID – Bureau for Global Health

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ISSUE / PROBLEM

The United States AID – Bureau for Global Health (USAID) has requested a consultation on its supply chain fluidity to ensure the optimization of its operations efficiency.

An operations analysis has identified USAID – Bureau for Global Health is experiencing a higher than the global market average on-time delivery cost, of $9.78m (USD).

RESPONSE

I chose to conduct a predictive analysis based on the products, shipping costs, and distribution of data provided. The heat map identifies the average freight cost of the most demanded medication. The predictive cost-benefit bar graph shows the cost saving of a 30% freight costs reduction.

Ensuring that the prediction is not over-biased and is moderate. The predictive analysis performed better than expected on the test data.

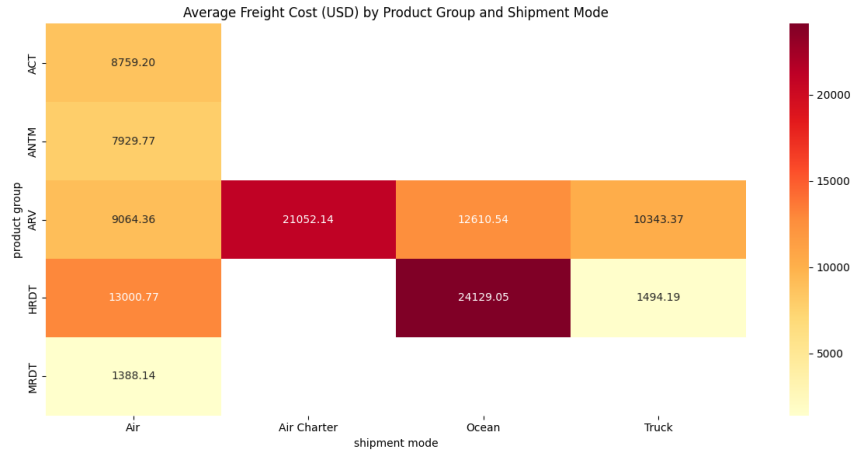
IMPACT

Inputting a moderate cost reduction percentage of 30% has optimized the supply chain process, specifically regarding the variables of freight cost, shipment mode, and duration.

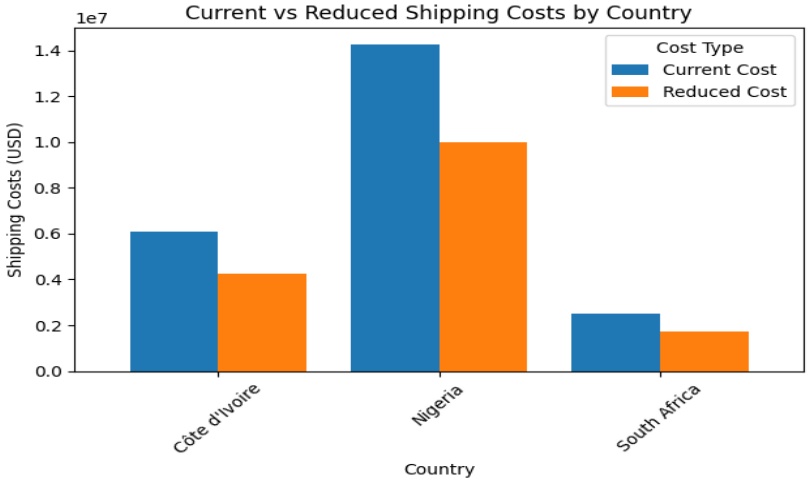
The predictive analysis provides a sound framework for predicting the estimated cost savings of optimizing the USAID supply chain process.

To showcase the efficacy of supply chain optimization, I included a heat map identifying the current freight cost (USD) per product and shipment mode. Allowing USAID to identify its calculated cost.

To understand the potential cost savings provided by the predictive analysis, I added a bar graph showcasing the current vs reduced shipping cost post optimization implementation.



Alt-text: The heat maps show an average cost of freight shipments.



Alt-text: The double bar graph shows a predictive cost-benefit analysis of establishing and opening new warehouse locations.

KEY INSIGHTS

- **Shipping Cost :** USAID is losing on average $13,156.07 per shipment due to late deliveries. Most of the cost occurs in Africa.
- **Profit Margin:** All chosen African countries exhibit profit margins, all above 94%.
- **Demand per country** *(rounded to nearest decimal) :* Nigeria: 34% | South Africa: 23% | Cote d'Ivoire: 12%.
- **Next Steps**: Establishing warehouses in Nigeria, South Africa, and Côte d'Ivoire, with an assumed 30% reduction in freight costs due to optimized warehouse locations, is **projected to result in an annual cost savings of approximately $6,856,290.96.** This would lead to a reduced total cost of $15,998,012.24, compared to the current total cost of $22,854,303.20.