

People Analytics in Digital Era

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I . Introduction

The demand for people analytics has surged due to recent advancements in big data, digital technologies, and the increasing use of data science techniques (Yoon, 2021). People analytics, as outlined by Tursunbayeva et al. (2021), involves the collection and analysis of data, as well as the extraction of valuable insights, enabling organizations to assess the impact of various human resource (HR) metrics on overall business performance and make informed decisions. While the interest in people analytics within information systems (IS) research is not novel, recent years have seen a notable surge in this research domain, evidenced by emerging publications focusing on employing big data and analytic techniques for understanding organizational challenges and establishing new businesses based on employee data (Giermindl et al., 2022). Despite the growing interest, however, the research community, including scholars such as Giermindl et al. (2022), Levenson and Fink (2017), Pessach et al. (2020), and Saxena et al. (2021),

acknowledges a significant scarcity of scholarly works dedicated to this topic. This gap highlights the need for more rigorous academic inquiry into the use and impact of people analytics in modern organizations.

The purpose of this special issue is to expand upon existing dialogues in people analytics, introducing new discussions on its pivotal role in addressing management challenges and how big data, machine learning, and metaverse technologies influence its applications. These topics represent an emerging field that necessitates interdisciplinary collaboration and the integration of management perspectives, increasingly gaining importance alongside the rise of artificial intelligence (AI)-related subjects. However, the challenge lies in achieving a cohesive interdisciplinary research perspective and identifying clear, meaningful research objectives in this complex and evolving domain. This complexity underscores the need for more nuanced and sophisticated approaches to studying the intersection of people analytics with advanced technological trends and management

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practices.

In this special issue, we have delved into a variety of data-driven research themes. These include studies on the impact of interpersonal relationships on organizational members' work performance, analyses of factors influencing employee satisfaction and early career turnover, and investigations into the characteristics of HR organizations enhanced by machine learning. A key aspect of this issue is its focus on integrating conventional topics from organizational activities and information systems, as well as e-commerce research, into the emerging domain of people analytics. This approach reflects a thoughtful fusion that bridges established theories with the innovative methodologies and analytical frameworks. Although we may not have fully achieved all our objectives in this issue, it marks a crucial milestone in our journey. We are encouraged by the progress made in sparking interest among APJIS readers in the field of people analytics and in broadening the breadth of research in this research domain. This achievement will provide a pivotal step in the ongoing evolution and expansion of research within this dynamic and impactful domain.

II. People Analytics in Information Systems Research

People analytics is broadly defined as a data-driven approach used to guide employee-related decisions and practices, encompassing various outcomes and applications based on data analysis. We conceptualize people analytics as both an organizational function—which encompasses data collection, analyses, and interpretation—and a set of practices that utilize employee data to inform and support decision-making processes and activities across the organization. The

main objective of people analytics activities is to leverage the endeavors of data science to enhance organizational productivity and to explore the potential contributions of AI services in fostering customer satisfaction and human welfare. This definition highlights the multifaceted nature of people analytics, emphasizing its role in both the operational and strategic aspects of organizational management and employee engagement.

As the channels for data acquisition continue to expand and AI algorithms advance, there is an increasing interest in utilizing information technologies to understand human behavior, work performance, and interactions. Efforts to comprehend human behavior through data analysis in the fields such as consumer behavior (Erevelles et al., 2016), financial forecasting (Martin and Nagel, 2022), and healthcare management (Davenport and Kalakota, 2019) indicate that the advancements in big data and data science applications are poised to significantly transform traditional approaches to predicting and understanding human behavior. Similar to how data science has provided academic breakthroughs across various disciplines, people analytics holds significant promise in addressing important questions in the HR field. These include—How do we hire and promote based on objective criteria? How can we measure and manage employee well-being and happiness? In remote working scenarios like those necessitated by COVID-19, how can we support employees to collaborate more effectively and produce productive outcomes? Who is likely to leave our organization, and how can we proactively identify potential losses of key talents? Addressing these questions requires substantial research efforts to expand methods that leverage big data and AI-based technologies, as emphasized by Salganik (2019). This approach is essential for both adapting to and capitalizing on the trans-

formative potential of these technologies in the domain of HR management.

Management scholars are currently poised at an opportune moment to open new research avenues by integrating the vast amounts of big data recorded in information systems, which encapsulate human behavior and interactions, and by employing interdisciplinary fusion theories for comprehensive analysis. This integration is further enhanced by the utilization of machine learning technologies, as outlined by Tambe et al. (2019). The rise of people analytics within the HR domain is heralded by data-driven studies on aspects of the employee lifecycle such as promotions, hiring, and compensation, as evidenced by Agrawal et al. (2018, 2022) and Kahneman et al. (2021). A crucial factor driving the direct expansion of research in HR lies the technological advancements that enable the storage and processing of both structured and unstructured data produced by organizational members. In addition, the education and training of scholars to harness the diverse benefits arising from AI represent a noteworthy development. This trend underlines the potential for groundbreaking research that can transform HR practices by leveraging advanced data analysis and AI technologies.

One of the objectives of people analytics is to devise methods for measuring and managing whether targeted performance levels are achieved using data, and to explore how these methods can complement conventional methodologies utilized by IS scholars to elucidate theoretical relationships. However, this objective also encompasses the task of considering how to better utilize algorithms. Employing algorithms is pivotal to achieving maximum performance with minimal management effort, especially in situations where large groups of people are gathered or where internal and external organizational struc-

tures are complexly intertwined. If algorithms can be used to make decisions that are more fair, consistent, and of high quality, the benefits would be substantial (Kahneman et al., 2021). Concurrently, there exist challenges that need to be addressed, such as ensuring unbiased algorithms and managing public perception and acceptance regarding the control and management of human behavior and relationships by algorithms or AI. Addressing these issues is critical for the ethical and effective application of people analytics in various organizational settings.

III. Papers in this Special Issue

This special issue aims to bring together scholars investigating the realm of people analytics in the IS context. With this aim, seven papers have been carefully selected for publication. The first paper, titled “*The Impact of Autonomous Virtual Work Environments on Job Satisfaction and Organizational Effectiveness*” by Eun Seo Park, Sung-Byung Yang, and Arum Park, examines the perceptions of justice concerning flexible work arrangements and their impact on job satisfaction and organizational effectiveness. The study finds the substantial influence of distributive justice on job satisfaction for both R&D and office administration roles, highlighting the importance of justice perceptions in enhancing overall performance in organizations with flexible work setups. The findings bear significant implications for firms utilizing flexible work arrangements, suggesting the need to prioritize justice perceptions to enhance satisfaction and overall performance.

The second paper, titled “*Evaluating the Current State of ChatGPT and Its Disruptive Potential: An Empirical Study of Korean Users*” by Jiwoong Choi, Jinsoo Park, and Jihae Suh, presents a comprehensive

empirical investigation into the adoption and perception of ChatGPT among Korean users. It uniquely identifies perceived intelligence and anthropomorphism as key factors differentiating ChatGPT from other AI chatbots. The study's robust methodology involves surveying Korean online communities, utilizing the Technology Acceptance Model (TAM) to analyze users' acceptance. It highlights the importance of both utilitarian and hedonic motivations driving the adoption of ChatGPT. Interestingly, the study reveals that perceived ease-of-use and trust are not as significant in terms of influencing behavioral intentions to adopt ChatGPT as previously believed. The research offers insightful implications for service developers and Large Language Model (LLM) providers, emphasizing the need for user-centric design and acknowledging the role of social influence in technology adoption.

The third paper, titled "*Impact of Service Quality on Behavioral Intention to Use FinTech Payment Services: An Extension of the SERVQUAL Model*" by Vikas Sharma, Sanjay Taneja, Sanjay Raneja, Munish Gupta, Kshitiz Jangir, and Ercan Ozen, explores the relationship between service quality and users' intentions to adopt FinTech payment services. The research integrates the SERVQUAL and TAM frameworks, investigating how service quality impacts behavioral intentions through a survey conducted in Northern India. The study is significant for FinTech service providers, offering valuable insights into factors influencing user adoption and satisfaction. The utilization of the PLS-SEM technique for analysis adds robustness to the findings. The study contributes to the understanding of user behavior in the emerging FinTech sector, specifically highlighting the importance of service quality in influencing user acceptance and continuous use.

The fourth paper, titled "*Validity of Language-*

Based Algorithms Trained on Supervisor Feedback Language for Predicting Interpersonal Fairness in Performance Feedback" by Jisoo Ock and Joyce Pang, investigates the efficacy of computer-aided text analysis and machine learning in assessing the interpersonal fairness of supervisor feedback. This study empirically substantiates that language-based algorithms can predict the fairness of feedback with a reasonable level of accuracy. This finding holds considerable significance, suggesting a practical tool for organizations to monitor and improve the quality of feedback in performance management. The methodology and findings of this study significantly contribute to the domains of performance management and people analytics, highlighting the potential of IT in enhancing traditional management practices.

The fifth paper, titled "*Early Career Turnover Model and Career Path for Self-realization: Findings in Korea's Information Security Industry*" by Song-Ha Lee, Hyo-Jung Jun, and Tae-Sung Kim, offers a comprehensive analysis of turnover intentions among early-career information security professionals in Korea. The study utilizes a well-constructed turnover intention research model, focusing on the impact of self-realization on career paths. Combining theoretical models with empirical data from in-depth interviews, the study highlights the importance of career development and job satisfaction in reducing turnover. The research offers valuable insights into people analytics research, emphasizing the necessity for tailored approaches to career development for retaining skilled professionals in the information security sector.

The sixth paper, titled "*A Study on the Factors Affecting User Trust and Satisfaction: Focusing on the Online Fashion Curation Services*" by Hohyun Kim and Jongtae Lee, examines the impact of various factors on user trust and satisfaction in online fashion

curation services. The study finds that design quality positively influences user satisfaction but not trust, while interactivity significantly influences trust but not satisfaction. Furthermore, perceived usefulness is found to have positive impacts on both trust and satisfaction. Interestingly, personalization affects trust but not satisfaction. The research demonstrates the important roles of these factors in shaping user experiences about fashion curation services, highlighting the complexity of user engagement in e-commerce environments. Leveraging extensive datasets relating to human interactions, the paper's findings offer valuable insights into the development of more effective online fashion platforms, emphasizing the importance of personalized, useful, and interactive design elements for enhanced user engagement.

Finally, the seventh paper of this special issue, titled "*Lessons Learned from Institutionalization of ML Supported HR Services in the Existence of Multiple Institutional Logics*" by Gyeong-min Kim and Heesun Kim investigates the implementation of Machine Learning (ML)-supported HR services to address high employee turnover in the IT sector. The study examines the challenges of reconciling conflicting institutional logics prevalent among different organizational groups during the integration of ML into HR processes. It highlights the importance of creating an enabling environment for different logics to coexist and the critical role of organizational actors in legitimizing and fostering change. Based on the key tenets in institutional theories, the research outlines the process of legitimizing ML-led organiza-

tional changes and emphasizes the significance of stakeholder acceptance for the success of such initiatives. This study significantly contributes to understanding the complexities of integrating advanced technologies like ML into traditional HR functions within an organization.

IV. Conclusion

This special issue encompasses the multifaceted perspectives and methodologies in people analytics, highlighting its significance in the convergence of HR practices and the strategic utilization of big data. This emphasizes the exploration of human-centric data analysis within the framework of information systems, the use of social interaction data, and the transformative impact of AI on work tasks and organizational dynamics. Beyond these explorations, the issue aspires to positively influence various research endeavors in this domain and anticipates an increased emphasis on interdisciplinary integration centered around human-centric data and data science, reinforcing the necessity for comprehensive and innovative approaches in understanding and leveraging people analytics in diverse organizational contexts. As the boundaries between technology and human resources continue to blur, this special issue advocates for a balanced synergy, better harnessing the potential of people analytics to derive human-centric decisions that propel organizations toward greater efficiency, productivity, and employee well-being.

<References>

- [1] Agrawal, A., Gans, J., and Goldfarb, A. (2018). *Prediction Machines: The Simple Economics of Artificial Intelligence*. Boston, MA: Harvard Business Review Press.
- [2] Agrawal, A., Gans, J., and Goldfarb, A. (2022). *Power and Prediction: The Disruptive Economics of Artificial Intelligence*. Boston, MA: Harvard Business Review Press.

- [3] Davenport, T., and Kalakota, R. (2019). The potential for artificial intelligence in healthcare. *Future Healthcare Journal*, 6(2), 94-98.
- [4] Erevelles, S., Fukawa, N., and Swayne, L. (2016). Big data consumer analytics and the transformation of marketing. *Journal of Business Research*, 69(2), 897-904.
- [5] Giermindl, L. M., Strich, F., Christ, O., Leicht-Deobald, U., and Redzepi, A. (2022). The dark sides of people analytics: Reviewing the perils for organisations and employees. *European Journal of Information Systems*, 31(3), 410-435.
- [6] Kahneman, D., Sibony, O., and Sunstein, C. R. (2021). *Noise: A Flaw in Human Judgment*. Boston, MA: Little, Brown.
- [7] Levenson, A., and Fink, A. (2017). Human capital analytics: too much data and analysis, not enough models and business insights. *Journal of Organizational Effectiveness*, 4(2), 145-156.
- [8] Martin, I. W. R., and Nagel, S. (2022). Market efficiency in the age of big data. *Journal of Financial Economics*, 145(1), 154-177.
- [9] 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.
- [10] Salganik, M. J. (2019). *Bit by Bit: Social Research in the Digital Age*. Princeton, NJ: Princeton University Press.
- [11] Saxena, M., Bagga, T., and Gupta, S. (2021). Fearless path for human resource personnel's through analytics: A study of recent tools and techniques of human resource analytics and its implication. *International Journal of Information Technology*, 13(4), 1649-1657.
- [12] Tambe, P., Cappelli, P., and Yakubovich, V. (2019). Artificial intelligence in human resources management: Challenges and a path forward. *California Management Review*, 61(4), 15-42.
- [13] Tursunbayeva, A., Pagliari, C., Di Lauro, S., and Antonelli, G. (2021). The ethics of people analytics: risks, opportunities, and recommendations. *Personnel Review*, 51(3), 900-921.
- [14] Yoon, S. W. (2021). Explosion of people analytics, machine learning, and human resource technologies: Implications and applications for research. *Human Resource Development Quarterly*, 32(3), 243-250.

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