**Research Article**

# Human Resource Analytics And Sustainable Performance: A Case Of Automobile Sector Of Pakistan

Kanwal Bilal[1*], Dr. Qasim Ali Nisar[2]

[1*]Research Scholar, Faculty of Business and Management Sciences, The Superior University, Pakistan. kbilalsabir@gmail.com, https://orcid.org/0000-0003-3327-0720
[2]School of Management at RMIT University, School of Business & Law at Central Queensland University (CQU), Australia, qasimalinisar@yahoo.com

| ARTICLE INFO | ABSTRACT |
|---|---|
| | The purpose of this research is to investigate the relationship between human resource analytics, data driven insight, dynamic capabilities, and performance of organizations especially in the auto industry of Pakistan. The information gathered for the research was collected via a survey administered to managers employed in Pakistan's motoring industry. A collection with a size of around three hundred and fifty was determined. Nonetheless, the investigator was able to gather data from nearly two hundred and seventy workers in Pakistan's automotive sector. The data was analyzed using Smart PLS 4 and SPSS. The research questions had positive outcomes, according to the study's findings. The findings suggest that human resource analytics have a major influence on the automobile industry's sustainable performance. Additionally, it was observed that data-driven insights have an impact on dynamic capabilities, which in turn have an impact on the car industry's sustainable performance. Moreover, this study is significant for businesses looking to improve their current technological capabilities or start up or expand their current human resource analytics initiatives. It appears to have found that employing workforce technology, executives and employees in human resources may create publications, track metrics, create portals and representations in graphics, and accomplish predictive evaluation using modeling techniques. As such, a beneficiary concept should be established and used extensively in future research on the application of insights in human resources in corporate ethics and sustainable growth. This includes stakeholder governance in the strategic handling of human resources and other areas. Having already said that, the significant practical and theoretical repercussions of this research's outcomes have been discussed.

**Keywords:** Human resource analytics, sustainable performance, data driven insight, dynamic capabilities |

## Introduction

In recognition of the growing acknowledgment of the resource-focused perspective of a business, studies in the field of organizational behavior and business management have connected the capacity of an organization with competitiveness and long-term sustainability (San, Latif, and Di Vaio, 2022). The necessity for a sustainable company effectiveness and the business environment's rapid transformation developed consideration to dynamic capabilities, and these are characterized as the capacity to identify and evaluate possibilities, set away resources for pursuing them, as well as redirect assets and skills for carrying out the necessary adjustments (Shoaib et al. 2022). As stated by Yan et al. (2022), such dynamic qualities appear to be an essential component of a substantial and enduring competitive advantage that ultimately promotes long-lasting success of business.

However, studies on the factors that propel dynamic competencies are just now beginning to emerge; in this study, "human resource analytics" has been taken on as components that propel long-term achievement. Corporations are always looking for solutions related to durability in the outside world. Companies must be effective as well as productive in their methods of operation in the current complex and competitive market in order to achieve sustained success (Chowdhury et al. 2022). Because this has a direct bearing on their

ability to perform over the long term, organizations need to consider the factors that impact the way they operate and conduct business activities (Shabbir and Gardezi, 2020). By considering the actions of organizations into account, they will be better able to cultivate and sustain long-lasting skills, that will eventually boost performance.

In response to different call for studies and future objectives, the analytics of human resource management developed (Qamar et al., 2021). The realm of ventures referred to as return upon investment additionally concentrates on assessment analysis and is given careful consideration by the research of Chalutz Ben-Gal (2019). However, a unique comparative analysis with respect to individuals was conducted using a systematic review, according to Tursunbayeva et al. (2018), and it was subsequently expanded to include a wide range of approaches and instruments. Managing human resources approaches, as demonstrated by the study of another researcher, reinforces this paradox (Marler & Boudreau, 2017). Fernandez and Gallardo-Gallardo (2021)  have analytically examined the inspiring elements of human resource management including human resource analytics.

Due to reasons like declining rupees, extra tariffs, and rising petrol prices, Pakistan's car market is preparing for a big fall. Almost fifty percent more units were purchased this year than the previous, meaning that once the year comes to an end, sales of over three hundred thousand pieces are predicted to set a new mark. The total of these includes automobiles, light trucks, cars for passengers, and public transit. It's also critical to keep in mind that the economic woes that compelled Pakistan to request aid from the International Monetary Fund, or IMF, will likely lower consumption because of measures like increased fuel prices, more stringent rules governing financing for vehicles, and escalating high-inflation patterns. The examination of Pakistan's car industry, which accounts for only 3% of GDP, revealed possibilities for supporting socioeconomic paradigms (Hyder et al. 2023). For evaluating the predicted links, the current study has focused on Pakistan's automobile sector. It is important for companies to make a positive contribution towards improving the condition of their communities through decreasing the misery that is being brought about by the operations of businesses.

## Literature Review

### Human Resource Analytics

Human resource analytics, according to (Wirges & Neyer, 2023) is the systematic identification and assessment of the human elements that affect business outcomes with the objective to enhance the process of decision making. Human resource analytics, according to (Marler & Boudreau, 2017), is a practice of human resources made possible by technological advances that uses data on managerial execution, staffing, administrative operations, and external accounting practices to analyze insights in an illustrative visual, and empirical manner in order to determine the company's effect and facilitate decisions based on data.

While the company and the employees may benefit from human resource analytics, there are additional considerations that must be made, such as security risks and unauthorized consumption of information about staff members, which call for the necessary government regulation (Chatterjee & Chaudhuri, 2021). Human resource data systems were first used by banks of Pakistan, based on a recent study, to streamline the primary human resources-related processes. It also listed barriers that keep banks from fully utilizing HR-related technologies, namely the lack of HR's focus on strategy and a deficiency in HR professionals' advanced education in computer, logical, and forecasting skills (Muhammad et al, 2024).

### Data Driven Insights

Knowledge-driven insight is the process of using both current and historical data to go from not knowing how to solve an issue to figuring out how to solve it. Management may broaden their corporate strategies, goals, and methods for making decisions by enhancing understanding driven by data (Sivarajah et al., 2017). Three types of insights based on data are produced by business entities: instructive, forecasting, and narrative insights. The descriptive part of insight draws attention to historical occurrences. The sequential method statistics are typically used by businesses to identify concepts as well as simulation via the interpretation of patterns and advances in descriptive information (Ghasemaghaei & Calic, 2019). Using evaluations and studies, this aids businesses in understanding their current situation so that strategies, spending plans, and prospects for development may be clearly communicated (Sivarajah et al., 2017).

Companies are attempting to use the most recent technological advancements to collect information from several sources and sectors in order to improve the production of recommendations using this data. Several companies have started utilizing various instruments to manage copious amounts of data. Additionally, a few businesses have started to leverage the cloud-based services industry to quickly interpret vast amounts of heterogeneous data. Businesses may get deeper insights into their customer base by applying data that exceeds expectations in quantity, authenticity, speed, and diversity (Ghasemaghaei & Calic, 2019).

### Dynamic Capabilities

Dynamic capabilities are defined by (Bhupendra & Sangle, 2022a) as the business schedules that, when monitored, are assimilated and eventually make up a component of the ability to organize. This is because durable abilities create, combine, and use their resources in novel ways; essentially, they may mix and

organize these plans in unusual manners that stimulate the creation of fresh ideas, arrangements, or designs. In order to prevent natural pollution, dynamic capabilities may be adopting new innovations, which will also provide them an advantage in the environmental arena. However, in order for these developments to be successful, a few small-scale skills are required, such as the management's collaborative eco-viewpoint, systemic comprehension, group strategy, and knowledge gathered through multidisciplinary collaboration (Figueiredo et al., 2022).

Very few studies have examined how a company might improve its capacity to evolve and mold itself toward a model that is environmentally friendly by integrating conservation of resources as an organizational competency. The needs of the company impact the transformation path (Mugge et al., 2020). However, in certain instances, businesses may face difficult goals in order to meet their financial goals, as well as a decline in the environment that fosters competition (Klassen & Whybark, 1999). Businesses strive to create values in a profitable, inventive, and trade-off-rich manner in order to gain a competitive edge (Inigo et al., 2017). However, via required tools and an approach to strategy pertaining to dynamical skills, edge over rivals modifies the intricate nature of surroundings (Helfat & Winter, 2011). This concept explores the dynamic subject of corporate planning to increase professionals' engagement and interest.

## Sustainable Performance

While things work responsibly, it may fulfill the demands of its constituents, accomplish its goals, and continue to compete in the competitive marketplace. It is defined as a method of assessing a company's success in respect to its objectives, necessitating a contrast of actual and desired outcomes (Saikat Basu et al., 2022). The study examined by Cokins (2017) clarified the process of performance management, extending its recognition to both the results and the makeup of the company. The long-term viability of corporate policy and strategy was examined by Cokins (2017). According to Van Dooren et al. (2015), viable businesses enable leadership to investigate effectiveness and provide assistance with value creation. In order to strengthen the purpose, goal, and aim, companies investigated successful collaboration for personnel. In the midst of organizational transformation, tactics perform well. Institutions that are responsible for organizing the particular order of environmental instability and uncertainty regularly monitor performance. Additional features include the businesses' capacity to provide differentiation and enterprise-wide advantages (Wang et al., 2011). The utilization of supplies and specific competencies in course of action can be used to investigate organizational efficiency and effectiveness (Li et al., 2017). To gauge the extent to that a business has achieved its goals, sustainable success, also known as the procedure of ensuring that fundamental tools have been utilized rightfully, encompasses all of the actions that are carried out by management at different tiers of the organization. To improve the efficacy and result of their firm, executive leadership must make certain simple decisions. While certain leaders will use a wide range of evidence to support their decisions, the majority base their decisions on personal experience, outdated data, intuition, or a combination of these. Because of this, academics have suggested that ways of working inside a company be changed, with a strong emphasis on recognizing and promoting sustainable abilities.

The ability of a company to meet its objectives, provide opportunities for all stakeholders, and remain viable in the market is known as sustainable success. It may also mean the process of assessing and contrasting the business's accomplishments with its goals, which calls for contrasting actual results with required or anticipated results. Long-term viability is defined as dependable company output or outcomes connected to the intended aim or goals (Khan et al., 2021). Teece emphasized that the group's capacity to manage innovation, protect, and employ non tangible assets such as information in a way that will benefit the company is a prerequisite for outstanding achievement.

## Based on the above review of the extant studies, the following hypotheses are given below:
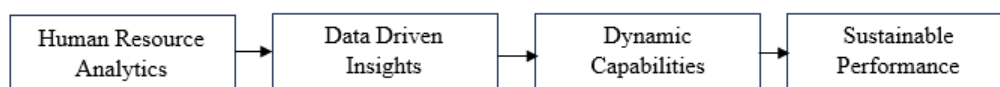
**H1:** Human resource analytics lead towards data driven insights in organizations.

**H2:** Data Driven insight leads towards dynamic capabilities in organizations.

**H3:** Dynamic capabilities lead towards sustainable performance in organizations.

**H4:** Data driven insights mediate the relationship between human resource analytics and dynamic capabilities.

**H5:** Dynamic capabilities mediate the association between data driven insights and sustainable performance.



## Research Framework

**Source:** Author

## Research Methodology

The Pakistani automotive industry list was used to compile a directory of Pakistani automakers. The car business will be the subject of this study's unit assessment. The research study's primary participants are managers in general. They are taken into consideration since it is thought that they can respond to inquiries about the factors covered by the planned investigation. They also have solid knowledge of the overall operations of the automotive industry. Out of the approximately four thousand vehicle firms in Pakistan, the total number of participants was determined to be close to three hundred and fifty.

## Measures

This suggested research study's questionnaire will include a cover letter and be broken up into various parts with issues to be addressed. The purpose of the proposed study, the confidentiality of the data gathered, and instructions regarding how to answer the concerns are all succinctly stated in the letter of introduction. Human resource analytics was the factor that was independent, while sustainable performance was the dependent variable. The influencing factors in this study are dynamic competences and data-driven insight.
The Statistical Package for Social Science (SPSS) version 25 and second-generation methods, commonly known as partially least squares structural equation modeling (PLS-SEM), are used to evaluate the information provided in this piece of writing. While the other strategy is employed to track the suggested research model's anticipated relationships, the prior method was used to assess data to shed light on the characteristics of the study's sample (Hair et al., 2021).

### Non-Response Bias
The human administration of data collection, and the online and postal questionnaires used to get the data for this study made it impossible to examine for non-response bias. Since every participant in this study finished and submitted their survey within the designated time limit, it was not possible to conduct and apply the test for differences between the non-responders and respondents. This is because each respondent answered all the inquiries within the time frame given to them.

### Data Analysis
Smart PLS4 (Ringle et al., 2022) was used for data analysis in this investigation. This is not reliant on analytical presumptions being met. Nevertheless, it is essential to keep in mind certain basic rules of multicollinearity and consistency regarding the theoretical structures in order to confirm the study's results while addressing the likelihood of mistakes (J. Hair et al., 2017). For each indicator, the Variance Inflation Factor (VIF) values were less than five. Multicollinearity did not provide a problem for this research investigation as a result. It indicates that the current study is free from typical technique bias. Therefore, the multicollinearity problem does not exist.
After the measurement data model was analyzed, the structural framework was assessed. The methods and criteria used to assess the underlying structure are covered in the next section. First, the outcomes of t, path coefficients, and standard errors of variance were taken into consideration while evaluating the model's relevance and efficacy. The main and mediation impact hypotheses were assessed using the bootstrapping technique in Smart PLS4 (Ringle et al., 2005). Any t-value more than -2 or less than +2 is often considered acceptable. The higher the t-statistics number, the more certain and definite the "coefficient" is in its ability to foresee and understand data. Low t-statistic values indicate that the coefficient's analytical and forecasting capacity is not very stable or accurate.
Moreover, the relevant coefficient of determination i.e. r-square was computed to investigate the variance reported for the constructs that are endogenous by the variables that predict, following the guidelines provided by Cohen (1988). Furthermore, the effect size (f - square) of each external structure were determined using the standards established by Cohen (1988). Additionally, a blindfolded procedure was employed to assess its prognostic significance.

### Findings
The findings of the study indicate that there is a statistically significant correlation ($\beta$ = 0.379, t = 3.637; LL = 0.166, UL = 0.575) between data-driven insights and human resource analytics, hence supporting hypothesis 1. According to the results, there was a positive correlation between data-driven insights and dynamic capabilities ($\beta$ = 0.867, t = 30.815; LL = 0.162, UL = 0.554); this suggests that hypothesis was also supported and approved. Furthermore, the path analysis shows a substantial relationship between dynamic capabilities and sustainable performance ($\beta$ = 0.768, t = 15.128; LL = 0.657, UL = 0.852); as a result, hypothesis 5 was also supported and validated. The results of this study demonstrate that the link between dynamic sustainability capabilities and human resource analytics is considerably mediated by data-driven insight ($\beta$ = 0.328, t = 3.46; LL = 0.138, UL = 0.512).
The study's findings further support the hypothesis that dynamic sustainable capabilities can act as a mediating factor between sustainable performance and data-driven insight ($\beta$ = 0.665, t = 12.969; LL = 0.555, UL = 0.755). The results also support the order in which human resource analytics and sustainable

performance are affected by data-driven insights and dynamic sustainable capabilities (β = 0.252, t = 3.427; LL = 0.107, UL = 0.395).

**Table** Findings

| Relationships | Std. Beta | Std. Error | t-value | L.L | U.L | Decision |
|---|---|---|---|---|---|---|
| H1: HRA -> DDI | 0.379 | 0.104 | 3.637 | 0.166 | 0.575 | Supported |
| H2: DDI -> DSC | 0.867 | 0.028 | 30.815 | 0.801 | 0.91 | Supported |
| H3: DSC -> SP | 0.768 | 0.051 | 15.128 | 0.657 | 0.852 | Supported |
| H4: HRA -> DDI -> DSC | 0.328 | 0.095 | 3.46 | 0.138 | 0.512 | Supported |
| H5: DDI -> DSC -> SP | 0.665 | 0.051 | 12.969 | 0.555 | 0.755 | Supported |

## Discussion

The information gathered for the research was collected via a survey administered to managers employed in Pakistan's motoring industry. A collection with a size of around three hundred and fifty was determined. Nonetheless, the investigator was able to gather data from nearly two hundred and seventy workers in Pakistan's automotive sector. The data was analyzed using Smart PLS 4 and SPSS. Most of the research questions had positive answers, according to the study's findings. The findings suggest that human resource analytics have a major influence on the automobile industry's sustainable performance. Additionally, it was observed that data-driven insights have an impact on dynamic capabilities, which in turn have an impact on the car industry's sustainable performance. Despite a growing focus on the topic, there is still a dearth of study evidence on the relationship between human resource analytics and company efficiency (Marler and Boudreau, 2017; Huselid, 2018; Greasley and Thomas, 2020). As a result, the present research establishes out an attempt to clarify the ways via which people analytics or human resource analytics may affect the effectiveness of an organization; moreover, it postulates and establishes a connection between people analytics, and organizational achievement. The study's linking model states that human resource analytics produce data-driven insight, which facilitates the development of dynamic capabilities and ultimately increases or enhances business efficiency and productivity. The structural equation modeling results, which were derived using a sample of around two hundred and seventy car businesses operating in Pakistan, provided full support for the theoretical basis of the model. Taking this into account, the research comes to the conclusion that human resource analytics both precede and support data-driven insights, such as analytical, prescriptive, and anticipatory findings that enable capacity building dynamically and lead to enhanced and continued business success. Empirical evidence supported the study's assumption that human resource analytics and data-driven insights will positively relate. In other words, the more accurate the data-driven insight, the greater the human resource analytics conducted by the car firms. The results of this study provide solid backing for the dynamic capacity speculation and principle. Specifically, the analytics of human resources can offer managers helpful information in implementing information-driven decisions, which can give their companies an edge over their competitors and maintain their company's success. The findings indicate a strong correlation between insights based on data and human resource analytics. The study's findings are consistent with other research, albeit there isn't much literature on the topic, despite its increasing importance and relevance. Conte and Siano (2023) claim that due of the exploratory research design and the small sample size from a single country such as Italy, more world-wide proof is needed. Their research study provides online interaction executives with insightful viewpoints to improve the talent based on information and human resource management approach, which is an effective strategy for ensuring an ongoing edge over competitors and optimizing business productivity. The survey also shows that a focus on the immediate future, a lack of statistical experience, and problems with the integrity of data all impede the development of people or talent analytics. The report offers a thorough analysis of the application of HR analytics to internal and recruitment strategies. Considering the alignment of European patterns regarding the use and adoption of analytics in HR, the research can provide other international corporations with insightful information.

According to Diclaudio (2019), employee and worker insights provide businesses with the greatest edge while handling the unpredictability and turmoil that are driving major changes and transformations in today's workplace. This is linked to the growing requirement on the part of the human resources division to understand how employee data influences and stimulates efficiency and effectiveness.
According to Diclaudio (2019), employee and worker insights provide businesses the greatest competitive advantage while handling the unpredictability and turmoil that are driving major changes and transformations in today's workplace. This is linked to the growing requirement on the part of the human resources division to understand how workforce analytics informs and drives performance. His study's objective is to find out how any organization's department of human resources may do this. Based on 'KPMG's 2019: The future of HR report,' 37 percent of respondents are quite persuaded that human resources have the genuine potential to transform and propel them forward through crucial capabilities like analytics and artificially intelligent technology (AI). Within the coming year or two, according to 60% of

respondents, they intend to invest in predictive analytics. Thirty three percent of those who have made investments in AI say that insights should be their top focus, and over eighty percent of those who have spent thus far believe that it was an investment worth making.

Just 12% of HR managers believe analytics will be a top management priority, and only 20% of HR professionals believe analytics will be their primary HR project in the upcoming years, despite the fact that knowledge has the incredible potential to enhance decision-making and provide news insights. HR analytics plays a major role in the approach to management and people management. If companies have access to real-time information, they can identify skill gaps, assess staff capabilities, and develop targeted recruitment, retention, and development strategies. Human resource professionals may leverage digital analytics to identify high-potential candidates for future hires, align talent acquisition strategies with organizational objectives, and design tailored growth programs.

Employee engagement is a further crucial area where intelligent organizational and personnel information may have a significant impact. By analyzing real-time data on inclusion drivers, companies may identify the factors that contribute to higher levels of satisfaction among workers and productivity. Those working in human resources may utilize this data in accordance with Vijayasree et al. (2023) to create tailored initiatives, incentives and appreciation programs, and employment schedules meant to boost engagement among workers. Tailored conversations fueled by data insights may enhance company outcomes and foster an innovative, community-focused culture.

## Implications in Theory

Based on the body of existing research, companies are very interested in classifying and locating practices within their organization that may improve and maintain the way they perform and provide them with an unusual edge over their competitors. Thus, as companies are dealing with both their internal and external requirements to become encompassed and occupied in such pursuits to gain long-term success, continuously pursuing the evolution as well as integration of contemporary workplace resources as well as behavior for example, the implementation and importance of analytics for human resources (Nisar et al. 2021; Sabharwal and Miah, 2021) is transforming to becoming essential and significant. The current study aims to assist businesses, in particular Pakistani automakers, in learning how analytics in human resources can contribute significantly to improving and attaining organizational success over the long term by showcasing pertinent work practices such as information-driven decisions and dynamic abilities and competences. The application and usage of data-driven insights and dynamic capacities are made possible by human resource analytics, and this will contribute significantly to the achievement of better and longer-lasting company performance. As a result, this study contributes to the body of knowledge in the field of human resource analytics that will benefit from their use in achieving long-term success.

## Implications in Practice

Many suggestions for academics, professionals, managers, and those who make decisions are made by the findings of this study. First, a classification and acknowledgement of the significant drivers of sustainable performance are made, including human resource analytics. Individuals will capitalize from having knowledge of these basic yet important elements as they develop plans and overcome obstacles in the process of attaining performance that is sustainable. Therefore, it follows that in order to attain a sustained the effectiveness of the organization, analytics for human resources prefer to represent these expectations and comprehension after collecting the hidden and obscure patterns in contemporary job procedures. The field of human resources analytics research has an immense opportunity to change company, according to managers, specialists, and academics who continue to push for expansion of research in this area (Hussain et al. 2023). Moreover, this study is significant for businesses looking to improve their current technological capabilities or start up or expand their current HR analytics initiatives. It appears to have found that employing workforce technology, executives and employees in human resources may create publications, track metrics, create portals and representations in graphics, and accomplish predictive evaluation using modeling techniques. Additionally, providing a variety of resources for knowledge to enable logical and knowledgeable decision-making (Garg et al. 2022). These resources based on information help executives and collaborators make smarter personnel decisions by connecting information-driven analysis with workforce analytics (Mahmood et al., 2023).

## Avenues for Future Research

The perspectives of managers were the main focus of this study. In order to better understand how other stakeholders such as consumers perceive social and environmental conditions, further study may be done to look at their perspectives. Therefore, future research on the use of analytics in human resources in business ethics and the sustainability of organizations should place a significant emphasis on establishing and utilizing a stakeholder paradigm in the strategic management of human resources and other aspects. Having said that, our research's findings have the important theoretical and applied ramifications that have already been addressed.

## References

1. Basu, S., Saha, A., Chakrabarti, A., & Sur-Kolay, S. (2022). i-qer: An intelligent approach towards quantum error reduction. ACM Transactions on Quantum Computing, 3(4), 1-18.
2. Bhupendra, K. V., & Sangle, S. (2022). Structural process model of absorptive capacity for stakeholder's integration in decision-making: dynamic capability perspective. Society and Business Review, 17(3), 421-440.
3. Chalutz Ben-Gal, H. (2019). An ROI-based review of HR analytics: practical implementation tools. Personnel Review, 48(6), 1429-1448.
4. Chatterjee, S., & Chaudhuri, R. (2022). Supply chain sustainability during turbulent environment: Examining the role of firm capabilities and government regulation. Operations Management Research, 15(3), 1081-1095.
5. Chowdhury, E. K., Dhar, B. K., & Stasi, A. (2022). Volatility of the US stock market and business strategy during COVID-19. Business Strategy & Development, 5(4), 350-360.
6. Cohen, J. (1988). Set correlation and contingency tables. Applied psychological measurement, 12(4), 425-434.
7. Cokins, G. (2017). Strategic business management: From planning to performance. John Wiley & Sons.
8. Conte, F., Sardanelli, D., Vollero, A., & Siano, A. (2023). CSR signaling in controversial and noncontroversial industries: CSR policies, governance structures, and transparency tools. European Management Journal, 41(2), 274-281.
9. DiClaudio, M. (2019). People analytics and the rise of HR: how data, analytics and emerging technology can transform human resources (HR) into a profit center. Strategic HR Review, 18(2), 42-46.
10. Figueiredo, M., Ferreira, J. J., & Vrontis, D. (2023). Perspectives on dynamic capabilities and ambidexterity in born-global companies: Theoretical framing, review and research agenda. Journal of International Management, 101099.
11. Garg, S., Balakrishnan, S., Lipton, Z. C., Neyshabur, B., & Sedghi, H. (2022). Leveraging unlabeled data to predict out-of-distribution performance. arXiv preprint arXiv:2201.04234.
12. Ghasemaghaei, M., & Calic, G. (2019). Does big data enhance firm innovation competency? The mediating role of data-driven insights. Journal of Business Research, 104, 69-84.
13. Greasley, K., & Thomas, P. (2020). HR analytics: The onto-epistemology and politics of metricised HRM. Human Resource Management Journal, 30(4), 494-507.
14. Hyder, A., Uddin, B., Siddiqui, H., Naeem, M., & Waheed, A.(2023). Mediation of reverse logistics in sustainable resources and organizational performance. South Asian Journal of Operations and Logistics, 2(1), 11-27. https://doi.org/10.57044/SAJOL.2023.2.1.23012
15. Khan, S. A. R., Zia-ul-haq, H. M., Umar, M., & Yu, Z. (2021). Digital technology and circular economy practices: An strategy to improve organizational performance. Business Strategy & Development, 4(4), 482-490.
16. Klassen, R. D., & Whybark, D. C. (1999). The impact of environmental technologies on manufacturing performance. Academy of Management journal, 42(6), 599-615.
17. Hair Jr, J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. International Journal of Multivariate Data Analysis, 1(2), 107-123.
18. Helfat, C. E., & Winter, S. G. (2011). Untangling dynamic and operational capabilities: Strategy for the (N) ever-changing world. Strategic management journal, 32(11), 1243-1250.
19. Hussain, R., Khoso, I. U., Khaskhelly, F. Z., & Channa, N. (2023). Effect of HR Practices on Employee Performance with Intermediating Role of Organizational Culture: A Study of Commercial Banks in Sindh. Journal of Entrepreneurship, Management, and Innovation, 5(2), 262-279.
20. Huselid, M. A. (2018). The science and practice of workforce analytics: Introduction to the HRM special issue. Human Resource Management, 57(3), 679-684.
21. Inigo, E. A., Albareda, L., & Ritala, P. (2017). Business model innovation for sustainability: Exploring evolutionary and radical approaches through dynamic capabilities. Industry and Innovation, 24(5), 515-542.
22. Li, D., Zhao, Y., Sun, Y., & Yin, D. (2017). Corporate environmental performance, environmental information disclosure, and financial performance: Evidence from China. Human and Ecological Risk Assessment: An International Journal, 23(2), 323-339.
23. Marler, J. H., & Boudreau, J. W. (2017). An evidence-based review of HR Analytics. The International Journal of Human Resource Management, 28(1), 3-26.
24. Muhammad, G., Siddiqui, M. S., Rasheed, R., Shabbir, H., & Sher, R. F. (2024). Role of External Factors in Adoption of HR Analytics: Does Statistical Background, Gender and Age Matters?. Journal of Business Analytics, 7(1), 1-14.
25. Nisar, Q. A., Haider, S., Ali, F., Jamshed, S., Ryu, K., & Gill, S. S. (2021). Green human resource management practices and environmental performance in Malaysian green hotels: The role of green intellectual capital and pro-environmental behavior. Journal of Cleaner Production, 311, 127504.

26. Qamar, Y., Agrawal, R. K., Samad, T. A., & Jabbour, C. J. C. (2021). When technology meets people: the interplay of artificial intelligence and human resource management. Journal of Enterprise Information Management, 34(5), 1339-1370.
27. Ringle, C. M. (2005). SmartPLS 2.0 (M3). http://www. smartpls. de.
28. Ringle, C. M., Becker, J. M., Cheah, J. H., & Sarstedt, M. (2022). PLS-SEMs Most Wanted Guidance. International Journal of contemporary Hospitality Management.
29. Sabharwal, R., & Miah, S. J. (2021). A new theoretical understanding of big data analytics capabilities in organizations: a thematic analysis. Journal of Big Data, 8(1), 1-17.
30. Sivarajah, U., Kamal, M. M., Irani, Z., & Weerakkody, V. (2017). Critical analysis of Big Data challenges and analytical methods. Journal of business research, 70, 263-286.
31. Shabbir, M. Q., & Gardezi, S. B. W. (2020). Application of big data analytics and organizational performance: the mediating role of knowledge management practices. Journal of Big Data, 7(1), 1-17.
32. Shoaib, M., Nawal, A., Zámečník, R., Korsakienė, R., & Rehman, A. U. (2022). Go green! Measuring the factors that influence sustainable performance. Journal of Cleaner Production, 366, 132959.
33. Tursunbayeva, A., Di Lauro, S., & Pagliari, C. (2018). People analytics—A scoping review of conceptual boundaries and value propositions. International Journal of Information Management, 43, 224-247.
34. Tze San, O., Latif, B., & Di Vaio, A. (2022). GEO and sustainable performance: the moderating role of GTD and environmental consciousness. Journal of Intellectual Capital, 23(7), 38-67.
35. Mahmood, F., & Nasir, N. (2023). Impact of green human resource management practises on sustainable performance: serial mediation of green intellectual capital and green behaviour. Environmental Science and Pollution Research, 30(39), 90875-90891.
36. M., Wang, P., Wang, H., Workman, K., & Christensen, A. L. (2011). Linking ethical leadership to employee performance: The roles of leader–member exchange, self-efficacy, and organizational identification. Organizational behavior and human decision processes, 115(2), 204-213.
37. Mugge, P., Abbu, H., Michaelis, T. L., Kwiatkowski, A., & Gudergan, G. (2020). Patterns of digitization: A practical guide to digital transformation. Research-Technology Management, 63(2), 27-35.
38. Van Dooren, W., Bouckaert, G., & Halligan, J. (2015). Performance management in the public sector. Routledge.
39. Wirges, F., & Neyer, A. K. (2023). Towards a process-oriented understanding of HR analytics: implementation and application. Review of Managerial Science, 17(6), 2077-2108.
40. Yan, X., Espinosa-Cristia, J. F., Kumari, K., & Cioca, L. I. (2022). Relationship between corporate social responsibility, organizational trust, and corporate reputation for sustainable performance. Sustainability, 14(14), 8737.