Numbers Game: What Every HR Professional Needs To Know

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Gone are the days when the top skills HR professionals needed to have were Empathetic skills, Budgeting skills, Training and developmental Skills, Decision-making skills, Organizational skills or Communication skills. An article on 16 HR trends you need to know in 2020 according to experts states that one of the growing skills needed to know is Data-Driven Strategies. These strategies involve the use of data to make decisions. This is where the numbers come in.

When we have data, we have to obtain insights from it that will enable decision making. We need to have evidence of why we are saying, for example, there is a relationship between number of employees and production output. Assuming this without enough evidence will be problematic when making decisions. We might end up increasing number of employees with the hope of increasing productivity, whilst there is no relationship between productivity and number of employees.

HR professionals have always kept records of employee data. Traditionally, this was used for reporting through describing or summarizing what was recorded. No analysis was performed. Recently, companies have been pushing for a data driven approach to their processes and this has resulted in the need for HR professionals to adopt the new methods. But, moving from analytics to reporting requires certain knowledge about numbers, mainly, how to obtain the numbers, how to interpret them and how to represent them.

How to obtain the numbers and interpret them

The numbers are obtained by turning data into numeric insights. The basic numeric quantities that we can obtain are

- Total number of employees
- Number of leave days employees took
- Total cost of labour for the company
- Number of employees who left the company
- Total number of products produced in a given time period and so on

These numbers can be directly observed from the data recorded. But in order to obtain insights, there is need to analyse relationships between variables in the data. We might want to investigate the relationship between employee salaries and their total production output. This can lead us to understanding if salaries affect productivity. Now, just plotting graphs and looking at their shapes is not enough to make a conclusion about whether there is a relationship or not. There is need to use statistical significance tests to make such conclusions.

The first test is the correlation test. This is a measure of how closely two variables are related. The closer

the correlation is to 1, the more closely associated two variables are. If the correlation is closer to 0, then the variables are not closely associated.

The correlation test can be found in Microsoft Excel, which is good since Excel is the most common data processing tool used by HR professionals. Another test is linear regression. This involves fitting a line onto the data and determining if the line best fits the data. When done using Excel, the output of this test gives important results, which are:

- **P-value**

This value shows the probability that the relationship between the variables, modelled by the line of best fit that was created (which we call the model), occurred by random chance. So, the lower the p-value, the higher the significance of the relationship between variables. The mostly used upper bound of the p-value is 0.05. This means that if the value is less or equal to 0.05, we can say that there is a relationship between the variables.

- **Lower Bound and Upper Bound**

The range of these values should be from negative to positive values for the relationship to be significant. If the values are either both negative or both positive, this reduces the statistical significance of the relationship between variables.

- **Significance**

When done in Excel, the result also shows the result of the Anova test. It shows a tabulated output which includes a value named significance. It is the same as the p-value and is interpreted the same way.

In Microsoft Excel, these tests are obtained on the **Data** tab, on selecting the **Data Analysis** button. If the Data Analysis button is not showing, go to File -> Options -> Add-ins -> Go -> Analysis ToolPak. Check or tick the box on Analysis ToolPak and select OK. The button will now show after this.

How to report the numbers

Reporting numbers is a tricky task. One way is to use graphs and other visualizations such that the audience quickly understands what is being reported. Especially when it comes to relationships, extra care has to be placed on creating the proper graphics to tell the story associated with the relationship. This previous article on Data Visualization of HR Data explains how to visualize data. For reporting purposes, a dashboard is always the go-to as it shows a lot of information neatly on one page. It is even better when it is interactive! Interactive dashboards can be created using Microsoft Excel, Microsoft Power BI or other tools.

It is important for HR professionals to know their numbers and relationships between the variables in their recorded data. The basic concepts explained here do not require any mathematical background since they are very simple and can be applied by anyone.

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