THE EFFECT OF HUMAN RESOURCE ANALYTICS ON EMPLOYEE PERFORMANCE

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ABSTRACT

Purpose: Data analysis in human resource contributed significantly to connect data with organizational and individual performance, by providing the organization with better understanding for effectively managing employees so that business goals can be reached quickly and efficiently. Thus, the key aspect of human resource analytics is to conclusively show the impact the human resource department has on the employee and on the organization as a whole. Hence, the aim of this study is to explore the relationship between “human resource analytics” as an independent variable, “employee performance & behavior”, and “organizational performance” as dependent variables, for a comparative study between profit and non-profit organizations.

Methodology: This research paper is a conceptual paper aiming to explore the impact of human resource analytics on the components of employee performance and behavior and organizational performance of the profit and non-profit organizations.

Findings: The results showed that there is a positive relationship between human re-source analytics and employee performance and behavior in the profit organizations, compared to a no relation between human resource analytics and employee performance and behavior in the non-profit organizations. There is a positive relationship between human resource analytics and organizational performance in the profit organizations, compared to a weak relationship between human resource analytics and organizational performance in the non-profit organizations.

Practical implications: This study has confirmed that human re-source analytics are applicable in the profit Lebanese organizations, and less applicable in the non-profit Lebanese organizations.

Keywords: Human Resource Analytics, Performance, Behavior.

O EFEITO DO HUMAN RESOURCE ANALYTICS NO DESEMPENHO DO FUNCIONÁRIO

RESUMO

Objetivo: A análise de dados em recursos humanos contribuiu significativamente para conectar os dados ao desempenho organizacional e individual, fornecendo à organização uma melhor compreensão para o gerenciamento eficaz de funcionários, de modo que as metas de negócios possam ser atingidas de forma rápida e eficiente. Assim, o principal aspecto da análise de recursos humanos é mostrar de forma conclusiva o impacto que o departamento de recursos humanos tem no funcionário e na organização como um todo. Assim, o objetivo deste estudo é explorar a relação entre “análise de recursos humanos” como uma variável independente, “desempenho e comportamento do funcionário”, e “desempenho organizacional” como variáveis dependentes, para um estudo comparativo entre organizações com e sem fins lucrativos.

Metodologia: Este documento de pesquisa é um documento conceitual com o objetivo de explorar o impacto da análise de recursos humanos sobre os componentes do desempenho e comportamento dos funcionários e desempenho organizacional das organizações lucrativas e sem fins lucrativos.
Constatações: Os resultados mostraram que há uma relação positiva entre a análise de recursos humanos e o desempenho e comportamento do funcionário nas organizações lucrativas, em comparação com a ausência de relação entre a análise de recursos humanos e o desempenho e comportamento do funcionário nas organizações sem fins lucrativos. Há uma relação positiva entre a análise de recursos humanos e o desempenho organizacional nas organizações sem fins lucrativos, em comparação com uma relação fraca entre a análise de recursos humanos e o desempenho organizacional nas organizações sem fins lucrativos.

Implicações práticas: Este estudo confirmou que a análise de recursos humanos é aplicável nas organizações libanesas com fins lucrativos, e menos aplicável nas organizações libanesas sem fins lucrativos.

Palavras-chave: Análise de Recursos Humanos, Desempenho, Comportamento.

EL EFECTO DEL ANÁLISIS DE RECURSOS HUMANOS EN EL DESEMPEÑO DE LOS EMPLEADOS

RESUMEN

Objetivo: El análisis de datos en recursos humanos ha contribuido significativamente a conectar los datos con el desempeño organizacional e individual, proporcionando a la organización una mejor comprensión de la gestión efectiva de los empleados para que los objetivos empresariales se puedan alcanzar de manera rápida y eficiente. Por lo tanto, el aspecto principal del análisis de los recursos humanos es mostrar de manera concluyente el impacto que el departamento de recursos humanos tiene en el empleado y la organización en su conjunto. Así, el objetivo de este estudio es explorar la relación entre el "análisis de recursos humanos" como variable independiente, el "desempeño y comportamiento de los empleados" y el "desempeño organizacional" como variables dependientes, para un estudio comparativo entre organizaciones lucrativas y sin fines de lucro.

Metodología: Este documento de investigación es un documento conceptual que tiene como objetivo explorar el impacto del análisis de recursos humanos en los componentes de desempeño y comportamiento de los empleados y el desempeño organizacional de organizaciones lucrativas y sin fines de lucro.

Resultados: Los resultados mostraron que existe una relación positiva entre el análisis de recursos humanos y el desempeño y comportamiento de los empleados en las organizaciones con fines de lucro, en comparación con la ausencia de una relación entre el análisis de recursos humanos y el desempeño y comportamiento de los empleados en las organizaciones sin fines de lucro. Existe una relación positiva entre el análisis de recursos humanos y el desempeño organizacional en las organizaciones sin fines de lucro, en comparación con una relación débil entre el análisis de recursos humanos y el desempeño organizacional en las organizaciones sin fines de lucro.

Implicaciones prácticas: Este estudio confirmó que el análisis de recursos humanos es aplicable en las organizaciones libanesas con fines de lucro, y menos aplicable en las organizaciones libanesas con fines de lucro.

Palabras clave: Análisis de Recursos Humanos, Rendimiento, Comportamiento.

1 INTRODUCTION

Over the past decade, technology has changed dramatically. Human resources have been affected by the change as well, though; it has been slower to adjust than other functions. Cloud technologies, advances in machine learning, faster processing; allowed to store and analyze huge amounts of data from within and outside of the organizations. Thereby, understanding the role of technology and data analytics in people management can help turn people management
and human resource functions from transactional service providers to strategic partners playing a key role in the organization. Analytics is a relatively new arena for the human resources department, compared to analytics in other business departments. Therefore, applying data analysis to key human resource processes enhances the performance in the organization. Consequently, data analysis in human resource contributed significantly to connect data with organizational and individual performance, by providing the organization with better understanding for effectively managing employees so that business goals can be reached quickly and efficiently. Furthermore, Technology has also made advanced human resource management tools more accessible to different type of organizations, profit and non-profit ones.

Therefore, the aim of this study is to explore the relationship between human resource analytics, employee performance & behavior, and organizational performance in the Lebanese profit and non-profit organizations. Therefore, this study will be significant in promoting and customizing the importance of human resource analytics to increase, maintain and retain the employee’s performance & behavior and the organizational performance as well. Thus, by understanding the impact of human resource analytics and its benefits on the performance, various parties from profit and non-profit organizations can maintain their competitive advantages. Furthermore, the study generates interest from a wider perspective of employee performance & behavior and organizational performance in the profit and non-profit organizations. The findings of this study will help to provide a foundational basis for the work in the area of developing human resource analytics and benefits package linked to employee performance, employee behavior, organizational performance, profit organizations and non-profit organizations in Lebanon.

The implication of this research is that both the descriptive and diagnostic analytics can be used to enhance the performance of the employees. The study also provides insights as to how the issues or problems in HR can be rectified using HR analytics. It can also be made a part of the performance appraisal and management system so that it ensures improvement in organizational performance.

We will be looking into the impact of descriptive and diagnostic analytics on employee and organizational performance. Through descriptive analysis we will be looking into the patterns and inconsistencies in the concerned data and using diagnostic analysis the reason behind each variation will be explored.
The Effect of Human Resource Analytics on Employee Performance

2 THEORETICAL FRAMEWORK

The profit organizations are part of what is called the private sector, business sector, corporate sector. It includes businesses and corporate organizations of all sizes and industries.

The growth and size of the private sector is majorly related to the type of economy that a government adapts, for example in countries with free economy such as the USA, profit organizations constitute the biggest percentage in the national economy, thus in countries with free economy; the workforce is mostly employed by the profit organizations.

Lebanon’s economy relies on the profit organizations, yet the obstacles to achieving significant growth are those of the MENA region in general. Other than lack of transparency, sectarianism, and corruption in significant part of the sector; most of the organizations still adopt the old methodology of assessing performance based on financial metrics, thus reducing efficiency and employee motivation. Currently modern HRM practices are being adapted by Lebanese banks, such as creating a training department which enables capacity building of employees while engaging them in the type and efficiency of the trainings (Association of Banks in Lebanon, 2014).

On the other hand, the non-profit organizations are organizations that have undertaken the duty of social activity, without seeking profit (PotAuček, 1999). Non-profit organizations are also non-governmental; thus, the non-profit organizations are referred to as the “third sector” in contrast to the private and public sectors (Evers & Laville, 2004). Non-profit organizations can take a variety of forms and sizes, from informal neighborhood groups, churches, kitchens, charities, labor unions, to museums, hospitals and even large universities (Anheier, 2014). Contrary to common belief, NPOs are allowed to generate profit, but it must only be used to support the operations of the organization (Anheier, 2014).

Historically, the non-profit sector started with formed groups of volunteers for the purpose of social duty, as early as the colonial times (Ott & Dicke, 2016).

Over the past few decades, the middle east has been a major area of operations for NGOs, due to armed conflicts, refugee crisis, political and social instability, and poverty; implementing project directly, or through governments, local authorities and local NGOs. Missions to areas of operations implies hiring local staff, including management positions.

All those factors make it more complex to manage all the aspects of talent acquisition, people and performance management, requiring a decentralized management system that can take into consideration a set of variables that are different from an area of operation to another. In the current status quo, NGOs can no longer afford to continue an outdated approach relying
on employees’ passion for the job rather than qualified talents with proper human resource management policies in place (Proulx, 2016). NGOs are also looking into inducing a centralized human resource support by the HQs to local human resource leaders at country level (Proulx, 2016). In Lebanon, few NGOs have systematic annual staff performance appraisal system. Training of staff is assigned on ad-hoc basis, based on what trainings are offered to the NGO on short notice (UNDP, 2009). Majority of NGOs in Lebanon lack a transparent recruitment process, significant disparities in salaries between senior and junior staff can be seen.

The difference between the Profit and Non-profit organizations may be clear from the name itself, yet many operational differences exist.

The main goal for a profit organization is to return dividends to its stakeholders or profit to its owners, while the goal of a nonprofit organization is to expand its mission and meet its nonprofit targets set (Russo, 2016). Organizations of both sectors rely on the same set of tools in place for planning purposes, such as applying SWOT analysis, having a well written and planned strategic vision and mission (Russo, 2016).

While on the other hand, one of the biggest difference may be the source of input organizations from the two sectors rely on; the profit organizations rely on input from employees within the organization, or input of consultants to do the analysis and create the organization’s vision, while in the nonprofit sector, strategic planning relies on input from outside stakeholders who support or benefit from the organization’s scope of work, to take part in strategic planning (Russo, 2016). Thus, employee engagement in the strategic planning process is crucial in both sectors.

The profit organizations being dependent on employees’ input, and the nonprofit organizations being dependent on stakeholders’ input, who are in direct contact with employees.

### 3 HUMAN RESOURCE ANALYTICS

Conferred by Holsapple et al. (2014), human resource analytics can be classified as one domain of Business analytics (BA), However, Fitz had a different opinion, where he not only differentiated between human resource analytics and BA, but went further and took into consideration the area of human resource metrics, stating that human resource metrics are “the language of organizational management”, thus using human resource metrics enables the adoption of a language understood by the whole organization (Fitz-enz, 2010).

Fitz also concurred that human resource analytics to be “an outgrowth of and marriage between human resource metrics and general business analysis” (p.15).
Prior to human resource analytics, metrics focused on relationship between labor issues and the business plan, while human resource analytics allows the adoption of “all Business Intelligence (BI) data to both support the delivery of human resource services and influence the behavior of all levels of employees” (p.15).

4 ORGANIZATIONAL PERFORMANCE AND EMPLOYEE PERFORMANCE & BEHAVIOR

Organizational performance in its simplest definition can be referred to as the actual output of an organization in comparison with its intended set of goals over a specific period (Richard, et al., 2009). Despite the fact that measuring organizational performance was based on the concerns of preparing and controlling financial reports, rather than having it linked to strategic planning (Halachmi, 2005); in 1930s the first recorded performance measurement model was created in France by engineers aiming to improve production by acquiring a better understanding of the cause-effect relationship, the model was called the Tableau de Bord, which translates to Dashboard (Epstein & Manzoni, 1997). The Tableau de Bord was revolutionary in a sense that it included both financial and non-financial indicators (DeBusk, et. al, 2003).

Then, two decades later, the 1950s witnessed the biggest growth of performance measurement models. The appraisal standard of quantifiable performance was created by Martindell (Martindell, 1950), the approach was later on adopted and elaborated by Drucker in 1954, into the “management by goals” model, in which organizational performance should be considered from different angles within the organization (Lodi, 1974). During the period between 1950 and 1980, publications shifted their focus towards balanced indicators that takes into consideration the relevance of each indicator with the organizational context (Koontz & O’Donnell, 1974). At the end of the 1980s, the adopted model that predominantly relied on financial information, which prevailed since the 1920s, faced a vast wave of criticism, mainly for the lack of indicators that could measure quality, innovation, customer satisfaction, and employee satisfaction (Ittner & Larcker, 1998).

The late 1980s and the 1990s marked the creation of complex models, with indicators covering various information, such as the “scorecard format” (Lohman, et. al, 2004), leading the way to more complex models with analytical capabilities, such as the BSC model (Kaplan & Norton, 2004), the SMART “strategic measurement analysis and reporting technique” (Cross & Lynch, 1988), IPMS “integrated performance measurement system” (Bititci, et. al, 1998a), Skandia navigator (Edvinsson & Malone, 1997), and sigma sustainability scorecard (The Sigma
Project, 2003). The implementation of the new performance measurement systems shifted the focus of research into solving a new dilemma, which is the management of the data generated by those systems, thus the focus migrated from performance measurement to performance management (de Waal, 2003).

The individual performance and employee behavior plays a focal role in driving organizational performance. The need to understand employee behavior came into attention during the era of the industrial revolution (Lombardo, 2017). During this era, Frederick Taylor viewed job tasks as components that can be analyzed when broken down into small parts (Lombardo, 2017). He also believed that an employee could be replaced at any instant of the labor process, just like replacing a machine part (Lombardo, 2017). Employee performance is interlinked with employee behavior. It refers to how an employee reacts, adapts, and performs under specific circumstances, taking into consideration the employee’s culture and the organization’s culture, affecting the environment of the workspace (Mckineey, 2017).

In order to assess those variables, the performance management science emerged many decades ago (Brooks, 2016). According to multiple sources, performance appraisals were invented around WWI by WD Scott, as a performance measurement tool, yet the concept did not assume wide recognition until more formal appraisal systems were developed and adopted around the 1950s (Brooks, 2016). By mid-1950s, companies were using a personality-based appraisal system, which by the end of the decade proved to be insufficient, due to the absence of the self-appraisal element (Brooks, 2016).

In the 1960s, companies began to do better at assessing performance, where the approach shifted towards goals and objectives; employees were assessed based on their capacities that could influence their ability to achieve in the future, rather than focusing on the personality of an employee (Brooks, 2016).

This development in appraisal systems did not make it immune from criticism that arouse in 1970s, where several cases were taken to court, due to the fact that the systems in place followed a subjective, and opinion-based approach, thus companies started to introduce psychometrics and rating scales into their appraisal systems (Brooks, 2016). During the time between 1980s and early 2000s, companies adapted a holistic approach, focusing on employee engagement and motivation (Brooks, 2016). The new approach gave birth to new set of metrics that are still in use to our present day, such as communication, teamwork, ability to handle emotions, self-awareness, and conflict reduction (Brooks, 2016).
Advancement in communication and mobile technology played a role in the nonstop evolution of performance management systems (Brooks, 2016). Companies are recognizing more and more the value of a company culture, and its direct effect on employee performance and behavior, thus they starting a 360-degree feedback approach, which consists of seeking multiple feedback sources when assessing employee performance, and reducing the traditional hierarchy in favor of more equal work environment (Brooks, 2016).

Thus nowadays organizations are adopting performance management systems which have better outcome for the organization, ranging from communication improvement, stress reduction due to frequent communication, relevant appraisals for everyone, adaptive capacity building for all; while on the other hand, traditional appraisal systems had negative outcomes, such as being too painful and emotionally charged, yielding poor understanding of expectations, having a bad timing, being based on manager’s subjective opinion, as well as having promotions not in line with the real performance (People Streme, 2013).

5 MAJOR TYPES OF ANALYTICS

1. Descriptive analytics

The first type of HR analytics on the list is descriptive analytics. This is the most basic type that analyzes data patterns to gain insight into the past. It is known as decision analytics and uses statistical analysis techniques to explain or summarize a particular set of historical, raw data. It focuses on past data to account for what happened but doesn’t make predictions for the future.

**Figure 1**

*Descriptive analytics*

<table>
<thead>
<tr>
<th>Diagnostic analytics advantages</th>
<th>Diagnostic analytics disadvantages</th>
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<tbody>
<tr>
<td>- Shows a more comprehensive interpretation of the data for informed decision-making.</td>
<td>- Focuses on past occurrences which makes it very reactive</td>
</tr>
<tr>
<td></td>
<td>- Can't provide actionable insights to support your planning process.</td>
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Descriptive analytics can use a combination of numerical data and qualitative data. It involves performing mathematical calculations, such as central tendency, frequency, variation, ranking, range, deviation, etc. This allows HR to see patterns and inconsistencies to improve planning. It can help with:
- Assessing behavior
- Comparing characteristics across time
- Spotting anomalies
- Identifying strengths and weaknesses

2. Diagnostic analytics

Diagnostic analytics takes descriptive analytics to the next level by providing an explanation for what has been revealed. It aims to determine the underlying reasons for what the data exposes.

Although it is based on the same historical data as descriptive analytics, there is a key difference.

Diagnostic analytics goes into the next step of summarizing what happened in understandable terms. It digs for the “why” behind the data’s trends, correlations, and anomalies. Conducting a diagnostic analysis typically involves the following steps:

- Identifying the patterns and anomalies within the data raises questions and needs to be studied further.
- Discovering what factors could be contributing to the patterns and anomalies to identify the relevant data.
- Determining causal connections by analyzing the data with various methods.

Diagnostic analytics is used to transform data into worthwhile insights. It identifies patterns, variances, and causal relationships while also considering internal and external factors that could be influencing them. This helps HR see the big picture of a situation and zero in on which factors have the potential to create problems. Then you can focus your efforts on the right place to mitigate them.

6 RESULTS AND DISCUSSION

Human resource departments passed through many evolution phases by enabling technology which gave them a strategic function within the organization, rather than being operational and reducing bias. This new role was achieved by the analysis of data and the use of technology to contribute to great organizational performance.

Human resource analytics can be considered a tool to predict and direct business outcomes, in order to improve the quality of people-related decisions thus increasing organizational performance. In this scope, human resource analytics face the challenge of identifying the type of data that should be captured, how to use it, and how to benefit from the
data that is already available. A challenge that can only be answered through the nature of the organization, whether profit or non-profit, and at a deeper level, the goals of the organization, with the problems at hand.

For example, diagnostic analytics can be put into action with HR in employee absenteeism. If the absenteeism rate is climbing, diagnostic analytics can find out why employees are missing work more often.

7 CONCLUSION

Organizations provide support for the applicability of the human resource analytics in order to improve employee’s performance and behavior along with organizational performance. This literature covered the conceptual model relation of human resource analytics on the employees’ performance and behavior, and organizational performance in both profit and non-profit organizations.

Also, this paper presented the implications of this study and showed how much the human resource analytics in profit and non-profit organizations affect the performance of employees and organizations. The limitations and delimitations were covered in this paper, showing the major obstacles that faced the researchers in the fieldwork.

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