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A Study on HR Analytics and its Impact on Employee Performance at Femtosoft Technology

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Abstract

HR analytics is important for companies that want to make their workers more productive and make decisions. This study looks at how HR analytics affects employee performance at Femtosoft Technologies, a software company in Chennai. We collected information from 100 employees in departments using a questionnaire with a five-point scale. We used tools like percentage analysis and regression to analyze the data. The results show that using HR analytics has a positive effect on how well employees perform, including how much work they do how engaged they are and how well they achieve their goals. The analysis shows that HR analytics can predict employee performance accurately explaining about 90 percent of the differences, in performance. We also found that which department an employee works in and their level of education can affect how they feel about HR analytics. The study says that using HR analytics in a way can really improve employee performance and make the company work better.

Keywords: HR Analytics, Employee Performance, Workforce Management, Predictive Analytics, Organisational Effectiveness, Data-Driven Decision-Making, Femtosoft Technologies, SPSS Regression Analysis, Employee Engagement.

1. INTRODUCTION

The way companies manage their employees has changed a lot because of technology and data-driven management. HR analytics, which is the collection and analysis of employee data has become an important tool for companies to make good decisions about their employees. Of just guessing or using old methods companies now use HR analytics to measure how well employees are doing predict what they will do and make things better for them. HR analytics helps companies to understand their employees and make decisions about things like employee performance how engaged they are and how to keep them.

Femtosoft Technologies is a company that makes software and was started in 2005 in Chennai, India. They have been doing this for over 19 years. Are very good at making software for companies that need to manage

things like logistics and transportation. Femtosoft Technologies has over 20,000 users in than 2,500 places around the world including India, the Middle East, Southeast Asia and the United Kingdom. The company is led by Director Mr. A. Murugan. Is known for making software that is tailored to what each company needs. Femtosoft Technologies is a trusted partner for companies that need software solutions.

Even though HR analytics is being used more and more around the world there is not a lot of research on how it affects employees in software and IT companies. There are some problems that make it hard for companies to use HR analytics, such as not having the skills, bad data and not being able to integrate systems. Some people are also resistant to change. This study looks at how HR analytics affects employee performance at Femtosoft Technologies. Suggests ways to make HR analytics work better. The study focuses on HR analytics and its impact on employees, at Femtosoft Technologies.

Industry Overview:

The Information Technology and Software Services industry has changed a lot over the forty years. It started as a support function and now it is one of the most important parts of the global economy. The industry began with computer work and mainframe software in the mid twentieth century. Then it grew with technologies like personal computers, the internet, mobile phones, cloud computing and now artificial intelligence and machine learning. Today the Information Technology and Software Services industry is a system that includes software development, system integration, digital transformation, cybersecurity and enterprise platform solutions. At a level people are spending more money on Information Technology than ever before. The total amount of money spent on Information and Communications Technology is seven trillion US dollars as of 2025.This is because companies are using intelligence more moving to cloud computing and making their business operations digital. The enterprise software segment, the ERP software market is a big part of this growth.

The global ERP market was worth about 97.8 billion US dollars in 2024. It will be worth about 199.6 billion US dollars by 2030. This means it will grow at a rate of 11.6 percent every year. In the Asia Pacific region, where Femtosoft has operations the ERP market is worth about 16.24 billion US dollars in 2024. It will grow to about 77.04 billion US dollars by 2035 at a rate of 15.2 percent every year. The logistics and supply chain software segment is an important part of the Information Technology industry. Femtosoft Technologies has products in this segment.

The logistics software market in India will grow from about 0.61 to 0.66 billion US dollars in the 2020s to over 1.3 billion US dollars by 2035. This is because e commerce is growing fast more things are being traded across borders and companies want to be able to track their supplies in time. Logistics software solutions like Courier ERP, Cargo ERP, Transport Management Systems, Warehouse Management Systems, Customs House Agent ERP, EDI filing systems and last mile delivery platforms are essential, for companies that have locations and want to manage them efficient

Need for the Study:

The way a company manages its employees is very important for how the company does overall especially in areas like information technology and software development. This is because how well employees and teams perform directly affects the quality of the products and services they deliver to clients. For companies like Femtosoft Technologies it is really important to be able to measure, analyse and improve employee

performance. This is because they have to deal with a lot of pressure from clients who want quality products and services and they also have to compete with other companies to find the best employees.

Even though a lot of people have talked about how HR analytics can help companies there are still some problems that need to be solved.

- There is not a lot of research that looks at how HR analytics affects employees in software and technology companies in India.
- Most studies look at big picture things like how many employees leave the company and how productive they're, but they do not look at how analytics affects the behaviour and motivation of individual employees.
- A lot of HR professionals do not have the skills they need to use data to improve employee performance.
- There are also problems with the quality of the data and how it is used which can make it hard to trust the results of HR analytics.
- People are also worried about how employee data's used and whether it is private and secure.
- There is not a lot of research that looks at how HR analytics works in industries like logistics-focused software firms.
- We also need to know more about how things like education level what department someone works in and their job title affect how they feel about HR analytics and how it affects their performance.

This study is going to look at these problems and try to find some answers. We are going to do a study of how HR analytics affects employee performance at Femtosoft Technologies. We hope that our findings will be useful for HR professionals, company leaders and policymakers who want to use HR analytics to improve employee performance. By doing this study we want to help companies, like Femtosoft Technologies get the most out of their employees and deliver quality products and services to their clients.

Objectives of the Study:

1. To identify the influence of HR analytics practices on individual employee performance outcomes such as productivity, quality of work, and goal achievement
2. To understand the key HR analytics practices influencing employee performance.
3. To assess the role of HR professional's analytical skills in applying HR analytics for performance improvements.
4. To explore how ethical practices and data privacy in HR analytics affect employee trust and performance outcomes.
5. To analyze the impact of HR analytics on employee experience, satisfaction, and perceptions toward work.

Research Methodology:

The research employs a structured and systematic methodological framework to ensure the reliability, validity, and scientific rigour of its findings. The study adopts a descriptive and analytical research design, which is appropriate for examining existing HR analytics practices and quantifying their relationship with employee performance outcomes.

Research Design:

A quantitative research approach is employed, utilising the survey method as the primary instrument of data collection. This design enables the collection of measurables, standardised data from a defined sample, which can subsequently be subjected to rigorous statistical analysis. The study identifies HR analytics as the independent variable and employee performance as the dependent variable, establishing a causal analytical framework.

Data Collection:

Primary Data: We got the data from the employees at Femtosoft Technologies. We used a questionnaire with 30 questions that was divided into two parts. The first part had seven questions about the employees. These questions were about their age, gender what they studied their job, which department they work in how long they have been working and what level they are at in the company. The second part had 23 questions that asked the employees what they think about the human resources analytics at Femtosoft Technologies. We wanted to know what they think about how the company makes decisions how their work is evaluated how transparent the company is, how accurate the data is, how quickly they get information how much the company uses artificial intelligence and machine learning how engaged the employees are how much training they get how efficient the company is and how well they achieve their goals.

Secondary Data: We also got some data from other places. We looked at journals, studies that reviewed lots of other studies reports from Femtosoft Technologies publications from the industry and government databases. We were looking for information, about human resources analytics how employees perform, systems that companies use to manage their work and the information technology industry.

Sample Size and Sampling Technique:

The sample is made up of 100 people from parts of Femtosoft Technologies like Human Resources, IT/Development, Operations, Marketing and other areas. We picked these people because they were easy to reach and happy to take part. This way of choosing people is called convenience sampling. It is a way to do things when we do not have a lot of time or money. We think 100 people is enough to get results, from our tests like correlation, regression, ANOVA and chi-square analyses at Femtosoft Technologies.

Statistical Tools and Data Analysis:

All the data we collected was given a number code (Strongly Agree was 5 and Strongly Disagree was 1) and we used SPSS (Statistical Package for Social Sciences) to look at it. We used these tools to analyze the data:

- Percentage Analysis: This helped us understand the people in our study and how they answered the questions with scales.
- Pearson Correlation Analysis: We used this to see how strong the connection is between HR analytics and employee performance for groups of people.
- Linear Regression Analysis: This showed us how well HR analytics can predict employee performance and how much of the difference it can explain.
- One-Way ANOVA: We wanted to know if people with work experience and from different departments had different thoughts, on HR analytics.

- Chi-Square Test of Independence: We looked at how age and other personal detailers connected to what people think about HR analytics and employee performance.

Data Analysis and Interpretation:

Demographic Profile of Respondents:

The demographic analysis of the 100 respondents provides important contextual insight into the workforce composition at Femtosoft Technologies and helps interpret the subsequent statistical findings in a nuanced manner.

Demographic Variable	Category	Frequency	Percentage (%)
Age	Below 20	31	31%
	21–25 (Majority)	43	43%
	26–30	11	11%
	31–40	6	6%
	Above 40	9	9%
Gender	Male	70	70%
	Female	26	26%
	Prefer not to say	4	4%
Educational Qualification	Postgraduate (PG)	40	40%
	Undergraduate (UG)	35	35%
	Diploma	20	20%
	Others	5	5%
Department	Human Resources	33	33%
	IT / Development	30	30%
	Others	23	23%
	Operations	11	11%
	Marketing	3	3%
Work Experience	Less than 1 year	52	52%
	1–3 years	25	25%
	4–6 years	12	12%
	7–10 years	6	6%

	Above 10 years	5	5%
Employment Level	Entry Level	51	51%
	Mid-Level	29	29%
	Senior Level	15	15%
	Top Management	5	5%

Demographic Profile of Respondents (N = 100)

The majority of respondents (43%) fall in the 21–25 age group, followed by those below 20 years (31%), confirming that the study predominantly captures perspectives from a young and relatively early-career workforce. Male respondents constitute the largest gender group at 70%, while females account for 26%. In terms of educational background, postgraduate holders form the largest category at 40%, followed by undergraduates at 35%, indicating a highly educated sample with the analytical literacy required to meaningfully engage with HR analytics practices. Human Resources (33%) and IT/Development (30%) departments together account for 63% of respondents — the two departments most directly involved in implementing and utilising HR analytics tools — ensuring the study captures informed and contextually relevant perspectives. A significant majority (52%) have less than one year of experience and 51% occupy entry-level positions, reflecting a predominantly early-career sample whose perceptions of HR analytics are shaped by current, real-time exposure rather than long-term observation.

Analysis:

1. Regression Analysis:

Simple linear regression analysis was employed to quantify the predictive impact of the HR Analytics composite score on the Employee Performance composite score.

R	R^2	Adj. R^2	Std. Error	F-Value	Sig. (p)
0.9528	0.9079	0.9069	0.4321	965.52	0.0000***

Regression Model Summary

Variable	B (Unstd.)	Std. Error	Beta (Std.)	t-value	Sig.
(Constant)	0.1399	0.0801	—	1.746	0.084
HR Analytics Score	0.9501	0.0306	0.9528	31.073	0.000***

Regression Coefficients

Regression Equation: Employee Performance = 0.1399 + 0.9501 × (HR Analytics Score)

The simple linear regression model yields exceptionally strong results. The model is highly statistically

significant ($F(1, 98) = 965.52$, $p < 0.001$), and the coefficient of determination ($R^2 = 0.9079$) indicates that the composite HR Analytics score explains 90.79% of the total variance in the composite Employee Performance score — an extraordinarily high explanatory power for a social science study. The adjusted R^2 of 0.9069 confirms that this result is robust and not inflated by sample-specific characteristics.

The unstandardised regression coefficient (B = 0.9501) indicates that for every one-unit increase in the HR Analytics composite score, Employee Performance improves by approximately 0.95 units — a near one-to-one relationship that underscores the direct and powerful influence of HR analytics on individual performance outcomes. The standardised beta coefficient (Beta = 0.9528) further confirms that HR analytics is effectively a near-perfect predictor of employee performance in this organisational context. The t-statistic of 31.073 ($p < 0.001$) eliminates any possibility that this result could be attributed to chance or sampling error. These findings provide robust empirical validation for the study's central hypothesis: that HR analytics is a significant and powerful determinant of employee performance.

2. One-Way ANOVA:

One-way Analysis of Variance (ANOVA) was conducted to examine whether statistically significant differences exist in mean HR analytics perceptions across groups defined by work experience and departmental affiliation.

Grouping Variable	F-Value	df (Between)	df (Within)	p-value	Result
Department	3.499	4	95	0.010*	Significant

One-Way ANOVA Results

The ANOVA for departmental affiliation yields $F(4, 95) = 3.499$ with $p = 0.010$, which is statistically significant at the conventional 5% significance level. Post-hoc inspection reveals that HR department employees report the highest mean scores regarding HR analytics utilisation and effectiveness, which is consistent with their direct involvement in implementing these tools. IT/Development employees follow, while Operations and Marketing departments report comparatively lower means, reflecting lower direct exposure to analytics dashboards and performance data systems. This significant result carries an important practical implication: organisations cannot assume uniform understanding or appreciation of HR analytics across all departments. Targeted awareness programmes, cross-functional analytics training, and transparent communication of analytics insights are necessary to bridge the perception gap between HR/IT departments and the broader organisational workforce.

5. KEY FINDINGS

The majority of respondents (43%) belong to the 21–25 age group, confirming a predominantly young, entry-level workforce. Human Resources (33%) and IT/Development (30%) together account for 63% of the sample, ensuring analytically informed perspectives on HR practices.

Strongly Disagree records the highest frequency (36%) for the strategic decision-making statement, with combined negative sentiment reaching 43%, highlighting a critical gap between HR analytics capabilities and employee awareness of their strategic application.

Performance recognition and reward record the highest combined negative response in the survey (43%), revealing widespread dissatisfaction and the urgent need for data-driven, objective reward frameworks supported by HR analytics.

HR analytics providing accurate and reliable data for decision-making achieved the highest positive consensus (43%), indicating that data reliability is the most favourably perceived dimension of HR analytics among respondents.

The Pearson correlation analysis confirms a strong positive relationship between HR analytics and employee performance, with Educational Qualification and Department emerging as the two significant demographic predictors of both HR analytics and performance perceptions.

The simple linear regression model is exceptionally strong: $R^2 = 0.9079$, $F(1,98) = 965.52$, $p < 0.001$, confirming that HR analytics explains 90.79% of the variance in employee performance, with a near-perfect predictive coefficient (Beta = 0.9528).

ANOVA results confirm that Employment Level ($F = 6.887$, $p < 0.001$) and Department ($F = 3.499$, $p = 0.010$) significantly differentiate employee perceptions of HR analytics and performance, while Work Experience does not produce significant differences.

Chi-square analysis of Age vs. Likert statements reveals 6 significant associations out of 23 tests, with Job Role Clarity ($\chi^2 = 30.96$) and Data Accuracy ($\chi^2 = 26.53$) recording the strongest significant results.

Conclusion:

This study set out to investigate the impact of HR analytics on employee performance at Femtosoft Technologies, a Chennai-based software development company with a significant global presence. Through a rigorous, multi-method quantitative investigation employing correlation, regression, ANOVA, and chi-square analyses on data collected from 100 employees, the research has generated a comprehensive and empirically robust set of findings that advance both the theoretical understanding and the practical application of HR analytics in the information technology sector.

The study's findings conclusively establish that HR analytics has a significant, positive, and direct impact on employee performance. The simple linear regression model, with an R^2 of 0.9079, reveals that the composite HR analytics score explains over 90% of the variance in the composite employee performance score — a finding that positions HR analytics not merely as a supportive tool but as a fundamental driver of individual performance outcomes within the organisational context studied. The regression coefficient of 0.9501 further confirms a near one-to-one relationship between improvements in HR analytics adoption and corresponding improvements in employee performance, providing powerful empirical support for the central hypothesis of this research.

The correlation analysis identifies educational qualification and departmental affiliation as significant moderating factors, with higher educational attainment and membership in analytics-intensive departments (HR and IT) consistently associated with more positive perceptions of both HR analytics practices and employee performance outcomes. The one-way ANOVA results reinforce the importance of departmental context, with significant differences in analytics perceptions observed across departments ($p = 0.010$), while work experience alone does not produce statistically significant performance differentiation. The chi-square

analysis further reveals meaningful associations between age and key performance-related perceptions, particularly regarding job role clarity and data accuracy expectations.

As digital transformation continues to reshape the IT and software services industry, and as competitive pressures for talent intensify, the strategic adoption of HR analytics will become an increasingly non-negotiable imperative for organisations seeking to sustain performance excellence. This study contributes a valuable, empirically grounded perspective to this growing discourse and lays the foundation for future longitudinal and multi-organisation studies that can further deepen understanding of the mechanisms through which HR analytics shapes human capital outcomes.

Declaration of Conflicting Interests

The authors declare no potential conflicts of interest with respect to the research, authorship and publication of this article.

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