PROJECT REPORT: COFFEE SHOP SALES ANALYSIS

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Objective: Operational Efficiency & Sales Growth Optimization

1. EXECUTIVE SUMMARY

This project analyzes transactional data from a multi-location coffee shop enterprise over a six-month period (January – June). By leveraging **MS Excel** for data processing and interactive dashboarding, the analysis uncovers customer spending habits, peak operational hours, and product performance metrics to drive data-backed business decisions.

Key Performance Indicators (KPIs)

- **Total Sales Generated:** $698,812.33
- **Total Footfall:** 149,116 customers
- **Average Bill per Person:** $4.69
- **Average Time per Person:** 11.74 minutes

The Business Goal: *"How can we optimize staffing, inventory, and marketing strategies to maximize revenue and improve customer throughput?"*

2. BUSINESS PROBLEM STATEMENT

The coffee shop management required a granular view of their performance to address:
- **Inefficient Staffing:** Identifying peak vs. off-peak hours to manage labor costs.
- **Product Mix Optimization:** Understanding which categories drive the most revenue.
- **Location Performance:** Comparing revenue and footfall across Astoria, Hell's Kitchen, and Lower Manhattan.
- **Customer Behavior:** Analyzing weekday trends and size preferences to refine promotional offers.

3. TECHNICAL METHODOLOGY

3.1 Data Preparation & Modeling

- **Data Cleaning:** Processed raw transaction logs to ensure consistency in pricing, timestamps, and product categorization.
- **Calculated Measures:** Created specialized formulas in Excel to derive "Average Bill/Person" and "Footfall" by aggregating unique transaction IDs.
- **Time Intelligence:** Extracted hour-of-day and day-of-week attributes to enable temporal analysis.

3.2 Analysis & Visualization (Excel Dashboard)

- **Interactive Slicers:** Implemented month-based filters (Jan–June) for dynamic data exploration.
- **Advanced Pivot Charts:** Utilized a combination of bar, line, and pie charts to represent multi-dimensional data.
- **UI/UX Design:** Applied a consistent color palette (burnt orange/earth tones) to provide a visually intuitive and professional experience for stakeholders.

4. KEY INSIGHTS

📊 Sales & Category Performance

- **Dominant Category: Coffee** accounts for the largest share of sales at **38.63%**, followed by specialty beverages at **28.11%**.
- **Product Leaders:** The *Barista Espresso* and *Brewed Chai Tea* are the top-selling products by footfall.
- **Size Preferences:** Large-sized drinks lead sales at **34%**, though a significant **29%** are "Not Defined," indicating an opportunity for better size-tier marketing.

⏰ Operational Trends (Time & Day)

- **The Breakfast Rush:** Quantity ordered peaks sharply between **8:00 AM and 10:00 AM**, with a drastic decline after 11:00 AM.
- **Weekday Peaks: Friday and Monday** show the highest footfall (~101k), while mid-week and weekends see a slight dip.
- **Monthly Growth:** There is a clear upward trend in footfall from January through June, with **June** reaching the maximum volume ($166k+).

📍 Location Intelligence

- **Revenue Leaders:** Hell's Kitchen and Astoria show nearly identical sales performance, both significantly outperforming Lower Manhattan in terms of total sales generated.

5. STRATEGIC RECOMMENDATIONS

1️⃣ Operational Optimization

- **Staffing Alignment:** Increase barista and service staff during the 8:00 AM – 11:00 AM window to maintain speed of service during the morning rush.
- **Off-Peak Incentives:** Introduce "Afternoon Happy Hour" discounts between 2:00 PM and 5:00 PM to fill the significant gap in quantity ordered during those hours.

2️⃣ Menu & Inventory Strategy

- **Bakery Upselling:** Since the "Bakery" category is currently a low contributor (1.95%), implement "Coffee + Pastry" bundles to increase the Average Bill/Person.

- **Size Conversion:** Run a promotion to "Upgrade to Large" for a minimal fee to capitalize on the existing preference for larger sizes.

3️⃣ Geographic Marketing

- **Lower Manhattan Focus:** Conduct a local market study in Lower Manhattan to identify why footfall lags behind Astoria and Hell's Kitchen.

6. CONCLUSION

The **Coffee Shop Data Dashboard** transforms raw transaction records into a roadmap for growth. By identifying the critical morning rush and the dominance of the Coffee category, the business can now refine its operations to better serve high-traffic periods. This project demonstrates proficiency in **KPI reporting, trend analysis, and interactive dashboard design** within MS Excel.

📁 Deliverables

- **Excel Dashboard:** Interactive file featuring slicers and real-time KPI updates.
- **Cleaned Dataset:** Processed CSV/XLSX with relational data structures.
- **Executive Report:** Summary of strategic insights and recommendations.