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**Assessment Report**

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**Student Name:** Mohtasim Hossain Shovon  
**Student Number:** 24033962

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**A Case Study on Adidas Sales Analysis Based on the Years 2020-2021**

# Introduction

Adidas is a German production company that produces footwear, apparel, and Accessories around the world. It is generally famous for its athletic accessories and the famous three-striped logo. Adidas is considered one of the largest sportswear manufacturers in the world. According to Statista, in 2024, Adidas' total net sales are about 23.7 billion euros by which we can easily understand how Adidas captured the sportswear market globally. Adidas has been doing business successfully over the years by facing strong competition in the market from giant competitors like Nike, Puma, Under Armour, New Balance, etc. In this report, I will analyze Adidas' sales report between the years of 2020-2021 and identify the key KPI’s that can drive sales more and make recommendations about which factor the company should focus on to boost its sales.

To maintain its continuous strong position, Adidas must need to focus on its strategic decision-making process. They need an extensive analysis of their past historical data, by which they can forecast their upcoming market condition. As they are doing business in a competitive market that they need to analyze their competitors' data also. They need to use advanced business intelligence tools to create an overview of their current market scenario, which enables them to make strategies for the future.

The dataset I use for my report contains sum key observations like total sales, regional-based performance, units sold, price per unit, invoice date, Retailer name, etc. I will use Power BI, which is considered one of the best advanced Business intelligence tools, to extract important insights from this dataset.

# Literature Review

This paper refers to identifying important factors that can boost sales through data analysis. It introduces a different framework to help retail managers to improve their performance in three important sectors, like forecasting sales revenue, estimating market equilibrium, and investing performance assessments. The authors emphasize the use of statistical analysis for any data analysis & they use techniques like the least absolute Shrinkage & selection Operator (Lasso) for identifying key performance indicators. They suggested to the companies about how to improve their strategic decisions through the use of data analytics & business analytics. (Wang, 2022)

This paper highlights how business analytics is essential for every company to improve its strategic decisions. It refers to the core of business analytics is data analytics, by which people can process a large amount of data and find strategic insights to boost their performance. The research discusses different analytics techniques such as descriptive analytics, predictive analysis, and prescriptive analysis, along with the integration of decision science, and through them, how people achieve their target by effective decision making. (Daraojimba, 2024)

This study describes Business intelligence tools by which organizations can gather, transform, and analyze data that helps the decision maker to improve the key performance of the organization. The BI application has some significant features like data transformation, query & report, Forecasting, statistical analysis & online analytical processing (OLAP). The primary goal of this paper is to provide BI solutions that can enhance the sales performance and profitability. (aerbãnescu, 2011)

This paper utilizes of of the best BI tools from Microsoft, named Microsoft Power BI, to create a dashboard from the data of an e-commerce site. The author extracts important information by using this tool and creates an overall explainable scenario through a dashboard regarding the performance of sales and potential growth opportunities for the future. Through the dashboard, the decision makers of any company can understand the overall performance of a company and find the potential factors where they should focus to improve overall performance. (Gokulpriya, 2024)

This study analyzes Adidas sales report data by different regions like Europe, the Middle East & Africa and creates a dashboard to present the overall scenario. They collected the data from various kinds of sources, like Adidas’s ERP system, Excel report, and Shopify’s integrated API. Based on the analysis, they emphasize the importance of an interactive dashboard with proper visualization. The dashboard includes sales trend analysis, comparison of different regions, and inventory alerts. Through this, they make some recommendations about how Adidas can improve its performance in the upcoming periods. (Khan, 2023)

This research made customer segmentation by using Power BI to identify the customer buying behavior based on the North America region. The authors used DAX formulas for calculating important metrics like gender proportion, age distribution & product preference. They used a scatterplot and treemaps to categorize customers into high value, Less engaging & discount-based. They discuss the importance of Slicers for filtering the data. (Chen, 2022)

# Research Methodology :

For this research, I applied a quantitative data analysis method. I collected this dataset from an online source. I used Power BI, a fantastic business intelligence tool, to analyze this data and for extracting insights.

**Dataset Description :**

The dataset consists of 9648 rows & 13 columns. The dataset contains some significant insights about the sales report of Adidas, between the year of 2020-2021. I will describe some key columns from this dataset, which are very significant in my analysis.

1) Total sales: This column refers to the number of total sales that occur in each observation. This is calculated by using this formula.

Total sales = Price per unit \* No of units sold

2) Region: This provides us with the multiple regions of the United States where Adidas products were sold (Ex: Midwest, South, West, etc).

3) Invoice date: The date when the sales were generated.

4) Retailer name: The retail company name that sells Adidas products in their store (Ex: Walmart, Footlocker, Amazon, Sports Direct, etc)

5) Products: It refers to different types of products Adidas has, such as Men's Apparel, Women's Apparel, Men's footwear, Women's footwear, etc.

6) Operating profit: Profit calculated before tax/ interest

**Analytical tools used for analysis :**

When I first downloaded the file from an online source, I opened it with Microsoft Excel to view the gist of this dataset. With Excel, I checked whether the dataset is fully ready for analysis or not. Then I used Microsoft Power BI for data manipulation & data analysis. PowerBI is one kind of advanced business tool that is very effective for advanced data analysis & visualization. I make my interactive dashboard using this, which provides us a clear report about the overall performance of Adidas, which lies in this dataset.

**Data preparation :**

I opened the downloaded dataset in Microsoft Excel to check if there is any missing values or not. Luckily, I found a dataset that is totally clean and ready for further analysis. If there were any missing values, I would use Excel's filter function to remove the missing observations. Then I load the data into PowerBI to convert this raw data into actionable insights.

**Data Manipulation :**

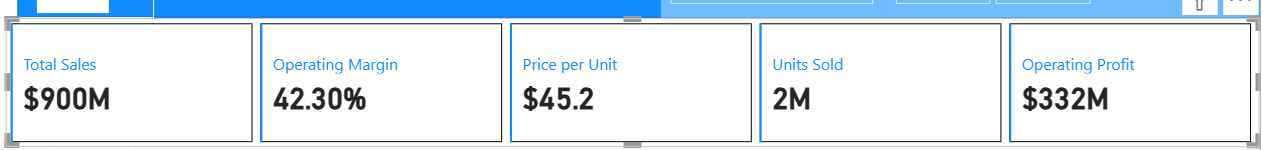
After loading the dataset into PowerBI, aggregate Functions were used to manipulate this data to convert it into significant insights.

1) Sum of Total sales: I use the function sum to calculate the total sales amount over the two years. All the transactions are generated in dollars and the total amount is being counted by the unit of millions. PowerBI enables me to convert the data into this unit with its built-in functionalities.

2) Total Operating Profit: This is also calculated by the use of the aggregate function called Sum.

3) Price per Unit: For this, I need to use the aggregate function average.

4) Operating profit margin: For this, I need to apply the average function, then need to convert it into percentage.



**Data analysis & Visualization :**

1. Total sales by month: Here, I tried to represent the amount of total sales that occurred in each month. I extracted the month individually from the invoice date column using the advanced data hierarchy option of PowerBI. I use an area chart to see the distribution and to identify the peak sales month according to the total sales amount.

A graph with numbers and a line

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Figure: Area chart representing Total sales by month

2. Total sales by state: Here, I use the filled map to show the distribution of the total sales based on the different states of the United States. I also generate tabular data to view which top states perform better in this period.

A screenshot of a map

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Figure: Distribution of Total sales vs state

3. Total Sales by Region: In this section, I use a Donut chart to represent the total sales distribution by each region. This will give us an idea about which regions are performing better and which are not.

A screenshot of a graph

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Figure: Total sales distribution by each region.

4) Total sales by products: For this purpose, I use a bar chart to visualize the amount of total sales with respect to different products. There are six different product categories and we will see how every category performs in the United States.

A screenshot of a graph

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Figure: Total sales categorized by product types

5) Total sales by retailer for different years: I use another bar chart to see how different retailers perform with the Adidas products. I also categorized them into two different years, by that I can see their year-by-year performance.

A screenshot of a graph

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Figure: Total sales distributed by retailers & year

6) Using Slicers for filtering data based on regions and the ranges of different invoice dates.

# Result & Discussions:

1) The dataset contains more than 90000 observations and is categorized by different types of attributes like product types, regions, retailers, and states. The amount of total sales for Adidas products in the area of United States between the year of 2020-2021 is about 900 million, and the operating profit is about 332 million, which is marvelous. From that Stat, we can conclude that Adidas is doing well in this area regarding their business.

2) From the area chart, we can see that July has the highest number of total sales, and March is the lowest. From my observation, I can consider June-July-August is the peak season for the sales of Adidas. Although every year there is a satisfactory amount of sales, which is good for Adidas.

3) From the filled map and the tabular representation of data, we can conclude that New York State has the highest amount of sales, which is about 64,229 dollars. The top five best-performing states are New York, California, Florida, Texas & South Carolina.

4) From the donut chart, we can see that the West region is the best performer in terms of sales over the two years, while the Midwest region is the least. The West region performs extremely well. But except for the West region, we can also witness a good amount of sales by the rest, with small differences.

5) From the bar chart, we find that Men's street footwear is the most liked product of the customers from the United States, whereas Women's athletic footwear is the least. Though the least performing product has also made a good amount of sales, considering the current market, which represents Adidas' strong position in the market.

6) From the bar chart, which is categorized into different retailers over two years, we can observe that Foot Locker & West Gear performed really well in terms of Adidas products. Walmart and Amazon performed poorly, but Amazon sold only in 2021. Kohl's performed very badly in 2020 but started increasing sales in 2021.

# Recommendations:

* Adidas can add a **cash-back** system in the peak sales period of (June-July-August) which will inspire the customer to buy more products. Also, launch some **promotional campaigns** and provide some **discounts** on products during the time of the lowest sales period, like March.
* Increase **Brand promotion**, Launch **Sponsored events with celebrities** in the underperforming region, like the West Region.
* **Tailored inventory management** for top product lines and add a **special offer** for the low-performing products to promote sales.
* Launch **Special incentives** for the highest performing retailers which will motivate the underperforming retailers, like Walmart, to generate more sales.

# Limitations & Future work :

The dataset only contains the observations from 2020-2021. From that limited period of the dataset, it's very difficult to portray the overall performance. So in the future, I have a plan to enrich the dataset with more observations. I will do some statistical analysis with SPSS in the future to predict the sales using Regression. I will also apply time series analysis to realize the seasonality & trends.

# Ethical Consideration :

Though it is a publicly available dataset but it also contains sensitive information about Adidas. I ensure that I maintained all ethical standards while doing this analysis. I store the data in my personal drive to ensure the highest security, and I will eliminate this dataset after 6 months from the completion of this project.

# Conclusion :

Adidas has been considered one of the leading brands across the world. Because of its efficient strategic movements and visionary decision making it has been able to maintain a strong position in this competitive market. In this report, I make an interactive dashboard to evaluate the overall performance of the chosen dataset and suggest some recommendations by which Adidas can improve its sales performance & profitability in the upcoming years.

# References :

1. Chen, L., & Okafor, D. (2022). Leveraging Power BI for customer behavior analysis: Insights from Adidas’s North American market. *Data Science for Business, 7*(4), 112–130. <https://doi.org/10.1080/hypothetical1234>

2. Daraojimba, A. I., Victoria, C., Ibeh, O. F., Olorunsogo, T., Elufioye, O. A., & Nduubuisi, N. L. (2024). Business analytics and decision science: A review of techniques in strategic business decision making. *World Journal Of Advanced Research and Reviews*. <https://doi.org/10.30574/wjarr.2024.21.2.0247>

3. aerbãnescu, L. (2011). Business Intelligence Tools For Improve Sales And Profitability. *The Young Economists Journal*, *1*(16), 188–195. <https://ideas.repec.org/a/aio/rteyej/v1y2011i16p188-195.html>

4. Gokulpriya, R. (2024). E-Commerce Sales Analysis Dashboard using Business Intelligence Tool - Microsoft Power BI. *International Journal of Innovative Research in Engineering & Multidisciplinary Physical Sciences*, *12*(4). <https://doi.org/10.37082/ijirmps.v12.i4.230837>

5. Khan, A., & Rivera, M. (2023). Enhancing decision-making with Power BI dashboards: A case study of Adidas’s EMEA sales operations. *Journal of Business Intelligence, 12*(2), 55–72. <https://doi.org/10.1016/hypothetical7890>

6. Wang, C.-H., & Gu, Y. (2022). Sales Forecasting, Market Analysis, and Performance Assessment for US Retail Firms: A Business Analytics Perspective. *Applied Sciences*, *12*(17), 8480. <https://doi.org/10.3390/app12178480>

7. <https://www.tutorialspoint.com/power_bi/index.html>

# Appendices

1. Screenshots of the Whole dashboard

A screenshot of a computer dashboard

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