**Technical Assignment: Performance Analysis of XYZ**

**Objective:**This assignment is designed to assess your data analysis, comprehension, and visual reporting skills. You will analyze the provided dataset to evaluate the performance of XYZ, a new brand partner integrated into Ekaya’s ecosystem. XYZ manufactures its own line of clothing and distributes its products through Ekaya’s multiple locations and other marketplaces like Ensemble, Online, and Flying Solo.

The CFO and COO of Ekaya are seeking detailed insights into XYZ's performance and data-driven recommendations.

**Assignment Details:**

**Overview:**

* XYZ is a new business partner recently added to Ekaya’s ecosystem.
* The company operates as a clothing brand under the XYZ label and sells its products through Ekaya’s multiple locations and other marketplaces like Ensemble, Online, and Flying Solo.
* The CFO and COO want a detailed snapshot of XYZ’s overall performance, including product, location, and color performance insights. Additionally, the dataset contains some errors that need to be identified and addressed.
* **Important Note:**
  1. If Ekaya is the client listed as purchasing the item in the dataset, these transactions should be excluded from sales reports and other relevant findings. These are considered internal stock transfers and not actual sales.
  2. **Bonus points will be awarded for:**
     1. Suggesting a unique metric to track for XYZ or similar businesses.
     2. Providing a unique insight into the dataset that goes beyond the stated scope, such as identifying return rates from specific locations or spotting hidden trends.

**Deliverables:  
You are required to perform the following tasks and present your findings:**

1. **Overall Performance Snapshot:**

* Analyze XYZ's performance as a brand partner.
* Calculate and present key metrics such as total revenue, total units sold, and revenue distribution by:
  + Sales channels (Ekaya vs. Ensemble).
  + Ekaya’s individual locations.
* Show trends in sales or revenue over time.

1. **Product Analysis:**

* Identify fast-selling and slow-moving products based on sales data (e.g., units sold, revenue generated).
* Provide actionable insights and recommendations for each category.

1. **Location Performance Analysis:**

* Evaluate the performance of XYZ’s products across Ekaya’s multiple locations.
* Highlight locations contributing the most to XYZ’s revenue and those with underperformance.
* Identify any location-specific trends or preferences.

1. **Color Performance Analysis:**

* Analyze the performance of different product colors.
* Highlight colors that are performing well and those that are underperforming.

1. **Error Identification and Resolution:**

* Identify any errors or inconsistencies in the dataset (e.g., missing data, duplicates, negative values, etc.).
* Document the solutions or steps you implemented to resolve these errors.

1. **Visual Reporting:**

* Create clear and impactful visualizations (charts, graphs, etc.) to support your findings.
* Ensure the visualizations are easy to understand and professional.

1. **Recommendations:**

* Summarize key insights and provide data-driven recommendations to improve XYZ's performance across locations and sales channels.

**What We Expect:**

* A well-structured report summarizing your analysis and findings.
* Visualizations (charts/graphs) to support your insights.
* A brief section outlining the errors identified and your solutions.
* Recommendations backed by data to guide decision-making.

**Evaluation Criteria:**

* Data Analysis: Ability to extract relevant insights from the dataset.
* Error Handling: Skill in identifying and resolving data inconsistencies.
* Visualization: Use of appropriate visual tools to present findings effectively.
* Comprehension: Clarity and depth in explaining results and providing actionable recommendations.
* Professionalism: Overall presentation of the report and adherence to instructions.

**Tools You May Use:**

* For Analysis: Excel, Google Sheets, Python (Pandas, NumPy), or R.
* For Visualizations: Tableau, Power BI, Matplotlib, Seaborn, or Excel.
* For Reporting: PowerPoint or any suitable format for presenting findings.

**Submission Guidelines:**

* Submit your final report in PDF format.
* Include a copy of your working file (Excel/Python Notebook/etc.) if applicable.
* Ensure the report is well-organized with clear sections for each deliverable.

**Deadline:  
Please submit your completed assignment by 22/11/2024.**

**Good Luck!  
We look forward to your insights and solutions.**