1. OVERVIEW

The sales table is a critical part of any business, as it records all of the transactions that have taken place within a given period of time. This table is usually used to track the revenue generated by the business, as well as to identify any trends or patterns that may be emerging in the market.

In addition to the sales table, there are several other tables that are commonly used in businesses to track various types of data. For example, the returns list table is used to track all of the products that have been returned by customers. Similarly, the product reviews table is used to track customer feedback and ratings on various products.

Another table used by the companies is the 'campaigns table', which is used to track the effectiveness of marketing campaigns. Finally, the other promotions table is used to track any other promotional activities that the business may be engaged in, such as discounts or special offers.

The methodology we followed during this period examining the datas row by row and at the end get an insight or pre-look about our feature analysis. At this point we marked the features from which we have taken the following actions on the table. If you do not see any table below the explanation, that means we left the table with its main existing columns.

In this report, the following tables received from The Mynes Company will be used in our analyses.

- Sales

- Amazon Campaigns

- Meta Campaigns

- Refunds

- Product Reviews

1. SALES TABLE

When we analysed the sales table, the raw data we received contained 190,000 rows. Almost more than half of these rows consisted of empty rows. As a result of the analysis, all of these empty rows were removed from the data set. Then, data in the form of day, month and year were obtained from the date columns. And columns such as TotalWeight, DispatchUnitCost were removed because they contained many empty or zero values.

After these operations, new features such as TP_per_Quantity,ST_per_Quantity,UK_CPI,Turkey_CPI,Net_Profit,Day_Time were added according to the need.
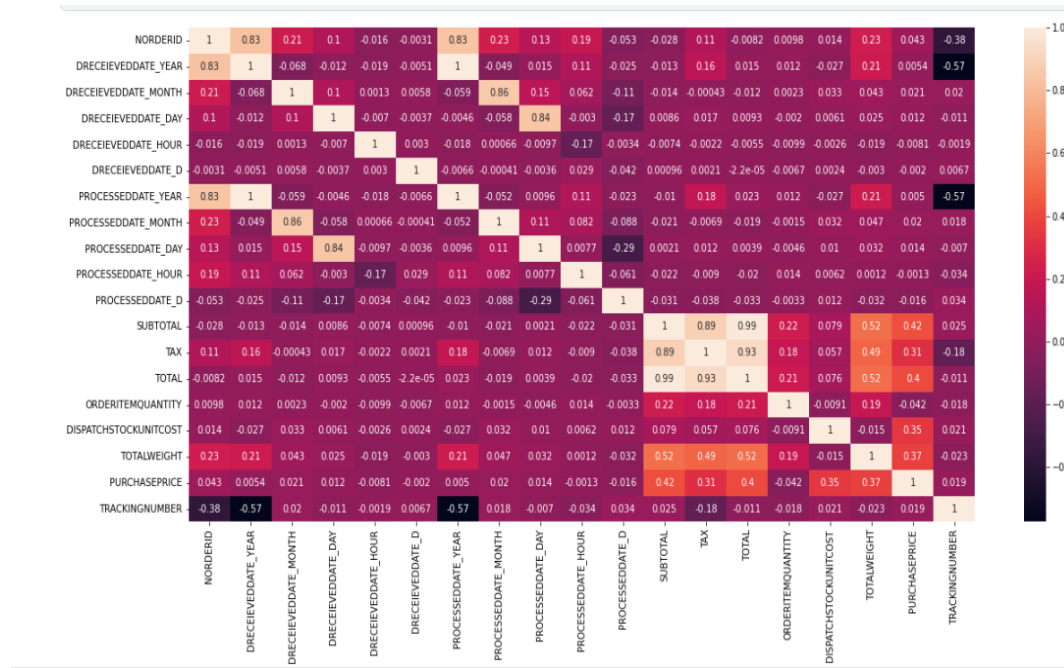
Table 1: Correlation Map of Sales Table

FEATURE (COLUMN)	THE FUNCTION OF COLUMN
nOrderId	• The uniqiue ID of each order taken by the company.
Company	• The company which shops or buys items.
Customer ID	• The ID number of customer
dReceievedDate	• The Date on which orders taken
Country	• Country of the customer
status	• Status of Orders (paid or unpaid)
Processed	• processing of the order if it is true the order is delivered to customer.
ProcessedDate	• The date of the delivery process begins
Source	• The source of orders taken(Amazon,Ebay etc.)
Currency	• The currency on that an order transacted
Subtotal	• The Price without tax
Tax	• The amount of tax a customer paid on an order
Total	• The Total price a customer paid on an order
OrderItemSKU	• Unique item number which is on sale
OrderItemTitle	• The ItemTitle which a customer sees on sale platform
ItemCategory	• Brands which items on sale
DispatchStockUnitCost	• Delivery Cost of an item
OrderItemQuantity	• Quantity of items order per nOrderID
TotalWeight	• The weight of dipatched goods.
PurchasePrice	• Purchase price of items sold

FEATURE (COLUMN)	ACTIONS TAKEN
TrackingNumber	• Delivery tracking number of items sold
PostalService	• The postal service over it delivery sent

Table 2 - Raw Features of Sales

FEATURE (COLUMN)	ACTIONS TAKEN
dReceievedDate	The column is splitted up in to the following columns.To get insight about sales date based on time. The main column also stays. •DRECEIEVEDDATE_YEAR •DRECEIEVEDDATE_MONTH •DRECEIEVEDDATE_DAY •DRECEIEVEDDATE_HOUR •DRECEIEVEDDATE_WEEKDAY Tıme serıes analizlerinde aylık, gunluk, haftalik tahminlerde kullanmak için yukarıdaki feature'lar eklendi.
ProcessedDate	It is also one splitted up following columns.The main ProcessedDateColumn also stays. •PROCESSEDDATE_MONTH •PROCESSEDDATE_YEAR •PROCESSEDDATE_DAY •PROCESSEDDATE_HOUR •PROCESSEDDATE_WEEKDAY Tıme serıes analizlerinde aylık, gunluk, haftalik tahminlerde kullanmak için yukarıdaki feature'lar eklendi.
DispatchStockUnitCost	• There was lots of zero values so we decided to drop it. Also it didn't give so much insight.
TotalWeight	• This column did not give us the expected research perspective.
TrackingNumber	• It was determined that there was a delivery tracking number, but the process of obtaining the desired information did not take place.
Processed	• After dropping false values then the column was dropped.

TP_Per_Quantity	• We would like to know the price that a customer paid per quantity with tax. • Birim fiyat analizlerinde bu feature'I kullanilacaktir.
ST_Per_Quantity	• We would like to know the price that a customer paid per quantity without tax. • Birim fiyat analizlerinde bu feature'I kullanilacaktir.
UK_CPI	• To use it on analysis as on the project instructions • Nedensellik (Enflasyonun ciro, satis ve kârlilik uzerindeki etkisi) analizlerinde bu feature olusturulmustur.
Turkey_CPI	• To use it on analysis as on the project instructions • Nedensellik (Enflasyonun ciro, satis ve kârlilik uzerindeki etkisi) analizlerinde bu feature olusturulmustur • Tedarik ulkesi Turkiye oldugu icin bu feature eklendi.
Net_Profit	• To know the net profit of the seller per sale (Subtotal-PurchasePrice)
Day_Time	• 24 hours of a day splitted up 4 parts like 'AfterNoon','Night','Early Morning' and 'Morning'
status	• There was no different values as 'PAID' because of that we have dropped this.

Table 3 - Actions Taken on Sales

1.1.1 Recommendations for Sales Table

When the analysis phase of the sales table was over, it was seen that most of the rows were filled with blank data. Although the exact reason for this is not known, it is thought that if it is a technical malfunction, the cause of the malfunction must be found. In addition, it has been determined that

some zero values on data such as on columns DispatchUnitCost, TotalWeight recommended to be recorded completely. In addition, it is recommended to the company that the process date data with the missing date is required to be filled in correctly.

Finally, unidentified characters were seen in a few product titles in the table, and it was determined that these characters belonged to the Swedish language. In this regard, it can be eliminated with this character with a renewal to be made within the system.

We also found 101 duplicate rows in this table, which we think is a system error.

2. RETURNS TABLE

The raw form of the data in the returns table contained approximately 15 thousand rows of data, and it was seen that more than half of this data was filled with null raws, as in the Sales table, in this context, these rows were removed from the data set.

The remaining columns in this table were found to contain important data and we did not need to add any new columns.

FEATRUE (COLUMN)	THE FUNCTION OF COLUMN
Type	• The reason of return

nOrderId	• The Id of Order returned
cPostCode	• Postcode of customer who makes item return
Customer ID	• The ID of customer
ItemNumber	• The number of item Returned
ItemTitle	• The title of item which customer returned
dReceievedDate	• The receviedate of return request
cCountry	• Country of the customer
cCountryCode	• The code of country from which rreturn made
cCurrency	• The currency of returned order
source	• The platform return made (amazon, ebay, etc)
Sub source	• The sub platform returns made
Return Date	• The date on that return of item realized
ReturnQty	• The quantity of item returned to company by customer
Category	• The reason of return category
ResendOrExchangeQty	• Resented or Exchanged Item Quantity from the company to customer

RMA Actioned	• The status of the return process
Refund Amount	• The amount money which refunded to customer
Return Reason	• Explanation from a customer about the return

Table 4 - Raw Features of Returns Table

Table 5 - Correlation Map of Returns Table

2.1. Recommendations For Returns Table

Suggestion for return table: Approximately 20% of the Refund values in the 'Type' column in the Refunds Table do not have date information. Therefore, it would be useful to add this information.

3. OTHER CAMPAIGNS

In the examinations made in the other campaigns table, it was seen that many of the examined columns contained exactly the same values. These are: Website with Adds to cart, Adds to cart, Checkouts initiated with Website checkouts initiated, Website purchases with Purchases, Purchases Conversion Value with Website purchases conversion value, are dropped.

The completely empty Meta Add to Cart, Meta Purchases, Meta Purchase Conversion Value columns were removed from the dataset.

FEATURE (COLUMN)	THE FUNCTION OF COLUMN
Reporting starts	• That column is mentioning about the date on which reporting starts.
Reporting ends	• That column contains the date on which the reporting ends.
Campaign name	• The campaign name which made
Campaign delivery	• Mentions the situation of campaign
Ad set budget	• This tells us the amount of the money that the seller spent on budget type basis.
Ad set budget type	• In this column it is mentioned that on which basis the seller spent the ad budget. (Daily or Lifetime)
Attribution setting	• The purpose of this column is telling the type of the ads. (28-day click or 1-day view,7-day click or 1-day view)
Results	• Number of Results which was aimed in Result indicator.
Result indicator	• The purpose of add set

Reach	• The number the ad reached
Impressions	• Total impression the ad taken (click, view etc.)
Cost per results	• Shows the cost per result
Amount spent (GBP)	• Result * Cost Per Result
Ends	• Shows the end date of campaign
Frequency	• the average number of times users see the ad.
Unique link clicks	• the number of people who clicked
Landing page views	• people landing on ad's destination URL
Link clicks	• the number of clicks on links within the ad that led to destinations
Cost per landing page view (GBP)	• the total amount spent divided by the amount of landing page views.
Adds to cart	• allows customers to choose items to purchase without actually completing the payment.
Website adds to cart	• allows customers to choose items to purchase without actually completing the payment.
Meta add to cart	• allows customers to choose items to purchase without actually completing the payment on Facebook or Instagram
Checkouts initiated	• The number of purchase launch events tracked by the pixel or Conversions API on the website and attributed to the ads.

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Website checkouts initiated	• The number of purchase launch events tracked by the pixel or Conversions API on the website and attributed to the ads.
Meta checkouts initiated	• The number of initiate checkout events attributed to the ads
Purchases	• The number of purchases made within Meta technologies (such as Pages or Messenger) and attributed to the ads
Website purchases	• The number of total purchases made within the website.
Meta purchases	• The number of total purchases made within Meta Technologies.
Purchases Conversion Value	• tracks the total value of purchases made from your advertising efforts
Website purchases conversion value	• tracks the total value of purchases made from your advertising efforts
Meta purchase conversion value	• The total value of website purchases conversions.
Purchase ROAS (return on ad spend)	• the total revenue generated from your Facebook ads (your return) divided by your total ad spend.
Website purchase ROAS (return on advertising spend)	• the total revenue generated from your Facebook ads (your return) divided by your total ad spend

Table 6 - Raw Features of Other
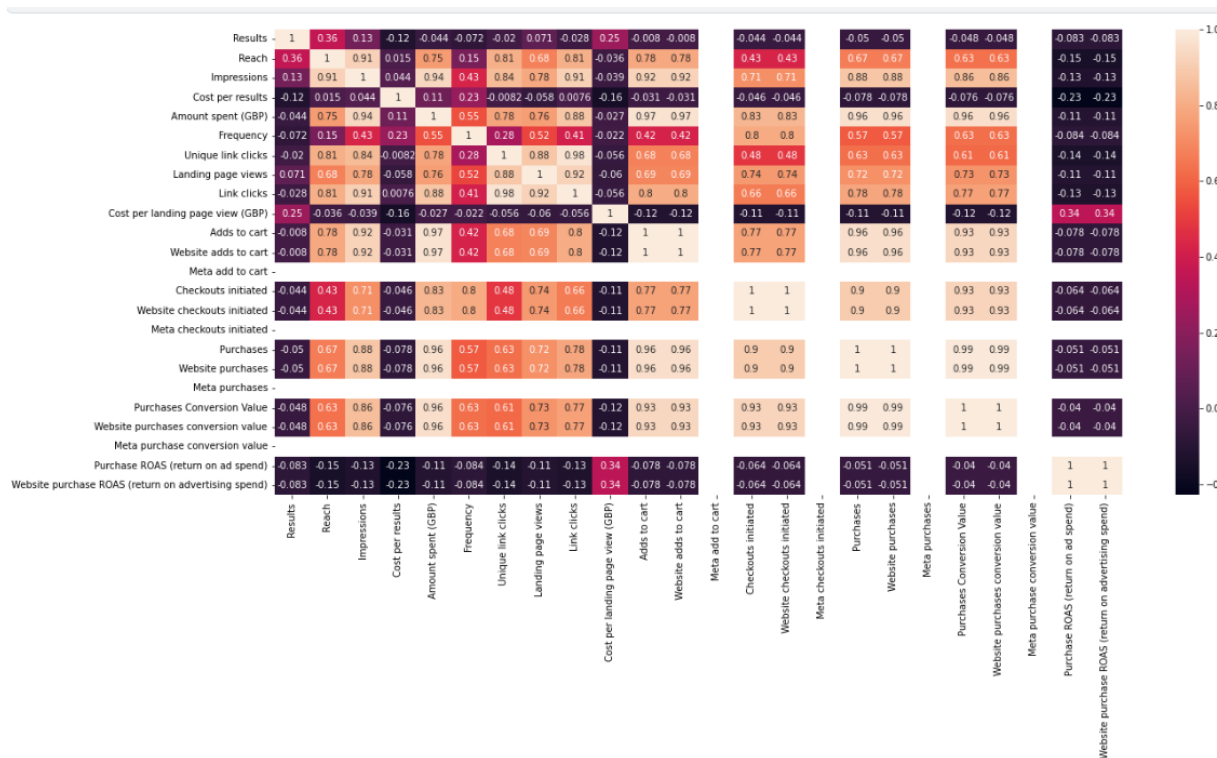
Table 7 - Correlation Map of Other Campaigns

FEATURE (COLUMN)	ACTIONS TAKEN
Adds to cart	• It contains same values with Web Site Adds to cart. It is duplicated so it is dropped.
Meta add to cart	• It is completely null. So it is dropped.
Checkouts initiated	• It contains same values with Website checkouts initiated. It is duplicated so it is dropped.
Meta checkouts initiated	• It is completely null. So it is dropped.
Purchases	• It contains same values with Website purchases. It is duplicated so it is dropped.
Meta purchases	• It is completely null. So it is dropped.

Purchases Conversion Value	• It contains same values with Website purchases conversion value. It is duplicated so it is dropped.
Meta purchase conversion value	• It is completely null. So it is dropped.
Purchase ROAS (return on ad spend)	• It contains same values with Website purchase ROAS (return on advertising spend). It is duplicated so it is dropped.

Table 8 - Actions Taken on Other Campaigns

3.1. Recommendations For Other Campaigns

After examining the Other Campaigns table, it is thought that if columns such as Meta Add to Cart, Meta Check out Initiated, Meta Purchases are completely blank, this data behooves to be filled completely.

4. AMAZON CAMPAIGNS

When the table was examined, it was seen that the data rows were empty in the same way and these rows were dropped. The other columns have been including significant values. Besides that, to get an idea about columns as Type, Campaign Binding Strategy, Portfolio, ROAS discussion goes further. At the and we have taken the necessary answers. Consequently, we have decided, it is recommended that the dataset stay the same with existing columns.

FEATURE (COLUMN)	THE FUNCTION OF COLUMN
State	• That column shows the status of the campaign

Campaigns	• This is the name of the campaign
Status	• The actual status of the campaign it includes valuable information.
Type	• Sponsored Products (SP), Sponsored Brands (SB), Sponsored Brand Video (SBV), Sponsored Display (SD),
Targeting	• choosing the specific keywords and products you wish to target and set bids accordingly.
Campaign bidding strategy	• When an Amazon customer performs a search for a product, the sellers with the highest bids on relevant keywords win the auction, and their product ads get listed in their chosen placement
Start date	• Start date of campaign
End date	• End date of campaign
Portfolio	• If you have an existing Portfolio in your account, you can optionally associate the campaign being created to a particular portfolio
Budget(GBP)	• A daily budget
Top-of-search IS	• the percentage of top-of-search impressions your campaign received out of the total top-of-search impressions it was eligible to serve on
Cost type	• CPC is the cost per click that an ad receives.
Impressions	• measure the number of times Amazon shows shoppers your Ad, regardless of whether they clicked on it or not.
Clicks	• Total number of clicks on ad

CTR	• the ratio between how many people have clicked on your Ad and the number of people who have seen it:
Spend(GBP)	• Total Spend for campaign
CPC(GBP)	• Cost per Click
Orders	• The number of orders taken
Sales(GBP)	• The amount of sales made through campaign
ACOS	• It compares the amount spent on PPC campaigns to the amount earned, and it helps determine if your brand generated campaigns that were cost-efficient.
ROAS	• ROAS (Return on advertising spend) is a metric that allows sellers to calculate the amount of income (or loss) from each invested dollar and evaluate the productivity of a particular ad campaign or even a keyword.
NTB orders	• The number of first-time orders for products on Amazon within the brand over a one-year lookback window
% of orders NTB	• The percent of first-time orders for products on Amazon within the brand over a one-year lookback window
NTB sales(GBP)	• The total amount of NTB sales
% of sales NTB	• The percentage of NTB sales
Viewable impressions	• This means that almost the number of measurable impressions.

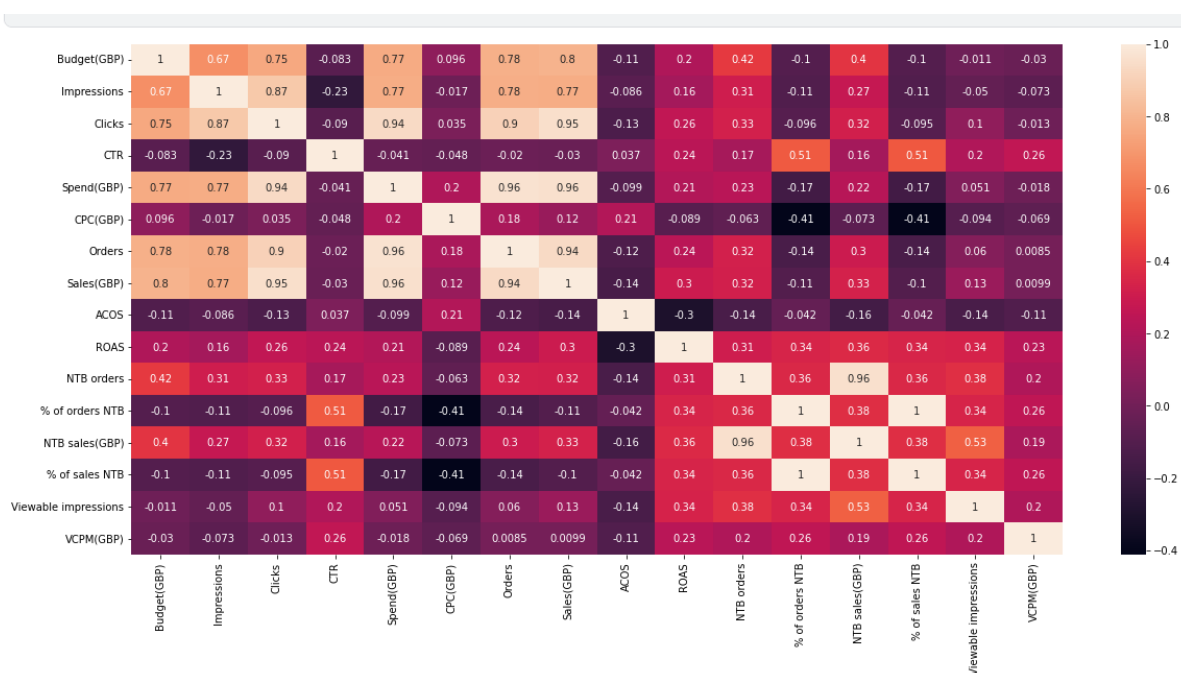| VCPM(GBP)	• Viewable CPM represents the cost to serve only viewable impressions, which can be compared directly with the CPM that you have paid to serve all of your ad impressions.

Table 9 - Raw Data of Amazon Campaigns

Table 10 - Correlation Map of Amazon Campaigns

4.1. Recommendatins For Amazon Campaigns

Since most of the customer information is confidential (e.g. address information), we cannot make some inferences.

5. PRODUCT REVIEWS

Empty data rows and unreachable video links were observed in the product reviews table. These were removed from the data set.

FEATURE (COLUMN)	THE FUNCTION OF COLUMN
order_id	• The order id of the comment made
review_title	• The review title(empty)
comments	• The comments made by customers
rating	• The rating made by customers 1 to 5. (1:lowest-5:greatest)
status	• The status of review active or inactive.
date_created	• The date review created
sku	• The unique number of item
Customer ID	• The ID of customer who made the review
address	• Adress of customer (empty)
product_sku	• The unique number of item
product_name	• The name of product
product_link	• The link of review made
video_review_prompt_id	• Full of 199
tags	• Tags of reviews
reply	• Replies to review made
reply_private	• Private reply made

reply_date	• The date of reply
published_images	• The images published by making review
unpublished_images	• Unpublished images by making review
published_videos	• Published videos by making review
unpublished_videos	• Unpublished videos by making review
source	• The source in that the comment made
location	• Location of customer who made the review
timeago	• The time indicator for how long time ago the comment or review made
video_first_campaign	• It is almost impossible to get insight from this column

Table 11 - Raw data of product reviews

FEATURE (COLUMN)	ACTIONS TAKEN
SKU	• We dropped the column because it has same values with Product SKU.
address	• It is totally an empty column we can drop it
tags	• There are few values but we can drop it.
reply	• We can drop it. There are lots of null values.

reply_private	• It is empty.
published_images	• There are few values but it won't give us insight. The links on this column are not available.
unpublished_images	• There are few values but it won't give us insight. The links on this column are not available.
published_videos	• There are few values but it won't give us insight. The links on this column are not available.
unpublished_videos	• There are few values but it won't give us insight. The links on this column are not available.
timeago	• There are few values, but it won't give us insight. Because it has a lot of null rows.
video_first_campaign	• There are few values, but it won't give us insight. Because it has a lot of null rows.

Table 12 - Actions Taken on Product

5.1.   Recommendations For Product Reviews Table

Columns mentioned or dropped above must be taken into account to be filled if the sales system allows it to fill.