OMBA 5114

HUMAN CAPITAL MANAGEMENT

Topic 4: HUMAN CAPITAL DATA

Learning Outcome

By the end of this topic, students should be able to:

1. Summarize human capital data
2. Connect the fact of importance in data interpretation
3. Relate the types of data
4. Recognize the challenges in data collection
5. Recite the guide to overcome the challenges

4.0 Introduction

In order to find the right people to do the right things for the right jobs, developing effective selection approaches is very critical. In particular, Human Capital (HC) data is recognized as one of the most salient topics.

Data mining refers to the extraction of useful patterns or rules from a large database through an automatic or semi-automatic exploration and analysis of data (Berry & Linoff, 1997; Chen, Han, & Yu, 1996). With the help of data mining techniques, computers are no longer limited to passively storing or collecting data. They can also help the users to actively excerpt the key points from huge amounts of data, and make use of analysis or prediction. Data mining techniques have been widely applied in many fields and have exhibited outstanding results.

Data mining methodologies have been developed for exploration and analysis, by automatic or semi-automatic means, of large quantities of data to discover meaningful patterns and rules. Indeed, such data including personnel data can provide a rich resource for knowledge discovery and decision support. Therefore, data mining is discovery-driven not assumption-driven. Data mining involves various techniques including statistics, neural networks, decision tree, genetic algorithm, and visualization techniques that have been developed over the years. Data mining problems are generally categorized as association, clustering, classification, and prediction (Fayyad, Piatesky-Shapiro, & Smyth, 1996; Fu, 1997; Han & Kamber, 2001).

Association is the discovery of association rules showing attribute-value conditions that occur frequently together in a given dataset. Clustering is the process of dividing a dataset into several clusters in which the intraclass similarity is maximized while the inter-class similarity is minimized. Classification derives a function or model that identifies the categorical class of an

object based on its attributes. Prediction is a model that predicts a continuous value or future data trends.

HUMAN CAPITAL DATA

Meaningful information on human capital relies on meaningful data. Sometimes companies fail to focus on 'people are our most important asset' and begin to develop processes to effectively measure and report on the contribution of that asset is because of lack of data on human capital. The HR profession must shoulder at least some of the blame for this delay. Too many times we are led to believe that collecting data and developing measures on the contribution of people to the business is too hard, too costly or too time consuming. Or sometimes people management and development professionals have a wealth of data at their disposal. They have data from recruitment, training, performance management, payroll and workforce opinions. They have access to data from customers, financial indicators and operations. The challenge is not in finding the data; it is in interpreting what it means.

4.1. Importance of data interpretation

Data interpretation can be observed from causality, such as: example, managers might investigate whether bonus payments really do cause higher performance. There are three fundamental steps to proving causality:

i.   Establish that the cause and effect are present at the same time - for example that bonus payments are made and performance rises.

ii. Establish that the effect comes after the cause, ie that bonus payments are made before performance rises.

iii. Isolate other factors that may also cause performance to rise, eg training

4.2 Types of data

4.2.1. Business performance data

• The data that will provide information on business performance will vary from organization to organization.

• However, most organizations commonly collect data on sales or customer satisfaction.

- Other forms of data that might be used to assess business performance include productivity; incidences of cross-selling, brand recognition, customer loyalty, and in the public sector extent to which targets set by government are met.
- This data even in its raw state can tell organizations something about performance, particularly if it is tracked over time or if it is compared against industry benchmarks.
- However, if it is correlated against employee data, such as commitment or engagement data, it can be used to calculate projected financial returns on improvement in employee satisfaction, commitment or loyalty.

4.2.2. Corporate social responsibility (CSR) data

- CSR data is demanded more and more by customers who want higher ethical standards from business in the way in which organizations treat labour, particularly in the developing world, and their record on environmental issues.
- CSR data can be correlated against customer data to see if improving the organization's record is likely to result in increased sales.
- It can also be correlated against employee data to see if it increases the number of applicants for jobs (because they see the organizations as fair and just), levels of commitment and satisfaction or organizational loyalty.
- Corporate social responsibility is good for the world, and an effective way to get workers motivated and engaged.

4.2.3. Customer data

Customer data is an important source of business performance data and also an important source of data in its own right.

- By collecting data on customer opinions and perceptions organizations can become more informed about the kind of behaviours they need to encourage in their employees, the type of sales techniques that will give most value and the products and services that customers are likely to demand in the future.
- This information will need to be viewed in the light of financial data.
- Customers will obviously be delighted with more free services but this may not be a valid financial proposition.
- Raw customer data will give information about the customer base, but again will need to be correlated against other forms of data before the real information is gleaned.

- So does an increase in customer satisfaction results in an increase in sales? We may assume this is the case but it is not always going to be so. Customer data can also indicate desirable targets for employee behaviour or services processes.

4.2.4. Demographic data

- This includes data on age, length of service, ethnicity and male to female ratios.
- This data is used in a number of ways, such as
- ➢ Some use it to compare their workforce profile with the national labour market profile to identify any potential problems
- ➢ At the Ministry of Defence, for example, managers began to express concern that so many senior members of staff were over 45. However, when they compared their profile against the demographic profile nationally and future trends, they began to understand that they are likely to be increasingly dependent on older workers and so actively engage in both recruiting and developing older workers.
- ➢ Other organizations interviewed use this data to get a better understanding of how they might address their 'hard to fill' vacancies and to access information on the external labour market to see who else is fishing in the same labour pool and whether there are enough people with the profile they are looking for to fill the gaps.
- ➢ This can then enable them to decide whether they need to revise their person specifications or look at alternative labour markets to fill their vacancies.
- ➢ However, while recognizing that this basic data is needed to provide a profile of the workforce and as a benchmark of diversity, some of those interviewed questioned the use of this form of data for HCM and whether it really added value to human capital evaluation.
- ➢ Certainly, in its raw state the data is open to misinterpretation.

4.2.5. Development data

- The competencies and skills of the workforce are often presented as a basic component of human capital and yet not everyone interviewed collected data on training and development.

- However, most did, and the kinds of data collected included the number of training events held, training days per employee, and registered users of online learning programmes, etc.

- Some HR manager believe that their primary concern is capability, '. . . do people have the skills and competence to do the job and if so how can we prove it?' Others also said that they collect development data to ensure that people are fit for the job.

- However, it was also said that development data is linked to attracting and retaining talent.

- A key element of training data for many was about assessing the gaps and identifying the training needs of individuals to be moved into key positions. In this way development data was also linked to succession planning and career management.

- Other organizations use development data to provide information on skills used and future skills requirements and skills gaps.

- However, the key for most of the people interviewed was about measuring the effect of training on future performance.

- This is difficult but not impossible and emphasizes the close link between development and performance management.

- A number of factors will need to be considered when attempting to correlate data, including:

➢ the extent to which individuals have the opportunity to apply what they have learnt in their current jobs;

➢ whether training is improving their capability in their current job or preparing them for a future role;

➢ the criteria against which performance is assessed and the extent to which individuals can influence these criteria.

4.2.6. Diversity data

- Some organizations are required to collect diversity data, and this is considered good practice in order to avoid accusations of discrimination.

- Most of the organizations interviewed collected diversity data under the umbrella of demographic data, collecting information on age, sex, race and disability.

- But some felt it was a more major issue. For example, Standard Chartered Bank acquires data on equality of access to development opportunities. There is some evidence that reflecting the diversity of the customer base in the workforce can enhance

business performance and diversity data could be correlated against customer data and business performance data to test this in practice.

4.2.7. Employee opinion data

- Employee opinion data is the most common way that organizations assess levels of satisfaction, engagement, commitment and loyalty.

- The people and performance model developed by Purcell and his team at Bath University (Purcell et al, 2003) identified these issues as significant drivers of discretionary effort and hence business performance.

- Some examples of the types of employee opinion data collected are:

➢ workforce climate surveys; leadership surveys; 360-degree appraisal feedback; performance appraisal feedback; employee engagement surveys; culture surveys; attitude surveys.

- For Standard Chartered Bank this is particularly a key issue. The bank has been measuring employee engagement for some time and now achieves a 97 per cent response rate from among 40,000 people in 56 countries. Internal research has now established that better engaged business units outperform those with low levels of engagement. The Royal Bank of Scotland surveys all employees across the group and has achieved an 84 per cent response rate. The bank measures its results against the ISR Global Financial Services Norm and the ISR Global High-Performance Norm, as well as using the results to inform leadership development programmes. The Nationwide Building Society also uses its employee opinion data to feed into the scenario modelling which enables managers to predict the likely financial impact of different courses of action in terms of people management (CIPD, 2006a).

4.2.8. HR data

- Data on the various activities and aspects of HR is routinely collected. This kinds of HR data collected and used for human capital evaluation and reporting purposes included:
  ➢ monitoring operating costs per head;
  ➢ revenue/profit per employee; monitoring absence rates;
  ➢ permanent to temporary staff ratio;

- ➢ average salary;
- ➢ reward differentiation based on performance contribution and potential;
- ➢ recruitment figures: length of time to recruit, number of applicants for each job, skill level of applicants, etc;
- ➢ ratio of internal to external recruitment;
- ➢ health and safety data;
- ➢ data from exist interviews;
- ➢ performance management or appraisal data;
- ➢ employee turnover and retention.

- Turnover and retention is one of the key measures used by most organizations.

- It is particularly attractive data as it is usually relatively easy to attach costs to it and therefore to calculate the savings if turnover can be improved.

- One HR director reported that he got the full attention of his executive management team when he told them a 1 per cent reduction in turnover would equate with a new BMW for each of them.

- However, the approach to the calculation of turnover differs from organization to organization, which makes comparison difficult.

- Another difficulty is that in some industries, or even some parts of the workplace, turnover is low and likely to remain so for cultural rather than people management reasons.

- So, for example, whereas large public sector organizations are primarily using data to inform them about skill shortages, Standard Chartered Bank is tracking vulnerable groups to ensure the flow of talent, Centrica monitors new starters to identify critical stages where people are mostly likely to leave and the Royal Bank of Scotland looks at the geographical distribution of its employees, monitoring external factors that have an impact on turnover (CIPD, 2006a).

- Many other organizations saw this as more of a resourcing issue to ensure enough people in the right place at the right time to deliver business objectives.

- Apart from turnover and retention data, when analysed and assessed with other forms of data it can be very informative.

- For example, the work at Bath University was able to identify significant links between various HR processes and levels of commitment, satisfaction and loyalty.

- They found that when people felt fairly treated by the performance management process, or were able to balance their work and home commitments, or believed that there was a genuine interest in their career progression, they also felt a high level, of commitment and satisfaction, which in turn tended to raise their levels of discretionary effort (defined as the extra effort people put into their job over and above the necessary minimum).

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Table 4.1 Levels of data collection

	Level		
	Basic	**Intermediate**	**Higher**
Action	• Collect basic input data, eg absence, employee turnover • Identify useful data already available such as data from pay reviews, performance management, job evaluation, training, the recruitment process • Use this data to communicate essential information to managers about absence, turnover or accident levels, compared by department • Look for trends or patterns in the data and investigate their causes	• Design data collection for specific human capital needs. For example, conduct an employee attitude survey to measure satisfaction, or follow up on training activity to monitor implementation and use • Use this data to inform the design and implementation of people management policies and processes • Look for correlations between data – for example whether high levels of job satisfaction occur when certain HR practices are in place, such as performance management, career management or flexible working • Communicate the value of processes to line managers and identify specific actions to improve people management	• Identify key performance indicators relating to the business strategy, and design and implement data collection processes to measure against them • Feed both quantitative and qualitative information into an analysis model such as a balanced scorecard • Provide managers with indicators on a range of measures designed to inform them on performance and progress in their department • Accompany this with specific actions to be taken informed by the resulting human capital data • Interpret and communicate data in ways that will be meaningful to a range of audiences
Outcome	• Measures of efficiency and effectiveness • Basic information for managers on headcount, make-up of the workforce, and so on • Identification of any action that might be needed as a result of these measures – for example to reduce accident rates, to improve the diversity profile of the workforce or to reduce absence	• Measures of process • Information to help design the HR model that is most likely to contribute to performance • Communication to managers not just how to implement processes but with accompanying information on why they are important and what they can achieve	• Identification of the drivers of business performance • Information that will enable better-informed decision making both internally on the management of people and externally on the progress with regard to strategy

4.3 Challenges in data collection

Most problematic situation is when companies merge. This often results in two very different sets of data collected using different techniques and different calculations, which makes it more difficult to assess trends or to establish historical knowledge.

The second most common problem occurred in diverse organizations possibly using different HR information systems where information is collected and reported in different ways. This latter problem is particularly acute in diverse organizations operating in many different business areas. One such organization graphically illustrated the problem by relating how even simple statistics such as headcount could not be relied upon because the different systems used in different parts of the business calculated the figure using different formulas. For example, collects data from all parts of the business around the world using numerous different systems. The problems associated with collecting data from HR information systems stemmed from the lack of HR involvement in the specification of these systems when they were developed. As a result HR was often sold systems that did not entirely fulfil its need to provide useful information to inform people management strategies.

4.4 Guide to overcome these challenges

The basic steps for the generation of good quality human capital data are as follows:

4.4.1. Start with basic data and analysis restricted to identifying trends and patterns and what they mean.

4.4.2. Demonstrate its integrity by ensuring that it is accurate, reliable and of value

4.4.3. Progress to higher levels of data collection, demonstrate the values of particular processes and enable managers to see how their actions can impact on performance

4.4.4. Identify the drivers of business performance

4.4.5. The aim of the data collection process should be to create a virtuous cycle where improved people management results from meaningful data provided to line managers that enables thoughtful insight and credibility for recommended management actions. Over time, this will create a new environment in which the HR function is a provider of knowledge and an enabler of good people management leading to improved business performance.

4.5   Summary

1.   HCM data would be derived from recruitment, training, performance management, payroll and workforce opinions.

2.   Data interpretation can be observed from causality, such as: example, managers might investigate whether bonus payments really do cause higher performance

3.   There are about 8 types of data that can be collected in respect of human capital management.

4.   Mergers, diverse organizations and lack of HR involvement are some of the challenges towards gathering relevant HCM data.

5.   There are about 5 basic steps that are recommended to overcome the lack of data.

4.6   Self-Learning Resources

1.   Human Capital Data

https://www.youtube.com/watch?v=we6UteeBczc

2.   Nancy Vargas, M. Begoña Lloria, Main drivers of human capital, learning and performance
https://doi.org/10.1007/s10961-016-9483-6

3.   TED-Ed: Organizational Development and Change Data Gathering

https://www.youtube.com/watch?v=OG_v-NZ88MU

KEY TERMS	
*Business performance data	*Corporate Social Responsibility Data
*Customer Data	*Demographic Data
*Development Data	*Diversity Data
* Employee opinion data	* HR Data

SELF ASSESSMENT

TUTORIAL AND ACTIVITIES – TOPIC 4

Tutorial Questions

1. Explain the vitals of human capital data for an organization

2. Explain the brief challenges in handling HCM data

3. Explain demographic data

4. How companies can overcome the challenges of HCM data collection?

5. Explain the concept of data mining.

Video/Podcast

Video 1: HR Analytic : https://www.youtube.com/watch?v=_j8yiCAycgA

Video 2: Big role for big data : https://www.youtube.com/watch?v=rl76ta53P64

Based on video 1 please answer the following questions:-

    (a) What is Big Data

    (b) What is 4 Vs? Explain

    (c) What is HR analytics and how does big data relate to HR analytics

Case Study

Read the article Big data and management at https://doi.org/10.5465/amj.2014.4002

Based on this article address the following questions:

    1. What is big data ?

    2. How big data related to HR/management?

    3.Current practices of the organization in processing big data

Essay Question

    Using your own experience, share your thoughts on how technological development has brought changes in the HCM landscape in current times. Use appropriate examples to support your thoughts.