# E-commerce Store Insights Report

In this report, we analyze the e-commerce database to gain insights into monthly sales trends, identify seasonality patterns, and explore top-selling products and categories. The goal is to provide actionable insights to optimize business performance.

The e-commerce database comprises tables such as Orders, Products, Order Items, Customers, Geolocation, Order Payments, Order Reviews, Sellers, and Category Name . These tables capture various aspects of the e-commerce process, allowing for a comprehensive analysis.

I will be using Microsoft Power BI to analyze the data. The analysis involved querying the relevant tables and creating visualizations to extract meaningful insights.

Sales Trends

Total revenue consistently increased over time, albeit experiencing occasional declines in certain months. However, a significant drop occurred in September 2018. This decline can largely be attributed to the termination of transaction records for the dataset during that month. Nonetheless, it's important to note that the consistently high revenue in preceding months complicates the interpretation of this sharp decrease solely as a result of data cessation.

Total Revenue Over Time

Quarterly trend of revenue over time
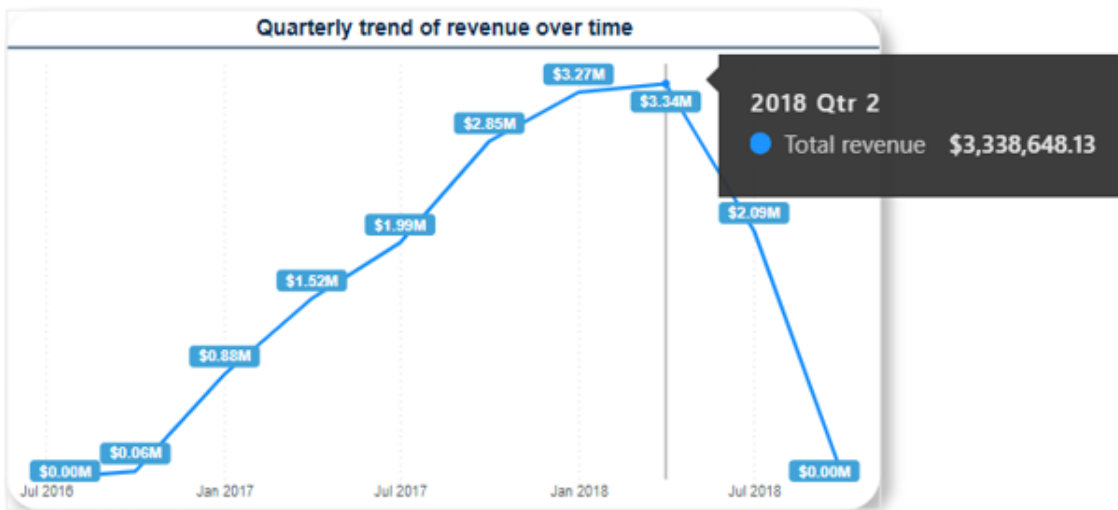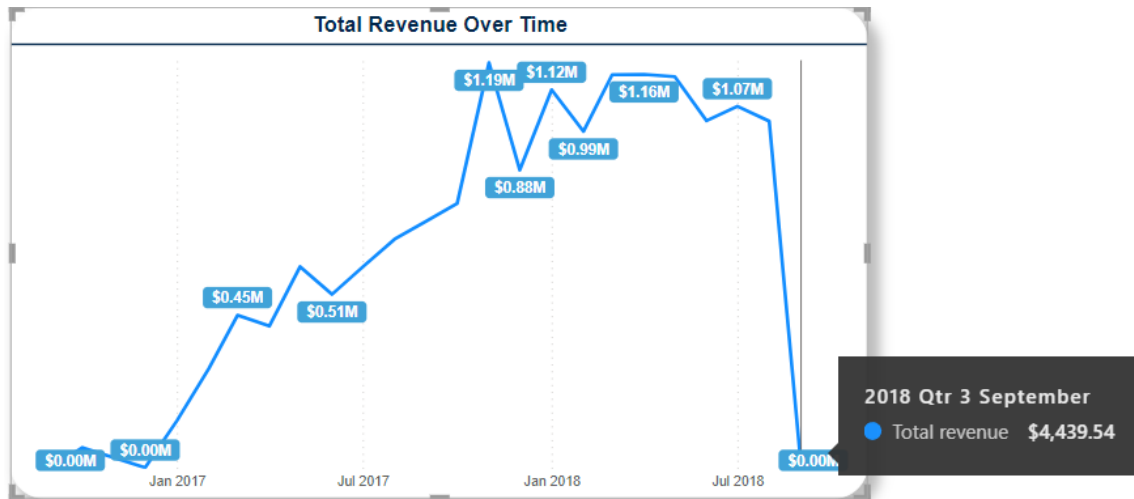
The line chart clearly indicates that the period with the most impressive sales performance was the second quarter of 2018, which marked its peak period, closely followed by the first quarter of 2018. A more detailed analysis will provide deeper insights into this trend.

A total of 99,441 orders were placed on the platform. Below, we can observe the distribution of these orders across months in an overall perspective.

Orders per month

In the overall trend analysis, August stands out as the month with the highest number of orders placed on the platform, reaching its peak. It is closely followed by May and July. The decline observed in September can be attributed to the termination of business activities during that month, as indicated by the previous findings.
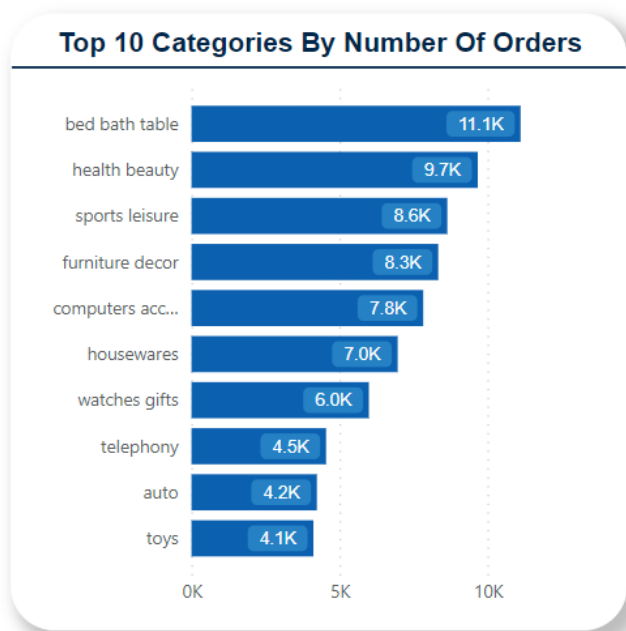
THE BLACK FRIDAY EFFECT

- A crucial observation to consider is the trend of orders placed across different years, particularly highlighting the Black Friday Effect.

Orders per day

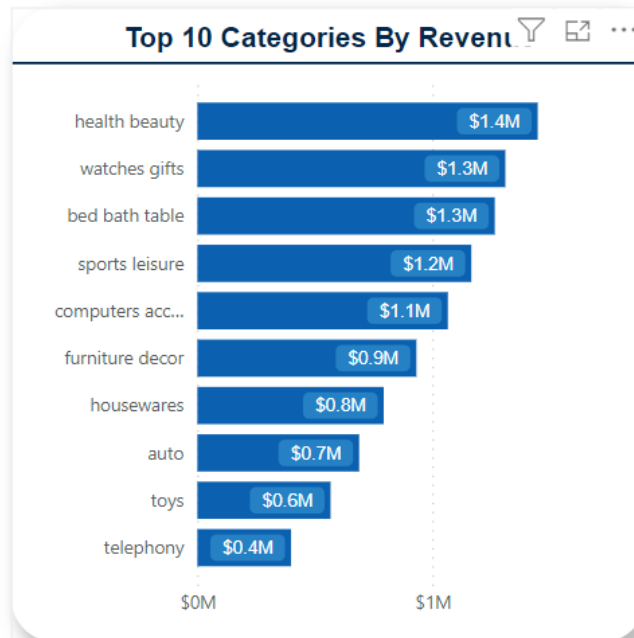2017 Qtr 4 November 24
● Count of order_id 1176

The order data reveals a steady increase over the years, with a notable spike occurring during the 47th week of 2017, which aligns with Black Friday, falling on November 24th. This surge indicates that customers likely capitalized on discount sales, resulting in more than double the number of orders compared to the previous week and other weeks throughout 2017.

Top-Selling Products and Categories

While the "Bed Bath Table" category appears to be the most popular based on the count of orders, it's not guaranteed that it generated the highest revenue value. Popularity, as measured by order count, doesn't directly correlate with revenue generation. Other factors such as the price point of items within each category, frequency of high-value purchases, and overall sales volume also contribute to revenue generation. Therefore, further analysis of revenue data within each category is necessary to determine which category generated the highest revenue value.

Top 10 Categories By Number Of Orders

Category	Number of Orders
bed bath table	11.1K
health beauty	9.7K
sports leisure	8.6K
furniture decor	8.3K
computers acc...	7.8K
housewares	7.0K
watches gifts	6.0K
telephony	4.5K
auto	4.2K
toys	4.1K

Top 10 Categories By Revenue

Category	Revenue
health beauty	$1.4M
watches gifts	$1.3M
bed bath table	$1.3M
sports leisure	$1.2M
computers acc...	$1.1M
furniture decor	$0.9M
housewares	$0.8M
auto	$0.7M
toys	$0.6M
telephony	$0.4M

Based on the information provided, it appears that there has been a shift in the popularity rankings of product categories. The "Bed Bath Table" category has dropped to third place, while the "Health Beauty" category has risen to the top position. Additionally, the "Watches Gifts" category has jumped from seventh place to second place in the rankings. This indicates changes in consumer preferences and purchasing behavior over time.

product_category_name_english	Count of order_id
bed bath table	9417
health beauty	8836
sports leisure	7720
computers accessories	6689
furniture decor	6449
housewares	5884
watches gifts	5624
telephony	4199
auto	3897
toys	3886
Total	**62379**

product_category_name_english	Total revenue
health beauty	$1,448,729.73
watches gifts	$1,310,893.45
bed bath table	$1,265,918.38
sports leisure	$1,166,060.50
computers accessories	$1,066,263.82
furniture decor	$932,339.78
housewares	$793,238.51
cool stuff	$729,806.15
auto	$688,628.01
garden tools	$596,759.43
Total	**$9,928,472.03**

product_category_name_english	Average payment Value
computers	1,286.95
small appliances home oven and coffee	669.55
home appliances 2	529.75
agro industry and commerce	430.65
musical instruments	336.08
small appliances	331.05
portable kitchen food preparers	305.59
fixed telephony	296.45
construction tools safety	277.90
office furniture	270.92
Total	**379.07**

The data suggests that the "Computers" category has the highest revenue value, indicating that customers are investing more in purchasing items from this category. This could be attributed to the fact that products within the "Computers" category tend to be more expensive compared to those in the "Bed Bath Table" category. The higher price point of computer products likely contributes to the increased revenue generated from this category.

Despite the bed bath table category having the highest number of products purchased, it didn't result in a better revenue-to-order count ratio. This indicates that although customers buy more items from the bed bath table category, they spend more money on products from the computers category. To enhance sales growth, the platform should consider replicating the success seen in the computers category across other categories, particularly bed bath table and other low-performing categories. This could involve allocating more marketing resources to drive traffic, encouraging higher spending through discount offers, and implementing other promotional strategies. By optimizing sales from more expensive products and strategically promoting them, the platform can potentially increase overall revenue and improve performance in various product categories.

Insights:

- The platform's revenue model relies on diversity in product offerings rather than relying solely on selling a few products in large quantities.

- Revenue consistently increased over the years but reached its peak in 2018, particularly during the Black Friday period in the last week of November.

- Based on order count, the Bed Bath Table category emerges as the most popular product category.

- Computers emerged as the product category with the highest average order value.

- Despite the Bed Bath Table category having the highest number of products purchased, it didn't result in a higher revenue-to-order count ratio. This indicates that although customers bought more items from the Bed Bath Table category, they spent more money on average on expensive items like computers.