

Impact Of Hr Analytics Competencies On Organizational Performance

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Abstract

HR Analytics has gained immense popularity among the consultants and practitioners in the field of HR management. HR Analytics applies various statistical tools on the collected data to create interventions, propose strategies and assess their effectiveness in the organizational performance of various departments such as marketing, finance, etc. Though the HR Analytics is not less known but has been remained relatively less explored. However, it has not been subjected to scrutiny by academic researchers. The present study, therefore, investigates the impact of HR Analytics on organizational performance and how this relationship is mediated by employee motivation. A descriptive design was adopted and data was collected from HR employees from Bangalore, who adopt analytics for various HR processes. The results showed that motivation partially mediated the effects of HR Analytic on organizational performance. The analytical skills of employees which involves understanding, analyzing and interpreting data has a significant impact on the organizational performance of the organization in terms of improved decision-making and return on investment achieved. Further, motivating employees at work to generate and experiment with new ideas; to customize new ways to deliver products and services by analyzing data; to adopt and use creative analytics in any process; and to find satisfaction at work can further enhance the effectiveness of analytical skills on organizational performance. Based on these results, the study emphasizes the need for developing analytical skills among HR employees and motivating them to increase organizational performance.

Keywords: HR Analytics, Organizational Performance, Motivation, Data interpretation skills, Data application skills, Decision-making, Return-on-Investment.

1) Introduction

Human Resource Analytics plays an important role in devising corporate strategies, add value in organizations, and determining the effectiveness of an organization (Lawler & Mohrman, 2003; Ulrich & Dulebohn, 2015). The Human Resource (HR) has evolved from basic administrative responsibilities to evidence and data-driven decision-making and has potentially evolved in their strategic role in organizations (Jensen-Eriksen, 2016). In order to become a strategic partner and to influence business strategy, HR professionals must possess analytical and decision-making capability (Lawler III, Levenson, & Boudreau, 2004). The data analysis on employees, their working pattern and other related activities is essential to increase the organization's effectiveness, productivity and performance (Guest, 2004). HR analytics, which is also popularly known as workforce analytics, talent analytics or people analytics meticulously uses the information technology to integrate the data based on extrinsic and intrinsic function and efficiently analyze the HR data. Van Den Heuvel & Bondarouk (2016) has defined HR analytics as "the systematic identification and quantification of the people drivers of business outcomes".

Currently, the technological advancements and integration of computerized system have simplified the HRM practices (Pfeffer and Sutton, 2006). The HR of any organization uses various aspects like HR metrics, HR scorecards, workforce economics, utility analysis, evidence based management, HR return of investment etc (Rasmussen and Ulrich, 2015). Levenson et al. (2005) differentiated HR Analytics as a different entity from HR metrics. The HR metrics refers to the efficient, effective, and impactful HR practices adopted by an organization's, whereas HR analytics constitutes evidence-driven program (Bassi, 2011) which utilizes the data and applies scientific methods such as prognosticative and explanatory analytics and empirical programs to formulate the policies and take necessary steps to enhance the quality of service, persuasive decision making and increase the company's competitive threshold (Lawler, 2004; Levenson, 2015).

HR plays a role in every aspect of HR functions including recruiting, training and development, retention, succession planning, and providing compensation and benefits (Mishra, Lama & Pal, 2016). It transforms complex data into meaningful information to aid in decision-making and predict future business outcomes (Rasmussen & Ulrich, 2015). The main goal of HR analytics is "to gather and maintain data for predicting short and long-term trends in the supply and demands of workers in different industries and occupations and to help global organizations make decisions relating to optimal acquisition, development and retention of their human capital" (Kapoor & Sherif, 2012, p.1627) or as stated by Hota and Ghosh (2013, p.167) "to provide an organization with insights for effectively managing employees in order to achieve business goals quickly and efficiently." Thus, it can be implied that data-driven HRM can add value to the business (Abrahamson and Eisenman, 2008). However, approximately 8% of the organizations use workforce analytics to enhance performance of the employees and give a boost to the business (Deloitte, 2017). Thus, it can be inferred that still there is a considerable lack of competent HR analytic functions in HR team and the connection between analytical measures and proactive future strategies is not yet fully developed requiring a need to understand the recruitment of competent HRA professionals (Hoffmann et al., 2012).

The objective of the present study is to determine the impact of HR Analytics competencies on the organizational performance. The possible connections between HR analytic competencies and organizational performance are examined. Researchers like Dobre (2013); and Ahamed, and Sunderasan (2016) reported that performance of an organization depends on the motivation of its employees towards work. Hence, the paper also analyzes level of impact of analytic competencies possessed by employees on organizational performance with mediating effect of motivation.

2) Review of Literature

Human Resource Analytics (HRA) is an effective tool to quantify the organizational data and to reinforce the strategies to increase the effectiveness of programs or interventions adopted by the HRM (Lydgate, 2018). The globalization, increased competition, penetration of advance technologies, management of workforce and innovation of Big Data has led the way to business analytics to analyze the data and extract the necessary information (Bassi et al., 2012). Mondore, Douthitt, and Carson (2011) stated that HR analytics can help the HR department to direct the money to be spent on beneficial employee initiatives that are key to influence business metrics and outcomes. Levenson (2011) reported that analytics and metrics offer a great potential to make decisions regarding human capital issues in an organization. He found that along with statistical skills, time and resources will also be needed to make maximum utilization of the analytics to make decisions.

HR Analytics

Green (2017) pointed out that Big Data analytics and their directive focus on projects which matters for business can enhance the HR value and contribution. Similarly, Fred (2018) reported that HR analytics is a strategic partner of HR and their directions to HR influences the selection and recruitment of employees by HR, suggesting that a lack of proper data-based decision making and analytical ability will strongly influence the HR strategies. Sanders and Ganeshan (2018) study on supply chain management executives emphasizes on the Big Data collection and associated aspects of it such as opportunity and changing the nature of inquiry, changing the nature of experimentation which allows the exploration of wide range of questions and possible experimentation.

Van der Voort, Klievink, Arnaboldiand Meijer (2019) reported that big data provides ample opportunities for decision-makers and data analysts to make better decisions and perform their job well. Sousa (2018) suggested that analytic models can facilitate data analysis and better decision-making. Similarly, Gaur (2018) stated that HR analytics acts as a catalyst for organizations to make relevant decisions for the management and improvement of various businesses processes. He suggested that HR analytics can simplify the management of human resources in an organization by shifting from traditional operational HR department to a tactical data-driven decision-making. According to Vargas et al (2018) HR analytics helps to identify the strategic position, talent pool, monitoring of talent performance and management of recruiting the employees and talent retention. According to Nocker and Sena (2019) HR analytics aid the senior management team to align HR strategies and issues such as retention, planning, etc. which can be personalized support the individual. Since HR analytics play an important role in influencing the organizational performance in terms of improved decision-making and return on investment. So, we propose:

Hypothesis 1: HR Analytics has a significant positive impact on organizational performance.

In addition to this, motivation of employees has been reported to play an important role in enhancing the performance of organization (Dobre, 2013; Ahamed, & Sunderasan, 2016). Thus, we propose:

Hypothesis 2: Motivation of employees mediates the effect of HR analytics on organizational performance.

3) Methodology

The study design involved exploratory and descriptive analysis with a cross-sectional time frame. For this study, 180 employees employed in HR analytics department of different companies in Bangalore city, India were selected and administered with a well-structured questionnaire. The questionnaire involved different sections like demographic profile, Human Resource analytics skill in terms of process performance and strategy, and overall organizational performance in terms of Return on Investments (ROI) and decision-making process. Each response was scored on a 5-option Likert Scale ranging from 1-5, where 1=strongly disagree, 2=disagree, 3=no idea, 4=agree, and 5=strongly agree. The collected data was subjected to statistical analysis. Exploratory Factor Analysis (EFA), multivariate analysis (MANOVA) was conducted to verify the hypothesis. All the test results were considered statistically significant at $p < 0.05$. All data analysis was performed using the Statistical Package for the Social Sciences (SPSS) program, version 24.0. Principal component analysis was used to perform an exploratory factor analysis (EFA) and to extract the factors for HR analytics and organizational performance. The exploratory factor analysis (Table 2) resulted in the extraction of two factors for different processes. The Kaiser-Meyer-Olkin (KMO) value of 0.734 indicated sampling adequacy and Bartlett's test of sphericity ($p < 0.00$) supported the use of a factor analysis. Virtually all the items under process performance (9 items) yielded factor loadings in the range of 0.60-0.84 with a total percentage variance of 71.82%, with process performance explaining 48.55% and strategies making up 23.26% of the variance.

4) Results and Discussion

In the present study, out of 180 respondents, 55% were males, 47.2% were between 31-40 years and 80.6% had a PG degree. Professionally, 39.4% were working in MNC followed by 34.4% in large companies with more than 1000 employees and department wise 51.7% were from IT sector and 25.6% from services. The majority of HR analytic professionals (76.6%) had more than one but less than 10 years of experience as an HRA and about 45.6% were from organization which had a team for HRA (Table 1).

Table 1. Demographics Profile of Respondents

Demographics	Categories	Frequency	Percent
Gender	Male	81	45
	Female	99	55

Age (years)	21-30	75	41.2
	31-40	82	45.5
	41-50	23	12.8
Educational Qualification	UG	42	23.3
	PG	137	76.6
	PhD	1	0.01
Currently Working	Multi National Company	85	47.2
	Small Indian Company (up to 100 employees)	24	13.3
	Medium size company (101-1000 employees)	28	15.5
	Large companies (>1000 employees)	43	23.8
Types of Sectors	IT	101	56.1
	Manufacturing	26	14.4
	Services	53	29.4
Total Experience as an HRA	1-5	87	48.3
	6-10	65	36.1
	>10	28	15.5
	Total	180	100

Table 2. Factors of utilization of data-based HRA competencies by the organization for different processes

Factors	Factor Loadings	% of Variance	Cumulative %
Process Performance		49.504	49.504
Employee attitude surveys	0.780		
Organization design/ dysfunctional aspects of work flow	0.815		
Compensation analysis	0.823		
Downsizing workforce assessment	0.846		
Organizational development assessments	0.791		
Employee competency assessments	0.776		
Recruitment analysis	0.741		
Management development assessments	0.707		
Employee performance assessments	0.612		
Strategies		24.272	73.776
HR manpower planning	0.861		
Change management planning	0.818		
Succession planning for leadership development	0.748		

Table 3 represents the extracted factor loadings, namely return on investments (ROI) and decision-making process of the organizational performance. The ROI contained six items with a factor loading ranging from 0.61-0.91 and decision-making process contained thirteen items with a factor loading ranging from 0.61-0.85. ROI contributed 36.623% and decision-making process accounted for 29.185% of the overall variance.

Factors	Factor Loadings	% of Variance	Cumulative %
Return on Investments (ROI)		37.533	37.533

Analytics helps to link each activity to the business bottom-line very objectively	0.910		
Wide application of Analytics will change the organization results drastically	0.851		
Analytics will enhance the efficiency of the business process	0.768		
Analytics helps to evaluate the efficiency of the operating standards	0.749		
The learning curve of the organization is enhanced	0.749		
Decision-Making Process			
The company in the position to assess the ROI on training	0.610	28.297	65.830
Point out HR programs that should be discontinued	0.845		
Link human capital practices to organizational performance	0.831		
Measure the cost of providing HR services	0.851		
Outcome of key HR activities like manpower planning can be forecasted well	0.781		
Identify the area where talent has the maximum scope for strategic impact	0.780		
Measure routine HR activities (payroll, benefits, communication, etc.)	0.775		
Evaluate and track the performance of outsourced HR activities	0.743		
Getting input from analytics process key input for business decisions, especially from strategic perspectives	0.738		
Contribute to decisions about business plans and human capital management	0.698		
Analytics cuts the unnecessary opinion based decision making in the organization	0.682		
Evaluate the practicality of new business strategies	0.661		
Evaluate and improve the human capital strategy of the company	0.669		
Make decisions that reflect your company's competitive status	0.653		

Mediation analysis was carried out using Hayes and Preacher process method to assess the mediation effect of Motivation between HR Analytics and Organizational Performance. The results are provided in Table 4. It can be seen that HR Analytics is a significant predictor of motivation (a-path), $b=.459$, $SE=.056$, $p<.001$ and also Motivation was found to be a significant predictor of organizational performance (b= path), $b=.329$, $SE=.062$, $p<.001$. The total effects between HR Analytics and Organizational Performance (c-path), $b=.371$, $SE=.049$, $p<.001$ and the direct effect through mediation by Motivation between HR Analytics and Organizational Performance (c'-path), $b=.151$, $SE=.035$, $p<.001$ were also significant. Hence, the variable Motivation acts as a partial mediator between HR Analytics and Organizational Performance.

The explanatory power of the independent variable over the dependent variable can be studied from Table 5. The explanatory power of HR Analytics over Organizational Performance was found to increase from 24% ($R^2=0.241$) to 34% ($R^2=0.347$) due to the inclusion of a mediator (Motivation). Based on the above discussion, the hypothesis, “Motivation of employees mediates the effect of HR Analytics on Organizational Performance” was only partially accepted.

Table 4: Mediating effects of motivation between HRA and Organizational Performance

	Co-eff	SE	t	p	LLCI	ULCI	Decision
HRA→MOTVN	0.449	0.046	8.112	0.000	0.338	0.479	Supported
MOTVN→OP	0.339	0.064	6.344	0.000	0.219	0.511	Supported
HRA→OP (Direct effect)	0.362	0.052	7.415	0.000	0.282	0.457	Supported
HRA→MOTVN→OP (Indirect effect)	0.160	0.029			0.089	0.241	Partially supported

Table 5: R^2 values of the variables

	R	R-sq	MSE	F	df1	df2	p
HRC→MOTVN	0.534	0.284	0.358	68.325	1	178	0.000
HRC→BO (Direct effect)	0.491	0.241	0.254	56.450	1	178	0.000
HRC→MOTVN→BO (Indirect effect)	0.589	0.357	0.230	47.838	2	177	0.000

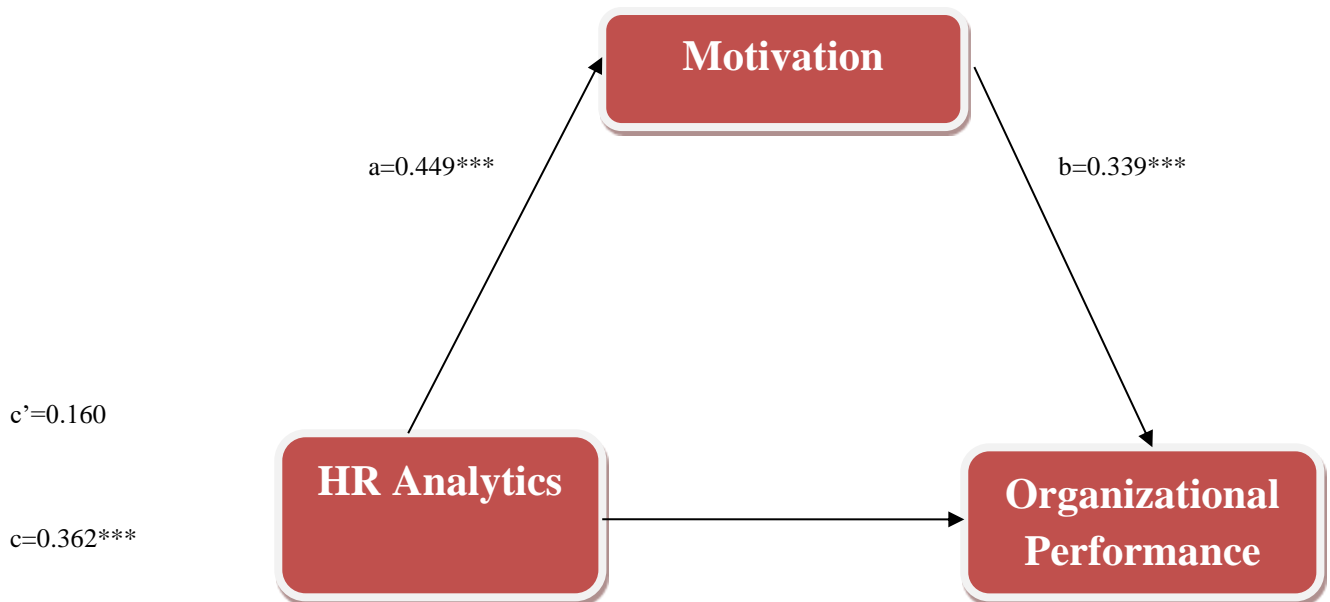


Figure 1: Mediation effect of Motivation between HR Analytics and Organizational Performance

The direct effects found that HR Analytics competencies possessed by HR professionals have an impact on the decision-making and return on investments made by the business. This is in line with the findings reported by Sousa (2018), Gaur (2018) and Levenson (2011) who also suggested that data analysis provides improved and effective decision-making for organizations. Employees who can effectively analyze and interpret the data at hand, can effectively predict about the future and thereby help organizations to make accurate and data-driven decisions.

Also, the analytical skills possessed by the HR employees can help them to make decisions related to issues of workforce and workforce efficiency based on evidence rather than acting upon instincts. Furthermore, similar to the current findings, a study by Mishra, Lama, and Pal (2016) and Mondore, Douthittand Carson (2011) also supports the claim that HR analytics models help organizations to maximize the return on their investments. Thus, with the help of data and employees with analytical skills and competencies, organizations can make decisions and develop strategies to generate significant gains on the investment made.

The effect of employees' analytic on organizational performance has been found to be partially mediated by employee motivation. Motivation of employees will enhance their adoption of analytic techniques for decision making which in turn will increase the organizational performance. Thus, HR analytics will help organizations to drive organizational performance through the use of analytics and employee motivation.

5). Conclusion

HR analytics is a new area and involves data collection and analysis, which is further used by different organizational departments to improve decision making, introducing new function in order to enhance the efficiency of the organization. This paper contributes to the literature by exploring different aspects of HR analytics with special reference to Indian companies. The results of the study show the impact of HR analytics on organizational performance. We found that implementation of HR analytics is a key initiative to making HR a strategic partner in any organization. Therefore, HR analytics must be available to business leaders to expand their impact on the organization. The results of the study also showed that employee motivation partially mediates the effects of HR analytics on Organizational performance. The analytical competencies possessed by the employees can be largely adopted for enhancing organizational performance by motivating employees to adopt creative analytics and apply the same in all processes. Employee motivation thus plays a crucial role in enhancing the effectiveness of employee competencies on organizational performance. Organizations must therefore motivate its HR employees to develop analytical competencies and utilize them to make informed data-driven decisions which in turn can maximize its return on investments.

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