Retos
Revista de Ciencias de Administración y Economía

october 2024-march 2025
pp. 217-232
https://doi.org/10.17163/ret.n28.2024.03

Human resource analytics for change and happiness management

Analíticas de recursos humanos para la gestión del cambio y de la felicidad

Arturo-Julián Abellán-Sevilla
PhD student in the Doctoral Program in Social and Legal Sciences of the International Doctoral School of the University Rey Juan Carlos, Spain
aj.abellan.2022@alumnos.urjc.es
https://orcid.org/0009-0002-6572-9372

Marta Ortiz-de-Urbina-Criado
Professor and researcher at Universidad Rey Juan Carlos, Spain
marta.ortizdeurbina@urjc.es
https://orcid.org/0000-0001-7527-6798

Eva-María Mora-Valentín
Professor and researcher at Universidad Rey Juan Carlos, Spain
evamaria.mora@urjc.es
https://orcid.org/0000-0002-7330-0667

Received on: 14/02/24 **Revised on:** 27/05/24 **Approved on:** 19/08/24 **Published on:** 01/10/24

Abstract: companies are in a constant process of change, and they need to be flexible and innovative and take care of the well-being of their employees. Events such as the pandemic COVID19 have highlighted the need to consider new perspectives to address Human Resources Management. Human Resource Analytics (HRA) are tools that help to understand and implement better Human Resources policies and strategies. However, many of the literature reviews on HRA only analyze what has been published up to 2021 and, moreover, do not usually consider different time periods for Identifying the issues studied, which would help to better understand the evolution of the issues. Therefore, the aim of this paper is to present a structured and period-based picture of the main Human Resource Analytics themes studied and to propose new themes for future research. The results obtained have been grouped into the following thematic categories: context, internal aspects, tools, applications and effects. From these results, two novel themes have been identified: change management and happiness management. And two theoretical models for the adoption of HRA have been proposed, one on decision-making and one on organizational change. These models can serve as a starting point for future research and have a direct application for decision making in companies.

Keywords: human-resources, analytics, workforce, change, wellbeing, happiness, firm, bibliometrics.

Abstract: en el entorno empresarial actual, las organizaciones están en constante proceso de cambio y tienen que ser flexibles e innovadoras, cuidando el bienestar de sus trabajadores. Acontecimientos como la pandemia han puesto de manifiesto la necesidad de considerar nuevas perspectivas para abordar la gestión de los recursos humanos. Las analíticas de recursos humanos (ARH) son herramientas que ayudan a entender y aplicar mejores políticas en este ámbito. Sin embargo, muchas de las revisiones de la literatura sobre ARH solo analizan lo publicado hasta 2021 y, además, para la identificación de las temáticas estudiadas no suelen considerar diferentes periodos temporales, que ayudarían a entender mejor la evolución de las temáticas. Por ello, el objetivo de este trabajo es presentar una imagen estructurada y por periodos de los principales temas estudiados sobre ARH y proponer otros nuevos para la investigación futura. Los resultados obtenidos se han agrupado en las siguientes categorías temáticas: contexto, aspectos internos, herramientas, aplicaciones y efectos. A partir de estos resultados, se han identificado dos temas novedosos: la gestión del cambio y la gestión de la felicidad, y se han propuesto dos modelos teóricos para la adopción de ARH, uno de toma de decisiones y otro sobre cambio organizativo. Estos modelos pueden servir como punto de partida para futuras investigaciones y tienen una aplicación directa como herramienta de ayuda en la toma de decisiones en las empresas.

Keywords: recursos humanos, analíticas, trabajadores, cambio, bienestar, felicidad, empresa, bibliometría.

Suggested citation: Abellán-Sevilla, A.-J., Ortiz-de-Urbina-Criado, M. and Mora-Valentín, E.-M. (2024). Human resource analytics for change and happiness management. *Retos Revista de Ciencias de la Administración y Economía, 14*(28), 217-232. https://doi.org/10.17163/ret.n28.2024.03

Introduction and state-of-the-art

Companies are in constant process of change so they need to be flexible and innovative and also must seek the welfare of their workers (Ravina-Ripoll *et al.*, 2019a). Happiness and well-being at work are part of the objectives presented in the 2030 Agenda and pose a challenge for organizations, which have to consider changes in their management models to obtain sustainable competitive advantages (Ravina-Ripoll *et al.*, 2021a; 2021b; 2023b). Contreras-Contreras *et al.* (2023) establish a direct relationship between happiness and expectations of change and sustainable behavior in a post-COVID world. Managing job happiness helps to improve the organizational climate and individual and organizational performance (Ravina-Ripoll *et al.*, 2017).

In this context, business leaders have the role of enabling the necessary changes to enhance the creative thinking, well-being and happiness of workers (Ruiz-Rodríguez *et al.*, 2023; 2024; Díaz-García *et al.*, 2024). There is an interet in the academy to apply human resources tools for implementing models of happiness management (Abellán-Sevilla and Ortiz-de-Urbina-Criado, 2023). Phenomena such as the Great Resignation have shown the importance of having human resources analytics -HRA- which help to better understand human resources strategies and policies and facilitate the processes of change and the management of happiness at work (Abellán-Sevilla and Ortiz-de-Urbina-Criado, 2023). However, there is still little progress in this regard. Therefore, this work takes as a starting point the research on HRA to raise the topics that have been studied and analyze its usefulness and its application in the processes of change and happiness management.

Literature on HRA has grown in recent years (Thakral *et al.*, 2023). The most commonly used terms are human resources analytics, personnel analytics, workforce analytics, or human capital analytics (Fernández and Gallardo-Gallardo, 2021; Thakral *et al.*, 2023). The main aspects studied in previous reviews of the literature, organized around five basic questions, are summarized below. The first question is what are HRAs? In relation to this issue, some works have focused on defining and delimiting this concept (for example, Fernández and Gallardo-Gallardo, 2021; Margherita, 2022; Qamar and Samad, 2022; Ramachandran *et al.*, 2024; Singh and Muduli, 2021). Fernández and Gallardo-Gallardo (2021) and Falletta and Combs (2021) have collected the main definitions, and from them, one that integrates the main characteristics of those has been proposed in this research:

Human Resources Analytics (HRA) is a statistical analysis and modeling methodology, which uses the capabilities offered by the most advanced information systems, especially *Big Data,* to collect, model and analytically interpret data related to human resources of a company, so that the decision-making process in the field of HR is optimized under a strategic management approach, with the aim of improving individual and organizational performance, thus obtaining the best possible performance of the staff and the organization itself.

The second question is where have HRAs been applied? Human Resources (HR) processes or functions such as recruitment, selection and training are referred to in this case (e.g. Qamar and Samad, 2022; Singh and Muduli, 2021; Thakral *et al.*, 2023; Yoon *et al.*, 2023; Zeidan and Itani, 2020). For the third question, how have HRAs been implemented? and factors affecting HRA adoption have been considered (e.g., Coolen *et al.*, 2023; Lee and Lee, 2023; Margherita, 2022; Pongpisutsopa *et al.*, 2020; Ramachandran *et al.*, 2024; Thakral *et al.*, 2023) as well as the technical tools that have been used (e.g., Ben-Gal, 2019; Coron, 2022; Margherita 2022). In this sense, Big Data and Information and Communication Technologies (ICT) of Industry 4.0 have been widely applied in the management of HRs. (Jiang and Akdere, 2022). According to Polzer (2022), HRAs, artificial intelligence and technologies which are cloud-based are popular topics related to digital transformation in HR. However, there is still a gap between research and business practice.

The fourth question is what are the reasons for adopting HRA? In this case, the reasons may range from providing a tool to measure HR aspects to making predictions that help companies make decisions about HR (e.g., Marler and Boudreau

© 2024, Universidad Politécnica Salesiana, Ecuador
Print ISSN: 1390-6291; Electronic ISSN: 1390-8618

2017; Qamar and Samad 2022; Singh and Muduli 2021; Zeidan and Itani 2020). Finally, to answer the question: what are HRAs implemented for? we analyzed what drives companies to use HRA in their HR processes. In this sense, they have been analyzed from the effects on company results (for example, Jiang and Akdere, 2022; Kiran *et al*., 2023; Margherita, 2022; Marler and Boudreau, 2017; Zeidan and Itani, 2020) to other aspects more related to corporate social responsibility such as ethics (Fernández and Gallardo-Gallardo, 2021; Lee and Lee, 2023; McCartney and Fu, 2022a; Yoon *et al*., 202) and/or sustainability (Álvarez-Gutiérrez *et al*., 2022; Chang and Ke, 2024).

Reviews of the literature on RHAs have used different methodologies as systematic reviews of the literature (e.g. Ben-Gal, 2019; Coolen *et al*., 2023; Coron, 2022; Espegren and Hugosson, 2023; Fernández and Gallardo-Gallardo, 2021; Kiran *et al*., 2023; Margherita, 2022; Ramachandran *et al*., 2024), integrative reviews of the literature (Chang and Ke, 2024; Lee and Lee, 22), content analysis (e.g., Álvarez-Gutiérrez *et al*., 2022; Thakral *et al*., 2023) or bibliometric techniques (e.g., Arora *et al*., 2023; Jiang and Akdere, 2022; Qamar and Samad, 2022; Yoon *et al*., 2023). However, studies that apply bibliometric techniques usually perform descriptive or co-citation analyzes, rather than co-word analysis. The COVID-19 pandemic has shown the need to consider new perspectives and paradigms to address the management of HRs. HH. However, no reviews of the literature that differentiate between periods have been found to identify the changes produced. On the other hand, previous studies have identified some of the characteristics of the literature on HRA until 2021 but no works have been found that present a structured image of the topics studied on HRA.

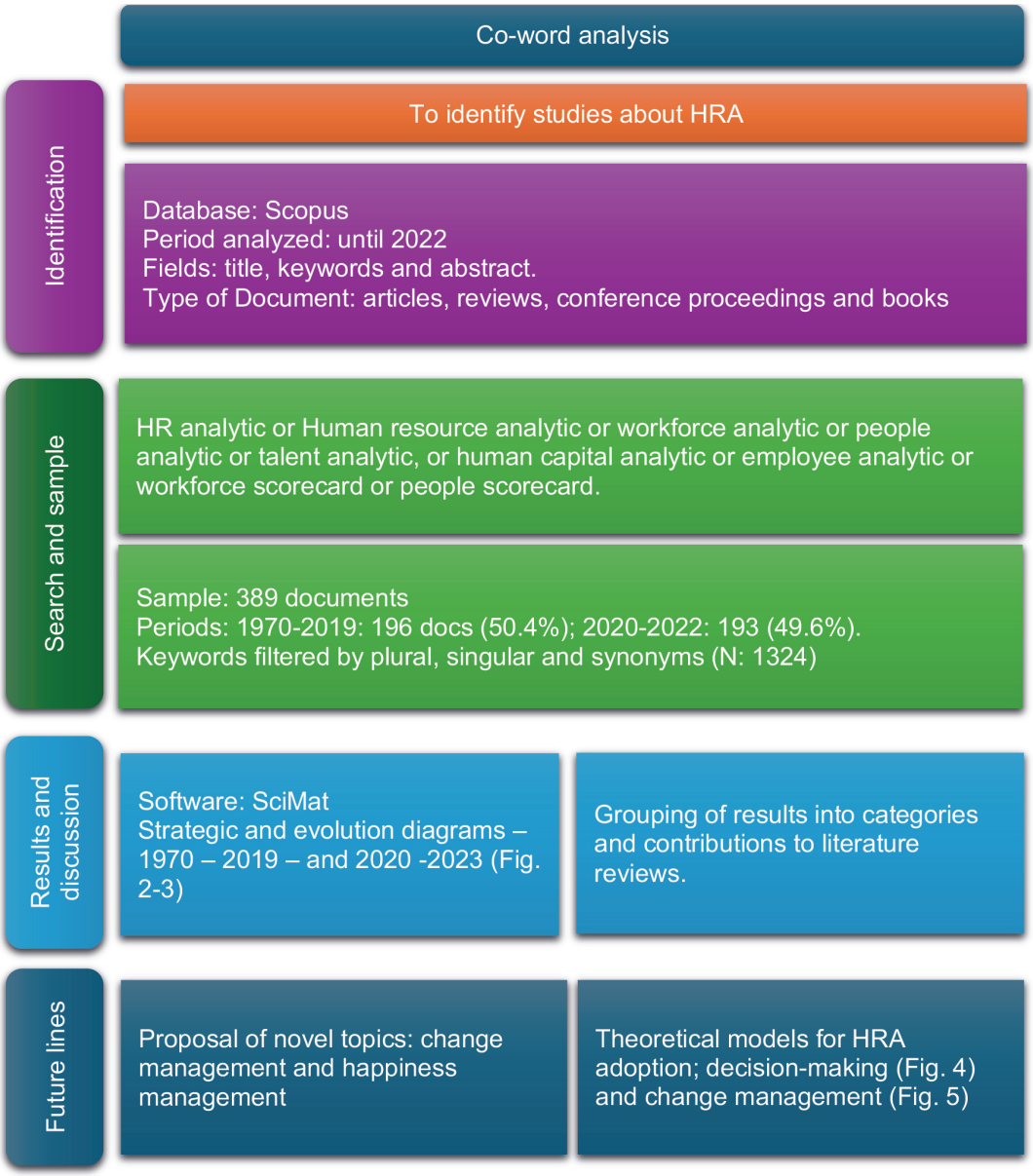
Considering the interest of the topic and the identified gaps, the objective of this work is to present a structured classification of the main topics studied on HRA and to propose new topics for future research. Thus, two research questions have been asked: 1) What topics have been studied on HRA? and 2) What are the novel topics of research on HRA?

To answer these questions, first, a co-word analysis has been carried out, which is an appropriate technique to present the knowledge structure of the research field and the relationships between its topics (Cobo *et al*., 2011). The results obtained, i.e. the topics identified, have been grouped into the following categories: context, internal aspects, tools, applications and effects. Based on these results, two novel topics have been identified: the management of change and happiness. In addition, two theoretical models have been proposed, one of decision-making for using HRA and another model on organizational change, which make up the main contribution of the work. These models can serve as a starting point for future research and have a direct application for decision-making in companies.

Methods

Figure 1 summarizes the methodological process. To answer the first research question, the topics studied in the previous literature have been identified using a bibliometric technique called co-word analysis, which allows to identify the topics or thematic groups studied, using keywords as a unit of analysis. In the analysis of co-words, methods such as concurrency analysis are applied to relate themes from keywords and strategic diagrams and thematic networks are elaborated. The SciMat program has been used to carry out these analyzes, offering the appropriate methods, algorithms and measures to perform keyword concurrency analysis and identify topics and groups of topics (Cobo *et al*., 2012). Moral-Muñoz *et al*. (2020) have justified the suitability of SciMat as a tool to carry out co-word analysis and offer graphical representations of the results in the form of strategic diagrams and thematic networks. The Scopus database has been used as a source of information because it presents some advantages over other databases such as the Web of Science (Stahlschmidt and Stephen, 2020) and, especially, because a larger sample of documents was obtained for this study. To answer the second research question, the titles and abstracts of the works published in recent years have been analyzed to observe the most current topics and conduct a process of reflection that has allowed to propose two interesting and novel topics.

Figure 1
Methodological process



Note. Own elaboration inspired by the PRISMA method.

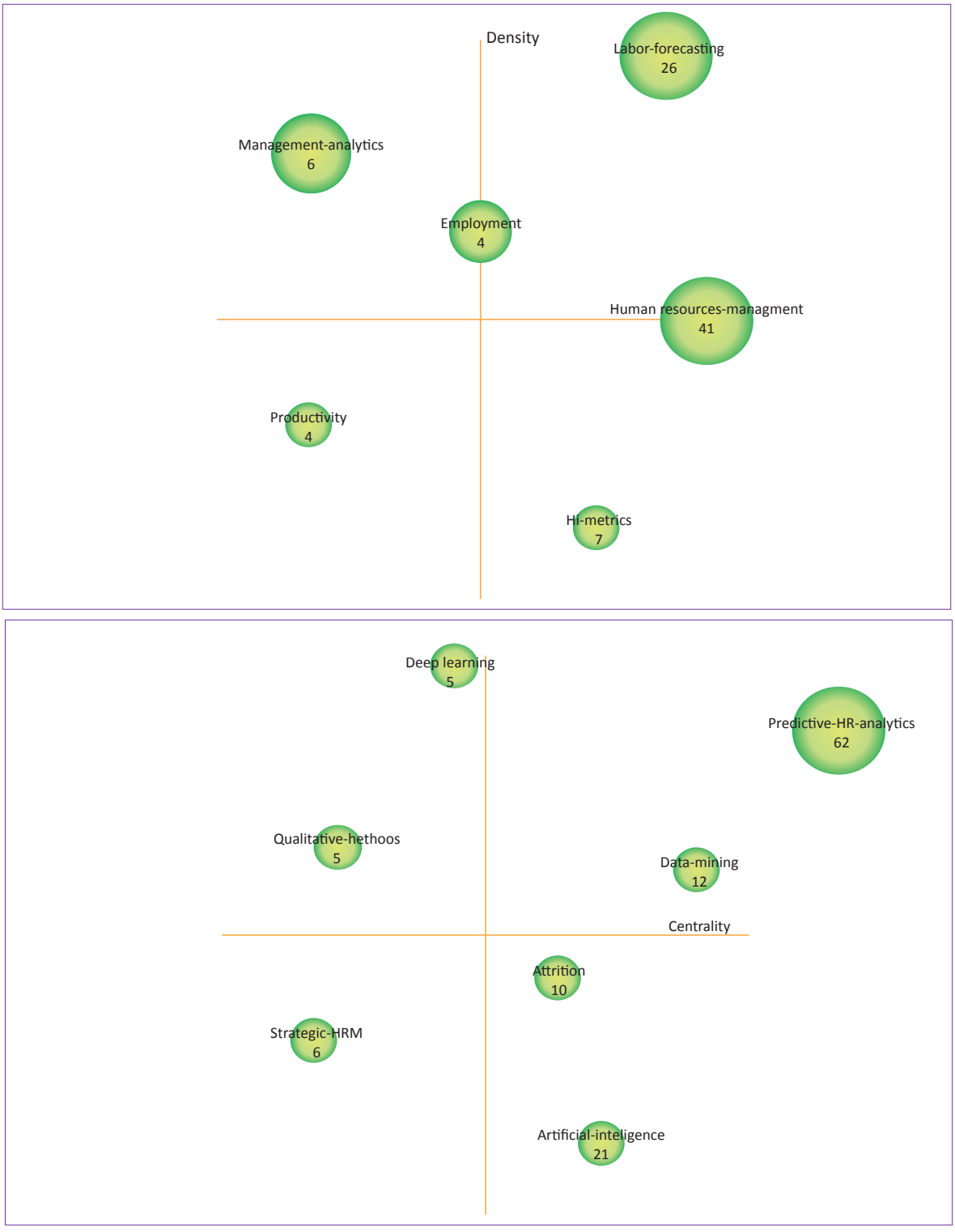
Results and discussion

The measures of centrality and density have been considered to do the strategic diagrams. Each semantic network has been classified, following the proposal of Cobo *et al.* (2018), in one of these groups: well-developed or isolated, emerging or disappearing, basic or transversal topics and engines. To give a complete view of the studied and to be able to see the changes produced before events such as the pandemic or the Great Renunciation, two periods of analysis have been considered: from 1970-2019 and the period 2020-2022 (Figure 2 and Table 1).

© 2024, Universidad Politécnica Salesiana, Ecuador
Print ISSN: 1390-6291; Electronic ISSN: 1390-8618

Figure 2

Strategic diagram for the periods 1970-2019 (docs. n) and 2020-2022 (docs. n)



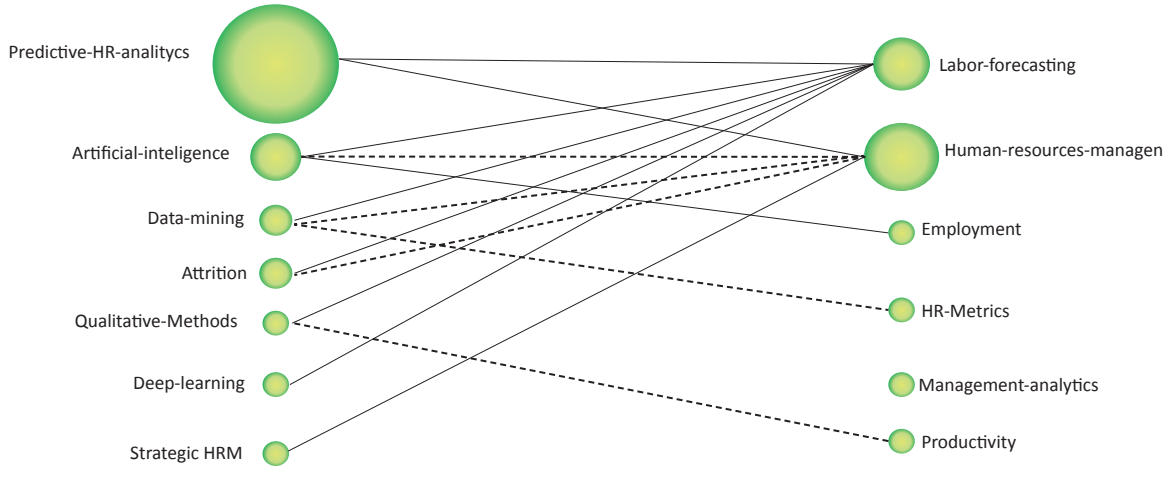
Note. SciMat results.

Table 1
Thematic groups and typology

Periods	Thematic groups	Group Type
1970–2019	*Labor-Forecasting*	Pilot
	Human Resources Management	A basic-transverse pilot
	Employment	Well-developed pilot
	HR-Metrics	Basic-transverse
	Management-Analytics	Well developed
	Productivity	Emerging
2020–2022	*Predictive HR Analytics*	Pilot
	Data-Mining	
	Artificial Intelligence	Basic-transverse
	Attrition	
	Qualitative-Methods	Well developed
	Deep-Learning	
	Strategic HRA	Emerging

To compare the different time periods (Figure 3), the inclusion index of Sternitzke and Bergmann (2009) has been used to determine the level of similarity between two thematic networks over different time periods (Cobo *et al.*, 2011). The literature that goes until 2019 has focused mainly on analyzing the role of HRA in job satisfaction and its effect on the company's result. Also, as an emerging topic in this period, HRAs have been considered from the perspective of the strategic direction of HRs. However, as of 2020, the literature has focused on the application of tools such as *deep-learning*, data mining and artificial intelligence and on their strategic and predictive ability. In this period, the interest in studying the role of HRA in subtractive processes has also been highlighted, i.e., in the different ways of leaving the employees of the organization for any reason – voluntary or involuntary – including resignation, dismissal or retirement.

Figure 3
Temporary developments for the periods 2020-2022 and 1970-2019



Note. SciMat results.

© 2024, Universidad Politécnica Salesiana, Ecuador
Print ISSN: 1390-6291; Electronic ISSN: 1390-8618

What topics have been studied about HRA?

In relation to the first research question, the topics identified have been classified into the following groups: context, internal aspects, tools used, applications and effects. As far as the context is concerned, HR professionals have faced new realities and have been adopting integrated management models to improve human capital management. Qamar and Samad (2022) have identified a study group on the adoption of HRAs from the strategic perspective of HR and other authors have studied the basic concepts and theories used to develop HRAs. The studies have been trying to explain the role of HR on competitive advantage, and the reasons why proper selection of staff is crucial for an organization. On the other hand, the impact of high-performance work systems on organizational results has been explained, relating the results of HR with business results. Research papers have also highlighted the importance of talent, the need to move towards HR models based on the combination of intuition and technologies and their impact on organizational outcomes (Al Ariss *et al.*, 2014). In addition, the HR strategic direction approach has been used to carry out longitudinal studies from the HRA, so that the HR strategies are studied focusing on aspects such as employee and other interest group behavior (McCartney *et al.*, 2020).

As for internal aspects, the practices of HR have been considered. For example, the application of HR in the selection processes (Brandt and Herzberg, 2020) and staff retention processes (Singh and Malhotra, 2020) has been studied. Subtractive processes have worried researchers a lot since the COVID-19 pandemic (Krishna and Sidharth, 2022). Therefore, some aspects related to staff retention have been analyzed, such as commitment, absenteeism, satisfaction and HR management. 4.0. However, HRAs have been applied heterogeneously in HR practices (Sripathi and Madhavaiah, 2018). The future of RHA depends on the efficiency of these departments in handling HR data, but it has been observed that there are still few HR professionals with the necessary skills to apply them (Wiblen and Marler, 2021).

The third group includes the tools used in the development and implementation of HRAs. The two central themes have been *Big Data* and artificial intelligence (AI). AI has been used to implement HRAs integrated into HR information systems and develop them using machine learning algorithms (Pessach *et al.*, 2020). It has been analyzed how they are used in recruitment processes, e-commerce, for knowledge transfer and for the pursuit of efficiency, but the legal aspects have not yet been deeply studied. On the other hand, HRA cannot be understood without considering *Big Data* (Ghasemaghaei, 2020), which has allowed the development of analytics in the digital economy for companies. And its role in remuneration policies has been analyzed (Dahlbom *et al.*, 2020).

Applications and effects of HRAs have been included in the last group. The HRAs have been a support for HR planning by offering recommendations thanks to the application of data science. Some of the barriers to their adoption in companies have also been identified, among which privacy issues stand out (Chatterjee *et al.*, 2021). Information technologies have helped to collect, manipulate and analyze data to support decision-making processes (Qamar and Samad, 2022). On the other hand, Greasley and Thomas (2020) have analyzed its implications—social, political and epistemological—on the perceived value of interest groups. In addition, it has been observed that companies often use qualitative systems for assessing HR, but the most current work has called for the development of quantitative measurement indicators of HR, the so-called *Key Performance Indicators* (KPIs). Another application of HRA has been the conduction of predictive analysis (Gurusinghe *et al.*, 2021), as support for decision-making. In this line, Qamar and Samad (2022) have highlighted the direct relationship between HRAs and value creation and McCartney and Fu (2022b) have provided empirical evidence on the positive impact of HRAs on companies.

If these results are compared with those of the previous literature review studies presented in the introduction, several complementary aspects are observed. On the one hand, previous studies

have not analyzed the topics considering two periods, nor have they made a proposal for their grouping. In this sense, the classification presented in this section has allowed us to propose four questions around the topics studied on RHA: 1) In which contexts have RHA been studied? 2) To which HR processes. H. are they being applied? (3) What tools are being used? and (4) What are their applications and impact? Moreover, these results have been the starting point to identify other novel topics that have been explained in the following section.

Novel topics in HRA research

Previous literature has shown the usefulness of HRAs, but their use in business environments remains being limited (Zeidan and Itani, 2020). From the reflection process carried out, two novel topics have been identified to develop this idea: the management of organizational change and the management of happiness.

HRA and organizational change management

To develop future research, it may be interesting to incorporate the foundations of organizational behavior (Ramachandran *et al.*, 2024). Zubac *et al.* (2021) have analyzed the implementation of the strategy as an operational issue and have proposed what change management specialists need to do to achieve more adaptable and efficient workplaces. The authors have pointed out that the implementation of the strategy is established through decision-making processes, while organizational change helps the development of strategies, structures and organizational processes. In this line, research on HRAs is challenged to demonstrate the importance of its adoption and implementation in the business environment. Qamar and Samad (2022) have proposed some interesting questions: Is it desirable to adopt HRA in organizations? What changes would be needed? What are the ethical dilemmas regarding HRA? Wirges and Neyer (2023) have suggested that the process of implementing HRAs should take into account the interaction between the specialized department and the HR department. In addition, it has been highlighted that there are still few companies that use HRA (Marler and Boudreau, 2017; Sigh and Muduli, 2021). The background, determinants and consequences of the use of HRA have also been analyzed (Vargas *et al.*, 2018; Zeidan and Itani, 2020), and the barriers to its implementation (Fernández and Gallardo-Gallardo, 2021).

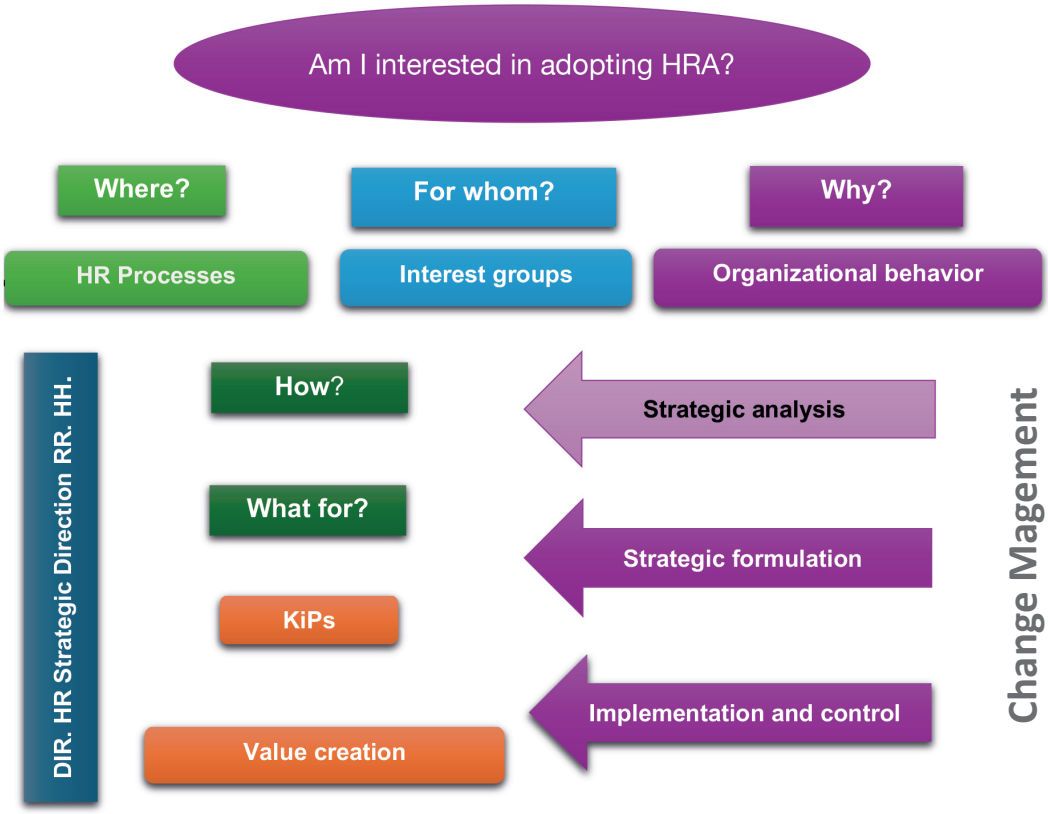
In this sense, research on HRA can deepen the role they have in the operational and strategic decision-making of companies. To guide future research, the first question a company can ask is: Do I want to adopt HRA? A proposal for a model decision-making model on the adoption of HRA is presented in Figure 4. If the answer to this question is yes, the next questions to ask would be: where do I apply it and to whom? In this sense, HRAs can be applied to HR processes since the decision on which and when to apply them is very relevant. In turn, this decision may be conditioned by the purpose for which HRAs are adopted in each HR process. Regarding the question of who they can be applied for, an interesting topic opens up which is the analysis of the role of interest groups with questions such as which of the objectives of each interest group can be covered with the use of HRA in each HR process? In addition, the importance of value creation in companies raises the following question: how to adopt and implement HRA in each HR process to meet the interests of the different interest groups and the organization as a whole? On the other hand, with regard to the question of how to adopt them, it is here that the usefulness and application of the Strategic Direction of the HRs is highlighted as a perspective to understand the adoption and implementation of HRA in companies.

Once the question of how to adopt them is answered, another question arises: how and why to adopt them? In this sense, it is useful to develop measurement indicators such as KPIs to measure results (for example, performance, economic and financial profitability) and to create value. Another possibility is that the company does not want to adopt them and wonders about the obstacles and ethical problems that their implementation can entail. For example, the potential

© 2024, Universidad Politécnica Salesiana, Ecuador
Print ISSN: 1390-6291; Electronic ISSN: 1390-8618

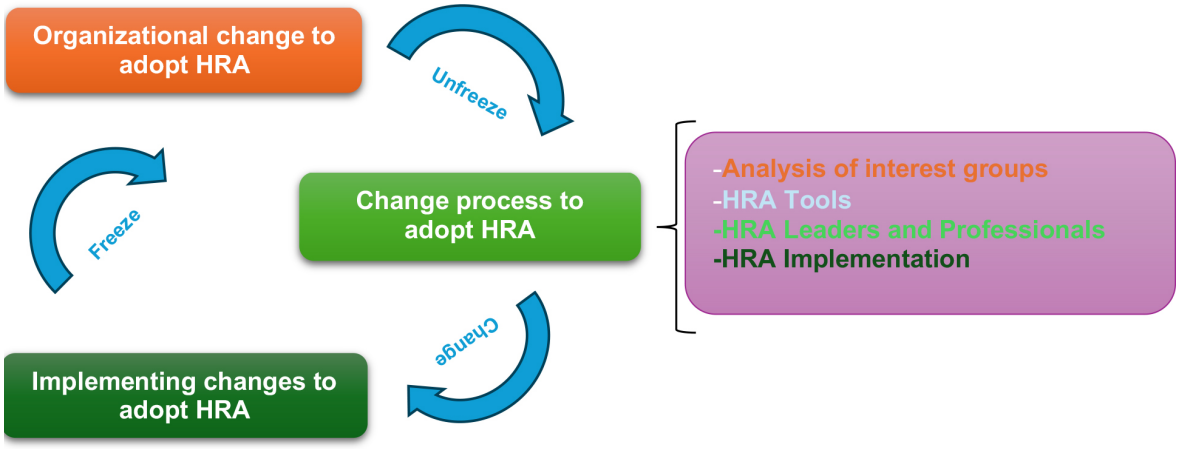
negative effects of HRAs in terms of inequality and well-being that can cause social and human costs. This is where the question arises: Why is it interesting to adopt HRA? which is closely related to aspects of organizational behavior such as organizational culture, motivation, communication, leadership, power, conflict, teamwork, decision-making and change (Robbins and Judge, 2018). For many companies, adopting HRA requires organizational changes and considering the influence of all aspects of organizational behavior on their decisions (Peeters *et al.*, 2020).

Figure 4
Decision-making model on the adoption of HRA



Furthermore, it has been observed that although previous literature has analyzed the obstacles and problems for the adoption of HRA, studies on this issue do not usually consider the contributions of organizational behavior. One of the key aspects of HRAs is their usefulness for decision-making (Coron, 2022; Ellmer and Reichel, 2021); but both the decision to adopt them and their implementation often require organizational changes (Qamarand Samad, 2022). One of the change models best known for its simplicity and usefulness is the Lewin model, which establishes three phases: unfreeze, change and refreeze (Lewin, 1951). Hussain *et al.* (2018) have presented an extension of the phases of the Lewin model. This model has been adapted so that it can serve as a guide to carry out the change processes necessary to adopt and implement HRAs (Figure 5).

Figure 5
Organizational change model for the use/implementation of HRA



Note. Own elaboration from the model of Hussain *et al.* (2018).

HRAs for happiness management

Another interesting aspect is the analysis of the role of interest groups in the adoption and implementation of HRAs. Hewett and Shantz (2021) have defined the process of RR co-creation as a continuous process in which HR and stakeholders create value through collaboration to solve problems and innovate in the design and use of HR practices so that the objectives of all parties can be better met. With this concept of co-creation, a holistic view of value creation that includes the needs of all stakeholders can be offered. By using this approach, HRAs can facilitate the identification and measurement of these needs.

One of the interest groups that requires the most attention is workers (Werbel and Balkin, 2010). Therefore, it is interesting to analyze the effect of the adoption and implementation of the HR from managerial and worker perspectives (Sung and Choi, 2014). Based on theories such as attribution (Martinko *et al.*, 2011), leadership and motivation models can be proposed to introduce the necessary changes in the behavior of workers. Thakral *et al.* (2023) have identified that one of the relevant topics is the role of HR in identifying employee behaviors that favor their well-being and the effectiveness of the organization. The characteristics of the employees that Thakral *et al.* (2023) have cited are: behavior, perception, attitude, personality, skill, competence, suitability for the position, improvement, commitment, teamwork, collaboration, value, trust, stress, well-being, ethics, justice, morality, equity and job satisfaction.

Some companies have found that increased employee happiness translates into higher productivity, higher quality of service, higher sales, greater creativity and higher levels of innovation; they also see greater openness to change, a greater collaborative spirit and, ultimately, better overall performance (Ravina-Ripoll *et al.*, 2019a; 2019b). In this context, which considers talent as the main core, a new style of talent management and business culture is developed, called happiness management (Ravina-Ripoll *et al.*, 2017; 2019a; 2019b; 2021a; 2021b; 2023a). The applications of HRAs for happiness management may be conditioned by the role of leaders in their adoption and implementation. At present, leaders must be authentic talent coaches, enhancing the personal growth of employees and ensuring that they maintain an adequate working climate, in line with the need to seek happiness in the midst of chaos (Sánchez-Bayón, 2020). Therefore, leadership must be based on trust, security, loyalty, commitment, team spirit and, above all, on improving the well-being of the worker. In that sense, Díaz-García *et al.* (2024) have defined a new style of leadership associated with the management of happiness, happy leadership.

© 2024, Universidad Politécnica Salesiana, Ecuador
Print ISSN: 1390-6291; Electronic ISSN: 1390-8618

Ruiz-Rodríguez *et al.* (2024) have developed the concept of happy and responsible neuroleadership (*Happy-Ne-R leadership*).

Recently, attention has been paid to the applications of HR for happiness management. In this sense, Abellán-Sevilla and Ortiz-de-Urbina-Criado (2023) have proposed a model that relates the HR analytics. Smart HR (*Smart Human Resource Analytics*) with happiness management. The authors have pointed out the interest of developing measurement and performance indicators (KPIs) to quantify the effect on happiness of each of the HR processes. Abellán-Sevilla and Ortiz-de-Urbina-Criado (2023) have suggested that the combination of Smart HR and happiness management can help identify dimensions and factors to measure value creation. In this sense, three levels of analysis have been proposed: 1) the organizational, considering factors such as corporate governance, entrepreneurship and innovation; 2) the individual, highlighting factors such as creativity, intraentrepreneurship and worker management; and 3) the relational, in which customers and social responsibility have their greatest role.

Starting from the idea that happiness in organizations is a reflection of the subjective well-being of the worker (Ravina-Ripoll *et al.*, 2017; 2019a; 2019b), happiness can be considered as an intangible resource that facilitates organizational changes helping to reduce or avoid workers' resistance to new technological, business and social challenges. Good happiness management can help attract and retain talent, but for this, it is necessary to show how to manage HR as objectively as possible for healthier and happier working environments. These ideas open a new line of future research to deepen and validate the application of HRAs for happiness management. Therefore, one of the novel topics that have been identified and that has not been developed in the previous literature is the application of HRA to measure the happiness of workers.

Conclusions

An analysis of the main topics studied in the literature on HRA has been conducted. To this end, two research questions have been answered. In relation to the first question, it has been observed that the previous literature has analyzed various topics that can be grouped into several categories: the context, the internal aspects, the tools used, the applications and the effects. This is one of the academic contributions of this work, as key issues have been identified in the literature on HRAs such as HR practices. Where HRAs are being applied, the tools are used for their development and adoption, and their utilities. To answer the second question, two novel topics and two theoretical models have been proposed that may be interesting to academics and managers. HRAs can help manage two of the biggest challenges companies face today: managing change and employee well-being. This is the major academic contribution of this work.

Human resource analytics are tools that help improve individual and organizational performance and can provide great value for decision-making. The adoption of human resources analytics is a relatively new phenomenon in companies that has become a complementary tool to adapt to change. Out of the aspects developed in this work, it is remarkable the fact that companies are subject to large processes of changes that significantly influence the welfare and performance of workers. In this sense, it is observed that studies about HRA in the processes of exit of employees from the organization have been conducted in recent years. These processes have a significant impact on the working environment and, more specifically, on worker happiness. Therefore, it is essential to consider the management of happiness when adopting and implementing HRA and analyze the processes of change that must be made to have happy employees.

Regarding the practical implications, following the suggestion of Edwards *et al.* (2024), the connection between HRA research and the real world has been sought. Although qualitative systems of HR assessment are often used. Currently, there has been a trend in the use of quantitative measurement indicators. In this sense, research on HRA can be used to develop measurement indicators that help assess value creation in companies. The new topics proposed and, in particular, the theoretical models presented in

this work can serve as a guide for general managers and HR to better understand how to adopt and implement HRA. They can also be used for predictive analysis to support decision-making. Managing change and employee well-being can greatly benefit from the use of HRAs, and their development can help reduce turnover in companies and make workers happier. Therefore, it may be interesting that, in future research, the usefulness of HR for the management of employee happiness, as well as the changes necessary for its adoption, is analyzed.

Another practical implication relates to Markman's (2022) call for research to address problems that concern society to make the world a better place. Some socio-political implications of this work are seen in the fact that HR pose important ethical challenges due to the potential negative impact that bad management practices can have on employees and society. Under the slogan *people* analytics for good an ethical application of HRA is being promoted (Edwards *et al*., 2024). In addition, Álvarez-Gutiérrez *et al*. (2022) propose a framework for developing HRA from the sustainability approach. In this context, many companies are concerned with issues such as diversity, hybrid work models and happiness management. This document can help professionals manage the change processes necessary to implement HRA in an ethical and sustainable way.

This research has some limitations related to the methodology used; however, future research may consider complementary techniques such as content analysis or case study. Statistical models such as decision trees and structural equation models can also be used to study decision-making processes and their effects on happiness in the workplace.

Finally, based on the ideas presented in Figures 4 and 5, new lines of research are proposed to answer questions such as: How can theories and models of organizational behavior be used to improve the implementation of HRA? How can change be managed for HRA adoption and deployment? How useful can HRAs be in achieving the objectives of different interest groups? In which HR processes can HRA be applied? How can the value created by the adoption and implementation of HRH be measured? On the other hand, the relevance, topicality and interest of happiness management leads to another question: How can HRA be used for happiness management in the workplace?

Research support and financial support

Entity: Ministry of Science and Innovation

Country: Spain

City: Madrid

Subsidized project: Corporate strategies, internationalization and key strategic factors in a global institutional context: determining factor of business performance and sustainability (Strategor).

Project Code: PID2021-124641NB-I00

Entity: Universidad Rey Juan Carlos

Country: Spain

City: Madrid

Subsidized project: High performance research group in open innovation of the Rey Juan Carlos University (OPENINNOVA).

Project Code: Internal Reference GI068

References

Abellán-Sevilla, A.-J. and Ortiz-de-Urbina-Criado, M. (2023). Smart human resource analytics for happiness management. *Journal of Management Development, 42*(6), 514-525. https://doi.org/10.1108/JMD-03-2023-0064

Al Ariss, A., Cascio, W. F. and Paauwe, J. (2014), Talent management: current theories and future research directions. *Journal of World Business, 49*(2), 173-179. https://doi.org/10.1016/j.jwb.2013.11.001

Álvarez-Gutiérrez, F. J., Stone, D. L., Castaño, A. M. and García-Izquierdo, A. L. (2022). Human resources analytics: a systematic review from a sustainable management approach. *Journal of Work and Organizational Psychology, 38*(3), 129-147. https://doi.org/10.5093/jwop2022a18

Arora, M., Prakash, A., Dixit, S., Mittal, A. and Singh, S. (2023). A critical review of HR analytics: visualization and bibliometric analysis approach. *Information Discovery and Delivery, 51*(3), 267-282. https://doi.org/10.1108/IDD-05-2022-0038

Ben-Gal, H. C. (2019). An ROI-based review of HR analytics: practical implementation tools.

© 2024, Universidad Politécnica Salesiana, Ecuador
Print ISSN: 1390-6291; Electronic ISSN: 1390-8618

Personnel Review, 48(6), 1429-1448. https://doi.org/10.1108/PR-11-2017-0362

Brandt, P. M. and Herzberg, P. and. (2020). Is a cover letter still needed? Using LIWC to predict application sucess. *International Journal of Selection and Assessment, 28*(4), 417-429. https://doi.org/10.1111/ijsa.12299

Chang, Y.-L. and Ke, J. (2024). Socially responsible artificial intelligence empowered people analytics: a novel framework towards sustainability. *Human Resource Development Review, 23*(1), 88-120. https://doi.org/10.1177/15344843231200930

Chatterjee, S., Chaudhuri, R., Vrontis, D. and Siachou, E. (2021). Examining the dark side of human resource analytics: an empirical investigation using the privacy calculus approach. *International Journal of Manpower, 43*(1), 52-74. https://doi.org/10.1108/IJM-02-2021-0087

Cobo, M. J., López-Herrera, A. G., Herrera-Viedma, E. and Herrera, F. (2011). Science mapping software tools: review, analysis, and cooperative study among tools. *Journal of the American Society for Information Science and Technology, 62*(7), 1382-1402. https://doi.org/10.1002/asi.21525

Cobo, M. J., López-Herrera, A. G., Herrera-Viedma, E. and Herrera, F. (2012). SciMAT: a new science mapping analysis software tool. *Journal of the American Society for Information Science and Technology, 63*(8), 1609-1630. https://doi.org/10.1002/asi.22688

Cobo, M. J., Jürgens, B., Herrero-Solana, V., Martínez, M. A., y Herrera-Viedma, E. (2018). Industry 4.0: a perspective based on bibliometric analysis. *Procedia Computer Science, 139*, 364-371. https://doi.org/10.1016/j.procs.2018.10.278

Contreras-Contreras, P., Cuesta-Valino, P. and Gutiérrez-Rodríguez, P. (2023). Happiness and its relationship to expectations of change and sustainable behavior in a post-COVID world. *Journal of Management Development, 42*(6), 458-482. https://doi.org/10.1108/JMD-04-2023-0107

Coolen, P., van den Heuvel, S., Van De Voorde, K. and Paauwe, J. (2023). Understanding the adoption and institutionalization of workforce analytics: A systematic literature review and research agenda. *Human Resource Management Review, 33*(4), 100985. https://doi.org/10.1016/j.hrmr.2023.100985

Coron, C. (2022). Quantifying human resource management: a literature review. *Personnel Review, 51*(4), 1386-1409. https://doi.org/10.1108/PR-05-2020-0322

Dahlbom, P., Siikanen, N., Sajasalo, P. and Jarvenpää, M. (2020). Big data and HR analytics in the digital era. *Baltic Journal of Management, 15*(1), 120-138. https://doi.org/10.1108/BJM-11-2018-0393

Díaz-García, G. A. Ortiz-de-Urbina-Criado, M. and Ravina-Ripoll, R. (2024). Happy leadership, now more than ever. *International Journal of Happiness and Development, 8*(3), 223-243. https://doi.org/10.1504/IJHD.2023.10060264

Edwards, M. R., Charlwood, A., Guenole, N. and Marler, J. (2024). HR analytics: an emerging field finding its place in the world alongside simmering ethical challenges. *Human Resource Management Journal, 34*(2), 326-336. https://doi.org/10.1111/1748-8583.12435

Ellmer, M. and Reichel, A. (2021). Staying close to business: the role of epistemic alignment in rendering HR analytics outputs relevant to decision-makers. *The International Journal of Human Resource Management, 32*(12), 2622-2642. https://doi.org/10.1080/09585192.2021.1886148

Espegren, Y. and Hugosson, M. (2023). HR analytics-as-practice: a systematic literature review. *Journal of Organizational Effectiveness: People and Performance,* https://doi.org/10.1108/JOEPP-11-2022-0345

Falletta, S. V. and Combs, W. L. (2021). The HR analytics cycle: a seven- step process for building evidence-based and ethical HR analytics capabilities. *Journal of Work-Applied Management, 13*(1), 51-68. https://doi.org/10.1108/JWAM-03-2020-0020

Fernández, V. and Gallardo-Gallardo, E. (2021). Tackling the HR digitalization challenge: key factors and barriers to HR analytics adoption. *Competitiveness Review, 31*(1), 162-187. https://doi.org/10.1108/CR-12-2019-0163

Ghasemaghaei, M. (2020). Improving organizational performance through the use of big data. *Journal of Computer Information Systems, 60*(5), 395-408. https://doi.org/10.1080/08874417.2018.1496805

Greasley, K. and Thomas, P. (2020). HR analytics: the onto-epistemology and politics of metricised HRM. *Human Resource Management Journal, 30*(4), 494-507. https://doi.org/10.1111/1748-8583.12283

Gurusinghe, R. N., Arachchige, B. J. H. and Dayarathna, D. (2021). Predictive HR analytics and talent management: a conceptual framework. *Journal of Management Analytics, 8*(2), 195-221. https://doi.org/ 10.1080/23270012.2021.1899857

Hewett, R. and Shantz, A. (2021). A theory of HR co-creation. *Human Resource Management Review, 31*(4), 100823. https://doi.org/10.1016/j.hrmr.2021.100823

Hussain, T., Lei, S., Akram, T., Haider, M. J., Hussain, S. H. and Ali, M. (2018). Kurt Lewin's change model: a critical review of the role of leadership and employee involvement in organizational change. *Journal of Innovation & Knowledge, 3*(3), 123-127. https://doi.org/10.1016/j.jik.2016.07.002

Jiang, Y. and Akdere, M. (2022). An operational conceptualization of human resource analytics: implications for in human resource development. *Industrial and Commercial Training, 54*(1), 183-200. https://doi.org/10.1108/ICT-04-2021-0028

Kiran, P. R., Chaubey, A. and Shastri, R. K. (2023). Role of HR analytics and attrition on organisational performance: a literature review leveraging the SCM-TBFO framework. *Benchmarking: An International Journal*. https://doi.org/10.1108/BIJ-06-2023-0412

Krishna, S. and Sidharth, S. (2022). HR Analytics: Employee Attrition Analysis using Random Forest. *International Journal of Performability Engineering*, *18*(4), 275-281. https://doi.org/10.23940/ijpe.22.04.p5.275281

Lee, J. and. and Lee Y. (2023). Integrative literature review on people analytics and implications from the perspective of human resource development. *Human Resource Development Review, 23*(1), 58-87. https://doi.org/10.1177/15344843231217181

Lewin, K. (1951). *Field theory in social science: selected theoretical papers*. Dorwin Cartwright.

Margherita, A. (2022). Human resources analytics: a systematization of research topics and directions for future research. *Human Resource Management Review, 32*(2), 100795. https://doi.org/ 10.1016/j.hrmr.2020.100795

Markman, G. D. (2022). Will your study make the world a better place? *Journal of Management Studies, 59*(6), 1597-1603. https://doi.org/10.1111/joms.12843

Marler, J. H. and Boudreau, J. W. (2017). An evidence-based review of HR analytics. *The International Journal of Human Resource Management, 28*(1), 3-26. https://doi.org/10.1080/09585192.2016.1244699

Martinko, M. J., Harvey, P. and Dasborough, M. T. (2011). Attribution theory in the organizational sciences: a case of unrealized potential. *Journal of Organizational Behavior, 32*(1), 144-149. https://doi.org/10.1002/job.690

McCartney, S. and Fu, N. (2022a). Promise versus reality: a systematic review of the ongoing debates in people analytics. *Journal of Organizational Effectiveness: People and Performance, 9*(2), 281-311. https://doi.org/10.1108/JOEPP-01-2021-0013

McCartney, S. and Fu, N. (2022b). Bridging the gap: why, how and when HR analytics can impact organizational performance. *Management Decision, 60*(13), 25-47. https://doi.org/10.1108/MD-12-2020-1581

McCartney, S., Murphy, C. and McCarthy, J. (2020). 21st century HR: a competency model for the emerging role of HR analysts. *Personnel Review, 50*(6), 1495-1513. https://doi.org/10.1108/pr-12-2019-0670

Moral-Muñoz, J. A., Herrera-Viedma, E., Santisteban-Espejo, A. and Cobo, M. J. (2020). Software tools for conducting bibliometric analysis in science: An up-to-date review. *El profesional de la información, 29*(1), e290103. https://doi.org/10.3145/epi.2020.ene.03

Peeters, T., Paauwe, J. and Van De Voorde, K. (2020). People analytics effectiveness: developing a framework. *Journal of Organizational Effectiveness: People and Performance, 7*(2), 203-219. https://doi.org/10.1108/JOEPP-04-2020-0071

Pessach, D., Singer, G., Avrahami, D., Ben-Gal, H. C., Shmueli, E. and Ben-Gal, I. (2020). Employees recruitment: a prescriptive analytics approach via machine learning and mathematical programming. *Decision Support Systems, 134*, 113290. https://doi.org/10.1016/j.dss.2020.113290

Polzer, J. T. (2022). The rise of people analytics and the future of organizational research. *Research in Organizational Behavior, 42*, 100181. https://doi.org/10.1016/j.riob.2023.100181

Pongpisutsopa, S., Thammaboosadee, S. and Chuckpaiwong R. (2020). Factors affecting HR analytics adoption: a systematic review using literature weighted scoring approach. *Asia Pacific Journal of Information Systems, 3*(4), 847-878. https://doi.org/10.14329/apjis.2020.30.4.847

Qamar, Y. and Samad, T. A. (2022). Human resource analytics: a review and bibliometric analysis. *Personnel Review, 51*(1), 251-283. https://doi.org/10.1108/PR-04-2020-0247

Ramachandran, R., Babu, V. and Murugesan, V. P. (2024). Human resource analytics revisited: a systematic literature review of its adoption, global acceptance and implementation. *Benchmarking: An International Journal*, *31*(7),

© 2024, Universidad Politécnica Salesiana, Ecuador
Print ISSN: 1390-6291; Electronic ISSN: 1390-8618

2360-2390. https://doi.org/10.1108/BIJ-04-2022-0272

Ravina-Ripoll, R., Foncubierta- Rodríguez, M. J. and López-Sánchez, J. A. (2021a). Certification Happiness Management: an integral instrument for human resources management in post-COVID-19 era. *International Journal of Business Environment, 12*(3), 287-299. https://doi.org/10.1504/IJBE.2021.116606

Ravina-Ripoll, R., Núñez-Barriopedro, E., Almorza-Gomar, D. and Tobar-Pesantez, L. B. (2021b). Happiness management a culture to explore from brand orientation as a sign of responsibility and sustainable production. *Frontiers in Psychology*, *12*, 3243. https://doi.org/10.3389/fpsyg.2021.727845.

Ravina-Ripoll, R., Galván-Vela, E., Popescu, C. R. G. and Ahumada-Tello, E. (2023a), Guest editorial: Exploring happiness in the workplace as an essential theme for developing managers post-pandemic. *Journal of Management Development*, *42*(6), 421-424. https://doi.org/10.1108/JMD-07-2023-512

Ravina-Ripoll, R., Galván-Vela, E., Sorzano-Rodríguez, D. M. and Ruiz-Corrales, M. (2023b). Mapping intrapreneurship through the dimensions of happiness at work and internal communication. *Corporate Communications: An International Journal, 28*(2), 230-248. https://doi.org/10.1108/CCIJ-03-2022-0037

Ravina-Ripoll, R., Marchena-Dominguez, J. and Montañés-Del-Río, M. Á. (2019a). Happiness management in the age of industry 4.0. *Retos: Revista de Ciencias Administrativas y Económicas, 9*(18),189-202. https://doi.org/10.17163/ret.n18.2019.01

Ravina-Ripoll, R., Tobar-Pesantez, L. B. and Marchena-Dominguez, J. (2019b). *Happiness management: a lighthouse for social wellbeing, creativity and sustainability*, Peter Lang, Bern, Berlin, Bruxelles, New York, Oxford, Warszawa, Wien. http://dx.doi.org/10.3726/b15813

Ravina-Ripoll, R., Villena-Manzanares, F. and Gutiérrez-Montoya, G. A. (2017). Una aproximación teórica para mejorar los resultados de innovación en las empresas desde la perspectiva del "Happiness Management". *Retos. Revista de Ciencias de la Administración y Economía, 7*(14), 113-129. http://dx.doi.org/10.17163/ret.n14.2017.06

Robbins, S. P. and Judge, T. A. (2018). *Organizational behavior (What's new in management)*. Pearson, USA. 18th ed.

Ruiz-Rodríguez, R., Ortiz-de-Urbina-Criado, M. and Ravina-Ripoll, R. (2023). Neuroleadership: a new way for happiness management. *Humanities and Social Sciences Communications*, *10*(139), 1-14. https://doi.org/10.1057/s41599-023-01642-w

Ruiz-Rodríguez, R., Ortiz-de-Urbina-Criado, M. and Ravina-Ripoll, R. (2024). Happy-Ne-R leadership for companies in emerging economies. *International Journal of Happiness and Development*, *Online first articles*. https://doi.org/10.1504/IJHD.2024.10064437

Sánchez-Bayón, A. (2020). Una historia de RR.HH. and su transformación digital: Del fordismo al talentismo y la gestión de la felicidad. *Revista de la Asociación Española de Especialistas en Medicina del Trabajo, 29*(3), 177-256. https://goo.su/JBF9b

Singh, T. and Malhotra, S. (2020). Workforce analytics: increasing managerial efficiency in human resource. *International Journal of Scientific and Technology Research*, *9*(1), 3260-3266. https://bit.ly/3MktvtX

Singh, S. and Muduli, A. (2021). Factors influencing information sharing intention for human resource analytics. *Economic Studies Journal*, *3*, 115-133. https://bit.ly/3WYDD0l

Sripathi, K. and Madhavaiah, A. (2018). Are HR professionals ready to adopt HR analytics? A study on analytical skills of HR professionals. *Journal of Advance Research in Dynamical & Control Systems, 10*(08-Special Issue), 303-308. https://bit.ly/3z2jtKT

Stahlschmidt, S. and Stephen, D. (2020). *Comparison of Web of Science, Scopus and Dimensions databases.* KB Forschungspoolprojekt 2020. https://bit.ly/474bs4H

Sternitzke, C. and Bergmann, I. (2009). Similarity measures for document mapping: a comparative study on the level of an individual scientist. *Scientometrics*, *78*(1), 113-30. https://doi.org/10.1007/s11192-007-1961-z

Sung, S. and. and Choi, J. N. (2014). Multiple dimensions of human resource development and organizational performance. *Journal of Organizational Behavior, 35*(6), 851-870. https://doi.org/10.1002/job.1933

Thakral, P., Srivastava, P. R., Dash, S. S., Jasimuddin, S. M. and Zhang, Z. (2023). Trends in the thematic landscape of HR analytics research: a structural topic modeling approach. *Management Decision*, *61*(12), 3665-3690. https://doi.org/10.1108/MD-01-2023-0080

Vargas, R., Yurova, Y. V., Ruppel, C. P., Tworoger, L. C. and Greenwood, R. (2018). Individual adoption of HR analytics: a fine-grained view of the early stages leading to adoption.

The International Journal of Human Resource Management, 29(22), 3046-3067. https://doi.org/10.1080/09585192.2018.1446181

Werbel, J. and Balkin, D. B. (2010). Are human resource practices linked to employee misconduct?: a rational choice perspective. *Human Resource Management Review, 20*(4), 317-326. https://doi.org/10.1016/j.hrmr.2009.10.002

Wiblen, S. and Marler, J. H. (2021). Digitalised talent management and automated talent decisions: the implications for HR professionals. *The International Journal of Human Resource Management, 32*(12), 2592-2621. https://doi.org/10.1080/09585192.2021.1886149

Wirges, F. and Neyer, A. K. (2023). Towards a process-oriented understanding of HR analytics: implementation and application. *Review of Managerial Science, 17*, 2077-2108. https://doi.org/10.1007/s11846-022-00574-0

Yoon S. W., Han S.-H. and Chae, C. (2023). People analytics and human resource development – research landscape and future needs based on bibliometrics and scoping review. *Human Resource Development Review, 23*(1), 30–57. https://doi.org/10.1177/15344843231209362

Zeidan, S. and Itani, N. (2020). HR analytics and organizational effectiveness. *International Journal on Emerging Technologies, 11*(2), 683-688. https://bit.ly/3XjkN5w

Zubac, A., Dasborough, M., Hughes, K., Jiang, Z., Kirkpatrick, S., Martinsons, M. G., Tucker, D. and Zwikael, O. (2021). The strategy and change interface: understanding "enabling" processes and cognitions. *Management Decision, 59*(3), 481-505. https://doi.org/10.1108/MD-03-2021-083

© 2024, Universidad Politécnica Salesiana, Ecuador
Print ISSN: 1390-6291; Electronic ISSN: 1390-8618