**Documentation of the portfolio project**

**The Analysis of the Adidas US Sales in 2021**

Contents

[Introduction 3](#_Toc156416064)

[Data used 3](#_Toc156416065)

[KPI Cards: 4](#_Toc156416066)

[Charts: 5](#_Toc156416067)

[Conclusion 7](#_Toc156416068)

Warsaw, 1/17/2024

Introduction  
The Analysis of the Adidas US Sales in 2021 is a comprehensive reporting solution designed to analyze and visualize sales data for Adidas company in the US. It's not a typical sales analysis; instead, it focuses on a specific business problem.  
  
Business problem  
The main business problem revolves around calculating sales that meet defined requirements below:

1. Includes only weeks when the shop has sold at least 4 products or more.

2. Includes only weeks when the shop has had the sale at the level of 100,000 dollars.

3. Prominent sale is the sale that accounts for at least 2% of weekly sales.

4. The grain of the fact table is daily.  
  
In addition to the core business problem, the analysis aims to address additional aspects such as:  
1. Sales performance.

* Understanding the overall sales performance of the store with the forecast for 1Q of 2022.
* Analyzing sales by products.

2. Product analysis

* Identifying the top-selling products.
* Assessing the performance and profitability of different products.

By addressing these challenges, the analysis aims to empower the Adidas management with actionable insights to make informed business decisions.

Data used  
The Analysis of the Adidas US Sales in 2021 utilizes a dataset that contains information about the sales transactions of the footwear and apparel. The dataset was stored in Excel file, that can be downloaded from an address: <https://www.kaggle.com/datasets/heemalichaudhari/adidas-sales-dataset>

ETL Operations for Adidas US Sales Analysis (2021) using Power Query

1. Data Extraction:

The Adidas US sales dataset was connected to Power Query.

2. Data Transformation:

Data cleansing has dealt with any missing or inconsistent values within the dataset, ensuring data integrity. Solving the business problem required creating new columns that allowed to make sales calculations based on weekly granularity (the grain of the fact table was daily).

Validation against predefined criteria was performed to identify and rectify anomalies, guaranteeing the reliability of the dataset.

Raw data was transformed into a structured format conducive to analysis.

3. Data Loading:

Within Power BI, was designed a data model. This involved defining relationships between tables based on key fields, facilitating a seamless data integration for analysis.

Calculated columns and measures were created to enable advanced analytics and derive insights from the dataset.  
  
Sales Overview

The following Key Performance Indicators (KPIs) provide a snapshot of crucial metrics for Adidas US Sales analysis.

### KPI Cards:

* Prominent sale.

DAX Code:   
  
Prominent Sale =

SUMX (

    FILTER (

        GENERATE (

            ADDCOLUMNS (

                VALUES ( 'Invoice Date'[Week number] ),

                "sales weekly", [Sales amount],

                "no of sold products", DISTINCTCOUNTNOBLANK ( 'Product'[Product] )

            ),

            RELATEDTABLE ( Sales )

        ),

        [no of sold products] > 5

            && [sales weekly] > 100000

            && DIVIDE ( [Sales amount], [sales weekly] ) > 0.02

    ),

    Sales[Sales amount]

)

* Total sales revenue.

DAX Code: CALCULATE(SUMX(Sales, Sales[Units Sold] \* Sales[Price per Unit]))

* Average margin.

DAX Code: Average = AVERAGEX('Sales','Sales'[Operating Margin])

The calculation for the two best-selling products:

DAX Code: Top two selling products =

VAR Top2Products =

    TOPN(

        2,

        ADDCOLUMNS(

            ALL('Product'),

            "Sales", [Sales amount],

            "ProductName", 'Product'[Product]

        ),

        [Sales amount]

    )

VAR Result = CALCULATE([Sales amount], KEEPFILTERS(Top2Products))

RETURN

 Result

// Sales amount for the two best-selling products displayed with their names //

Top 2 Selling Products =

VAR Top\_2\_Table =

          TOPN(2, ADDCOLUMNS(

            ALL('Product'),

            "Sales", [Sales amount]), [Sales amount], DESC)

           VAR Result = CONCATENATEX(Top\_2\_Table, [Product] & " | " & "$ " & [Sales amount], " ", 'Product'[Product], DESC)

RETURN

Result

### Charts:

* Stacked Column Chart (“Prominent Sales by week number”):

Metric and insight:  
The chart presents "Prominent Sales" that identifies significant sales within a given time frame. It is calculated by summing the sales amounts for weeks where the shop has sold more than 5 products, achieved weekly sales exceeding $100,000, and where the sales for that week contribute to at least 2% of the total weekly sales. This metric provides valuable insights into high-impact sales weeks, helping to highlight periods of exceptional performance. The Prominent Sales chart visualizes these noteworthy sales events, offering a quick overview of the most impactful weeks based on the specified criteria.

DAX Code:  
Prominent Sale measure was described above.

* Line Chart (“Sales for 2021 with forecast for 1Q 2022”):

Metric and insight:  
The metric represents the total sales amount for the year 2021 and includes a forecast projection for the first quarter of 2022. This metric, along with its accompanying chart, provides a comprehensive view of historical sales performance for the specified year and an early outlook for the upcoming quarter.

DAX Code:  
    CALCULATE(SUMX(

            'Sales',

            'Sales'[Units Sold] \* 'Sales'[Price per Unit]

        ))

* Clustered Bar Chart (“Sales by retailer”):

Metric and insight:  
The "Sales by Retailer" metric focuses on quantifying the total sales amount attributed to each individual retailer within the specified dataset. This metric offers valuable insights into each retailer's contribution to the overall sales.

DAX Code:  
    CALCULATE(SUMX(

            'Sales',

            'Sales'[Units Sold] \* 'Sales'[Price per Unit]

        ))

* Line Chart (“Cumulative sales”):

Metric and insight:  
The "Cumulative Sales" metric represents the ongoing sum of sales over time, providing a cumulative view of the total sales amount up to the end of 2021. The chart visualizes the growth and progression of sales over the selected time period.

DAX Code:  
Cumulative sales =

VAR table\_2021 =

    DATESINPERIOD (

        'Invoice Date'[Invoice Date],

        DATE ( 2021, 12, 31 ),

        -12,

        MONTH

    )

RETURN

    CALCULATE (

        [Sales amount],

        FILTER (

            table\_2021,

            'Invoice Date'[Invoice Date] <= MAX ( 'Invoice Date'[Invoice Date] )

        )

    )

* Matrix:

Metric and insight:  
The matrix displays total sales for all products and the calculated "Operating Profit," derived by multiplying the "Operating Margin" and "Sales Amount" columns for each product, offering insights into the profitability of individual products. The "Pct. of Opt. Profit" column represents the percentage of the total operating profit contributed by each product relative to the overall operating profit for all products. This matrix is a comprehensive tool for analyzing both sales and profitability.

DAX Code:  
Pct. of opt. profit =

VAR total =

    SUMX ( Sales, [Operating profit] )

VAR total\_all =

    CALCULATE ( [Operating profit], REMOVEFILTERS ( 'Product'[Product] ) )

RETURN

    DIVIDE ( total, total\_all )

Operating profit =   
SUMX(  
 'Sales',

        'Sales'[Operating Margin] \* 'Sales'[Sales amount]

    )

Conclusion

The Adidas US Sales Analysis for the year 2021 offers a comprehensive and insightful examination of sales performance, addressing a specific business problem and providing valuable metrics for decision-makers. Through meticulous data extraction, transformation, and loading operations, the project ensures data integrity, allowing for a reliable analysis. The key performance indicators (KPIs) and charts presented, such as the "Prominent Sales" and "Sales for 2021 with forecast for 1Q 2022," deliver a nuanced understanding of sales dynamics and forecasted trends. Additionally, the matrix detailing cumulative sales and profitability metrics further enhances the depth of analysis, offering a holistic view of product performance. By empowering Adidas management with actionable insights, this project serves as a robust foundation for informed business decisions and strategic planning in the dynamic landscape of retail sales.