



RESEARCH ARTICLE

THE USE OF DATA SCIENCE IN HIRING FUNCTIONS OR TRANSITION OF POSITIONS BY COMPANIES

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Abstract

The use of Data Science in hiring employees or transitioning positions allows to perform a selection of employees with a profile more aligned and appropriate to the company's objectives. Selecting skills and factors that would not be considered by the traditional selection, but that really make a difference in the company, in addition, increases the speed in analysis and selection, because the curricula are no longer analyzed one by one. This article showed that this tool used by specialized professionals that dominates emerging technologies, such as People Analytics, which is exactly to use Data Science as a tool for professional profiles within the company itself, thus speeding up decision making, and not wasting time or money with exhaustive training and frustration of skills not developed by employees during their hiring.

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Introduction:-

Generally speaking, Data Science or data science in Portuguese is not a single domain is more like a multi-concepts combination that focus on data analysis and the search for the best solutions based on them (FENSHAM, 2016). Initially, these tasks were performed by experts in mathematics or statistics, but data experts began to use Machine Learning and artificial intelligence, creating this new approach to data analysis that we know. The use of Data Science in human resource management has become known as People Analytics. With extensive possibilities and still little explored, this technology can improve decision making, identify talent and generate productivity gains.

Today there is an increasing number of losses of candidates given due to lack of internal communication, and data science has found a way to minimize this problem. The idea is to select the curricula with the requirements proposed to the position and create ways to identify failures in internal communication and preparing a board aimed at meeting the needs of employees. So, do not need to worry about that incredible talent that will leave the organization when receiving a job proposal in another company, the data Science will do all the tracking of employees who fit the respective vacancies, if the candidate is within the parameters required by the position, already automatically leaves as a direct candidate for the vacancy.

The objective of data Science in this article is to improve the processes of hiring and transition of position, using this tool in the automation of selection processes and internal tracking of candidates, in order to change positions within the company.

Theoretical Referential

Advanced data analytics can dramatically improve the way companies or agencies identify, attract, develop and retain talent (AIKENHEAD, 2013). However, however, many companies still make this kind of decision based on instinct and intuition. The use of data science in employee hiring (People Analytics) helps managers use the full power of data, increasing accuracy. In this topic we will emphasize the basis required for operation using Data Science.

Data Science

Meireles (2011, p. 2), Data Science is the disciplined study of the data and information inherent to the business and all the visions that can surround a given subject. It is a science that studies information, its process of capture, transformation, generation and, later, data analysis.

Data science involves several disciplines:

1. Computation;
2. Statistics;
3. Mathematics;
4. Business Knowledge.

People Analytics

People Analytics, is a methodology used in the personal department to identify, recruit, develop and retain the right people for the demands of the areas and for the rapid implementation of the organization's strategy (TIERNEY, 2016). The steps in this process are: collecting, organizing, and diagnosing data through software that crosses this information, such as Big Data.

This methodology has as its main characteristic to understand the behavior of employees, to know better their skills and skills to use strategically within the company (ZHU; SONG, 2016). Thus, it is possible to measure their performance and develop new ways to engage and increase team satisfaction.

Machine Learning

According to Matos (2018) Machine Learning is a set of rules and procedures, which allows computers to act and make decisions based on data rather than being programmed to perform a particular task. Pro-grams of Machine Learning are also designed to learn and improve over time when exposed to new data. Machine learning is a subfield of artificial intelligence (AI). The goal of machine learning is usually to understand the structure of data and adapt this data to models that can be understood and used by people (TAGLIAFERRI, 2017).

Data Science

Generally, data science is the application of quantitative and qualitative methods to solve relevant problems and pre-see results. One of today's main revelations, with the vast and growing amount of data, is that knowledge and analysis of data cannot go hand in hand. A North American research called Data Science Predictive Analytics, translated into our language as Predictive Analysis of Data Science, shows that students have difficulty understanding analytical thinking in data analysis (DUMBILL; LIDDY; MUELLER, 2013). According to Dumbill, Liddy and Mueller (2013) it is easier to teach programming language to a computer science student than to teach the mastery of knowledge for quantitative and qualitative analysis of data.

Materials And Methods:-

In methodological terms, this article is classified as quantitative quali, whose approach to the problem was based on a qualitative perspective. The objectives of the article were analyzed from a descriptive perspective, whose technical procedures involved bibliographic survey, interviews, mental analysis such as books, articles, master's dissertations and triangulation of theoretical information with empirical data. Therefore, these considerations make it possible to affirm that the apre- sitting research was developed by a case study strategy (YIN, 2015).

The position adopted in relation to the qualitative pesqui-sas aspect is similar to that proposed by Bohnsack (2015,p. 65), for which the procedures and models used in qualitative research are made based on the empirical recomposition of research practices. This approach aims to disseminate the conception that qualiquantitative research patterns can be developed from the analysis of common patterns of communication and, consequently, to reconstruct the criteria of validity and reliability in the research.

Results:-

A company can introduce technology within its li- nhas, that is, the company brings innovation to its own processes. This can occur passively when a technology is applied by most organizations and its mode of use becomes "mandatory", especially so that companies do not lose competitiveness in the market or become obsolete and get out of the consumer's view.

Therefore, HR, when data science is incorporated, the recruitment and choice of employees in the company is improved and an organizational improvement has been improved with the improvement of innovation and creativity. Not only hr, but in the various other sectors of the company, technology changes strongly how tasks will be performed and develop new strategies.

With the use of Data Science, data analysis is simplified through mathematical, statistical and computational techniques that transform a wide range of data into sim-ples observations so that decision making is easier and more assertive.

Figure 1:- Use of People Analytics.



Font: Mindsight Talent Analytics, (2021).

Creating a selection process for the operational level should be done with the same care as for leadership positions. The difference is that, as you are looking for a candidate with a specific role and who can start working immediately, the selection needs to be faster.

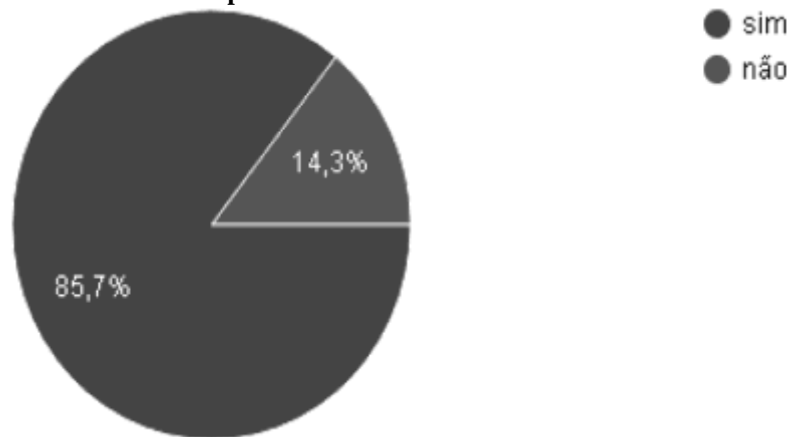
As mentioned in the previous paragraph, the counter-field usually has a very high turnover. In general, it incorporates all sectors of a company, and it is extremely disadvantageous for organization to put together a selection process that will last two months to hire someone, and that same person stay only a month in the function, resulting expenses for the company and loss of time. With the use of Data Science, applied as People Analytics, the search becomes faster and more efficient. Being an arrow straight to the target.

Study On The Use Of Data Science In Local Companies.

During the 14th to 25th of February and 14th to 25th March, we sent a small form to some companies in the most difficult branches of activity, to fill out a small form that would be used as a technical basis for our article, all companies responded to our form, contributing significantly to our study.

The number of companies that were part of our survey were 22 in total. Where they answered the following questions.

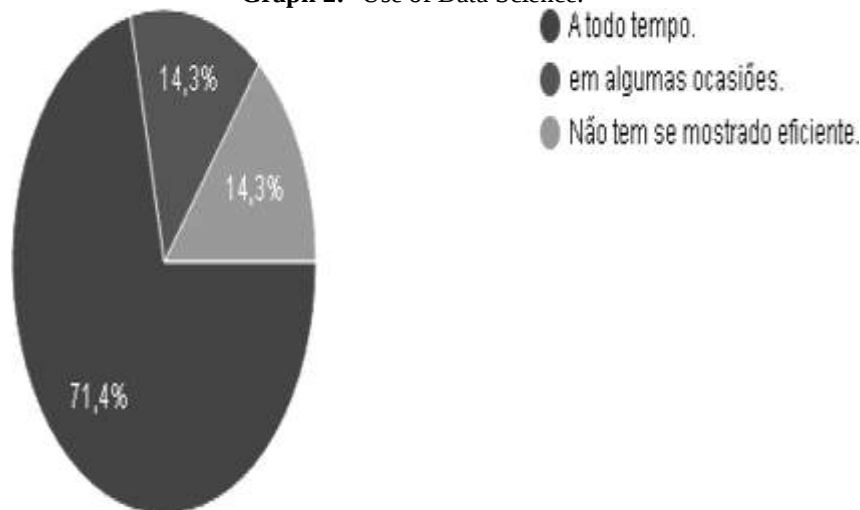
Graph 1:- Makes use of Data Science.



Source: Own authorship, (2022).

In this first graph it was observed that the number that makes use of the Data Science Tool is more than 80%, showing today that it is something indispensable for organizations that adopt as a ferramenta of selection and displacement of sector employees.

Graph 2:- Use of Data Science.

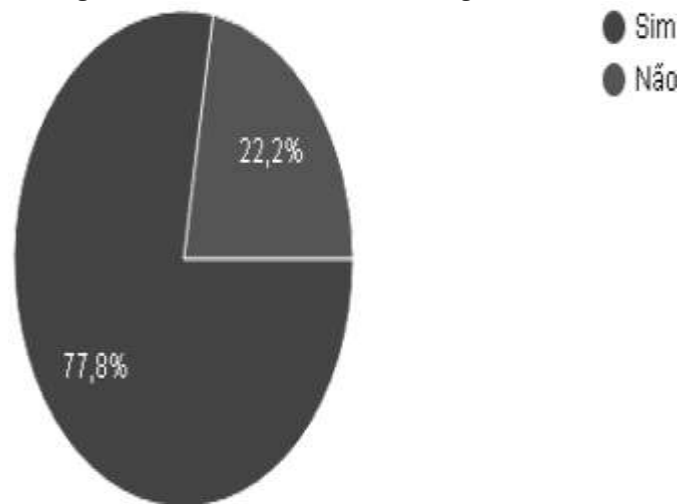


Source: Own authorship, (2022).

Analysis performed in graph 4 showed a balance between the items: use of a more prepared professional and savings in recruitment expenses. These items were already expected due to the analysis of the other graphs in our research.

The study showed the increasing importance of using Data Science in hiring employees and moving vertically. The study also shows a comfort among employees, because they know that they can prepare for higher positions than they occupy, because they will not be forgotten as they were in the past.

The use of Data Science has proven effective in the processo of hiring and promoting employees, since this employee is remembering and not, but forgotten within the company, leading to a state of internal contentment among the collaborators.

Figure 3:- Recommendations for using Data Science.

Source: Own Authorship, (2021).

Graph 3 shows that most companies 77.8% recommend the use of Data Science as a tool in the process of selection and vertical displacement of positions. The percentage was not higher or lower because some companies did not answer this question. The reason why this question was not answered we do not know.

Graph 4:- Gain Items in Data Science Adoption.

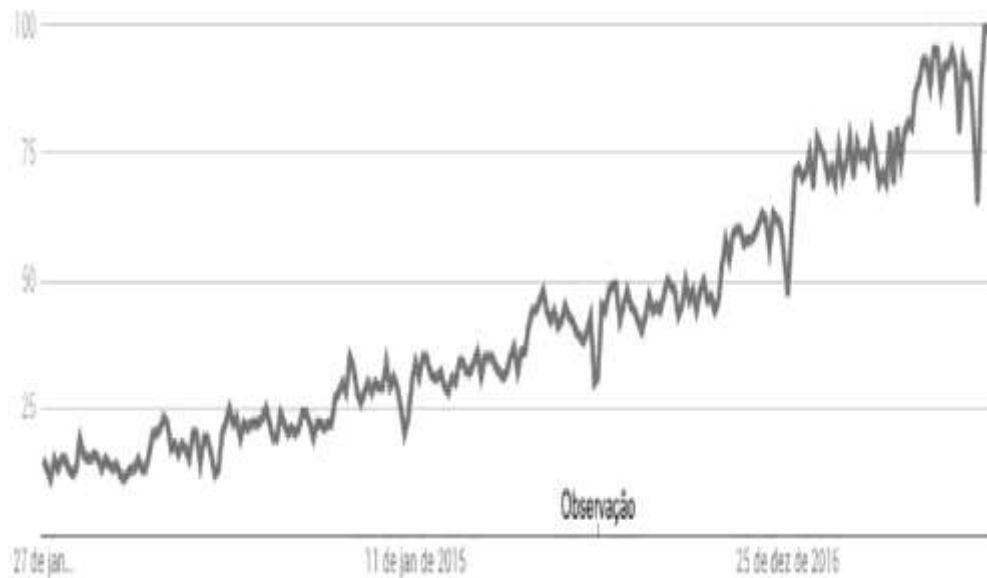
Source: Own authorship, (2022).

Results Discussion:-

An interesting point about Data Science is the possibility of analyzing errors in the hiring process or sector promotion. That is, any misunderstandings in the procedures can be detected and solved in an agile way by the systematization of corporate information.

The benefits described in the results of the article is the high number of companies in the adoption of Data Science by some sectors in our study more directly the sector of hiring and selection of people, HR. , providing more right strategic decisions is a positive point capable of being predicted.

After all, by having organized information and structure- will enable the adoption of strategies that are more accurate and relevant to the business. With the data systematized in a logical and accurate way, minimizes the possibility of resolutions based on achismos.

Figure 2:- Increased demand on Data Science.

Source: Google Trends on the term data Science, (2022).

Figure 2 shows a Google Trends chart with the volume of searches for the term "data science" from January 2013 to January 2021.

It is important to remember that data science, when used to its full potential, can become an intelligent autonomous system capable of changing the perspectives of companies, adding to them the exponential growth factor.

Final Considerations

The use of Data Science in the selection process helps to cross-reference and analyze a series of information between the characteristics of the data and the specifications of the vacancy in question. This helps identify who is most aligned with what the company is looking for. The logic is the same as the commercial use of data to get to know customers better. Here, however, the idea is to use the information to better understand the profile of each employee and how they can be motivated, increasing their productivity and improving their performance. Data Science can map behaviors and relationships that positively or negatively influence the performance of its professionals. With this it is possible to monitor the levels of engagements in real time, promote improvements, and gain competitive advantage over other companies not only in relation to recruitment or sector change of employee (promotion), but a better strategy against competitors because we know that time is money.

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