

PEOPLE ANALYTICS STRATEGIES IN DATA-DRIVEN HR DECISION-MAKING: A LITERATURE REVIEW

Eloh Bahiroh

Universitas Sultan Ageng Tirtayasa, Indonesia
elohbahiroh@untirta.ac.id

Sri Ndaru Arthawati

Universitas Sultan Ageng Tirtayasa, Indonesia
arthawatisri@gmail.com

Abstract

This study aims to examine people analytics strategies in data-driven human resources (HR) decision-making through a literature review approach. People analytics has become a strategic tool that enables organisations to transform employee data into actionable insights, thereby improving the accuracy and effectiveness of HR decisions. The method employed was a systematic literature review, analysing literature from academic journals, books and other documents. The findings indicate that the effective implementation of people analytics requires a holistic approach encompassing data quality, technological infrastructure, analytical competencies, data governance and a supportive organisational culture. Successful implementation strategies involve developing a data governance framework, investing in analytical technology, fostering data literacy among HR practitioners, securing support from senior leadership, and applying principles of data ethics and privacy. Organisations that successfully integrate people analytics into their HR decision-making processes are able to improve decision-making accuracy, operational efficiency, employee retention, and overall organisational performance. This article makes a theoretical contribution through a comprehensive literature review and offers practical implications for organisations seeking to utilise people analytics as a competitive differentiator in the digital age.

Keywords: people analytics, HR decision-making, data-driven human resources, implementation strategies, literature review, HR analytics

Introduction

In the era of digital transformation, human resources (HR) is no longer merely a support function, but a strategic partner in creating organisational competitive advantage. Rapid, complex and uncertain changes in the business environment require organisations to rely on concrete data when making decisions regarding talent management. In this context, people analytics has emerged as a data-driven approach that enables organisations to gain in-depth insights into employee behaviour, performance and contributions (Shatila, 2025).

People analytics, also known as human resources analytics or HR analytics, is the application of data analytics methods to understand and manage the workforce within an organisation. This approach utilises both structured and unstructured HR data to

answer strategic questions, ranging from recruitment and development to employee retention (X. Wu et al., 2022). By utilising statistical techniques, machine learning and data visualisation, people analytics provides a more objective foundation for decision-makers in the field of HR.

The development of people analytics is inextricably linked to the evolution of the HR function itself. In the past, the HR department was often viewed as an administrative function focused on compliance and internal processes. However, as demands for organisational accountability and effectiveness have increased, the HR function has been required to transform into a strategic partner capable of making a direct contribution to the achievement of business objectives (Morais et al., 2022). People analytics is one manifestation of this transformation, in which data is used to support smarter, evidence-based decision-making.

Advances in information technology play a central role in enabling the widespread adoption of people analytics. Human resources information systems (HRIS), big data, cloud computing and artificial intelligence (AI) have opened up new opportunities for the collection, processing and analysis of HR data (El-Ghoul et al., 2024). With adequate technological infrastructure in place, organisations can now access data in real time, carry out predictive analytics, and even automate certain HR decision-making processes. However, whilst the potential of people analytics is immense, its implementation is not always straightforward. Many organisations face challenges regarding data quality, organisational cultural readiness, and HR competencies in managing and interpreting data (Bondarouk et al., 2017). Data that is unintegrated, inconsistent, or incomplete can lead to misleading analyses and ultimately undermine the decision-making process. It is therefore important to understand effective strategies for implementing people analytics in order to deliver tangible added value.

One key aspect of people analytics is the ability to transform data into actionable insights. This is not merely about generating reports or dashboards, but about ensuring that analytical findings genuinely influence managerial decisions and actions (Ghedabna et al., 2024). Without strong integration between analytics and the decision-making process, people analytics will remain a tool that is not utilised to its full potential. In the literature, there are various frameworks that explain how people analytics can be integrated into HR decision-making. Some approaches emphasise the stages of analytics, ranging from descriptive, diagnostic and predictive to prescriptive (X. Wu et al., 2022). Other approaches highlight the importance of organisational capabilities, including leadership, data governance, and data literacy amongst HR managers (Plaskoff, 2017). Understanding these various perspectives is essential for formulating a comprehensive strategy. Furthermore, ethical and privacy issues are also key concerns in the implementation of people analytics. The use of employee data, particularly sensitive data, raises questions about the extent to which organisations can access and

utilise such information without infringing on individual rights (Prassl, 2018). Organisations need to strike a balance between the need for data to support effective decision-making and their ethical responsibility to protect employee privacy.

Globally, many leading organisations have successfully implemented people analytics to enhance the effectiveness of their human resources. For example, Google uses data to identify the factors that most influence team performance, whilst IBM uses predictive analytics to forecast the risk of employee turnover (Nocker & Sena, 2019). Case studies such as these provide empirical evidence that people analytics can have a significant positive impact when implemented correctly. However, the successful implementation of people analytics depends not only on technology or data, but also on human factors. Analytical competence amongst HR practitioners, support from top management, and an organisational culture that is open to data and empirical evidence are key elements that determine success (Plaskoff, 2017). Without this support, investment in technology and data may not yield the expected value.

In the Indonesian context, the adoption of people analytics is still in its early stages. Many organisations still face limitations in terms of data infrastructure, HR competencies, and awareness of the importance of a data-driven approach (Nocker & Sena, 2019). However, with growing awareness of the importance of digital transformation and more strategic HR management, the potential for the application of people analytics in Indonesia is considerable.

A literature review is essential to understanding how people analytics strategies have been developed and implemented across various organisational contexts. Through this review, this article aims to identify best practices, challenges and opportunities in the application of people analytics for data-driven HR decision-making. Consequently, this article is expected to contribute to the development of knowledge and practice in people analytics, particularly in Indonesia.

Consequently, this article not only makes a theoretical contribution through a synthesis of the existing literature, but also offers practical implications for HR practitioners and organisational leaders. It is hoped that, through an in-depth understanding of people analytics strategies, organisations will be able to make HR decisions that are more data-driven, accurate and have a positive impact on overall organisational performance.

Research Methodology

This study employs a systematic literature review to identify, evaluate and synthesise relevant literature on people analytics in data-driven HR decision-making. Primary data sources were obtained from scientific journals, books, and other research reports (Walliman & Walliman, 2021). The literature selection process was carried out using inclusion criteria comprising topic relevance, source quality (peer-reviewed journals and publications from leading institutions), and the availability of full access to

the full-text articles. The selected literature was then analysed thematically to identify patterns, trends and key findings relating to the concepts, implementation strategies, benefits, challenges and impacts of people analytics on the effectiveness of HR decision-making (Eliyah & Aslan, 2025). Through this approach, this article aims to provide a comprehensive and evidence-based overview of the role of people analytics in the transformation of HR functions in the digital age.

Results and Discussion

Concepts and Developments in People Analytics

People analytics is defined as a systematic approach to managing human resources by utilising data, statistical methods, and analytical technologies to generate actionable insights for organisational strategic decision-making (Morais et al., 2022). This concept emphasises the transformation of raw data into meaningful information that can help organisations gain a deeper understanding of employees' behaviour, performance, and potential. Thus, people analytics is not merely about data collection, but rather about the ability to translate that data into decisions that enhance organisational effectiveness.

Historically, people analytics has its roots in the evolution of the human resource management function, which has undergone significant transformation from the Industrial Revolution to the current digital era. At the start of the Industrial Revolution (1750–1850), workforce management was still traditional in nature and focused on the efficiency of mass production (Rahmadi & Rusmiati, 2025). As technology and computerisation advanced, the role of HR began to shift from an administrative function towards a strategic one requiring an evidence- and data-driven approach. This underpinned the emergence of people analytics as a response to organisations' need for more accurate and measurable HR decisions.

The development of people analytics has accelerated with the advent of big data, artificial intelligence (AI) and machine learning technologies, which enable data analysis on an unprecedented scale and with unprecedented complexity (Morais et al., 2022). These technologies enable organisations not only to analyse historical data, but also to predict future employee behaviour and performance, as well as to provide recommendations for optimal action. Consequently, people analytics has evolved from a mere reporting tool into a strategic instrument capable of supporting proactive planning and decision-making.

The main components of people analytics consist of three fundamental elements: data, technology and analytics. Data forms the foundation and encompasses information about employees, such as demographic data, performance, attendance, training and engagement (A.-C. Wu & Kao, 2022). Technology refers to the infrastructure and software used to collect, store and process data, such as HRIS systems, cloud computing and analytics platforms. Meanwhile, analytics is the process of applying

statistical methods and algorithms to extract insights from the data that has been collected.

In the literature, people analytics is categorised into four types of analytics based on the depth and purpose of the analysis: descriptive, diagnostic, predictive and prescriptive (A.-C. Wu & Kao, 2022). Descriptive analytics focuses on understanding what has happened, for example through reports on staff turnover or absence rates. Diagnostic analytics answers the question of why something has happened, such as identifying the factors causing a decline in performance. Predictive analytics uses historical data to predict what might happen in the future, such as the risk of employee turnover. Finally, prescriptive analytics provides recommendations on what should be done to achieve the desired outcomes.

The benefits of people analytics for organisations are wide-ranging and cover various aspects of HR management. Firstly, people analytics improves the accuracy of decision-making by providing objective and measurable data, thereby reducing reliance on intuition or assumptions (Nocker & Sena, 2019). Secondly, this approach enhances operational efficiency by automating analytical processes and reducing the time required to generate insights. Thirdly, people analytics contributes to improved organisational performance by identifying best practices and areas requiring improvement.

Furthermore, people analytics also plays a role in improving employee engagement and satisfaction by providing insights into the factors that influence their motivation and well-being (Rahmadi & Rusmiati, 2025). By understanding employees' behavioural patterns and needs, organisations can design more appropriate development programmes, remuneration packages and working environments. This, in turn, can improve staff retention and reduce costs associated with recruitment and retraining. Although it offers many benefits, the implementation of people analytics also faces a number of challenges that need to be addressed. One of the main challenges is data quality, where incomplete, inconsistent or unintegrated data can lead to misleading analyses (Umboh, 2025). Organisations need to ensure that the data collected is accurate, relevant and accessible to authorised parties. Without good data quality, investment in technology and analytics will not deliver the expected value.

Other challenges relate to the organisation's cultural readiness and the competence of its human resources in managing and interpreting data. Many organisations still face resistance to change from traditional approaches towards data-driven approaches (Morais et al., 2022). Furthermore, there is a shortage of HR practitioners with sufficient data literacy and analytical skills to utilise people analytics effectively. Therefore, organisations need to invest in skills development and cultural change to support this transformation.

Ethical and privacy issues are also a serious concern in the implementation of people analytics. The use of employee data, particularly sensitive data such as health,

performance or behaviour, raises questions about ethical boundaries in the collection and utilisation of such information (Khatoon et al., 2025). Organisations need to strike a balance between the need for data to support effective decision-making and their ethical responsibility to protect employees' privacy and individual rights. Without clear data governance, people analytics can pose reputational and legal risks to organisations.

Globally, many leading organisations have successfully implemented people analytics to enhance the effectiveness of their human resources. Google, for example, uses people analytics to identify the factors that most influence team performance through a project known as Project Aristotle (Nocker & Sena, 2019). IBM uses predictive analytics to forecast the risk of employee turnover and design appropriate interventions. Case studies such as these provide empirical evidence that people analytics can have a significant positive impact when implemented with the right strategy.

In the Indonesian context, the adoption of people analytics is still in its early stages, but its potential is immense as awareness of the importance of digital transformation in HR management grows (Kartiko & Gultom, 2026). Many organisations in Indonesia still face limitations in terms of data infrastructure, HR competencies, and awareness of the importance of a data-driven approach. However, with the right policy support and investment in capability development, people analytics can become a strategic tool for enhancing organisational competitiveness in the digital economy era.

The development of people analytics is also influenced by external factors, such as government regulations, industry trends, and labour market dynamics. Regulations on personal data protection, such as Indonesia's Personal Data Protection Act, influence how organisations collect, store and use employee data (Iswahyudi, 2025). Furthermore, industry trends such as the rise in remote working and post-pandemic work flexibility also demand a more adaptive and responsive approach to people analytics in the face of a changing business environment.

Conceptually, people analytics can be understood as part of a broader ecosystem encompassing talent management, business analytics and organisational digital transformation. This approach does not stand alone, but is integrated with various organisational functions and processes to create synergies that strengthen competitive advantage (Ghedabna et al., 2024). Consequently, a deep understanding of the concepts and developments in people analytics forms a vital foundation for organisations seeking to utilise this approach effectively in data-driven HR decision-making.

Strategies for Implementing People Analytics in HR Decision-Making

The strategy for implementing people analytics in HR decision-making requires a structured and holistic approach, beginning with the integration of analytics into the

organisation's decision-making processes. This integration is not only related to the use of technology but also encompasses the alignment of business objectives, HR policies, and the organisation's analytical capabilities (Dragu & Lupu, 2021). Without strong integration, people analytics will merely be a tool isolated from strategic processes and will not have a significant impact on organisational performance. One key strategy in the implementation of people analytics is the development of a clear and comprehensive data governance framework. Data governance encompasses policies regarding the collection, storage, access and use of employee data, as well as mechanisms to ensure data quality and security (Conte & Siano, 2023). Organisations need to establish consistent data standards, ensure interoperability between various systems, and form a team responsible for overseeing data integrity. Without sound governance, the risk of analytical errors and privacy breaches will increase significantly.

The next strategy is to invest in technological infrastructure that supports the effective collection and analysis of data. This includes the use of integrated HRIS (Human Resource Information System) systems, advanced analytics platforms, and cloud-based solutions that enable real-time data access (Votto et al., 2021). Organisations also need to consider the use of emerging technologies such as artificial intelligence (AI) and machine learning to enhance the predictive and prescriptive capabilities of people analytics. However, investment in technology must be accompanied by a clear understanding of business needs and the organisation's capacity to adopt such technologies.

Developing analytical competencies amongst HR practitioners is another equally important strategy in the implementation of people analytics. Many organisations face a shortage of talent with sufficient data literacy and analytical skills to utilise people analytics effectively (Prassl, 2018). Therefore, organisations need to invest in training and development programmes that cover an understanding of statistics, data visualisation, and the interpretation of analytical results. In addition, organisations can also recruit people analytics specialists or form a dedicated analytics team that works in collaboration with the HR function.

Support from top-level leadership and senior management is also a critical factor in the successful implementation of people analytics. Without commitment at the strategic level, people analytics initiatives often fail to secure the necessary resources or face resistance from various levels of the organisation (Cohen, 2019). Leaders need to understand the strategic value of people analytics and actively support the transformation of the organisational culture towards data-driven decision-making. This can be achieved through consistent communication, adequate budget allocation, and the setting of clear targets regarding the utilisation of people analytics.

The implementation strategy must also include the development of an organisational culture that is open to data and innovation. This culture is characterised by an attitude that values empirical evidence, transparency in information sharing, and

a willingness to test assumptions through data (Umboh, 2025). Organisations need to create an environment in which employees feel comfortable experimenting with data, learning from failure, and continuously improving their analytical practices. This cultural shift often requires time and consistent effort, but it is a vital foundation for the sustainability of people analytics.

In the context of HR decision-making, people analytics can be applied to various strategic areas, including recruitment, career development, performance management, and employee retention. For example, in the recruitment process, people analytics can be used to identify candidate profiles that best align with the organisational culture and demonstrate high performance potential (Walford-Wright & Scott-Jackson, 2018). In performance management, analytics can help identify patterns that influence employee productivity and design appropriate interventions to improve outcomes.

The use of predictive algorithms in people analytics also enables organisations to anticipate problems before they occur, such as the risk of staff turnover or a decline in team performance. By predicting potential future events, organisations can take more effective and efficient preventative action (Votto et al., 2021). For example, if analytics indicate that a particular employee is at high risk of resigning, managers can intervene early through career discussions, workload adjustments, or targeted retention programmes. However, the implementation of people analytics must also take into account ethical considerations and employee data privacy. Organisations need to ensure that the use of employee data is carried out transparently, with clear consent, and for legitimate purposes (Bondarouk et al., 2017). Data privacy policies must be clearly communicated to employees, and organisations need to have mechanisms in place to address complaints or concerns regarding data usage. Without the trust of employees, people analytics initiatives may face resistance and even damage industrial relations.

An effective implementation strategy also requires ongoing measurement and evaluation of the impact of people analytics on the organisation. Organisations need to establish clear metrics to assess the success of implementation, such as improved decision-making accuracy, reduced recruitment costs, or increased employee retention (El-Ghoul et al., 2024). This evaluation not only helps organisations to understand the value generated by people analytics, but also provides a basis for continuous improvement and strategic adjustments in line with changing business needs.

At a practical level, organisations can adopt a phased approach to implementing people analytics, starting with pilot projects in areas where the impact is high and data is readily available. This approach enables organisations to learn from experience, test assumptions and build momentum before expanding into other areas (Prassl, 2018). Pilot projects can also be used to demonstrate the value of people analytics to stakeholders and gain broader support for this initiative.

Collaboration between HR, IT and other business units is also a key strategy in the implementation of people analytics. People analytics is not solely the responsibility of the HR function, but requires contributions from various parties with different expertise and perspectives (Schaerer et al., 2009). The IT team can provide technical support in managing the data infrastructure, whilst business units can provide context regarding operational needs and challenges. This collaboration ensures that people analytics aligns with business objectives and can be implemented effectively.

In the Indonesian context, people analytics implementation strategies need to be adapted to local conditions, including personal data protection regulations, the readiness of technological infrastructure, and the existing organisational culture (Asif, 2025). Organisations in Indonesia can learn from global best practices, but they also need to consider specific factors that influence the effectiveness of people analytics in the local context. For example, approaches that have proved successful in developed countries may need to be adapted to the capacity and resources available in Indonesia.

Overall, a strategy for implementing people analytics in HR decision-making requires the right combination of technology, competencies, governance and organisational culture. With a holistic and well-planned approach, organisations can utilise people analytics to enhance the effectiveness of decision-making, strengthen the strategic position of the HR function, and ultimately improve the organisation's overall performance. The successful implementation of people analytics is not merely about possessing sophisticated data and technology, but about the ability to transform data into actionable insights that generate tangible business impact.

Conclusion

People analytics has become an essential strategic tool in the transformation of the human resources function from an administrative role to a data-driven business partner. A review of the literature indicates that the effective implementation of people analytics requires a holistic approach encompassing data quality, technological infrastructure, analytical competencies, clear governance, and an organisational culture that supports evidence-based decision-making. Organisations that successfully integrate people analytics into HR decision-making processes are able to significantly improve decision-making accuracy, operational efficiency, and employee performance.

An effective people analytics implementation strategy involves several key elements, including the development of a data governance framework, investment in analytical technology, the development of HR competencies, support from senior leadership, and the application of ethical principles and data privacy. A phased approach through pilot projects, cross-functional collaboration, and continuous evaluation of the impact of people analytics are best practices that organisations can adopt. In the Indonesian context, implementation strategies need to be tailored to local conditions,

including personal data protection regulations and the readiness of the technological infrastructure.

Overall, people analytics offers significant opportunities for organisations to make smarter, more proactive HR decisions that have a positive impact on business performance. However, successful implementation depends not only on the availability of data and technology, but also on the organisation's ability to transform data into actionable insights and foster a culture that values empirical evidence. With the right strategy and strong commitment, people analytics can become a competitive differentiator that strengthens an organisation's position in the face of an increasingly complex and uncertain business environment.

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