

Excel Data Analysis Project: Sales & Customer Trends Dashboard

Project Overview

In this project, I analyzed a retail dataset of 1,000 transactions across 3 branches and multiple cities. The goal was to uncover insights into customer behavior, sales performance, product categories, and payment patterns. The analysis was performed in Microsoft Excel using Power Query, Pivot Tables, and interactive dashboards.

Step 1: Raw Data Cleaning & Structuring

The dataset was loaded into Power Query, where initial steps included promoting headers, changing data types, and ensuring consistency in fields like dates and numeric values. I reviewed 17 columns such as Branch, Gender, Product Line, Unit Price, Quantity, Total, Tax, and Gross Income. Key actions included removing duplicates and computing derived fields like 'Total'.

The screenshot displays the Microsoft Excel Power Query Editor interface. The main area shows a data table with 17 columns and 28 rows. The columns are: Invoice ID, Branch, City, Customer type, Gender, Product line, and Unit price. The data is filtered to show transactions from Yangon, Naypyitaw, and Mandalay. The interface includes a ribbon with tabs like Home, Transform, Add Column, and View, and a right-hand pane for Query Settings.

Invoice ID	Branch	City	Customer type	Gender	Product line	Unit price
750-97-8428	A	Yangon	Member	Female	Health and beauty	
226-31-3081	C	Naypyitaw	Normal	Female	Electronic accessories	
631-41-3108	A	Yangon	Normal	Male	Home and lifestyle	
129-19-1176	A	Yangon	Member	Male	Health and beauty	
379-79-7910	A	Yangon	Normal	Male	Sports and travel	
609-14-3026	C	Naypyitaw	Normal	Male	Electronic accessories	
355-53-5943	A	Yangon	Member	Female	Electronic accessories	
319-32-5665	C	Naypyitaw	Normal	Female	Home and lifestyle	
665-32-9167	A	Yangon	Member	Female	Health and beauty	
692-92-5562	B	Mandalay	Member	Female	Food and beverages	
351-62-40822	B	Mandalay	Member	Female	Fashion accessories	
529-56-3974	B	Mandalay	Member	Male	Electronic accessories	
365-64-0515	A	Yangon	Normal	Female	Electronic accessories	
252-56-2099	A	Yangon	Normal	Male	Food and beverages	
829-34-3910	A	Yangon	Normal	Female	Health and beauty	
229-46-1805	B	Mandalay	Member	Female	Sports and travel	
656-95-9349	A	Yangon	Member	Female	Health and beauty	
765-26-6951	A	Yangon	Normal	Male	Sports and travel	
329-62-1586	A	Yangon	Normal	Male	Food and beverages	
319-50-3348	B	Mandalay	Normal	Female	Home and lifestyle	
300-71-4605	C	Naypyitaw	Member	Male	Electronic accessories	
371-85-5789	B	Mandalay	Normal	Male	Health and beauty	
279-16-6619	B	Mandalay	Normal	Male	Home and lifestyle	
636-48-8204	A	Yangon	Normal	Male	Electronic accessories	
549-59-1358	A	Yangon	Member	Male	Sports and travel	
227-03-5010	A	Yangon	Member	Female	Home and lifestyle	
649-29-6775	B	Mandalay	Normal	Male	Fashion accessories	

Step 2: Creating Pivot Tables & Charts

Using Pivot Tables, I analyzed sales by Branch, Product Line, Customer Type, City, and Payment Mode. This helped in identifying top-selling branches, customer preferences, and revenue-generating product categories. I also calculated gross income by region and gender-based sales trends.

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The screenshot displays an Excel spreadsheet with a sales data table. The table has columns for Branch, City, Customer type, Gender, Product line, Unit price, Quantity, Tax %, Total, Date, Time, Payment, Ewig, gross margin percentage, gross income, and Rating. The data is organized into rows, with some rows highlighted in green. The 'Queries & Connections' pane on the right shows a query named 'D6' with 1,000 rows loaded.

Branch	City	Customer type	Gender	Product line	Unit price	Quantity	Tax %	Total	Date	Time	Payment	Ewig	gross margin percentage	gross income	Rating
A	Yangon	Member	Female	Health and beauty	74.69	7	25.1433	548.9715	01-05-2019	13:00:00	Ewallet	522.83	4.761904762	25.1415	9.1
I	C	Naupytaw	Normal	Electronic accessories	15.28	5	3.82	88.22	03-08-2019	10:29:00	Cash	76.4	4.761904762	9.82	9.8
A	Yangon	Normal	Male	Home and lifestyle	46.53	7	18.2168	545.5385	03-08-2019	13:23:00	Credit card	524.31	4.761904762	18.2168	7.4
A	Yangon	Member	Male	Health and beauty	59.22	8	23.285	499.048	12-07-2019	20:33:00	Ewallet	465.75	4.761904762	23.285	8.4
A	Yangon	Normal	Male	Sports and travel	86.31	7	30.2085	634.3785	02-08-2019	10:37:00	Ewallet	604.17	4.761904762	30.2085	5.3
C	Yangon	Normal	Male	Electronic accessories	85.29	7	29.8865	627.6165	3-05-2019	18:30:00	Ewallet	597.73	4.761904762	29.8865	4.1
A	Yangon	Member	Female	Electronic accessories	68.84	6	20.952	433.962	2-05-2019	14:36:00	Ewallet	413.94	4.761904762	20.952	5.8
C	Naupytaw	Normal	Female	Home and lifestyle	73.56	10	36.76	772.38	10-04-2019	11:38:00	Ewallet	735.6	4.761904762	36.76	8
A	Yangon	Member	Female	Health and beauty	56.28	2	3.826	76.148	01-10-2019	17:15:00	Credit card	72.32	4.761904762	3.826	7.2
B	Mandalay	Member	Female	Food and beverages	54.64	3	8.226	172.746	2-09-2019	13:27:00	Credit card	164.52	4.761904762	8.226	5.9
B	Mandalay	Member	Female	Fashion accessories	14.48	4	2.866	58.816	02-08-2019	18:07:00	Ewallet	57.92	4.761904762	2.866	4.5
B	Mandalay	Member	Male	Electronic accessories	25.81	4	8.163	107.142	03-09-2019	17:53:00	Cash	102.94	4.761904762	8.163	6.8
A	Yangon	Normal	Female	Electronic accessories	46.95	5	11.7375	234.875	02-12-2019	10:25:00	Ewallet	234.75	4.761904762	11.7375	7.1
A	Yangon	Normal	Male	Food and beverages	43.19	10	21.565	431.9	02-07-2019	18:48:00	Ewallet	431.9	4.761904762	21.565	8.2
A	Yangon	Normal	Female	Health and beauty	71.58	10	35.89	749.49	09-09-2019	19:21:00	Cash	715.8	4.761904762	35.89	8.7
B	Mandalay	Member	Female	Sports and travel	93.72	6	26.116	590.496	1-15-2019	16:19:00	Cash	562.32	4.761904762	26.116	4.5
A	Yangon	Member	Female	Health and beauty	68.03	7	24.1255	598.6355	03-11-2019	11:03:00	Credit card	482.51	4.761904762	24.1255	4.8
A	Yangon	Normal	Male	Sports and travel	72.61	6	21.763	457.443	01-01-2019	10:30:00	Credit card	435.68	4.761904762	21.763	6.9
A	Yangon	Normal	Female	Food and beverages	54.67	5	8.2065	172.2355	02-02-2019	18:00:00	Credit card	164.07	4.761904762	8.2065	6.5
B	Mandalay	Normal	Female	Home and lifestyle	40.3	2	4.03	84.63	03-11-2019	15:30:00	Ewallet	80.6	4.761904762	4.03	4.4
C	Naupytaw	Member	Male	Electronic accessories	66.04	5	21.81	451.71	2-05-2019	11:24:00	Ewallet	430.2	4.761904762	21.81	4.8
B	Mandalay	Normal	Male	Health and beauty	87.68	3	13.197	277.137	03-09-2019	10:40:00	Ewallet	263.94	4.761904762	13.197	5.1
B	Mandalay	Normal	Female	Home and lifestyle	33.2	2	3.32	69.72	01-05-2019	12:20:00	Credit card	66.4	4.761904762	3.32	4.4
A	Yangon	Normal	Male	Electronic accessories	34.58	5	8.64	181.44	2-17-2019	11:15:00	Ewallet	172.8	4.761904762	8.64	6.9
A	Yangon	Member	Male	Sports and travel	88.63	3	13.2945	278.1845	03-02-2019	17:36:00	Ewallet	265.89	4.761904762	13.2945	6
A	Yangon	Member	Female	Home and lifestyle	52.59	8	21.088	441.756	5-02-2019	19:20:00	Credit card	420.72	4.761904762	21.088	8.5
B	Mandalay	Normal	Male	Fashion accessories	33.82	1	1.876	36.196	02-08-2019	18:51:00	Cash	33.82	4.761904762	1.876	6.7
A	Yangon	Normal	Female	Fashion accessories	87.67	2	6.767	184.107	03-10-2019	12:17:00	Credit card	175.34	4.761904762	6.767	7.7
B	Mandalay	Normal	Female	Food and beverages	88.58	5	22.09	463.89	1-05-2019	19:48:00	Cash	441.8	4.761904762	22.09	9.8
A	Yangon	Normal	Male	Health and beauty	24.69	9	11.2068	235.2168	3-15-2019	15:36:00	Cash	224.01	4.761904762	11.2068	7.4
B	Mandalay	Member	Male	Fashion accessories	94.15	5	23.5325	494.1625	2-05-2019	19:39:00	Credit card	470.65	4.761904762	23.5325	4.8
B	Mandalay	Member	Male	Sports and travel	78.07	9	35.1315	757.7015	1-08-2019	12:43:00	Cash	702.83	4.761904762	35.1315	4.5
B	Mandalay	Normal	Male	Sports and travel	63.78	8	30.512	703.782	01-10-2019	14:40:00	Cash	670.24	4.761904762	30.512	5.1
A	Yangon	Normal	Male	Health and beauty	96.58	2	9.656	202.818	3-15-2019	10:12:00	Credit card	193.16	4.761904762	9.656	5.1

Step 3: Designing the Dashboard

The interactive dashboard was built with multiple Pivot Charts: bar, pie, and line graphs. KPI cards summarized Total Sales, Quantity, Average Unit Price, and Total Tax. Slicers enabled filtering by City, Gender, Product Line, Payment Method, and Customer Type, giving dynamic control over the view.



Key Learnings

- Developed strong Excel skills: Power Query, Pivot Tables, Slicers, and Charts

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- Understood how to derive business insights from transactional data
- Learned how to build a story-driven, visual dashboard with interactivity

Tools Used

- Microsoft Excel
- Power Query
- Pivot Tables
- Conditional Formatting
- Pivot Charts & Slicers

Next Steps

To enhance my business intelligence skills further, I plan to explore Power BI and Tableau for more advanced dashboards. This project gave me hands-on experience and I look forward to applying these techniques to larger datasets.