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CLOUD COMPUTING AS A CREATIVE APPROACH OF HUMAN CAPITAL MANAGEMENT

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Abstract- *Cloud computing is the latest and burning topic for individuals, academician, researchers and the business community. Cloud computing is a integration of abstract, highly scalable and regulated resources that is capable of hosting customer applications and is paid according to usage. This computational paradigm was viewed as a key factor for gaining competitive advantage in the globalized marketplace as well as sustainability. In addition, human resources managers often use cloud computing technology for their daily operations, such as searching for resumes, tracking applications, building mobile human capital, improving flexibility, monitoring efficiency, fast decision-making, and others. On the other hand, some of the problems that arise when taking advantage of cloud computing are privacy concerns, protection concerns, data misuse and data loss. Implementation of appropriate authorization, validation, tracking, filter application and others will help to address cloud computing challenges and achieve long-term sustainability on the global marketplace. HR and cloud computing model collaboration would thus help to improve an organization's efficiency, innovativeness, and intellectual capital.*

Keywords: *Cloud computing, human resources, competitive advantage, organization's efficiency, innovativeness*

I INTRODUCTION

Role of leaders in human resource (HR) is like the catalysts which facilitate various HR activities performance and motivating organisations to adopt technology driven solutions. Implementation of cloud-based computing is moving like technologies related online personal profiles and social networking platforms are arranging the database rapidly for HR processes. However, most HR industries have are facing failure in the implementation of new and innovative technologies for successful running the various HR activities like screening and selection in interviews, performance management and HRIS. Even cloud computing is now days are most prominent in the field of online recruitment and short listing of potential candidates online without any processes and infrastructure. These operations of HR are becoming more easy and synchronized because of clod computing [1-2, 24, 25.26].

The most pressing issues in HR are leadership, development, recruitment, talent acquisition and engagement. HR leaders needs now days a strong strategic partner which can transform and reinvent HR by managing all HR practices with the right tools and techniques. Additionally, the role of the human resource chief changed to that of a business partner. Human resource have various features which include value in to the business process like

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dedication to employee growth, business support through organization change adoption, and effective design and execution of HR processes, which aligning with corporate goals and objectives and aligning with a transformational leader's characteristics [18,22].

Cloud infrastructure allows a variety of IT services globally accessible via network connectivity from a service provider. Increased broadband and technology advancements allow cloud technology service providers to leverage new markets and change conventional HR business practices. Cloud-based computing is replacing conventional software installations that are transforming traditional business processes and growing market value. However, HR practitioners are hesitant for implementation of modern technology oriented cloud computing in traditional HR practices despite strong consensus on key issues addressed by cloud solutions. That can affect managing human resources (HRM) and overall organizational performance [19,21].

Human Resource Managers can't imagine life today without HRMS (Human Resource Management System Applications) applications to update employee records, and Skype to interview applicants in distant lands. Technology has penetrated so profoundly into almost every area it seems almost impossible in the 21st century to work without it. There's hype about yet another technical advance which has the potential to disrupt the HR community. There's cloud technology and it's here to live. Going from an HRIS (Human Resources Information System) to an HCM (Human Capital Management) application, and now more recently to the HRMS systems that most companies use today, cloud application is poised to take over organization and communication to a whole new level. The most important question is that if this cloud technology is better than the existing systems in today's organizations [20].

II SHIFT FROM HR TO CLOUD BASED HR

Traditional human resources programs are fragmented and isolated. Cloud-based HR is real-time representation of the whole company. 40 percent of the 300-plus organizations surveyed globally have their key HR systems in the cloud, according to the new PwC HR Technology report. The introduction of emerging technology in the last few years has dramatically changed the very essence of work. Management of human resources has become a top priority for senior management across sectors, and is now expected to play a crucial role in helping companies to achieve business goals. It is imperative that HR departments utilize the latest in technology to meet this mandate. It is a goal to redefine workplace expectations and reduce stress when coping with assignments and problems related to HR. Cloud as a technology has allowed the development of these new employee interactions and increasing number of businesses are rushing to implement these new solutions. 40 percent of the 300-plus organizations surveyed globally have their key HR systems in the cloud, according to the new PwC HR Technology report. In addition, at least 73% of these organizations have at least one cloud-based HR process. Nearly one-third of those who still use on-premise applications are actively planning their migration into the cloud over the next couple of months [28-31].

Moving the current applications to the cloud or implementing Software-as-a-Service (SaaS)-based technologies provides several advantages, including cost savings, accelerated innovation, streamlined and scalable HR operations, and more efficient employee engagement.Keeping track of the latest technologies and

integrating them into on-site applications is a complicated and expensive undertaking, while cloud and SaaS-based HR applications are constantly being updated by vendors with the latest technologies, as they are at the center of their market. Remote monitoring and maintenance often removes the need for internal updating and maintenance of updates, resulting in additional cost savings[35].

The inherent scalability and versatility of any cloud system helps to reduce costs by allowing the HR organization to scale up as and when needed. Cloud and SaaS powered HR technologies significantly strengthen the capacity of the HR team to serve employees better. Nearly half of the companies surveyed attributed growing use of self-service HR software and a general rise in employee use of HR applications to cloud-based HR solutions, according to the PwC report. Cloud is mobility-compatible, and gives accessibility for HR applications at anytime, anywhere and on any computer as per the employee' requirement. Moreover, in today's globalization era, on-premise approaches that operate across locations in silos make it difficult to deal with a highly mobile workforce. Cloud-based applications can offer streamlined flexibility and digital mobility to operate a multinational organisation, efficiently [36].

III LITERATURE REVIEW

Adopting cloud-based technology provides a strategic advantage in terms of HR efficiency. Extensive research tackled innovation as change agents from transformation leaders and HR leaders; however, there is a difference between leadership style and technology implementation skills and performance impact (Zapotocny, M., 2015) [40]. This marked the beginning of a more human-centered HR orientation. The balance of power remained with staff managers in the 1950s and 1960s until legislation brought in uniform policies and regulatory acts requiring staff enforcement and obedience and supplemented by manuals, rules and procedures for employees. Francis, H., Parkes, C., & Reddington, M. (2014) claimed that in 1980s Human resources relating to personnel management or department. The creation and implementation of the necessary global human resources standards took place through the American Personnel Administration Society [17].

HRM is defined as the structure of an entity that is responsible for everything related to people management including policies, processes, practices, activities and decisions. Today HRM is referred to as human resource management or talent management (Bassi, L., & McMurrer, D. (2016)[5] . Management of human resources continues to change positions and IT continues to play an ongoing vital role in HRM functions (Nagendra, A., & Deshpande, M.,2014)[37].

According to Jafari Navimipour et al (2015) explained how will technology affect the human resources sector? Cloud technology, as well as its use to re-engineer human resource management systems, is still fairly new: the HR process environment [23]. "Technology has a deep impact on HR, and as technology evolves, in the future it is likely to move the field in some very new directions.' He also states that there are still many unanswered questions as to whether HR can achieve its primary goals (Stone et al., 2015)[38].The effect of e-HRM on strategic HR issues, such as turning HR into a strategic partner, and conclude that e-HRM contributes to this (Bondarouk and Ruël, 2009) [7].

"No studies which is specifically analyze the relationship between the implementation of e-HRM and any kind of organizational performance measures such as competitive advantage, organizational efficiency, reduced costs or improved HR outcomes such as increased human resources, reduced turnover or increased organizational engagement or job satisfaction" (Marler and Fisher, 2013) [34] . This statement usually applies to HR processes being digitized rather than converted into an HR Cloud environment [32].

Maier et al. (2013) examines the effect on employee satisfaction and employee productivity of e-HRM implementations in organisations. Their approach was based on the Technology Adoption Approach, which was expanded with work-related consequences. But still, its proponents have a technological emphasis. Some writers suggest that technology and organization be regarded separately when successfully implementing e-HRM, and that the shared dependencies be explored more clearly [34]. Bondarouk et al. (2017) suggested that "We are also lacking a thorough understanding of the factors influencing e-HRM adoption and its implications [6]."

According to Lawler et al., (2004) Differentiation of "HR Analytics" from "HR Metrics" HR metrics are measurements of main HRM outcomes, categorized as effectiveness, efficacy or effects. HR Analytics, on the other hand, does not quantify but instead reflects statistical methods and experimental strategies which can be used to explain the effects of HR activities. In spite of this difference there is still ambiguity between HR metrics and HR analytics [27].

Marler and Boudreau (2017) given evidence that HR Analytics has been adopted in relation to organizational efficiency, cases where HR Analytics and academic analysis have been adopted are very restricted [33]. Another statement is that in spite of the developments in that area, the realistic implementation of HR analytics has not had too much impact. They also point out that these metrics are not only used for statistical purposes but also to provide a deeper insight into the business (Baesens et al., 2016) [3].

This dimension has opened the debate on the definition of HR analytics described above. HR analytics has grown both in the business sector and in science. They also conclude that it has so far appeared to have an experimental position in companies but that, in addition to a rigorous study, it will also have a long-term predictive role until 2025, powered by technical advances. Such writers also note that "the fractured and obsolete IT environments are characteristic of current system (Van den Heuvel and Bondarouk, 2017) [39].

In the area of human resource management, cloud computing has also been implemented to achieve creative approaches for the survival of the organisation. Normally, an organization's human resources are distributed in a number of places, resulting in coordination discrepancies that may be linked to contact with team members or inefficiency in timely access to or tracking of relevant information by the various other department of any organization [9-12]. All of these problems result in data processing inefficiency, slow decision-making, inability to respond to external challenges instantly and others. With the support of cloud technologies, the above-mentioned gap can be fulfilled as the data can be processed in the central place-" the cloud. Centrally placed data and information is helpful to the company as clouds promote resume scanning, tracking applications, creating mobile workforce, monitoring results, reporting, enhancing accessibility, promoting two-way connectivity, and enhancing department productivity. Cloud computing technology does not call for additional expenses on maintenance and infrastructure. It is possible because cloud computing system users use the infrastructure and computing tools (network, infrastructure, and hardware) that cloud service provides support. In addition, cloud

computing technology assists human resource management in facilitating team engagement, goal achievement, and self-career management. HR and cloud computing model collaboration helps to boost an organization's efficiency, innovativeness and intellectual capital [4, 13-16].

IV OPPORTUNITIES

Cloud computing increases its presence in the market. Some of the benefits of using model cloud computing are:

Payment for value– Cloud computing platform is easier to use than home applications. The use of cloud computing is low cost because it does not have any infrastructure investment and there is subscription charges as well for the user. In addition, user has the option of discontinuing service as and when they wish. This kind of need-based subscription helps to avoid the drawback of earlier used long-term contracts.

Computing elasticity– The in-house server restricts an entity or individual's ability to store data. Furthermore, raising or increasing the storage space of the in-house server according to their needs is difficult. Cloud computing here helps to provide the storage requirement as required, and at any time.

Worldwide Accessibility– because the clouds are on the network, data stored in these clouds can be accessed from a number of locations and from a variety of platforms.

Low cost– the cloud data storage system would allow companies to slash their in-house hardware and software expenses. Moreover, time is also saved, because less supervision is needed for storage, management, and retrieval of data.

Improved effectiveness - The cloud infrastructure can both monitor and optimize the service it provides. Transparent framework for tracking, recording, and managing the usage of resources helps to improve the efficiency of the services rendered.

V CHALLENGES

Confidentiality, anonymity, and protection issues are the prime huddle when it comes to reaping the advantages of cloud-fuelled services. The HR managers' drawback of using cloud storage may be the loss or misuse of private data. Data stored in the public cloud can be easily hacked, because the hackers can easily access it. The problem associated with data misuse occurs when the private data is available to other users or malicious attackers get unauthorized access to the data. Additionally, data is typically stored in a remote location that can lead to a vendor-lock-in problem or user's inability to remove data from the cloud. In fact, there is a vulnerability to the customer's data being used for commercial purposes, because such data may be used for commercial purposes by the cloud service provider. The other area of concern is Information Protection.

Cloud computing complex problems can be overcome by taking proactive action. The data protection problem, data confidentiality, and access to data can be addressed by enforcing sufficient user identification, authentication, and authorization. This can be achieved by creating a proper framework to track, verify, organize and manage the accessibility of customer on network traffic. Additionally, in the case of data accessibility between applications, restriction should be enforced. Encryption can be done to ensure the authentication is successful. Protection or private data misuse may be safeguarded by taking reasonable action to control data

privacy. It can be accomplished by limiting the exchange of confidential account-related information; by applying filters to conceal or delete sensitive information; by tracking unauthorized network behavior; by enforcing and communicating a consistent control, communication and enforcement framework. Additionally, obfuscation can be used to protect data confidentiality.

VI METHODOLOGY

Present study is based on secondary and primary data and study is based on IT industry. For secondary data various source of data includes journal and articles and for primary data open ended questions were formulated. Data has been collected from various IT companies of Delhi-NCR those are applying cloud computing in their organization. For data reliability and validity has been checked. Objective of the research is that to examine the role of cloud computing in Human capital management.

VII DISCUSSION

What are the areas of HR where cloud computing is more effective?

Recruitment	56%
Payroll	51%
Benefits	42%
HRIS	42%
Interview	37%

Responses shows that online systems are in the use of various purpose most of the HR managers are using cloud based HR system for the recruitment process. Cloud-based computing is actually used by participants for various HR processes with Recruitment (56%) and compensation / payroll (51 percent) as these two HR processes mostly used with Cloud-based computing. Participants indicated that the respective target companies had plans for benefits (42%), Human Resource Information System (42%) and at last interview is having least contribution (37).

What are the obstacles for implementation of Cloud-Based Computing in Human Capital management?

Cost/budget	42%
Aversion to change	49%
Lack of technology awareness	53%
Security	45%
Unfamiliarity	58%
Lack of user skill	55%
Legacy systems function sufficiently	41%

List of factors that restricts the introduction of cloud-based HR at the respective firms. The most frequential responses include lack of familiarity with the technology, and lack of user skills and awareness from the technology. Few contributing factors are also includes resistance to change, securities etc.

How much Cloud-Based Computing affect the performance of Human Capital management?

Accessibility and availability to application and data	58%
Budget/cost	51%
Mobility of application and data	62%

Responses provided a list of reasons why cloud-based computing was introduced at the respective target companies including application and data usability and efficiency, budget / cost, and application and data versatility.

What are various leadership qualities for successful implication of Cloud-Based Computing is necessary?

Knowledgeable	45%
Coaching	51%
Communication	49%
Strategic	62%
Business acumen	46%
Integrity	43%
Open-minded	51%
Technology savvy	59%
Analytical	42%
innovative	57%

Responses have given various traits is important for successful cloud computing adaptor which are knowledgeable, coaching, communication, strategic, business acumen, integrity, open-minded, technology savvy, analytical, innovative. Most effective traits are technical savvy, innovativeness, open-minded and coaching with highest percentage respectively.

How Human Resource does contribute towards the performance of the organization?

Efficient Training Programme	67%
Designing and implementing specific plan	55%
Security needs concerns	52%
Conduct a need analysis	61%

The leading practices includes effective training and development programme for the end users and for that they need to conduct detailed need analysis and after that they have to devised some plan which they have to implement in the organization. Apart from this they need to understand the security issues associated with organization. Which ultimately gives the overall improved performance of organization, i.e. new system will be more cost effective and time effective.

What are the implications of best practices in Cloud Based computing within HR?

Creating and following a comprehensive implementation plan	56%
Creating a communication plan	67%
Training plan for all end users	71%
Implementing a feedback loop for ongoing improvements	62%
Leadership buy-in and support	52%

Addressing data security	46%
Conducting detailed needs analysis	49%

Traditional leaders of change empower followers to accomplish shared goals and how transformational leadership positively affects technical innovation. The results of study shows best practices for the effective implementation of cloud-based computing include the development and follow-up of a systematic implementation plan, the development of a communication plan, a training plan for all end users, the implementation of a feedback loop for continuing changes, leadership buy-in and support, data protection, thorough review of needs.

VIII CONCLUSION

Cloud computing is seen as the latest in networking and technology advancement. Cloud computing provides various advantages for individuals as well as organisations, such as scalability, versatility and others. HR managers can use cloud computing effectively to take fast decisions, track performance, scan for prospective workers, improve workplace mobility and others. HR manager can solve the threat of data privacy, security and integrity while implementing the cloud computing model by clearly identifying, communicating and monitoring data storage, transmission and handling process on clouds. In addition, legislation should be enforced to make every cloud service provider responsible for securing confidential information and accountable for it. Even individuals and organizations, though revealing their personal identities and confidential details, should remain vigilant. Taking these strategic steps will help individuals and organizations, through the use of cloud computing technologies, achieve sustainability and productivity.

REFERENCES

1. Alam, M. G. R., Masum, A. K. M., Beh, L. S., & Hong, C. S. (2016). Critical factors influencing decision to adopt human resource information system (HRIS) in hospitals. *PLoS One*, *11*(8), 1–22. doi:10.1371/journal.pone.0160366 PMID:27494334
2. Amalou-Döpke, L., & Süß, S. (2014). HR measurement as an instrument of the HR department in its exchange relationship with top management: A qualitative study based on resource dependence theory. *Scandinavian Journal of Management*, *30*(4), 444–460. doi:10.1016/j.scaman.2014.09.003
3. Baesens, B., Winne, S., & Sels, L. (2016). Is Your Company Ready for HR Analytics? *MIT Sloan Management Review.*
4. BarNir, A., Gallaugher, J. M., & Auger, P. (2003). Business process digitization, strategy, and the impact of firm age and size: The case of the magazine publishing industry. *Journal of Business Venturing*, *18*(6), 789–814. doi:10.1016/S0883-9026(03)00030-2
5. Bassi, L., & McMurrer, D. (2016). Four lessons learned in how to use human resource analytics to improve the effectiveness of leadership development. *The Journal of Leadership Studies*, *10*(2), 39–43. doi:10.1002/jls.21471

6. Bondarouk, T., Harms, R., & Lepak, D. (2017). Does e-HRM lead to better HRM service? *International Journal of Human Resource Management*, *28*(9), 1332–1362. doi:10.1080/09585192.2015.1118139
7. Bondarouk, T., Ruël, H., & van der Heijden, B. (2009). e-HRM effectiveness in a public sector organization:A multi-stakeholder perspective. *International Journal of Human Resource Management*, *20*(3), 578–590.doi:10.1080/09585190802707359
8. Carlson, K. D., & Kavanagh, M. J. (2008). HR Metrics and Workforce analytics. In *Human Resource Information Systems* (pp. 387–421). Basics, Applications, and Future Directions.
9. Chhinzer, N., & Ghatehatehorde, G. (2009). Challenging relationships: HR metrics and organizational financial performance. *The Journal of Business*, *8*(1), 37–48. doi:10.1016/j.jwb.2009.09.014
10. Dery, K., Hall, R., Wailes, N., & Wiblen, S. (2013). Lost in translation? An actor-network approach to HRIS implementation. *The Journal of Strategic Information Systems*, *22*(3), 225–237. doi:10.1016/j.jsis.2013.03.002
11. Devaraj, S., Krajewski, L., & Wei, J. C. (2007). Impact of eBusiness technologies on operational performance: The role of production information integration in the supply chain. *Journal of Operations Management*, *25*(6), 1199–1216. doi:10.1016/j.jom.2007.01.002
12. Dhamija, P. (2012). E-Recruitment: A Roadmap Towards E-Human Resource Management. *Journal of Arts. Science & Commerce*, *3*(3(2)), 33–39.
13. Dulebohn, J. H., & Johnson, R. D. (2013). Human resource metrics and decision support: A classification framework. *Human Resource Management Review*, *23*(1), 71–83. doi:10.1016/j.hrmr.2012.06.005
14. Eckhardt, A., Laumer, S., Maier, C., & Weitzel, T. (2014). The transformation of people, processes, and IT in e-recruiting. *Employee Relations*, *36*(4), 415–431. doi:10.1108/ER-07-2013-0079
15. Fisher, S. L., & Howell, A. W. (2004). Beyond user acceptance: An examination of employee reactions to information technology systems. *Human Resource Management*, *43*(2–3), 243–258. doi:10.1002/hrm.20018
16. Florkowski, G. W., & Olivas-Luján, M. R. (2006). The diffusion of human-resource information-technology innovations in US and non-US firms. *Personnel Review*, *35*(6), 684–710. doi:10.1108/00483480610702737
17. Francis, H., Parkes, C., & Reddington, M. (2014). E-HR and international HRM: A critical perspective on the discursive framing of e-HR. *International Journal of Human Resource Management*, *25*(10), 1327–1350. doi:10.1080/09585192.2013.870309
18. Garbarino-Alberti, H. (2013). IT Governance and Human Resources Management: A Framework for SMEs. *International Journal of Human Capital and Information Technology Professionals*, *4*(3), 40–57. doi:10.4018/jhcitp.2013070104
19. Grant, D., & Newell, S. (2013). Realizing the strategic potential of e-HRM. *The Journal of Strategic Information Systems*, *22*(3), 187–192. doi:10.1016/j.jsis.2013.07.001
20. Gueutal, H. G., & Stone, D. L. (2005). *The Brave New World of eHR: Human Resources Management in the Digital Age*. *Management*. San Francisco: Jossey-Bass.
21. Gummesson, E. (2006). Qualitative research in management: Addressing complexity, context and persona. *Management Decision*, *44*(2), 167–179. doi:10.1108/00251740610650175

22. Heikkilä, J.-P., Brewster, C., & Mattila, J. (2014). Micro-Political Conflicts and Institutional Issues During e-HRM Implementation in MNCs: A Vendor's View. In *Human Resource Management and Technological Challenges* (pp. 1–21). Cham: Springer International Publishing; doi:10.1007/978-3-319-02618-3_1
23. Jafari Navimipour, N., Rahmani, A. M., Navin, A. H., & Hosseinzadeh, M. (2015). Expert Cloud: A Cloud-based framework to share the knowledge and skills of human resources. *Computers in Human Behavior*, *46*, 57–74. doi:10.1016/j.chb.2015.01.001
24. Khan, H., Hussainy, S. K., Khan, K., & Khan, A. (2017). The applications, advantages and challenges in the implementation of HRIS in Pakistani perspective. *VINE Journal of Information and Knowledge Management Systems*, *47*(1), 137–150. doi:10.1108/VJIKMS-01-2016-0005
25. King, K. G. (2016). Data Analytics in Human Resources: A Case Study and Critical Review. *Human Resource Development Review*, *15*(4), 487–495. doi:10.1177/1534484316675818
26. Laumer, S., Maier, C., & Eckhardt, A. (2014). The impact of human resources information systems and business process management implementations on recruiting process performance : A case study. In *Twentieth Americas Conference on Information Systems* (pp. 1–12). doi:10.1007/s11573-014-0758-9
27. Lawler, E. J., Levenson, A., & Boudreau, J. W. (2004). Effective Organizations HR Metrics and Analytics – Uses and Impacts. *Human Resource Planning*, *27*(4), 27–35.
28. Levenson, A. (2018). Using workforce analytics to improve strategy execution. *Human Resource Management*,*57*(3), 685–700. doi:10.1002/hrm.21850
29. Lin, A., & Chen, N. C. (2012). Cloud computing as an innovation: Perception, attitude, and adoption. *International Journal of Information Management*, *32*(6), 533–540. doi:10.1016/j.ijinfomgt.2012.04.001
30. Lin, L.-H. (2011). Electronic human resource management and organizational innovation: The roles of information technology and virtual organizational structure. *International Journal of Human Resource Management*, *22*(2), 235–257. doi:10.1080/09585192.2011.540149
31. Low, C., Chen, Y., & Wu, M. (2011). Understanding the determinants of cloud computing adoption. *Industrial Management & Data Systems*, *111*(7), 1006–1023. doi:10.1108/02635571111161262
32. Maier, C., Laumer, S., Eckhardt, A., & Weitzel, T. (2013). Analyzing the impact of HRIS implementations on HR personnel's job satisfaction and turnover intention. *The Journal of Strategic Information Systems*, *22*(3),193–207. doi:10.1016/j.jsis.2012.09.001
33. Marler, J. H., & Boudreau, J. W. (2017). An evidence-based review of HR Analytics. *International Journal of Human Resource Management*, *28*(1), 3–26. doi:10.1080/09585192.2016.1244699
34. Marler, J. H., & Fisher, S. L. (2013). An evidence-based review of e-HRM and strategic human resource management. *Human Resource Management Review*, *23*(1), 18–36. doi:10.1016/j.hrmr.2012.06.002
35. Masum, A. K. M., Kabir, M. J., & Chowdhury, M. M. (2015). Determinants that influencing the adoption of E-HRM: An empirical study on Bangladesh. *Asian Social Science*, *11*(21), 117–124. doi:10.5539/ass.v11n21p117
36. McIver, D., Lengnick-Hall, M. L., & Lengnick-Hall, C. A. (2018). A strategic approach to workforce analytics: Integrating science and agility. *Business Horizons*, *61*(3), 397–407. doi:10.1016/j.bushor.2018.01.005

37. Nagendra, A., & Deshpande, M. (2014). Human Resource Information Systems (HRIS) in HR Planning and Development in Mid to Large Sized Organizations. *Procedia: Social and Behavioral Sciences*, *133*, 61–67. doi:10.1016/j.sbspro.2014.04.169
38. Stone, D. L., & Deadrick, D. L. (2015). Challenges and opportunities affecting the future of human resource management. *Human Resource Management Review*, *25*(2), 139–145. doi:10.1016/j.hrmr.2015.01.003
39. van den Heuvel, S., & Bondarouk, T. (2017). The rise (and fall?) of HR analytics. *Journal of Organizational Effectiveness: People and Performance*, *4*(2), 157–178. doi:10.1108/JOEPP-03-2017-0022
40. Zapotocny, M. (2015). Human Resource Information Systems: The current problems and future challenges.In *Innovation Vision 2020: From Regional Development Sustainability To Global Economic Growth* (pp.2606–2614).