HR Analytics

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Week: 2

Lec 07: Introduction to data visualization

Good morning participants. Today, welcome to this lecture number 23. In this session, we will learn about Power BI, Excel and Tableau. In this entire week, we will learn about these two softwares and Excel, how we can use for the data visualization and What are the things that we should consider before using these tools? So, we will start the session from there. So, first tool that we are going to use for this data visualization about which we will discuss more in this week that is the Excel. So, first we will understand these steps of the data analytics.

So, first step is always data collection. Now question comes from where we need to collect the data. So, you can understand HR is having six functions like recruitment, selection, learning, development, performance and compensation. So, in the system in a each organization there is a huge data is available related to recruitment, related to selection, related to performance, compensation, learning and development.

It might be possible, it may be there in MIS Management Information System or HRMIS HR Human Resource Information Management System. It may be available. So, from there you can extract the data in the form of excel, right. So, in the form of excel you can extract the data. and then you can organize that data so you so that second step is known as the data preparation so you can organize that data what data that you required which data that is not required in order to make some decisions so that is how you need to prepare the data in excel form or any other form in which you can upload that data on the software or in the excel so but i would suggest for most of the things that preparation of the data in excel would be good because you can upload that excel data in SPSS you can upload that data in tableau, power bi so that's why i recommend to prepare the data in excel format so i will teach you that also how to prepare the data in excel format.

Third important thing that we, third step is the data visualization. So we need to understand why we should visualize the data. So it is obvious for the better understanding about the data we need to visualize, right. So in this session we will be taking the example of this applicant analysis like in a recruitment process there are many candidate who apply for the vacant positions in the organization. So if we need to do the analysis of

all those applicants.

how we can visualize those applicants data in order to draw some meaningful insight from that data. So, that is why this data visualization is important right and then after visualization we can do some analysis right we can perform some analytical tool on that particular data. Then, we can discuss some of the meaningful insights from that data analysis, and then we can convert those insights into actions. So, now question comes, what are the data visualization tool? So, there are many data visualizations tools are available nowadays. So, one of the tool is Power BI, next one is the Tableau, third one is Excel that everyone knows, so we can use Excel and next one is Data Studio and R.

Data Studio and R both are open source. Both are open source. So, these are the two open source, right, Tableau, Power BI and Excel. For few days, for a trial purpose, you can download this Tableau as well as Power BI. But if you want to use for more than one month, then you need to pay some amount for these softwares.

But these softwares are so powerful, in order to visualize the data that we will see in the coming sessions. So, we can see this Power BI, Tableau, Excel. So, when we have a Excel then what is the need of this Power BI and Tableau? So, in Excel when we have a huge data like 10,000, 15,000, 20,000 then it may be little bit difficult to perform some of the functions if we do not have very good expertise into it, then in that case we can use these tools like Power BI, Tableau or Data Studio in which if huge data is there, large data is there that also can be visualized very easily. So, these are the tools which are used for the data visualization. It is up to the candidate which tool that candidate want to use.

If you want to use Power BI, you go ahead with the Power BI. If you are comfortable with Tableau, you can use the Tableau. If you are comfortable with Excel, you can use the Excel. If you are comfortable with Data Studio, you can go with Data Studio. If you are comfortable with R, you go with R.

It is not necessary you need to have a command over all data visualization tool because the results you will get the same only. If you will visualize the data through Power BI, Tableau or Excel or Data Studio, the result is going to be the same, only in the term of visualization that may differ, quality of visualization may differ, the kind of graphs that you are getting, that may differ in term of the presentation visualization that may differ. So, these tools may be useful for visualizing the data. So, for example, here we will understand for this applicant analysis like you are working in a organization. For example, you are working in one of the organization and your manager has asked to do the preparation for the interview, asked you to do the preparation for the interview.

what will happen you on a website you might be having applicants form in which certain information may be there like serial number, gender, department, city, status of interview whether the somebody is coming or not, source of application. Work experience and education, other than that, are some other important variables also that you can add. So, what I am trying to make you understand is, before using any data visualization tool, you need to identify all those variables on which you would like to work, like what is important for you. In an applicant analysis, if you want to know how many males and females have applied and have applied for the various job positions in your department, this gender data may be important for your diversity planning. So, if you want to know that how many people have applied, If you believe for a particular position, more females should be applied, but your data reveal that the males have replied.

So, you need to make a change in your employer branding strategy. So, male and female data may be important for your applicants analysis. In the same way department for which department people have applied more. Right, from which city they are, they are coming from metro cities, they are coming from two tier cities, status of interview, right. So, based on your screening criteria, you have selected some of the participants for the interview.

Whether they are ready to appear in an interview or not, so that, that, so that, that is status that you can confirm the source of the application, from where, by which source they have applied for this position, like from naukri.com, Indeed.com, LinkedIn, referral, external sources or internal sources, so from where they got the information to apply for this job. How much work experience they have, right? What is their education level? Work experience like 2 year, 3 year, 14 year, 15 year, right? And education, what is their level, undergraduate, postgraduate and PhD. So, that is how I will ask you, this is a just one sample of the variable for the applicant analysis.

I am not saying that only these variables are important. I am giving you just one example. I will be using one dummy data in order to make you understand how to solve your day-to-day problems or how to answer your day to day answer questions, answer through this data. So that is what I am trying to make you understand here, day to day answer, right, related to your work, how you will answer. So that is what I will make you understand.

So before that what I am trying to make you understand, what I am suggesting you, make a detailed list of all variables about which you have to make a decision. So if you are doing the applicants analysis, then related to applicant, application analysis, application you make a list. If you are doing the recruitment activity analysis, then you collect the all variable related to the recruitment. If you are doing the attrition analysis, then you would collect the all data related to the attrition. So, if you are having any

software which gives you this data in your organization.

You can extract the data from there. If you do not have then you have to collect the data from multiple sources in your organization and then you have to prepare a one excel in order to use these all tools for the data visualization. So, I hope you understand before the data visualization, the first step is to develop all the variables and collect the data related to them. this data may come from different sources because performance-related data may be available in the HR department, and cost-related data may be available in the finance department. Right, customer satisfaction related data may be available in marketing department.

So, sometimes, it may be possible you need to collect data from different departments also within the organization. So, for that also this list of variable is important. So, first you make a list of variable about which you need to make a decision. and then collect the data from different sources within the organization and then make a excel sheet before making the visualization. So, it may be possible before the interview your manager wants to know how many male and female have applied.

You may have the data for this; these many male and this many female candidate have applied, right? How many of them are coming for the interview? From which city they are coming? Do they have PG? It means postgraduate program, do they have, have they completed postgraduate program, What is their average work experience? So, if you will do this analysis, right, so your manager may be interested in these questions. So, in order to give a better answer to your manager, you may be asked to prepare a report in the word format. So, after visualizing the data, you can copy and paste into the word format and then you can prepare a report. That could be one of the thing that can be done. Second thing, if live dashboard, your organization is very big organization, you have lot of money, so you can use to Power BI in order to display this live dashboard for which you need to develop some formulas, some formats in advance and then you have to link This Power BI with this live thing can then be displayed live.

So, these questions answer anyone can assess the organization because it is live data is coming, and automatically, other data is refreshing and showing on a live dashboard that you might have seen on so many websites also. So, in a excel what we will be learning? In excel we will be learning how to use this pivot table, pivot chart and recommended tables. So, that is what we were learning in the excel in the next session right. So, in a excel there are many things that can be discussed with the respect in order to understand or in order to do this analytical analysis in the excel. But we will not go in that detail.

We will discuss only how to make this pivot table, how to make this pivot chart and how

to get this recommended table so that we can understand this pivot table how it is useful for the for this HR related function and pivot chart also how it is useful for the HR related function and recommended without doing anything how do we get the recommendation from this tool. So that is what we will learn in the in the next session. So before making the pivot table I already said what you need to focus you need to make a list of all variables. If you are able to make a list of these all variables and then you will understand these all things better. So One more thing that I would like to add here before going to this excel thing, the after, so first step that I said you need to collect the data and so what data you need to correct, so for that you need to make a list of variables about which you need to make a decision.

So, you have learnt till now as I said you need to prepare first step list of all variables, right. So now question comes list of all variables related to what, right. So if you remember earlier also I said in this session only list of variable related to recruitment, right, recruitment, selection, performance, compensation, learning, development, right. So simple thing that I want to make you understand here whatever problem that you are dealing with, right, whether it is attrition analysis, whether it is applicants analysis, whether it is retention analysis, so whatever analysis that you are doing it, so first you need to make a list of all those variables by which right, you can prepare a list. So, after that what you need to do, how you are going to visualize the data that I said in a second step you are going to use either bar graph, pie chart, So, any of the tool that you are going to use it, any of the tool that you are going to use it.

So, before these softwares will not teach you these all tools like when to make this bar graph, when to make this pie chart, when to make this table, what is x axis, what is y axis. So, these all things these software will not teach you. Automatically all options will be available. On this software where you can create pie chart, a bar graph, table, these all options are available. So, before creating these all option, before using these all options, what you need to do? You need to understand which type, what are the types of table, how we can create this table, what is a pie chart, what is bar graph.

So, these and histogram also So, these all things that you need to understand in advance. If you are able to understand these all things in advance and then third step I would suggest you have prepared a list of variables. In third step what you can do, in third step you can make a pie chart, bar graph, table in your mind as well as on paper. On paper you can make these all pie chart bar graph because at the initial stage you may face difficulty to visualize which for which variable which type of visualization is good. at the initial phase, when you are a beginner, just you are learning phase, starting your career as a data analytical person.

So, you may face difficulty to visualize which type of visualization will be good for this type of variable. So, that difficulty may be there. So in order to deal with this difficulty what you can do, you can use pen and paper and then you can, you have a list of variables so that I had already shown in our previous slide, right. So you can go to these variables like and then think about city. And then think for city, table will be good.

If table is good, then what you will write on, what you will give the title of the table, what will be the title of table, then what you will write on x, what you will write on y axis, what will be the value that you want to put, you want to put in the form of percentage, you want to put it in the form of ratio, you want to put in the form of just number, right. So, these all things if you will decide in advance, right and then in a tool just you have to perform the tool. But if you both things you will do the simultaneously on a software you are thinking what you will write on x axis, what you will write on y axis, right, then you may get confused if you are a beginner, right. So, my suggestion is first you may use the pen and paper and analyze each variable like for gender which type of visualization is good, for city for which type of visualization is good, for average work experience which type of visualization is good. Now, question comes how you will decide which type of visualization is good.

So, just check every day what type of questions your manager is asking, right, just check this what type of questions that your manager is asking. So, if your manager is asking simple questions, how many people are going to appear in an Simple thing that he is asking one number. So, that number that you can give in the form of pie chart through some, you can see in the form of pie chart that you can give. So, some based according to the city that you can divide, 40 percent people are coming from this city, 20 percent people are coming from this city.

So, that is what you can do. Total people are, how many are male, how many are female, that is what you can do. If you have a education level, so based on that you can divide. So, that is how you can think in advance and you can do with a pen on paper and then in a fourth step you can go to the software. You can go to the software you have already visualized in your mind, and you have already done this exercise variable-wise, you will not take much time to use this software effectively or this Excel sheet effectively for the data visualization. So we will take the example of this excel sheet right, how you can visualize the data through excel sheet and how you can use this pivot table, how you can use this pivot chart and how you can use this recommended pivot table, right.

So that is what we will learn in the next session and we will talk about these table, pivot chart and recommended pivot tables for the data visualization. So, in this 30 minute, you might have learned what are the thing, necessary things that you need to do before using

the data visualization software. Because going to the software and then getting confused, it is better to do the preparation before going to the software. So, in this week we will learn about Tableau, we will learn about Excel and we will learn about Power BI. So, first tool that for the data visualization that we are going to use that is the Excel.

So, through the Excel we will visualize the data and I will show you how you can give the better answer for your manager query, right. So, queries there is a few some of the sample question that I already said. Which may be important for the interview preparation that you need to do inside the organization, like how many people are coming. That number itself can give you the so many insight on which you can make so many meaningful decisions, right. Second, how many males are coming? How many females are coming? What is the mode of travel? What is the expected salary that they are having? So, if you have this much data, you can analyze, and then you can make meaningful insights for your organization, right? So, that is what we will learn in the next session.

So, in this session you would have learned how to prepare yourself for the data visualization tools, right. So, that is what we, I wanted to make you understand. So, four steps I can suggest you. First step to make a list, second step to analyze which type of visualization tool that you are going to use and then learn about that particular tool and fourth step to use the data visualization tool.

So, these are the four steps that I suggest. Thank you.