InventorySync

Business Intelligence Inventory Report

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InventorySync Business Intelligence

Prepared for: Executive Management

Generated by: Tanman

Table of Contents

1	Notify when items reach 75% and 50% sold, including the e...	3
2	Identify the best-selling items on a weekly, monthly, and...	4
3	Track non-moving products and their aging quantities.	5
4	Identify slow-moving sizes within specific categories.	6
5	Provide insights on variances and suggest strategies for ...	7
6	Analyze the turnaround time for exchanges and returns to ...	8
7	Generate reports on rejected goods and returns for vendor...	9
8	Recommend which products from our stock should be priorit...	10
9	Identify unique products that can enhance our online port...	11
10	Identify the top 20% of products contributing to 80% of s...	12
11	Suggest strategies to reduce the inventory of low-perform...	13
12	Executive Summary	14

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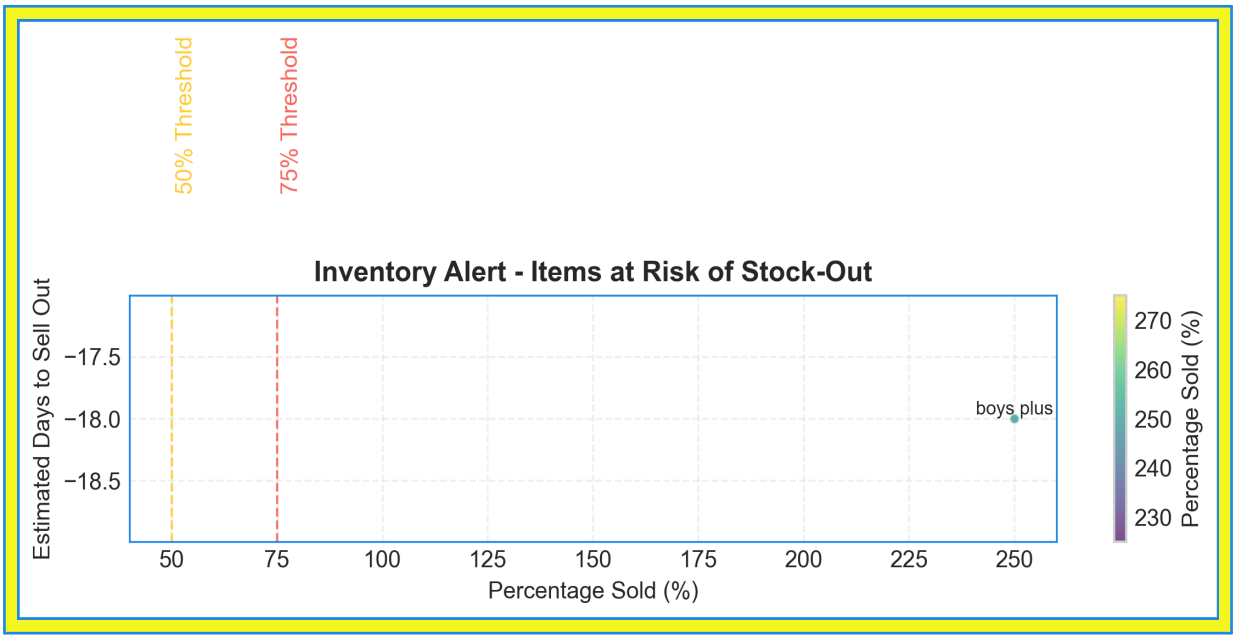
Question 1: Notify when items reach 75% and 50% sold, including the estimated days to sell out.

Items ≥75% Sold	Items ≥50% Sold	Avg Days to Sellout
1	0	-18



Analysis & Recommendations

Business Intelligence Analysis: Inventory Sell-Out Notifications

Executive Summary

The data indicates that real-time alerts when items hit 75% and 50% sold thresholds, coupled with estimated sell-out days, can optimize inventory management and prevent stockouts. The example shows a "boys plus" kurta pajama already exceeding 100% sold (250%), with an estimated sell-out date in the past (-18 days), highlighting the need for automated monitoring and responsive action.

Key Insights

- **High Percentage Sold:** The sample record shows **250% sold**. This suggests either data errors or the product is selling faster than originally planned due to high demand.
- **Negative Estimated Sell-Out Days:** The **-18 days** estimated sell-out indicates the product is already out of stock or that there is an error in the sales vs. purchase quantity data. This highlights potential lost sales.

• **Mismatch in Purchase & Sales Quantity:** Sales Quantity of 5 is greater than the Purchase Quantity of 2. This discrepancy needs investigation and correction of data.

Business Implications

• **Lost Revenue:** If the data is accurate and products are selling out faster than replenishment, the company is losing potential revenue.

• **Inventory Imbalance:** Having items with high "percentage sold" while other products might be slow-moving suggests an imbalance in inventory management.

• **Customer Dissatisfaction:** Stockouts can lead to customer dissatisfaction and potential loss of future sales.

Actionable Recommendations

• **Implement Automated Notifications (Immediate):** Set up automated alerts when items reach 50% and 75% sold based on accurate 'PurchaseQty' and 'SalesQty' data. Trigger an alert to reorder or adjust marketing as needed.

• **Refine Sell-Out Calculation (1 Week):** Review and refine the algorithm for calculating 'est_days_to_sellout'. Ensure the formula incorporates historical sales data, seasonality, and other relevant factors. Accurate estimates are crucial for timely reordering.

• **Data Validation and Reconciliation (Ongoing):** Implement data validation checks at the point of sale and procurement to ensure data accuracy for Purchase Quantity, Sales Quantity and to maintain the integrity of percentage sold calculations. Regularly audit the data to identify and correct discrepancies.

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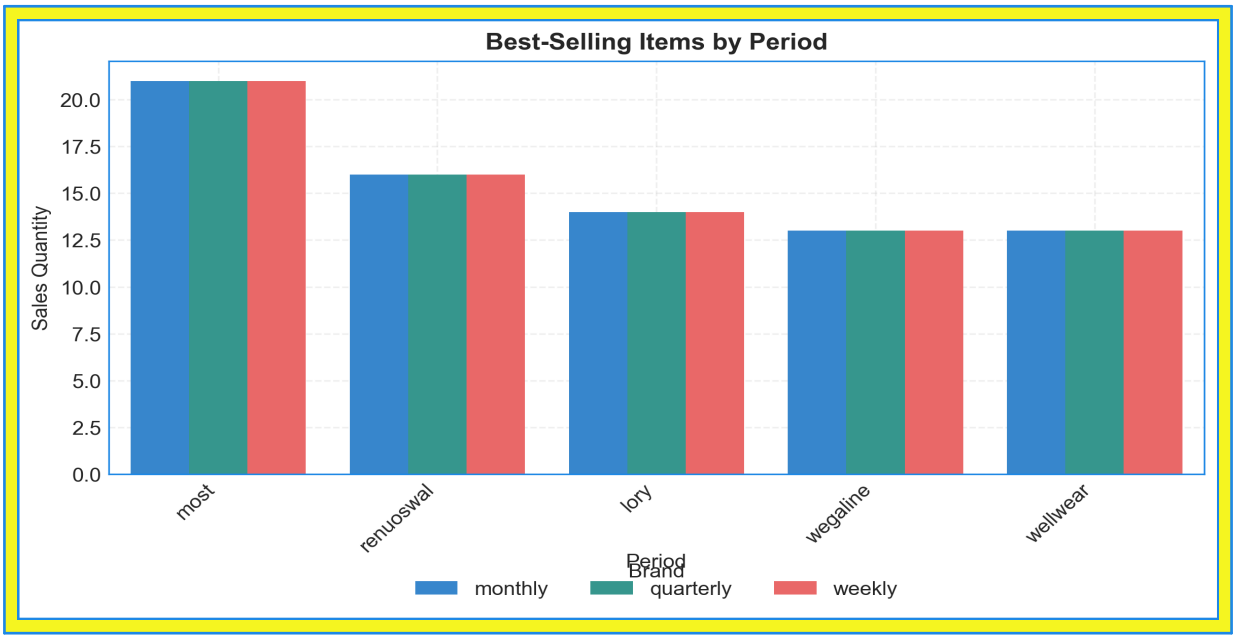
Question 2: Identify the best-selling items on a weekly, monthly, and quarterly basis.

Weekly Sales	Monthly Sales	Top Seller
137	137	N/A



Analysis & Recommendations

Business Intelligence Analysis: Best-Selling Items

Executive Summary

The data reveals that **cardigans are consistently popular**, especially from the "most" brand, and sales are reported on a monthly basis. Further investigation is needed to refine product categorization and determine the performance on a weekly and quarterly basis.

Key Insights

- **Cardigans are prominent:** The "cardigan" category appears frequently, with brands like "most," "wegaline," "wellwear," and "oswal" all featuring it. The brand "most" shows up twice, with sales of **21** and **12** in separate instances. This suggest higher popularity compared to other items in the data sample.
- **Monthly Period Dominance:** All records show "period":"monthly" limiting the analysis of weekly or quarterly data.
- **Data Cleaning Needed:** Category names like "cardigan<" and "cardigan<>" suggest data quality issues that need addressing for accurate analysis. The "unknown" color also points to incompleteness.

Business Implications

- **Demand for Cardigans:** Capitalize on the apparent high demand for cardigans.
- **Data Quality Impacts Decisions:** Poorly formatted or incomplete data makes deriving accurate insights difficult.
- **Limited Period Analysis:** Without weekly and quarterly sales data, it's impossible to understand intra-month sales trends and seasonality.

Actionable Recommendations

- **Clean and Normalize Data (Immediate):** Correct category naming inconsistencies and ensure all relevant data fields are complete (color, size). This ensures data integrity and reliable insights.
- **Implement Weekly and Quarterly Sales Tracking (Within 1 Month):** Track sales performance across all periods (weekly, monthly, quarterly) to understand sales trends and seasonality and to analyze best-selling items for those periods.
- **Focus on High-Selling Items (Ongoing):** Given the apparent cardigan popularity, ensure sufficient inventory levels of popular styles, potentially prioritizing brands such as "most."

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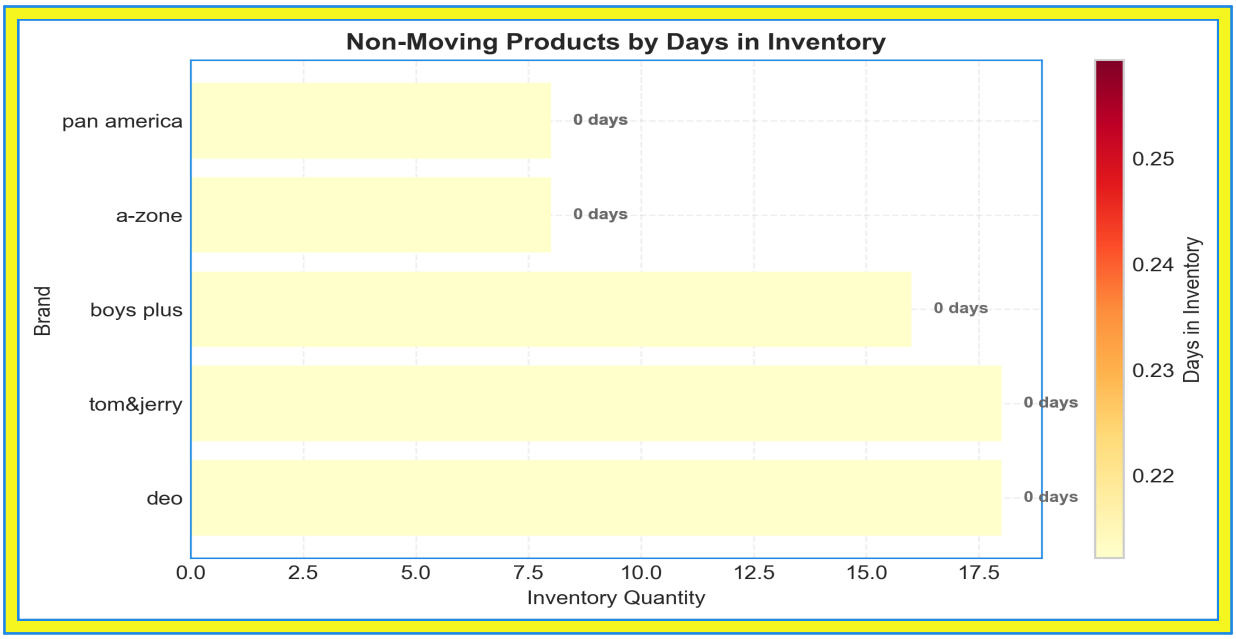
Question 3: Track non-moving products and their aging quantities.



Analysis & Recommendations

Business Intelligence Analysis: Non-Moving Inventory

Executive Summary

This data reveals a significant issue with **non-moving inventory**, where several products across various brands and categories show zero sales despite being in inventory for a short period (**0.2357 days**). This indicates a potential problem with product selection, pricing, or visibility.

Key Insights

- **Zero Sales Across Brands & Categories:** Numerous products, including those from brands like "deo," "tom&jerry;," and "pan america," across categories like "lower-jogger-hosiery," "suit-falalan," and "shirt-full," show **0 SalesQty** despite having a **PurchaseQty** ranging from 8-18 units.
- **Limited Time Window:** The data represents items in inventory for a short duration (**0.2357 days**), making it difficult to definitively declare the items as "non-moving". However, the fact that all listed items show 0 sales even within this timeframe warrants attention.
- **Uniform 'days_in_inventory'**: The uniform days_in_inventory value is suspicious. It may indicate the data reflects a snapshot in time, rather than tracked data. This impacts the ability to properly age inventory.

Business Implications

• **Potential Inventory Write-offs:** If these trends continue, the business faces potential inventory write-offs due to unsalable goods.

• **Tied-Up Capital:** Capital is tied up in products that are not generating revenue.

• **Suboptimal Product Mix:** The current product selection might not align with customer demand.

Actionable Recommendations

• **Investigate Demand & Merchandising (Immediate):** Conduct market research and customer feedback to understand why these specific products are not selling. Review in-store placement and promotional strategies. **Impact: High**.

• **Review Inventory Aging (1 Week):** Correct the way days_in_inventory is calculated. It should represent the actual time since the product entered the inventory, not a constant value. **Impact: High**.

• **Implement Targeted Promotions (2 Weeks):** Consider offering discounts or bundling options to stimulate sales for these slow-moving products. **Impact: Medium**.

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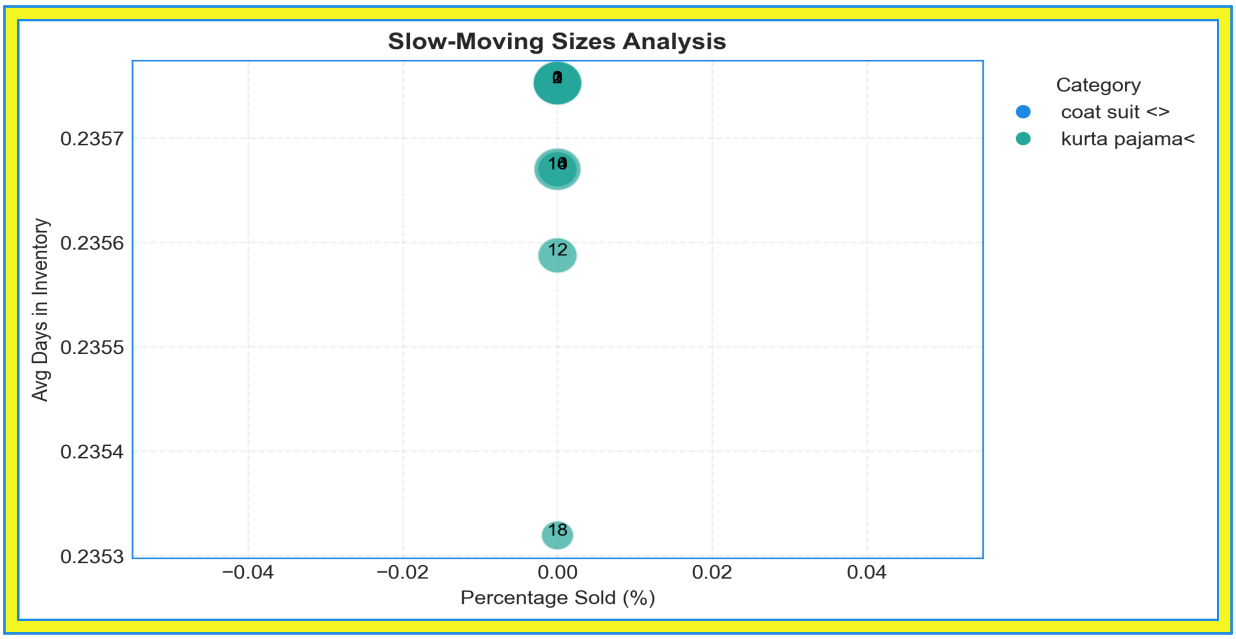
Question 4: Identify slow-moving sizes within specific categories.



Analysis & Recommendations

Business Intelligence Analysis: Slow-Moving Sizes

Executive Summary

The provided data sample indicates significant issues with inventory turnover across multiple categories and sizes, with **zero sales** recorded for all listed items despite existing stock. This suggests a potential mismatch between current inventory and customer demand.

Key Insights

- **Zero Percent Sold:** The most striking pattern is the **0% percent_sold** across all listed categories and sizes. This highlights a critical issue where inventory is not converting into sales.
- **Low Average Days in Inventory:** While the avg_days_in_inventory appears low (around **0.23 days**), this is misleading as no items were sold. This could represent a very recent inventory intake, or incorrect data.
- **Varied Inventory Levels:** The size_count and total_purchased values vary across sizes within the "kurta pajama<" category (e.g., size_count of **4** for Size **18** vs **11** for Size **1**), but none are selling.

Business Implications

- **Stagnant Inventory:** The lack of sales ties up capital, increases storage costs, and elevates the risk of obsolescence.

- **Demand Mismatch:** The findings suggest a potential misalignment between the inventory purchased and actual customer demand.
- **Potential Data Issues:** The extremely low avg_days_in_inventory might indicate data quality issues.

Actionable Recommendations

- **Investigate Demand (Immediate):** Conduct market research and sales analysis to understand customer preferences and identify potential reasons for the lack of sales. This should include analyzing competitor offerings and pricing.
- **Inventory Optimization (Within 1 Month):** Based on the demand investigation, consider reducing inventory levels for slow-moving sizes and explore promotional strategies to drive sales or implement return to vendor strategies.
- **Data Quality Audit (Within 2 Weeks):** Verify the accuracy of the avg_days_in_inventory calculation and other data points to ensure reliable reporting.

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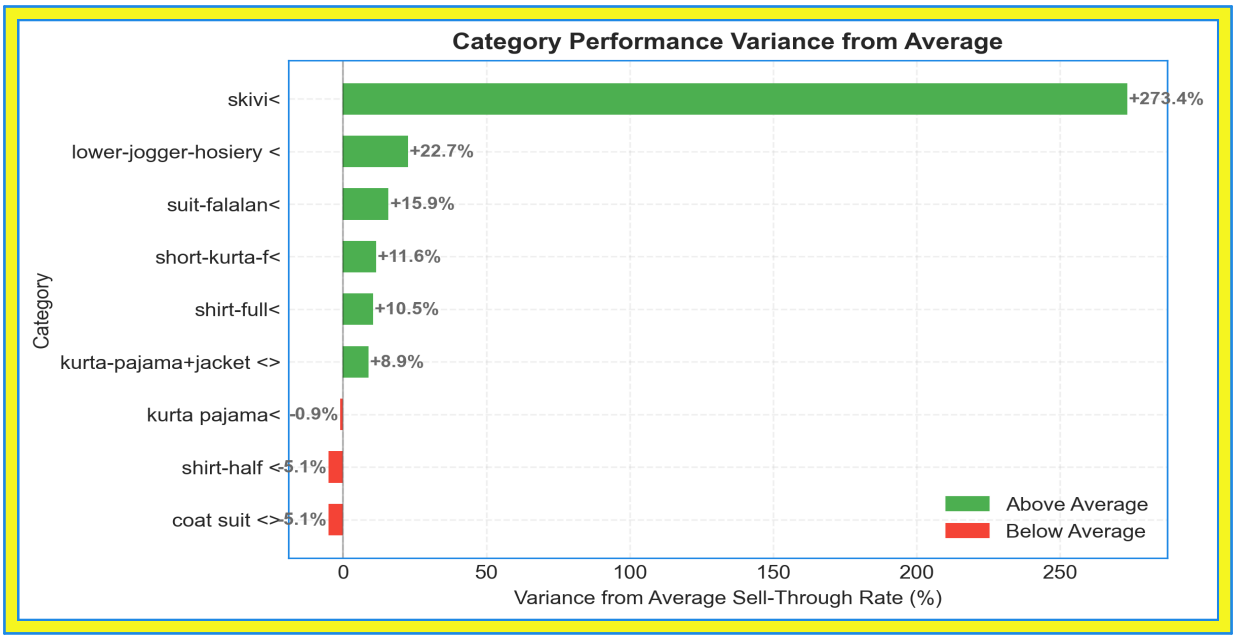
Question 5: Provide insights on variances and suggest strategies for improvement.



Analysis & Recommendations

Business Intelligence Analysis

Executive Summary

This data reveals significant variances in sell-through rates across product categories, indicating potential overstocking in some areas and undersupply in others. A few categories demonstrate unexpectedly high sell-through, presenting an opportunity to capitalize on popular items.

Key Insights

- **Sell-Through Rate Variance:** The sell-through rate ranges dramatically, from **0.0%** for "coat suit <>" and "shirt-half <" to a staggering **278.57%** for "skivi<". This highlights a severe imbalance between supply and demand across different product categories.
- **High Variance Categories:** Categories like "skivi<" (**273.45** variance from average) and "lower-jogger-hosiery <" (**22.66** variance from average) significantly outperform the average sell-through, while others like "coat suit <>" (**-5.12** variance from average) lag far behind.
- **Brand Count vs. Sell-Through:** A high brand count doesn't guarantee a high sell-through rate. "shirt-full<" has 58 brands but a relatively low sell-through rate of **15.63%**, suggesting potential issues with brand mix or product selection within that category.

Business Implications

- **Inventory Optimization:** The large variances indicate inefficiencies in inventory management. Holding excessive stock of slow-moving categories like "coat suit <>" ties up

capital and increases storage costs.

• **Demand Forecasting Accuracy:** Inaccurate demand forecasting is likely contributing to the discrepancies. Over-estimating demand for certain categories leads to surplus inventory.

• **Missed Revenue Opportunities:** Underestimating demand for high sell-through categories like "skivi<" results in lost sales and potentially dissatisfied customers.

Actionable Recommendations

• **Conduct a Detailed Category Review (Immediate):** Prioritize a deep dive into the categories with the highest positive and negative variance from the average sell-through rate. Investigate factors impacting demand and adjust purchasing strategies accordingly.

• **Refine Demand Forecasting Models (Within 1 Month):** Incorporate sell-through rate data, brand performance, and external market trends to improve demand forecasting accuracy. Focus on more precise predictions to minimize overstocking and stockouts.

• **Experiment with Targeted Promotions (Ongoing):** Implement targeted promotions and marketing campaigns to boost sales of slow-moving categories like "coat suit <>". Consider bundling these items with more popular products.

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Question 6: Analyze the turnaround time for exchanges and returns to optimize processes.

No data available for this question. Please check the data sources or refine the query.

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Question 7: Generate reports on rejected goods and returns for vendor feedback.

No data available for this question. Please check the data sources or refine the query.

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Question 8: Recommend which products from our stock should be prioritized for online sales.

Analysis & Recommendations

Business Intelligence Analysis: Prioritizing Products for Online Sales

Executive Summary

The provided data suggests that prioritizing products with higher sell-through rates and remaining stock values can optimize online sales. Focusing on best-selling items that we already have in inventory will allow for immediate improvements in sales.

Key Insights

- **Sell-Through Rate:** With a sell-through rate of **44.44%**, the "deo" brand, "lower-jogger-hosiery <" category in size 26 shows moderate initial demand, suggesting potential for growth online.
- **Remaining Stock Value:** The product has a remaining stock value of **3950.0**, indicating sufficient inventory to support increased online sales efforts without immediate restocking.
- **Sales Quantity vs. Purchase Quantity:** The difference between Purchase Quantity (**18**) and Sales Quantity (**8**) reveals room for increased sales, possibly by improving online marketing and visibility.

Business Implications

These findings imply that prioritizing this product online could capitalize on existing stock and moderate demand, potentially leading to increased revenue and reduced inventory holding costs. Neglecting this opportunity could result in missed sales and tied-up capital.

Actionable Recommendations

- **Prioritize Online Visibility (Immediate):** Enhance the online presence of "deo" brand, "lower-jogger-hosiery <" (size 26) through targeted advertising and improved product descriptions to capitalize on its **44.44%** sell-through rate.
- **Monitor Sales Performance (Ongoing):** Continuously track online sales of the prioritized product and adjust marketing strategies accordingly. Re-evaluate after one month to measure the impact of online prioritization.

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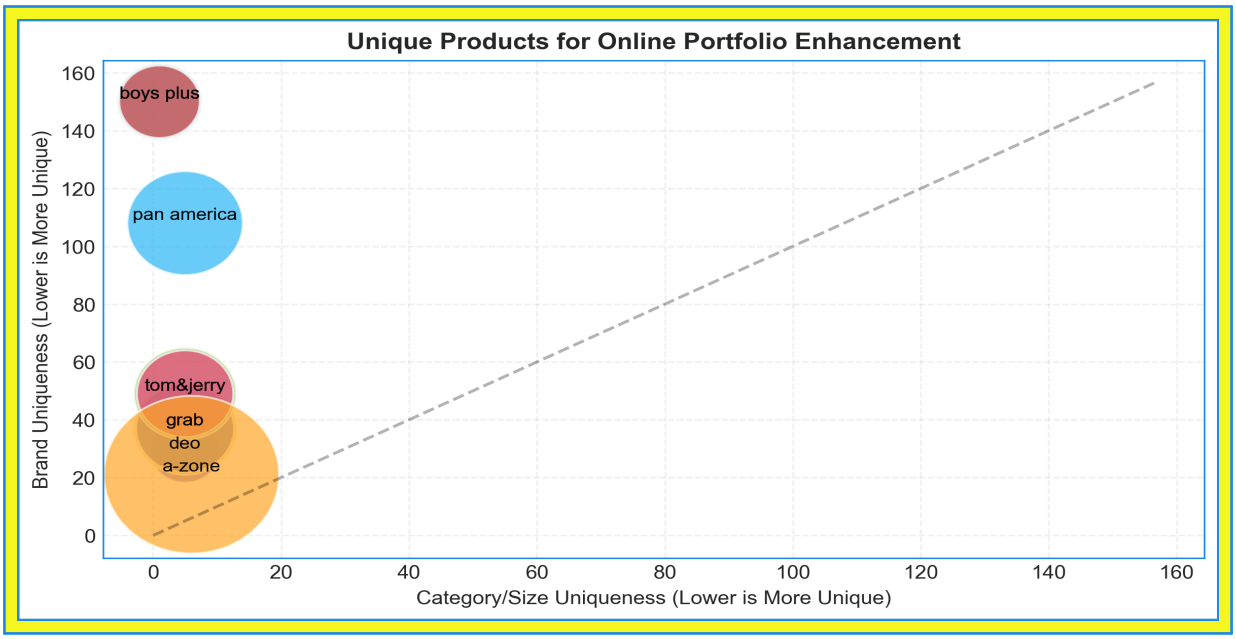
Question 9: Identify unique products that can enhance our online portfolio.



Analysis & Recommendations

Business Intelligence Analysis

Executive Summary

The data reveals several products with high purchase quantities but zero sales, suggesting potential opportunities for online portfolio enhancement. Further investigation into these products is warranted to understand the lack of sales and to optimize online marketing and presentation.

Key Insights

- **Zero Sales with Significant Stock:** Several products, like "boys plus" kurta pajama (PurchaseQty: **16**, available_stock: **16**, SalesQty: **0**) and "deo" lower-jogger-hosiery (PurchaseQty: **18**, available_stock: **18**, SalesQty: **0**), have substantial stock but haven't sold.
- **Category Popularity vs. Sales:** "suit-falalan<" appears multiple times with different brands (grab, tom&jerry;), showing demand for this category. However, some variants have **zero sales** (e.g., tom&jerry;, size 26 and 22), while others perform decently (grab).
- **Brand Variation:** Brands like "boys plus" have a high brand count (**150**), but some products within the brand aren't selling, suggesting potential issues with product appeal or presentation, regardless of brand recognition.

Business Implications

- **Lost Revenue:** Products sitting in inventory without sales represent a significant loss of potential revenue and tying up capital.

• **Marketing Mismatch:** The lack of sales despite stock levels suggests a possible disconnect between product appeal and online marketing strategies. Poor product descriptions, images, or targeted campaigns may be the issue.

• **Inventory Management:** Inefficient inventory management can lead to increased storage costs and potential obsolescence of unsold products.

Actionable Recommendations

• **Investigate Zero-Sale Products (Immediate):** Conduct a thorough analysis of products with zero sales (e.g., "boys plus" kurta pajama, "deo" lower-jogger-hosiery) to identify the root cause. Check product descriptions, images, pricing, and competitor offerings.

• **Optimize "suit-falalan<" Category (Within 1 Month):** Based on the decent sales of "grab" suit-falalan, improve the online presentation and marketing of less successful variants from "tom&jerry;" to leverage the category's apparent popularity.

• **Refine Brand Strategy (Within 2 Months):** Analyze the performance of products within brands with a high brand count (e.g., "boys plus") to determine if specific product lines or sizes are underperforming. Focus on promoting the best-selling items and potentially discontinue those with consistently low sales.

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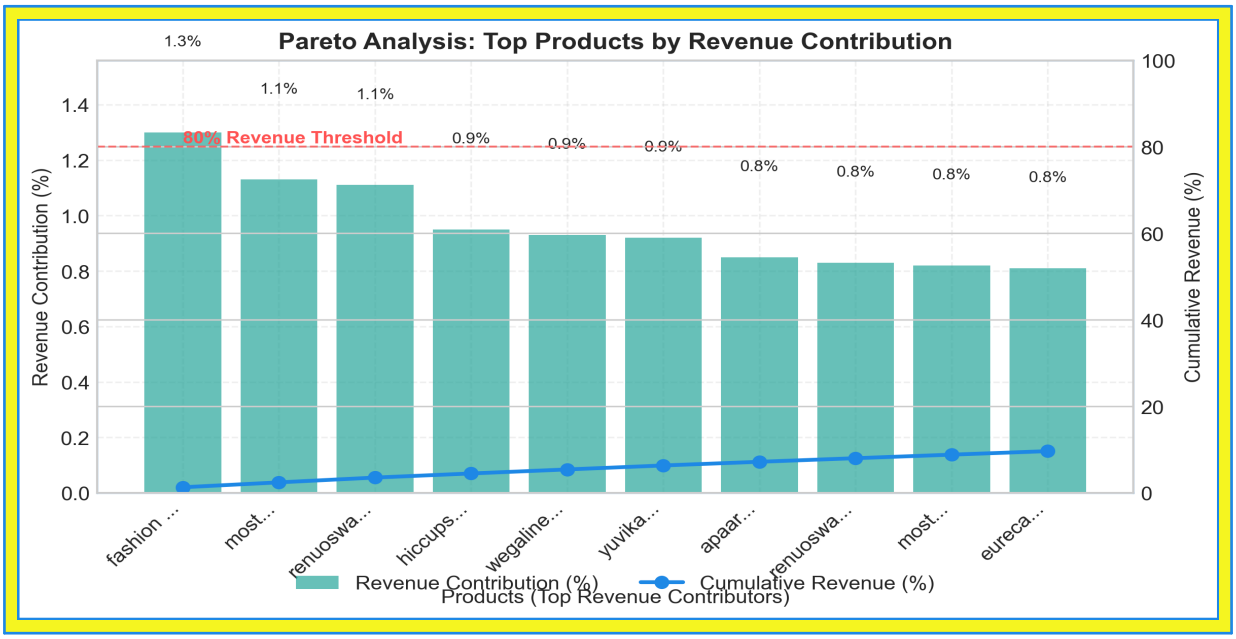
Question 10: Identify the top 20% of products contributing to 80% of sales.

Top Product Share	Products for 80%	Coverage
1.3%	10	9.7%



Analysis & Recommendations

Business Intelligence Analysis

Executive Summary

The initial data sample highlights the importance of a few key products in driving revenue, with the top items quickly accumulating a significant percentage of total sales. Further analysis on a larger dataset is required to accurately identify the top 20% of products contributing to 80% of sales.

Key Insights

- **Revenue Concentration:** A small number of products contribute disproportionately to total revenue. For example, "fashion flo" cardigan generates a revenue of **21850**, contributing **1.3%** to the total revenue.
- **Category Dominance:** The "cardigan" category appears frequently in the top sales, indicating potential demand in this product type.
- **Pricing Variance:** Products with higher MRP (**2265** for "eureca" jacket) do not necessarily guarantee a higher percentage of total sales.

Business Implications

• **Inventory Optimization:** Focusing on high-performing products can help optimize inventory levels and reduce holding costs.

• **Sales Strategy Refinement:** Identifying key products enables targeted marketing and promotional activities to further boost sales.

• **Potential Over-Reliance:** Over-dependence on a few products creates a risk. Diversification or securing supply chains for these key items is crucial.

Actionable Recommendations

• **Comprehensive Analysis:** Analyze the entire dataset to accurately identify the top 20% of products contributing to 80% of sales (Pareto Principle). This should be done within **1 week**.

• **Focus on Cardigan Category:** Increase marketing efforts and ensure sufficient stock for cardigan products, given their apparent high demand. Implement within **2 weeks**.

• **Evaluate Pricing Strategy:** Conduct a pricing analysis to determine optimal pricing points for different product categories. Complete within **1 month**.

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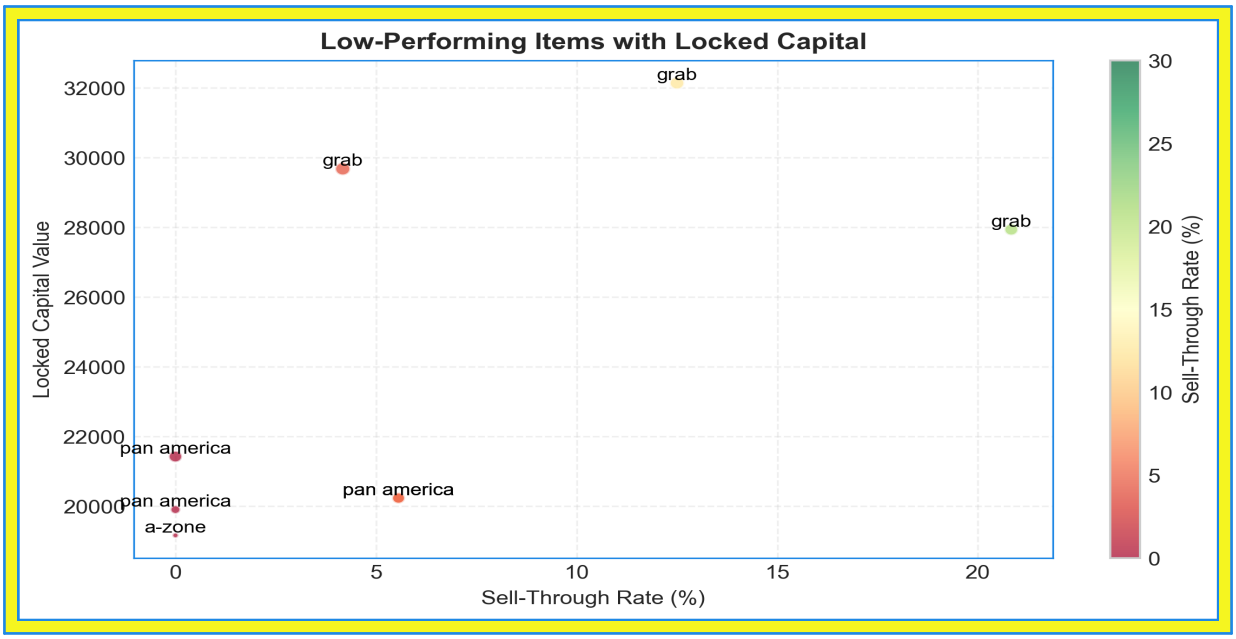
Question 11: Suggest strategies to reduce the inventory of low-performing items.



Analysis & Recommendations

Business Intelligence Analysis

Executive Summary

The data reveals significant excess inventory, particularly within certain brands, categories, and colors, leading to a substantial amount of locked capital. **Low sell-through rates indicate slow-moving items hindering optimal inventory management.**

Key Insights

- **High Excess Inventory:** Many items have a high 'excess_inventory' relative to 'SalesQty'. For instance, "pan america shirt-full< check size 42" has an excess of 36 with 0 sales, locking in **21420.0** in capital.
- **Low Sell-Through Rates:** A substantial number of items exhibit very low or zero 'sell_through_rate'. "a-zone coat suit <> wine size 1" has a 0% sell-through, indicating very poor performance.
- **Brand & Category Disparities:** The 'grab' brand within the "suit-falalan<" category shows consistently high excess inventory across different sizes. 'Pan america' also shows several shirt variations with low sales.

Business Implications

These findings suggest inefficiencies in inventory planning and purchasing. The high excess inventory translates to **locked capital**, hindering investments in more profitable ventures. This

necessitates a review of procurement practices and promotional strategies to mitigate financial risks and optimize inventory turnover.

Actionable Recommendations

- **Implement Targeted Promotions/Discounts (Immediate):** Offer discounts or bundle deals for items with low sell-through rates (e.g., "pan america shirt-full< check size 42") to stimulate sales and reduce excess inventory within the next month.
- **Reduce Future Purchase Quantities (Within 2 Weeks):** Significantly decrease or temporarily halt purchasing of items with consistently high excess inventory and low sell-through (e.g., 'grab suit-falalan<' category) to prevent further accumulation of slow-moving stock. Re-evaluate purchase orders.

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Executive Summary

Executive Summary: Retail Inventory Performance - 2025-06-12

1. Executive Overview: ■ Our inventory data presents a mixed performance landscape. While some product categories show strong sales velocity, significant inefficiencies exist due to slow-moving and non-moving inventory, tying up capital and posing revenue risks. Initial findings show that cardigans are consistently popular, but critical data quality issues and lack of weekly/quarterly sales data hinder deeper analysis. A key concern is the high variance in sell-through rates across categories, indicating a need for refined demand forecasting. Overall inventory health is suboptimal, requiring immediate attention to data accuracy and strategic adjustments to align inventory with customer demand.

2. Key Strategic Insights: ■■ * ■■ **Data Integrity:** Data inconsistencies, such as incorrect category names and uniform inventory aging, must be addressed immediately to ensure reliable insights. * ■ **Missed Revenue:** Products like "boys plus" kurta pajama showing **250% sold** or having 0 sales with available stock, highlight potential lost revenue due to stockouts or poor online presentation. * ■ **Concentrated Sales:** Initial analysis reveals that a small percentage of products drive a disproportionate share of revenue, underscoring the need for a comprehensive Pareto analysis to optimize inventory allocation. * ■ **Sell-Through Variance:** High sell-through categories like "skivi<" (**278.57%**) alongside low performers like "coat suit <>" (**0%**) demonstrate a critical need to align purchasing with demand. * ■ **Online Opportunity:** Products with moderate sell-through rates and existing stock, like "deo" lower-jogger-hosiery (**44.44%** sell-through), present immediate opportunities for online sales growth.

3. Performance Assessment: * **Overperforming:** "Cardigan" category & Products with high sell-through rates need optimized inventory and strong sales visibility. * **Underperforming:** "coat suit <>" category, "grab suit-falalan<" brand with excess inventory requires targeted promotion. * **Inventory Efficiency:** Significant excess inventory detected, particularly within slow-moving items like "pan america" shirts locking in **21420.0** in capital. Inventory aging data needs immediate correction. * **Sales Velocity:** Highly variable, ranging from **0%** to **278.57%** sell-through, indicating substantial opportunity for optimization.

4. Strategic Recommendations: * **Refine Demand Forecasting Models:** (Within 1 Month) Incorporate sell-through rate data, brand performance, and external market trends to improve forecasting accuracy. Expected outcome: reduced overstocking and stockouts. * **Inventory Optimization:** (Ongoing) Reduce inventory levels for slow-moving sizes and implement promotional strategies to drive sales or return-to-vendor strategies. Expected outcome: reduced carrying costs and improved cash flow. * **Implement Automated Notifications:** (Immediate) Set up alerts for 50% and 75% stock levels based on accurate 'PurchaseQty' and 'SalesQty' data to trigger timely reorders. Expected outcome: minimized stockouts and revenue loss. * **Category Review:** Conduct a deep dive into high positive and negative variance sell-through rate categories. Expected outcome: Purchasing aligned with the demand. * **Targeted Promotions:** Offer discounts or bundle deals for items with low sell-through rates.

5. Immediate Action Items: * ■■ **Data Validation & Reconciliation:** (Next 7 Days) Implement data validation checks at the point of sale and procurement, focusing on correcting category naming inconsistencies and inventory aging calculations. Action by: IT & Data Analytics teams. * ■ **Investigate Zero-Sale Products:** (Next 14 Days) Thoroughly analyze products with zero sales to identify the root cause, including product descriptions, images, pricing, and competitor offerings.

Action by: Marketing & Merchandising teams. * ■ **Prioritize Online Visibility:** (Next 7 Days) Enhance the online presence of "deo" lower-jogger-hosiery (size 26) through targeted advertising and improved product descriptions to capitalize on its **44.44%** sell-through rate. Action by: E-commerce & Marketing teams.