

Abstract

Implementation of Business Intelligence and Analytics in Human Resource Management as a Core Competency for Sustainability [†]

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1. Objectives

Business intelligence and analytics have been important and very critical tools for organizations along with a significant increase in the usage of data in almost all HR functions [1–3]. As seven of the UN sustainability goals can be related to the successful management of human resources, business analytics has proven to be a crucial tool for sustainability in all organizations. This study aims to summarize what data analytics is and how it can be utilized in HR to support sustainability goals [4,5].

2. Methodology

We followed a qualitative research methodology for this research. First, we summarized the theories, different models, and processes of business intelligence and data analytics in HR. We also carried out a literature review to find out how HR analytics can contribute to sustainability goals in the organizations. By providing examples, including the COVID-19 pandemic, we intend to present how this tool can be utilized for promoting sustainability and how it can be crucial for managers in the decision-making process.

3. Results

In the systematic review, we provide a detailed definition of business intelligence and data analytics in HR and their differences from pure statistics. We also explained different phases of HR analytics step by step by providing detailed examples and explanations. Different analytics models are also introduced. Examples from different cases and industries showed that HR analytics can enable managers to plan proactively and significantly contribute to sustainability goals.

4. Implications

Technologies, such as databases, artificial intelligence, big data, cloud computing, machine learning, and mobile technologies and devices, have offered organizations new tools and ways to collect, store, assess, and analyze employee-related data to establish a reliable basis for decision-making. HR Analytics, by using these data and processing them through several phases of data analytics, can provide vital information for HR managers to take proactive actions that contribute to sustainability.



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5. Originality Value

Our study is one of the pioneer studies that systematically explore and summarize the usage of HR analytics for reaching sustainability goals. HR managers and decision makers cannot ignore the data science perspective anymore. The increasing usage of data and artificial intelligence in almost every field has provided managers with smart tools to diagnose the situation and predict the future status [6–8]. For that purpose, our study provides significantly valuable information to better understand the current trends and techniques.

6. Contribution

In almost every industry, business intelligence and data analytics have been used to improve all types of functions [6,7]. HRM is a field dealing with all HR functions, as well as human attitudes and behaviors [8–10], which are difficult to measure and analyze. Furthermore, ethical considerations must also be taken into consideration in HR activities, such as diversity and well-being. Hence, our study introduced HR analytics, a crucial methodology and tool, that might shed light for managers and decision makers by helping them significantly contribute to sustainability.

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Data Availability Statement: The study is at the initial phase, thus there is no data to be shared. Moreover, qualitative data that will be obtained from the interviews in the following phases will be kept confidential and cannot be shared without the written consent of the participants due to the privacy reasons.

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References

1. Angrave, D.; Charlwood, A.; Kirkpatrick, I.; Lawrence, M.; Stuart, M. HR and analytics: Why HR is set to fail the big data challenge. *Hum. Resour. Manag. J.* **2016**, *26*, 1–11. [[CrossRef](#)]
2. Davenport, T.H. How strategists use “big data” to support internal business decisions, discovery and production. *Strategy Leadersh.* **2014**, *42*, 45–50. [[CrossRef](#)]
3. Du Plessis, A.J.; De Wet Fourie, L. Big data and HRIS used by HR practitioners: Empirical evidence from a longitudinal study. *J. Glob. Bus. Technol.* **2016**, *12*, 44–55.
4. Channa, N.A.; Shah, S.M.M.; Ghumro, N.H. Uncovering the link between strategic human resource management and crisis management: Mediating role of organizational resilience. *Ann. Contemp. Dev. Manag. HR* **2019**, *1*, 15–27. [[CrossRef](#)]
5. Falletta, S. In search of HR intelligence: Evidence-based HR analytics practices in high performing companies. *People Strategy* **2014**, *36*, 28–37.
6. Lawler, E.E., III; Levenson, A.; Boudreau, J.W. HR metrics and analytics: Use and impact. *Hum. Resour. Plan.* **2004**, *27*, 27–35.
7. Marler, J.H.; Boudreau, J.W. An evidence-based review of HR analytics. *Int. J. Hum. Resour. Manag.* **2017**, *28*, 3–26. [[CrossRef](#)]
8. Schiemann, W.A.; Seibert, J.H.; Blankenship, M.H. Putting human capital analytics to work: Predicting and driving business success. *Hum. Resour. Manag.* **2017**, *57*, 795–807. [[CrossRef](#)]

9. Ertürk, A.; Van den Broeck, H.; Verbrigghe, J. Self-other agreement on supervisor's transformational leadership and subordinates' assessment of supervisor's performance: Mediating role of leader-member exchange. *Leadersh. Organ. Dev. J.* **2018**, *39*, 291–308. [\[CrossRef\]](#)
10. Aksoy, S.; Ertürk, A. Influence of organizational justice perceptions on organizational identification. *Res. J. Bus. Manag.* **2014**, *1*, 253–262.

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