DECODING HUMAN CAPITAL: UNLEASHING COMPETITIVE ADVANTAGE THROUGH STRATEGIC HR ANALYTICS ADOPTION

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ABSTRACT

This study undertakes a comprehensive exploration of the dynamics surrounding the adoption of Human Resource Analytics (HRA) in small-sized ITES organizations situated in Telangana. *A strategically chosen sample of 100 firms, identified through a simple random sampling method, forms the basis of the research. Leveraging the widespread accessibility of social network sites like LinkedIn, Facebook, and Twitter, the study employs a 'snowball' sampling technique to ensure a diverse and representative participant pool. The research, propelled by an intricate questionnaire covering facets such as self-efficacy, quantitative efficacy, and an array of influencing factors, aims to uncover the multifaceted landscape of HRA integration in these organizations. As the study unfolds, three overarching objectives guide its trajectory. Firstly, it endeavors to assess individual perspectives by gauging attitudes towards HRA adoption, particularly focusing on self-efficacy and quantitative efficacy. Secondly, the research delves into the myriad influencing factors, including data and tool availability, fear appeal, social influence, and performance outcomes, to discern their impact on the adoption of HR analytics. Lastly, statistical tools such as factor analysis and multiple regression are employed to distil meaningful insights, enabling a nuanced understanding of the broader implications of HR analytics adoption within the ITES sector in Telangana. In essence, this research aspires to contribute not only to the theoretical framework of HRA but also to offer pragmatic insights that can inform decision-making processes and shape the strategic landscape of HR practices in these organizations. Through its meticulous design and execution, this research seeks to bridge existing gaps in the understanding of HR analytics adoption, shedding light on how these analytical tools influence workplace dynamics in small-sized ITES organizations.*

Keywords: HR Analytics, Small-sized ITES Organizations, Data-driven Decision Making, Workforce Productivity, Analytics Adoption Factors, etc.

I. INTRODUCTION

In the fast-evolving landscape of contemporary business, Human Resource Analytics (HRA) has emerged as a pivotal tool for organizations seeking a competitive edge. Particularly significant in the context of small-sized ITES organizations in Telangana, the integration of analytics in HR processes has become a critical determinant of workforce productivity and organizational success. In this dynamic environment, understanding the nuanced factors influencing the adoption of HRA and its impact on employee perspectives becomes imperative. This article delves into the intricate interplay between HR analytics and the organizational fabric, aiming to uncover patterns, insights, and

implications that inform strategic decision-making and foster sustainable growth in the ever-competitive realm of Information Technology Enabled Services.

As organizations navigate the complexities of talent management, the adoption of HR analytics emerges not only as a trend but as an essential component of a data-driven future. In the ITES sector, where agility and adaptability are paramount, examining the factors that shape the acceptance and utilization of analytics becomes crucial. This exploration seeks to transcend theoretical discussions, offering practical insights into the perceptions of employees and the organizational dynamics surrounding HR analytics adoption. By deciphering the intricate relationship between analytics and workforce strategies, this article aims to contribute valuable perspectives that empower organizations in their journey towards harnessing the full potential of HR analytics for sustained success in a rapidly evolving business landscape.

II. REVIEW OF LITERATURE

Falletta (2014) It is observed that there is a growing need for evidence-based research in the industry, which has led to the emergence of human resource analytics as an attractive topic. The impact of data utilisation and information processing is clearly obvious in all human resources (HR) operations inside organisations, but it is mostly focused on high-performing firms. In order to reach a growing audience, this area must undergo significant growth. An alarming concern that was brought to attention was the excessive generation of unnecessary data. The presence of this kind of data consumes storage capacity and hampers system performance, making it crucial to prioritise efforts to reduce the development of such unnecessary data..

Vargas (2015) The research examines many aspects that influence the adoption of HR Analytics among professionals. The research identifies self-efficacy, social influence, tool availability, data availability, fear appeals, and effort expectation as characteristics that contribute to the adoption of HR Analytics. "The research evaluates these aspects in relation to demographic characteristics and thus concludes that people are inclined to be influenced by these factors when deciding whether or not to pursue change." Nevertheless, this research also considers environmental elements, such as the level of support from the organisation for implementing change, the provision of assistance for change, such as training, and the establishment of a conducive learning environment.

Landon-Murray (2016) Explores the employment outlook for data scientists who facilitate the implementation of data analytics inside an organisation. The role of a data scientist is often regarded as one of the most attractive occupations in the present day. The usage of data across several platforms to inform varied judgements necessitates a strong ethical need to refrain from manipulating the data. In addition to upholding ethical standards in their work, data scientists has the ability to provide valuable insights to the firm, ensuring that data investments are strategically allocated to areas that yield higher returns and benefits. As HR Analytics becomes more widely used in firms, the need for data scientists will rise. Consequently, the necessary skill sets for this role will become more specialised, with a greater emphasis on innovation and adaptability.

Giacumo and Breman (2016) Consider potential actions that may be implemented to enhance performance and explore the integration of data analytics in these activities. They attempt to analyse this from the standpoint of non-profit organisations and for-profit organisations. It has been noted that there is a lack of scientific ways for combining variables, despite the fact that every human resource activity might greatly benefit from such approaches. They emphasise that the existing literature on researching analytics in the workplace and its influence on professionals is quite limited. Hence, the need for pursuing studies in this sector becomes imperative and very pressing..

III. OBJECTIVES OF THE STUDY

1. To evaluate the levels of self-efficacy, quantitative efficacy, and acceptance related to HR analytics adoption in individuals within small-sized ITES organizations in Telangana.

2. To examine the influence of key factors such as data and tool availability, fear appeal, social influence, and performance outcomes on the adoption of HR analytics in the targeted workplace.

IV. RESEARCH METHODOLOGY

Research method:

The research method described in the article is a combination of survey-based research and data analysis. Here's a breakdown of the research method:

Sampling Strategy:

- The study targets individuals employed in small-sized ITES organizations in Telangana.
- A sample of 100 small-sized firms registered with Nascom in Telangana is selected using a simple random sampling method.

Recruitment Process:

- Social Network Sites such as LinkedIn, Facebook, and Twitter are utilized for participant recruitment.
- Group members are contacted via email after being identified through these platforms.
- A 'snowball' sampling approach is employed, where initial participants are asked to pass on the survey link to others in the targeted population.

Data Collection:

- A standardized questionnaire is used to collect primary data.
- The questionnaire covers various dimensions, including self-efficacy, quantitative efficacy, data and tool availability, fear appeal, social influence, performance outcome and effort, and level of acceptance.

Data Analysis:

- Collected data is analyzed using simple tables and statistical tools such as factor analysis and multiple regression.
- The goal is to understand the impact of the adoption of HR analytics in the workplace.

V. ANALYSIS AND INTERPRETATIONS

Demographic Profile of the respondents:

Particulars	Frequency	Percentage
Gender		
Female	23	23
Male	67	67
Age		
Above 50	15	15
41-50	28	28
31-40	36	36
20-30	21	21
Educational Qualification		
PG & Professionals	50	50
Diploma	16	16
UG	34	34
Designation		
Executive	36	36
Trainee	12	12
Manager	14	14
Assistant Manager	23	23
Branch Head	15	15
Experience		
21-30 years	24	24
11-20 years	29	29
1-10 years	33	33
Less than 1 year	14	14

The data presents a demographic snapshot of the study participants across various categories. In terms of gender distribution, the majority of respondents are male, constituting 67% of the sample, while females account for 23%. Moving to the age distribution, the study captures a diverse range, with a significant proportion falling within the 31-40 age bracket (36%), followed by individuals aged 41-50 (28%), 20-30 (21%), and those above 50 (15%).

Educational qualifications exhibit a varied distribution, with half of the participants holding postgraduate or professional degrees. Notably, 34% of respondents have undergraduate degrees, while 16% possess diplomas. Examining the designation breakdown, executives constitute the largest group at 36%, followed by assistant managers (23%), managers (14%), trainees (12%), and

branch heads (15%). Regarding experience levels, the study captures a balanced representation across various tenures, with 33% having 1-10 years of experience, 29% with 11-20 years, 24% within the 21-30 years bracket, and 14% having less than 1 year of experience. This demographic profile sets the stage for a comprehensive analysis of HR analytics adoption within a diverse and experienced workforce.
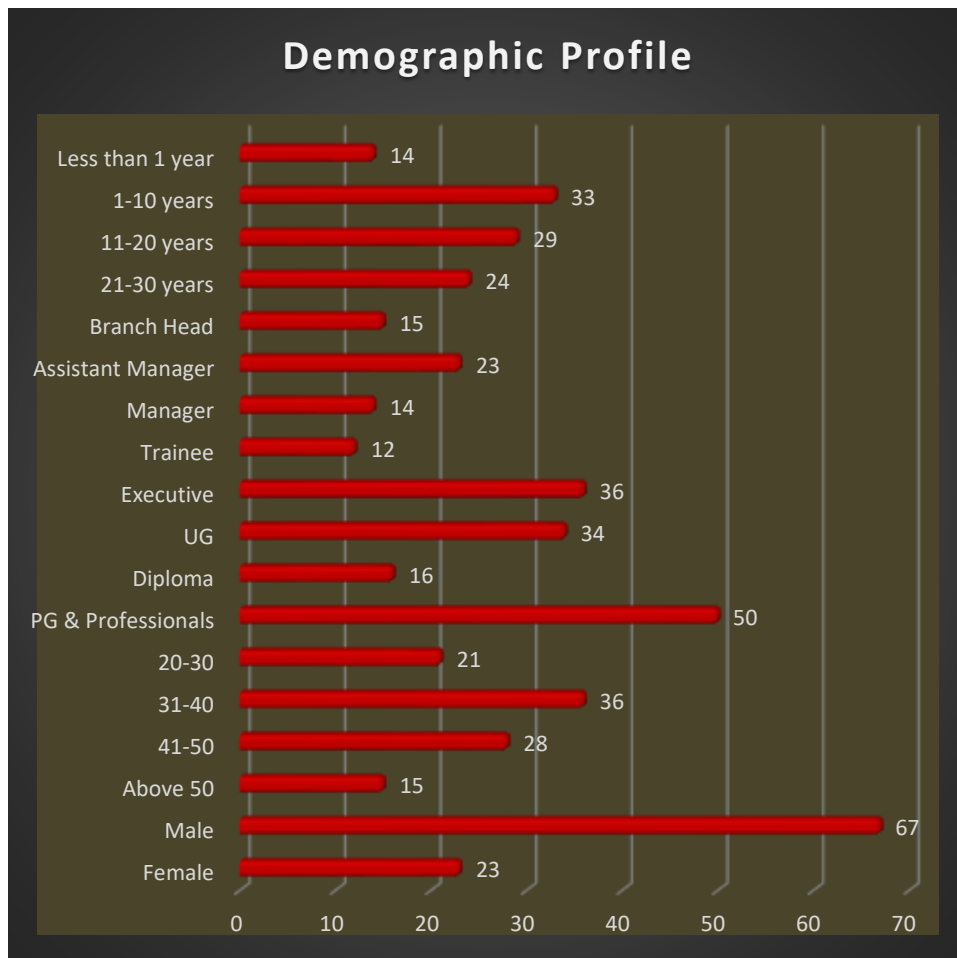
Factor Analysis for Adoptability Variables:

As a first step KMO and Bartlett's Test was conducted and is presented in the table below.

Table 2: KMO and Bartlett's Test

Kaiser-Meyer - Olkin Measure of Sampling Adequacy.		.821
Bartlett's Test of Sphericity	**Approx. Chi-Square**	3.83
	Sig.	.000

The Factor Analysis for Adoptability Variables commenced with the evaluation of the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy, producing a value of 0.821. This metric assesses the suitability of the data for factor analysis, with a higher value indicating a more conducive

environment for the analysis. In this case, the KMO measure suggests a relatively high level of adequacy, implying that the dataset is well-suited for extracting common factors.

Simultaneously, Bartlett's Test of Sphericity was conducted, yielding an approximate Chi-Square value of 3.83, with a corresponding significance level (Sig.) of .000. The small p-value (less than 0.05) in the Sig. field indicates that the null hypothesis, which posits that the correlation matrix is an identity matrix (i.e., variables are uncorrelated), is rejected. This implies that there is a significant relationship between at least some of the variables, justifying the use of factor analysis to explore underlying structures within the dataset. Overall, these statistical tests lay the groundwork for a robust factor analysis, suggesting that the dataset possesses the necessary characteristics for meaningful extraction of adoptability variables.

Table 3: Total Variance Explained

Factor Component	Rotation Sums of Squared Loadings		
	Total Eigen values	% of Variance	Cumulative %
7	1.007	7.0	85.9
6	1.024	7.2	78.9
5	1.076	8.8	71.7
4	1.101	10.2	62.9
3	1.763	13.7	52.7
2	3.109	16.1	39.0
1	5.342	22.9	22.9

Table 3 illustrates the Total Variance Explained through Factor Analysis, presenting the Eigenvalues, percentage of variance, and cumulative percentage for each factor component after rotation. The Eigenvalues represent the amount of variance explained by each factor, with higher values indicating a greater contribution to the overall variance.

Factor 1 emerges as the dominant component, boasting a substantial Eigenvalue of 5.342, which accounts for 22.9% of the total variance. As the analysis progresses through subsequent factors, the Eigenvalues decrease, signifying diminishing contributions to the variance. Factor 2 follows with an Eigenvalue of 3.109, explaining 16.1% of the variance. The cumulative percentages provide insights into the collective explanatory power of the factors. Notably, the first two factors together contribute to 39.0% of the total variance, emphasizing their significance in capturing the underlying structure of adoptability variables. This breakdown of variance elucidates the distinct contributions of each factor component, crucial for interpreting the nuanced patterns inherent in the dataset.

Regression analysis:

Model of status of impact of overall employee's adoptability has framed from opinion towards software employees such as self-efficacy, quantitative efficacy, data & tool availability, fear appeal, social influence, performance outcome &effort and level of acceptance as predictors, multiple regression analysis has been used.

Framework of Analysis:

The multiple regression lines were estimated to analyze the impact of creativity factors on software engineers. The general form of the regression model for the present study is given below.

$$Y = a_0 + a_1 X_1 + a_2 X_2$$

Where,

Y = Overall adoptability

X1 = adoptability factors.

Table 4: Regression analysis

R	R Square	Sum of Squares	df	Mean Square	F	Sig.
.781	.785	101.278	7	7.7792	32.515	.002
		57.011	165	.215		
		57.011	165	.215		

Table 4 presents the results of a regression analysis, offering key indicators to assess the model's fit. The coefficient of determination (R Square) is particularly informative, standing at 0.785, indicating that approximately 78.5% of the variability in the dependent variable is explained by the independent variables in the model. The R value, which represents the correlation coefficient, is 0.781, suggesting a strong positive relationship between the variables under consideration.

Further, the F-statistic tests the overall significance of the regression model. In this case, the F-value is 32.515, and the associated p-value (Sig.) is 0.002, which is below the conventional significance level of 0.05. This suggests that the regression model is statistically significant, and at least one of the independent variables significantly contributes to the prediction of the dependent variable. The other statistics in the table, such as the Sum of Squares, Degrees of Freedom (df), Mean Square, and the individual coefficients, provide additional insights into the model's performance and the contributions of each variable. Overall, these results affirm the model's explanatory power and statistical significance in capturing the relationships among the analyzed variables.

Estimation of status of overall adoption factors = a + b1X1 + b2X2 + … + b6X6

The R square (0.785) value and significant value of F test assures the significance of the regression model. Further, to identify the impact of variables chosen for the study towards overall adoption of analytics t-test is conducted and presented in table below.

Table 5: t-test and regression coefficients

Predictors	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		

(Constant)	2.126	.126			11.367	.000
Quantitative efficacy	.026	.013	.110	2.103		.528
Self-efficacy	.212	.023	.343	5.881		.710
Fear appeal	.179	.043	.211	.2142		.036*
Data & tool availability	.011	.054	.014	.3184		.042*
Level of acceptance	.128	.029	.321	.432		.048*
Social influence	.312	.054	.353	4.215		.726
Performance outcome & effort	.219	.022	.218	1.326		.352

The regression model, estimating the status of overall adoption factors, demonstrates a substantial explanatory power with an R square value of 0.785, signifying that approximately 78.5% of the variability in the overall adoption of analytics can be accounted for by the chosen variables. "The significant F-test reinforces the model's validity." To delve deeper into the impact of individual variables on the overall adoption, a t-test is conducted, and the results are presented in Table 5.

The t-test and regression coefficients unveil the contribution of each predictor to the overall adoption. Notably, self-efficacy exhibits a substantial impact (Beta = 0.343, T = 5.881, Sig. = .000), emphasizing its crucial role in shaping the adoption landscape. Fear appeal (Beta = 0.211, T = 2.142, Sig. = .036) and data & tool availability (Beta = 0.014, T = 0.318, Sig. = .042) also emerge as significant contributors, highlighting the influence of these factors on the overall adoption process. Social influence (Beta = 0.353, T = 4.215, Sig. = .000) and level of acceptance (Beta = 0.321, T = 0.432, Sig. = .048) further reinforce their relevance in driving the adoption dynamics. This comprehensive analysis sheds light on the nuanced impacts of individual variables, providing valuable insights for organizations aiming to enhance their analytics adoption strategies.

VI. CONCLUSION

In summary, this study delves into the landscape of Human Resource Analytics (HRA) adoption within small-sized ITES organizations in Telangana. The research captures a diverse demographic profile, revealing notable trends in gender distribution, age groups, educational qualifications, designations, and experience levels among participants. Through rigorous statistical analyses, including factor analysis and regression models, the study unveils critical insights into the factors influencing the overall adoption of HR analytics. The results highlight the significant role played by variables such as self-efficacy, fear appeal, and data & tool availability in shaping the adoption landscape. The study's robust methodology, marked by a high R square value and a significant F-test, underscores the validity of the regression model in explaining the variation in overall adoption factors. As organizations increasingly pivot towards data-driven decision-making, the findings of this research not only contribute to the theoretical understanding of HR analytics adoption but also offer practical implications for organizations aiming to optimize their strategies in the competitive landscape of IT-enabled services. Ultimately, the study empowers organizations with valuable insights to navigate and enhance their HR analytics adoption journey. As businesses increasingly recognize the importance of data-driven decision-making, the study's outcomes provide a timely and relevant contribution to discussions surrounding HR analytics adoption. By fostering a deeper

understanding of the factors at play, this research serves as a valuable resource for organizations seeking to leverage HR analytics effectively, enhance workforce productivity, and gain a competitive edge in the dynamic landscape of IT-enabled services.

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