INTRODUCTION

RIHAM Inc. manufactures 7 types of products namely Andrea, Samla, Dragon, Andrea, Norden, Flisat, Mula and Tarva. They service for different kinds of cities and ages (20-70). Also, until now the company reached 366 female and 671 male customers. The company categories products into 3 groups luxury, premium and general. As a first impression , most valuable product is Norden and cheapest one is Dragon. In term of analysis, Andrea is demanded by customers more than other products.

Now , we are going to explain what we did in detail for each step .

Product Analysis

For Product Analysis sheet , we had to work dynamically to collect unstaid and continious data . First of all , we set some data validations on certain cells which are “A2:C2” . For A2 , since we have 3 segments we let user to select among them , and we set B2 to change dynamically with A2 by filter() function and again data validation , we made a list . For C2 , we limited user to enter only whole numbers between 1-12 as this cell will refer to month . And for year variable , we needed to extract year from a date , therefore we used year function . To do this dynamically between sheets , we used concat() function which directly gives sheet name to refer to . After these we used sumifs to calculate the total sales under given multiple conditions and within sumifs() , we needed to refer sheet name dynamically . That was where we really did brainstorming and googling . We found a formula named indirect() , which is used to refer somewhere . We used one of the properties of this function structured as INDIRECT(""&sheet_name&"'!reference_cells") and it worked .

After these , we came to the macro side and put a messagebox for change made on some spesific addresses that explains the sales information to the user . Every time the user changes an input it creates necessary message .

Typo of our calculation was that when a user gives input for month , instead of calculating first n month , we calculated that month’s sales specifically .

Data For Powerbi

When collecting data for “DATA FOR POWERBI” , we have used the following techniques :

- For sales data , we used nested for loops , one for walking around sales sheets , and one for walking around rows on each sheet . Therefore , every time a sale data is entered for any of products , it will automatically affect powerbi table .
- For other informations such as city name , openingDate etc. , we used Vlookup function to gather the data given an index from related sheets .
- For Product and Segment column , we used for and if functions together and we counted the data on each data sheet . As much as that count , macro enters that much data on related columns .

For calculating totalProfit which was not readily available , we used following formula and did those calculations manually by using simple excel formulas and store them on this sheet .

(Formula : UnitPrice*UnitsSold – RawMaterialCost) , (RawMaterialCost = NofUnitsforEach * UnitPrice)

After that by using stored values we calculated totalProfit by a macro .

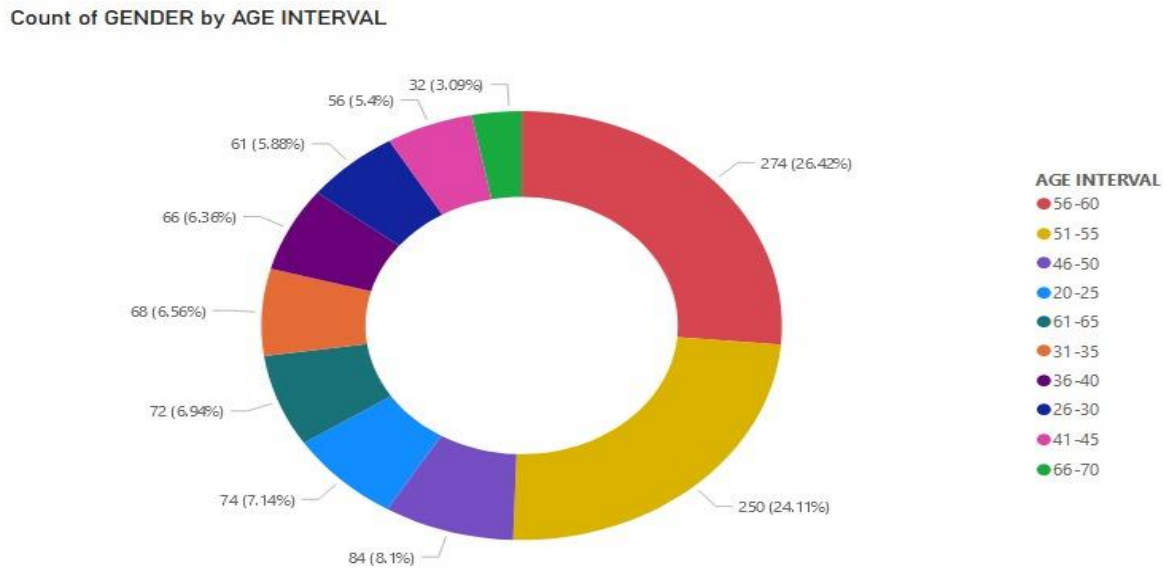
Important detail was that when we tried counting row numbers we faced with a problem which excel always referred lastRowUsed as 1001 . We used different techniques and formulas , however could not achieve . Finally we decided to clear every sheet below the necessary data and that simple idea worked .

We locked first row so that even we scroll down it still appears . We created a table including whole data that we extracted and import them on powerbi website to create necessary graphs . On powerbi we chose to use barchart , donut chart and scatterplot to express our thoughts on either sales by month or customer segmentation by age interval .

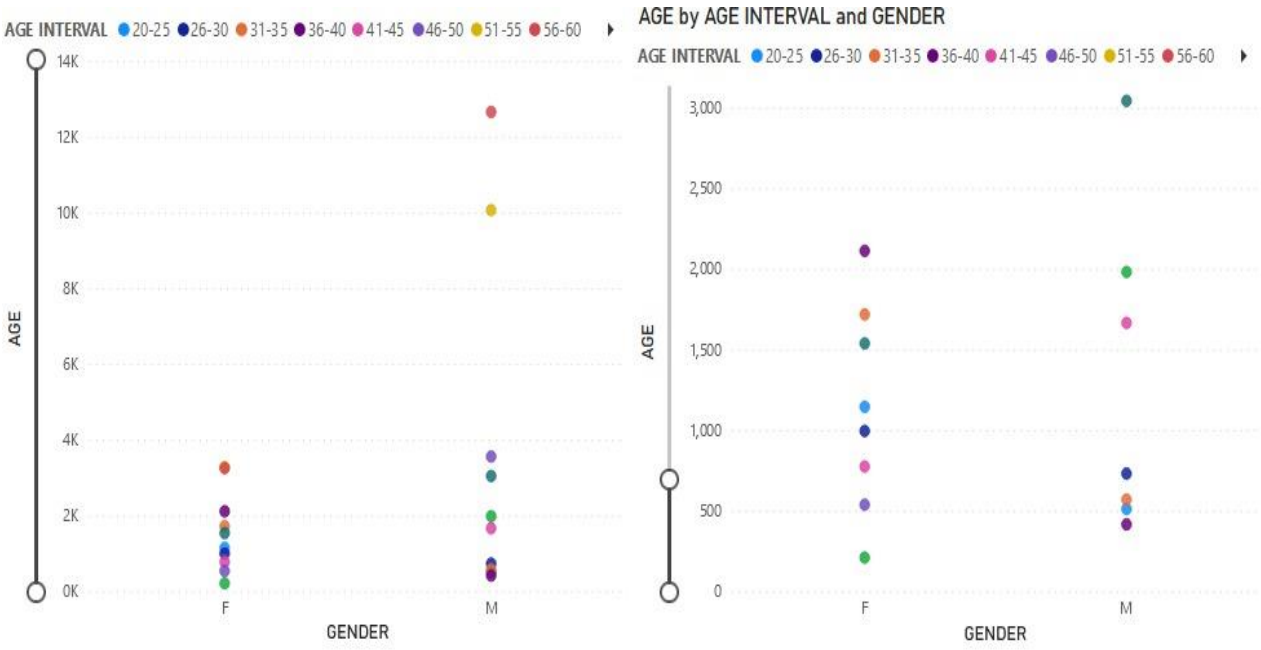
Note : For some macros such as ones with vlookup to work , some related macros should be worked first of all as they are related to each other . Meaningly , there should be a sequence for all macros to achieve their goals .

Powerbi Graphs

That's the "Units Sold by Sales month" clustered column chart . It is possible to see that until month 4 , there is an increase and on april (Month 4) maximum amount of sales occurred. After month 4, There is a huge decrease of Units Sold. Also, obviously month 10 has the lowest sales .



In “Count of Gender by Age Interval” donut graph, we may comment that 50 years and older has the largest contribution. It’s obvious that 66-70 age interval has the lowest number of people.



“CustomerAge by AgeInterval and Gender” scatter plot shows that count of male customers who are older than 50 is over 12k and this is the largest age interval in terms of population . Moreover , maximum amount of female number by age intervals is below 4k and largest age interval is 56- 60.

There are some outlier observations at male level specification , which that’s why we used the same graph by zooming different stages .

In powerbi , we tried to show expected results by constructing some graphs and made some comments on them as our first glances .