Inventory Management Analysis Report

Introduction

As the data analyst responsible for overseeing inventory operations, this report presents a comprehensive analysis of product stock, supplier performance, cost structures, and geographic distribution within the inventory system. Utilizing Power BI, I have built interactive dashboards to identify bottlenecks, uncover trends, and provide actionable insights for strategic decision-making.

A & C. Stock & Pricing Overview

To better understand our inventory dynamics and pricing strategy, I combined the stock and pricing data into one cohesive dashboard. This allows us to view stock levels and cost performance side by side.

Key Findings:

- The product category with the highest total stock quantity was the Home and Garden category, identified through a bar chart visualization, providing clarity on inventory concentration.
- A card visual highlights that 7000 products are currently below their reorder point. These represent urgent restocking needs.
- Another KPI visual calculates the minimum quantity, which is 262, required to restock all low-stock items.
- Using a table sorted by unit price, I extracted the top five most expensive products, alongside their respective categories.

Product Name	Category	Sum of Unit Price
Product_3416	Office supplies	999.73
Product_1411	Home and Garden	999.70
Product_4810	Electronics	999.70
Product_563	Home and Garden	999.51
Product_781	Books	999.42

- The fastest turnover category was Office supplies determined using a metric that considers stock quantity in relation to lead time, displayed through a clustered bar chart.

B. Supplier & Restocking Performance

This dashboard evaluates supplier efficiency and restocking behavior, which are crucial for maintaining optimal stock levels.

Key Insights:
- I identified the supplier with the highest average lead time for restocking was SUP041, using a visualized table, helping us assess supply chain delays.
- A KPI card visual calculates the average time since the last restock for products marked "Out of Stock," is 211.38 highlighting long-term supply gaps.
- Monthly restocking trends were analyzed through a column chart, revealing possible seasonal patterns in inventory replenishment. The months when the highest number of products were restocked were April, May, July, October while the months with the lowest number of products restocked were January, February, August, September, November and December.

D. Warehouse & Geographic Insights

This dashboard explores how products are distributed geographically and across storage facilities.
Key Insights:
- A bar chart revealed which warehouse location holds the highest number of stored products, assisting in warehouse planning.
- A country-level bar chart identified Germany holds the most stock overall.
- To drill down, I created a matrix that shows Germany, Spain and Belgium are the top three countries by stocked quantity across different product categories, allowing deeper insight into location-specific inventory strengths.

Conclusion & Recommendations

This report reveals several key takeaways for inventory optimization. Products below reorder thresholds need urgent restocking, especially from suppliers with long lead times. Certain product categories experience faster turnover and should be prioritized for agile replenishment strategies. Geographic distribution insights will assist in warehouse optimization.
Next steps should include automating restock alerts in Power BI, optimizing supplier contracts with high lead times, and maintaining buffer stock for fast-moving products.

I am confident that the insights presented here will enhance operational efficiency and support data-driven decisions.