HR Analytics

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Lecture 42: Data Visualization of Training & Development

So, Dear participants, before this session, you must have learned the training and development analytics concepts, right. So, in this session, what we will do, we will try to visualize all those variables that we have discussed in the analytics one, training and development analytics, eight sessions we have learned few concepts. So, we will try to visualize by in visualization that we will show in previous session in addition to this matrics you must have learned how to make how to visualize the data through tableau power bi and excel. All three visualizations demo i have already given online right so that is already recorded if you have not gone through you can go through and understand and then these variables how you can visualise So that is what we will learn in this today's session. So how you can visualize the data related to training and development. That is what few graphs that is what we will discuss that you can prepare by using the Tableau, Power BI and Excel.

And if you want to use any other data visualization tool that is what you can use. If you can prepare the data visualization through R and some other software also. So, let us start. So, this is the content training and development visualization.

So, few data related to the training and development how you can visualize. So, let us discuss if you remember we had discussed the training effectiveness, training effectiveness that is what we had discussed one of the concept. So, how you can visualize? So, here you can see the scores which are mentioned here. So, reaction score that is what you can understand as employee satisfaction for the training, right. Here you can see the gender, trainee name, training detail any whether it was in house training or external training details.

So, this coding that you can see may be the type of training it is there. So, score that you can see reaction is the satisfaction. So, on 1 to 5 scale right. So, what is the satisfaction level of various employees here. So, for Rohan that is what you can see 5 and for Raman is a 1 right.

So, that is what you can see and then you can calculate. The reaction and then you can check how many, what is the percentage of people who are, who have given the score

above average and below average, right. Learning score that is what you can see. If you remember we had discussed the four parameters in order to evaluate the training effectiveness, right. Employee reaction, learning score, behaviour, and as well as the business outcome.

So here you can see learning scores are there, behaviour scores are there and this KPI is a business outcome. And then you can check this overall score before and after. So before what was the, so here you will see the all scores are calculated before and after. So before you can calculate what is the score and overall score after. And if you want to use the statistics, then you can apply this t-test, and then you can check whether it is significant or not, right? Without a t-test, just by observing the data also, you can see whether that significant difference is there or not.

So that is how you can present the training effectiveness data. Now you can see the next dashboard related to the training which is prepared by this tableau. So, here you can see let us start one by one. So, gender wise that you can see here 28 percent are the female, 62 percent are male, and 10 percent are others right. Second graph that we can see here total percentage of count of training right.

So, whether these trainings were organized by internal or external. So, here we can see that in this organization 35 percent trainings are organized by the inter external faculty and 65 percent trainings are organized by the external faculty. So this bar graph is prepared in this case, right. Now you can see the performance. If you want to check the performance of external faculty and internal faculty right.

So, if you want to check the performance of internal or external. So, here you can see the average change in the KPI, whoever has got this training. So, what is the average change? So, if you remember I had discussed the two parameter, one is the performance rating and percentage of goal achievement right. So, the percentage of goal achievement is nothing but this average change in the KPI. So, now you can see if external people are organizing then you can see this 2 average change in a KPI is 2 right.

In the case of in house it is very low. So, here in all cases that you can see right. So, only in the case of TPM overview it is negative otherwise in other cases external faculty have performed well and this in the case of 8D in house faculty has performed well where KPI right. So, that is what you can see next that through this bar graph that you can the line graph that is you can see the association in average change in behaviour with KPI. So, that change in behaviour, so KPI that is what you can see, what is the KPI, positive change is there in the KPI or negative is there and change in behaviour, right.

So, change in behaviour that you have to calculate through the index, right. So, index though attitude change, let us say that attitude change index that is what you have used. So, towards the institute, towards the job, towards the organization, right and then average change in the KPI and then you can plot this graph and then you can see what kind of relationship is there, whether it is a positive relationship is there, negative relationship is there, right. So, behaviour Change trainee-wise, right here, you can see the name and then behaviour change is what you can see, and the average change in behaviour is what you can see, whether it is a positive change or negative change trainee-wise. Participation of count of training that is what you can see here, there is a count of training and these persons have received how many trainings in a year or in a particular month, month wise that you can present, year wise that is what you can present performance change training wise.

. So KPI change, average change in a KPI and then you can see the training wise. So whoever is taken the this training, so what is the change in their KPI, so performance change. So that indicates the performances, so percentage of goal achievement and average change in the KPI that is what you can see here. So that is how you can prepare the bundle full dashboard. For related after the training for your participants, you can present in front of the management as well as you can use for the report preparation purpose Also now you can see that next so here you can see the skill gap analysis right so job role-wise skill-gap analysis so if you remember for the skill-gap analysis what I had discussed this benchmark.

Existing skills of so to do a job, you might have prepared your HR department with a list of the skill and their level right and existing level of skills in various departments is what you can present here. So, here you can see the what is the average cutoff in term of the percentage, in term of the percentage what is the average cutoff or number of skills that is required to perform a job. So, let us assume for each profile 8 benchmark skills are there. So, out of 8 how many skills are present in the each. So, average number of skills are present in all employees who are working in the various departments.

So, that is the analysis that you can do it here, right and then you can understand how many departments are lacking in term of the skills and how many are not. So, here you can see job role versus average post training performance score. So here average scores that I am talking about so like HR assistant after the training what is their average score. So out of 100 that is what you can calculate or 1 to 5 scale that is what you can calculate 1 to 7 scale you can calculate. And then you can calculate the average score after the training.

So, in for which department employee it has gone up. So, in this case if you will see

average score after the training for the marketing manager is the highest one and lowest one for the HR assistant. So that that is the before as well as if you want to increase one more here so that you can add before and after so both bars that you can put it and then you can compare before and after. Also if in order to make more appropriate this graph is right next this department wise training cost right so for which department how much cost is being incur for conducting a training. So, department wise that cost that you can see.

So, here you can see which department is having the highest cost, this IT department. In the case of IT department, this organization is investing the highest amount and lowest for the HR, right, average that is what you can say in the case of IT department. So, in the case of marketing that you can see that is the average right highest for the IT and high lowest for the HR. So, here you can see the priority of training for which department is highest and for which department is lowest right. And duration also that you can see for how many days employees are getting the training in which department.

So, now you can say hours in terms of the hours it is mentioned, right? If you want, you can mention in terms of the days and even in terms of the months also, right? For one particular year, one particular quarter, one particular within 6 months. So, how you want to present it, it is up to you, but in term of months, in term of days, in term of hours, you can put it. So, if you are putting in term of hours, then you can calculate the with this. So, here you can see, you can calculate the per hour cost also, right. So, now for operations, 2 is there and what is the amount? So, operations that you can say 15, average cost 15,434.

So, once you will divide by 10, then you will understand the average cost per hour, right. So, that is by making such kind of graphs that you can calculate, do some calculation also and if you want to put it in term of the per hour cost, you can make the graph per hour cost, by the per hour cost also, right. So, here you can see the total cost department wise and total cost duration of the training department wise. Next thing that you can see average performance rating after the training. So that is what I was talking about how this average performance rating has increased.

So now you can see in which department it has highest performance rating is there. In the case of IT department it is the highest one. If you remember in the previous slide we discussed the highest number of training also given to the IT people. As far as my concern, should I check it? No, highest number of hour is given to operations.

In the case of IT it is 10.07 hours, right. But amount that is spent in the case of IT that is the highest, right. So, amount that you can see and average performance rating also that

also you can see that is there is highest and lowest that is what you can see in two department that is the HR and finance right. After the training also so in order to make it more appropriate you can see the different type of colors also here colors also there so through the color green red and then you can write do the coding what red stands for what is green stands for right. What yellow stands for right and then you can do this coding also that is what you can present here and then you can make a wonderful presentation by making such kind of graph.

So, I again I am saying this such kind of graph that you can make it by using tableau bar graph or Tableau, Power BI and Excel. And in previous session I have already covered how to make these graphs, how to do this analysis in Power BI, Tableau and in Excel. So please go through those sessions and understand. Here I am visualising certain data, which related to which that concept that I have already discussed in earlier session in training and development analytics. Now I am presenting you certain visualization of those data so that you can understand how to visualize the data by using these softwares.

So now let us understand next this classroom that is what you can see classroom for average hours that you can see how much training is given right in classroom online workshop mode. Right here, you can see the job position and the value that is there, so that is how you can present the department in the classrooms and offline workshops. Now, you can see the activity right right. So, here you can see activities, preventive, maintenance, fuel, widgets, complain, management system.

So, data before training and graph. So, here you can see this is the complaint management. So, complaint 100 that we were receiving right. So, number non-attended call and frauds reported. So, that is what you can see how many. So, this that is how you use quantitative data before the training and now you can compare the after the training.

So, if you remember one of the parameter was to evaluate the training effectiveness was business outcome. So, these are the business outcomes that are what you can see if the number of complaints has reduced. That clearly indicates that because of the training, this number of complaints has reduced. So, that is how you can present this count in terms of the count, but this graph I would not suggest you make this because here what this 70 stands for, what this 500 is, what is this 100 is, and what is this 400 is. So in this session you will see some of the best graph and some of the worst graph.

So this is the graph that I put under the worst category. So what is expected, explain here the colour what these colours indicates, whether it is a 40 and what is this 40, 40 is a, so right, so count that is written is a count, PM count is written. So, some number is there, but explain that what this PM stands for, right, PM does not stands for prime minister,

right, it may be something else, right. So, here you have to clearly you have to write what this PM stands for, what is these numbers are and then what these colours are. So, when you are making the graph, because understand one particular thing, when you are selecting any graph you will put a value, you will get a graph, right.

But these graph, graphs or tables will not give you any meaning until or unless you will do the right levelling for these graphs and right levelling and you will put those numbers and levels clearly, then only you will be able to interpret these all graphs clearly, right. So, I hope you can understand what I am trying to make you understand. I am saying whenever you are making the graph, be very much clear, right, what this number is. If it is not clear to you, then how you will be able to make understand to someone else. So, make it clear what this 40 stands for, what this PM is, this colour indicates this, So, explain these all things.

Now, you can see this count pm, preventive maintenance that is what you can see how many preventive maintenance is there, fuel widgets are there, complaints are there, site visit cost is there. So, that cost that you have to explain what this 5. 50 is, right and this number is the cost and complain both are numbers. So, how come this cost is coming here, right. So, you need to be very very careful when you are saying this site visit cost is there, complain management system, complain is there.

So, how these things are related, same thing that you can see here, complain, site visit cost fuel, failing sites, preventive maintenance. This is a cost so it is in rupees, it is in dollar, it is in lakhs what is the number is so that is what you have to clearly write in order to make these graphs understandable to the others right. So, that is how you can make some of the tables and then you can say how why what percentage numbers here you can see these charts also three lines are there and how these charts are explaining right. So, that is what you can see this chart title is missing. So, sometime it happens when you are in hurry, you have not selected the proper thing.

So, sometime you will miss this chart title, what this colour indicates, what these numbers are. So, here the series 1, series 2 and series 3 is written. So, what the series 1 is, what the series 2 is, what series 3 is. So, when you are using the software please clearly mention what this series 1 stands for, what this series 2 stands for, what this series 3 stands for, mention clearly what these numbers are, whether it is rupees, whether it is dollar, whether it is rank. So, there is no, if you will see there is no title this side, what this x axis, what is this y axis, right, this percentage is there, so what this percentage is indicating.

There is no clarity about it. So, some of the examples that you will see that good graphs

are there, some of the worst graphs are there. Why I am discussing this thing? So, that you can understand before making a graph you must have an idea what this x axis is all about, what this y axis is all about. Otherwise what will happen when you will select, you will use these visualization tool, you will put a data, you will get a graph. Because you are giving input, you will get output. But how well that output is would be that you have to define in advance, then only you will get a good output.

So, here in this chart that you can see at least one thing is clear, this series. These are the dates. On this particular date, what is the, but still there is no clarity about this number, what these numbers are talking about and chart title, still it is missing. Now, let us go to the next, like next visualization. So, this visualization that you can prepare through Power BI, even through the same type dashboard that you can prepare through Tableau also, right.

So, let us understand this dashboard what it indicating. So, 419 total new joinies in ABC Private Limited in third quarter have joined. Total number of joinies in Lucknow, Patna and Rachi in quarter number 3 and new joinies, joiner percentage is 18.

62. So, 18.62. Now, let us see in 63.96 percentage have joined in collections, 132, 31.15 percent have received joined in sales and then 11, 2.63 have joined in HO, headquarter support, RCU and operations. Similarly, that is what you can see here, and total new joiners in Lucknow, Patna and Ranchi again you can see. So, previous chart that we have seen and this presentation we have seen.

So, what is the difference that you see? In both presentations you will see a difference this presentation is clear because everything is defined in earlier one it was not clear. So, when you are making any visualization after making the visualization of the data read it and if you are not able to understand then go back again make it and then again read it. If you are able to understand then somebody else also will be able to understand. So, my suggestion is whenever you are making this graphs and presentations understand whatever visualization is there give a title give a color coding If you are using various types of color then give a color coding also which color stands for what if you are putting the number then what this number indicates if you are putting percentage then what this percentage indicates So this clearly should be there. So in this the title of these graphs you can see it is clearly mentioned.

So again you can go to some more graphs that is what we can see here. So let us start one by one understanding this graph. So new joiners that you can see here department wise, by department, in which department, how many people.. So, highest number of people have joined in the CV depth maintenance, right.

Then by function wise that you can see highest number of people have joined in collection and in by month that you can see. So, highest number of people have joined in the month of November, right. New joiners in headquarters. So, highest number that you can see Lucknow RO and now in last graph that you can see month wise.

So, for which month? Right in which headquarter have joined. So, questions will be asked to you in the month of November in which RO highest number of employee have joined. So, now you will be able to answer 15 people joined in Patna RO, right. So, this kind of graphical presentation will help you to answer such kind of questions, right only in one. So, thus again I am saying this kind of visualization you can prepare by using the both the Tableau as well as Power BI right. So, Power BI and Tableau I have already recorded the session you can go through and you can understand how you can prepare.

So, I am explaining these graphs only just because of that I have explained some of the concept and discussion related to such kind of graphs in the Analytics sessions. And now you can see how that tables that I have explained or the data I have explained how you can visualize that. So that is why I am explaining these all graphs here, right. Now you can see the training status, right.

How many people have completed their training, right. So here you can see in quarter 3 how many people have completed. So 67 that you can see in the month wise that you can see in which month October, November, December how many people have completed. And which type of training that they have done on job training, virtual training, classroom training, total training sessions done for refreshing, induction, new induction. And then function wise so you can see here maximum trainings are done for the sales function, number of participants month wise so in which month. You can see the department that is the collection and here sales and which month highest, highest number of people completed the training in the month of December.

The same thing that you can see for this quarter 3 also for which department highest number of people have done the training in the month of October for the sales, highest number of people have done the training. So, that is how you can visualize this training related data. The same thing that you can see another the training hours for how many training sessions not hours there is how many training sessions done and this is training hours number of total hours of training is done for which month highest number of done is. So, the again the department wise you can see visualization here right and total number of employee trained during the dealership budget that is what you can see, on-role employee trained during the dealership, off-role trained, right. So, here you can see the other bar graph numbers that is what you can see here.

So, thank you. I hope you would have learned in this session different types of graph that you can use in order to visualize the training and development data. Thank you.