HR Analytics

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Lec 08: Data Visualization Power BI – 1

Dear participant, in this session, we will learn how to use Power BI in order to visualize our data, right. So, in first session of the introduction of data visualization tool, we had discussed the various types of data visualization tool. So, first tool that we discussed Excel, Power BI and Tableau. These are the three tools that we are going to use in this course to visualize and to analyze our data. So before using these tools let us understand how effectively we can use these tools in order to visualize the data. So in this session we will talk about Power BI.

So any data visualization tool that you are using whether it is Tableau, Power BI or an Excel. First thing that you should do, you should think about your matrics and accordingly you should develop the data in your Excel sheet. So before, when I will start this Power BI session, first I will show you a Excel sheet which has the demo dummy data right. So, how that data that I have generated and by using that particular data how I will develop the matrics and then I will make a decision related to that particular data.

So, before using any data visualization tool, first step is to develop a very good excel sheet in that data is clearly, clearly visible or clearly presented, right, so that you can use this data visualization tool effectively. If data is not clearly visible, then you have transform option in this tool that you can use to transform the data also. So, let us start the use of Power BI and how you can use the Power BI. So, let us discuss. Dear participants, so in this session we will learn how to use the Tableau.

So, first thing that you can do, you can download the trial version of Tableau. You can download the trial version of Power BI, right, just you can write on a Google, download the Power BI, then you will get one website of the Microsoft and then you can download the trial version of Power BI and for 14 days free of cost you can do it. But in my system I have already downloaded this Power BI, so in search option I am going to write this Power BI. So, you will see, you can see on a screen this Power BI desktop app is there. So, just I will click on this.

The moment I click, now you can see it is opening. So, screen like this you will get it. So,

here you can see home, insert, modeling, view, optimize. So, these are the options are there. Below that you can see this get data, right, enter data, dataverse, right, transform data.

So these are the tools which are there. So one by one we will understand how to use these tools. So first let us start with this get data. The moment you will click on get data, you will get these many options, right? So this type of data, if you have a data in the form of Excel, you can use it. If you have Power BI data set, that you can use it.

If you have the SQL server data, that you can use it, right? So what do you need to do? You need to select the data type. You need to select in which form you have the data. So for the use of this exercise, we have a data in the form of Excel. So that is why I have selected the Excel. So as I already said, the dummy data that I have created, so wherever the data is saved in your system, you can go to that page.

So you can go to that folder and select that file. So I have created the file name is New Power BI, right. So I will select this, right and then just I have to click on open. So the moment I will click on open, I will get window like this. So in this new Power BI Excel is there, below that the sheet 1 is there.

So just I need to click on. So in Excel seat you might have seen sheet 1, sheet 2, sheet 3, sheet 4. So in which sheet your data is stored, the same sheet that you have to select. So for example in this Excel I have only one sheet, so that is why it is showing only sheet 1. If I, my Excel has sheet 1, 2, 3, 4, 5 then it will be showing 1, 2, 3, 4, 5.

So, if I have to analyze the data of sheet 2 then I will click on sheet 2. If I have to analyze the data of sheet 3 then I will click on sheet 3. So, but in this file, in this file I have a data on only sheet 1. So that is why I have selected sheet 1. Now at the bottom you can see three options are there, load, transform and cancel.

If you believe your data is already clean, you are not supposed to make any change into it, then you can directly click on load. But if you believe you need to clean your data, you need to modify some of the things, then you can click on transform. So the moment you will click on transform, so you will get a screen like this. So, what you can do right here you can see HR department market department in the department that you can see somewhere I have written this marketing full form right and HR short form. So, if I want to make change I can do it.

So, just how you can do this just you need to click right click on the department and then you can go to this transform. So transform you can see, you can change lower case if you

want to convert into the lower case, upper case, capitalize, stream, clean, length, right? So whatever you want to do it, you can do it here, right? As per the need of your data, right? So similarly that you can click here and then you can see text type, right? So begin with whatever changes that ad query, replace values right so whatever changes that you want to do it you can do it here right. So that that is how you can transform the data by using this window whatever changes that you want to do it right so here you can see source is there right navigation is there then promo promoted headers are there. Change type is there right so that is how these all options are available by using these all options you can transform your data in which form you want to present it. Now you can see let me explain the excel sheet.

So in excel sheet first line whatever you will headings that you have given so all those headings will come here in a first line. So the serial number SN that I have written that is the serial number. So serial number how many employees data is there, this is a dummy data so serial number is there. Second is a gender so you can say male or female. So if male is there then I have written M, if females are there then I have written F.

So you can see the moment I click on gender it has opened a sheet. It has opened a dialogue box so here you can see male and female is there so the way I it is shown in a Excel, same format it is showing here. So what is the good thing about this Power BI? If you have worked on Excel, then it is functions of the Power BI is quite similar to the Excel. So in the same way you get a filter in a Excel, same way you are getting on a Power BI also. Similarly, you can see that next variable that I have that is the department, next one that I have that is the interview date, city from which city people are coming, interview status whether they are coming or not, source of application what is the source of the application.

How much work experience that they have, what is their qualification, education level, what is their age, how much salary that they are expecting, so it is in 1000, so just 13,000, 14, 15, 16, 17, it is in 1000 and last variable that I have that is the attrition. So, these are the variables that I have and I have created this dummy data for Power BI use. So, if you believe you have done the all transformation here, so what do you need to do? Just you need to close and apply, close and apply. At the left hand side you can see first option that is there close and apply. So, the moment you will do it, so what will happen? You will get a screen like this again.

So, now it is loading. So, you can go to the home, one second just let me do it. So this side all variables should come. Why these all variables are not coming this side? So at the right hand side all variable names should come, right? Yes. So you can see this right side all variables are coming here. So, these all variables are coming.

So, let us assume we have to count how many people are there, in the how many data sets are there. So, first we will create this new major, on new major you can see this major is coming. So, if we want to calculate this head count, how many numbers are there? So, just I have written this head count equal to distinct count right. So, distinct count the moment you will click on this distinct count, why distinct count? If in a serial number any repetition is there then it will not recount, right. But if we will use the simple count option in that case that repetition of number may be recounted.

So that you may not get the right number. That is why we will use this distinct count. Now question comes for which variable that we need to use this distinct count. So for just dummy variable, so all list of the variable that you will get it. So I have for serial number that I am going to use because in all other cases there might be a repetition right.

So then distinct, so the serial number that I have used, now I will close the bracket and just I will enter right. So the moment I will, I have entered, so now you can see in a right side data had count is there, that new variable that has come. So, that new variable that has come now what you will do at the next to the data you will see visualization is there and various types of graphs are there. So, I here you can see in a 1, 2, 3 card is there. So, this I will select to present the head count.

So, simply I have taken this. So the moment you will click on this, you will get like this, right? So what do you have to do? Now you have to take this head count and just paste it here. So now you can see head count is 516. So now we have a data of 516, right? this is the total number of employee. Now we want to create a story about the numbers. So let us assume we want to know city wise how many applicants are there from the various cities.

So here what I will do, I will create a dashboard where only we will talk about the numbers. So here, so our interest variable is only numbers. In which department how many people have applied, how many males are there, how many females are there, what is their education level, from which city they are coming, how much salary that they are expecting, whether they are coming for the interview or not. So that is the head count that we are head count, so that head count that we have, so 16, 116. Now let us assume your manager ask how many males are there and how many females are there, right? So which type of graph would be appropriate in this case? You can make, just think which type of graph would be appropriate in this case? You can make bar graph as well as you can make pie chart also, right? So here you can see this all type of bar graphs are there.

So, you can select one of the bar graph here, right. So, here you can see cluster column

chart, clustered bar chart, right. So, the moment I have, so what I have to do, first again I have to click on this one card. So, just I will click here and after, after that I will click on this bar chart, right so male and female. I can remove also, one second remove and just take this simple bar graph right.

So here the moment you will click on this. So if you have used this pivot table, so in that you will see x axis and y axis. So similarly you can see after this visualization tool, this x axis is there and y axis is there. So on x axis, now what you want? On n x axis, what you want? So if you do not have any idea, do one thing.

Just you put the number. So simply just I have put a height count on x axis right it is not going. So, right just let me put on y. So, y had right and gender on x axis. So, now you can see this graph is there right. Now you can tell how many males are there and how many females are there.

So, you can see 7 So, the moment I clicked on this mail head count became 721 it means 721 mails are there. So, that is the you need to be very careful when you are making this dashboard if these dashboards are interactive in nature if you will click on one thing. So, one calculation is associated with the another one. So, that changes, simultaneously changes will take place. So, the moment I clicked on male, so head count also became the, so I need, if I will click here, right? So, then male and female both are 560.

So, second question that you can answer for your main manager, that is the head count, right? So, you can tell in your, in your organization how many people have applied. Next thing your manager wants to know what is their education level, right? So again you can make and again you can make the bar graph, right? So what you can do education level? So just you click on education level, put it into the x axis. Right and head count that you can put into the y axis. So, now you can get education wise right.

So, this is head count by education wise. if you have to change the graph, one graph to another graph, it is very easy to do in Power BI. Just you click on the graph and go to this visualization, select in which graph that you want to convert. So head count by gender, I want to convert into the pie chart. So simply just click on this pie chart, right. Now you can see this graph converted into the pie chart.

If I want to convert this pie chart into the bar graph I can just click on the bar graph it will be converted. If I want to make it donut just I need to click on the donut and it will be converted into the donut. So whichever graph that you want to make it here that is how you can decide and you can make it. Next thing if you have to make beautify your bar graph or these graphs right you have to change the headings what you can do you can see

the visualization is there. Next to the visualization this graphs are there above this graph if you will go and click next one.

So, format your visuals the moment you will click on this you need to click on a graph which you want to format and then you can see details, detail labels are on rotation is there. Legend in and the next option that you can see here journal is there you can go to the journal right titles if you want to change the title so head count by gender right so if you want to give it some other name you can give it here You can change the title, color, subtitle, dividing, spacing, whatever you want to do it just go and see how you can beautify your graph accordingly you can make the changes here. So, second thing that you we have understood the total number of people who have applied to your organization that is the 516, male and female that you can see 245, & 271 and education wise that you can see it. Now, if you want to check in term of their department for which department that they have applied.

So, let us go back again to this. What we will do? Again we will create a bar graph, right. So we have clicked on this bar graph, so that bar graph has come. Now we want department wise. So first we will put the head count into the x, it is not going, right.

It means we will put into the y. So it has come and education wise already we did, so department wise. So department wise that we put into the here x axis. So now you can see that department wise, department wise all data has come right. So I already said how to beautify it if you want to put the labels, data, numbers.

So just you go to here right and go to the journals. All things that you can see it whether it is on or not. So title, effect, visuals that you can see and just go to the down and then see data level is off, just you click on this on. So now you can see all numbers are there, all above the bars all numbers are there. So operations highest number of people have applied right, so 140. HR that is what you can see 118, marketing 103, 97, 97 for the finance and services, right? So that is how you can see department wise data is there.

So you have to just see these all options and then you can beautify your graphs. Next that you want to know city wise, right? How many people are there city wise? So again I have clicked on this, bar graph I hope right. So now city wise so head count that I have put into the y and the city that I have put into the x axis. So now you can see this city wise right.

So now you can see this city wise right. So city wise so total number that you have 516 male, female that you have, education level that you have, department wise for which department people have applied, how many people are there and city wise from which city that they have applied. So, city wise how many people that have applied that data

also is available with you. Right so now you have created these all number based uh visualization right so now if you have this dashboard in front of you now you can tell a story about your numbers right. So you can start 516 uh applicants that we have who have applied for our organization or who have shown the interest out of 516 we have 245 male and female. 245 male that we have, 245 female that we have and 271 male that we have.

So here you can see the in term of percentage also it is there, so you can mention in term of the percentage also. Headcount wise and what is their education level that is what also you can explain and what is their from which city that they are coming that is what also you can explain. And from which from which department that they are coming that is what for which department that they are coming that is what also you can explain. So that is how you can create the a dashboard for your data. So in this session what simply that we have learnt simply that we have learnt how to make the various types of the graphs.

So what is the key things in this whenever you will see this list of variable here. Whenever you will see the list of variables here, what is the thing that you have to do it here? First you have to think which type of graph will be suitable for which type of variable. You think then select the graph and then put the value into it. Automatically you will get that particular graph.

Now question comes how this dashboard works interactively. So if I want to know in operations department 140 people are there. 140 people are there and out of this 140 how many are male and how many are female. So, simply just I need to click on this, now you can see. So, 79 are female and 61 are male. That is what you get and the one more thing that you can see the moment I clicked on this operations right only one color is a brighter and rest all are not right.

And you can see head count change to the 140 and all graph has been changed. So, this is the beauty of this power BI. This one graph is associated with the another one, so interactive. So, if you will want to know for the other department, let us take like HR department.

So, just click on HR and the entire data will change accordingly. Simply that if you want to know in UG, the moment you clicked on undergraduate for which department they have applied, so headcount is 208, male, female that you can see here and you can see from which city that they are coming and then you can see for which department that they have applied. So that is the beauty of this Power BI dashboard. It is interactive in nature. You will click on this and then you can get that information just by clicking on one simple graph. So the moment you have such kind of graphs in front of you, now it is

being a manager, your duty is to ask the questions and see what are the answers that you are getting related to your problems or not.

If you are getting it is good, if not then think what is the additional data that you need to collect in order to solve your problems, right. So I hope this thing you would have understood this graph. In our next session we will use, we will take the another variable and we will make the graph for another variable. So dear participants, I hope you would have learned how to make these graphs by using this power bi and you would have seen how these graphs are interactive. So, that message that I have already given but still I am again saying when you will have this list of variables, see this list of variables clearly, make a image in your mind which type of graph would be useful.

in order to present these two variables, three variables, think about it, select it. Then the list under the visualization list of graph is there, select itand then put the value and then you will get the graph. So, thank you. Some more graphs we will learn in the next session. Thank you.