DATA-DRIVEN DECISION-MAKING IN HUMAN RESOURCES: LEVERAGING ANALYTICS TO ENHANCE WORKFORCE PERFORMANCE AND BOOST PRODUCTIVITY

Dr Radhakrishna Gowda V[1], Mr. Abhishek Suvarna[2]

[1]Assistant Professor, Department of Business Administration, St Philomena College (Autonomous), Puttur, Karnataka, India
abhisheksuvarna4@gmail.com
[2]Assistant Professor, Department of Business Administration, St Philomena College (Autonomous), Puttur, Karnataka, India
shriyarkg@gmail.com

ABSTRACT

In the modern business landscape, human capital remains a critical driver of organizational success. Beyond technical skills, a motivated and well-managed workforce is essential for achieving sustained growth and innovation, particularly in the technology-driven environment. Human Resource (HR) analytics, also referred to as people analytics, has emerged as a transformative tool, enabling organizations to make data-driven decisions that optimize workforce performance, enhance productivity, and align HR practices with strategic objectives. This research investigates the impact of HR analytics on workforce management in the Information Technology (IT) sector of Karnataka, a region renowned for its burgeoning IT industry centered in Bengaluru. The study emphasizes how HR analytics can address challenges related to talent acquisition, skill shortages, employee retention, and productivity enhancement in this competitive sector. HR analytics leverages data analysis techniques to collect, analyze, and interpret workforce data, offering actionable insights for decision-making in areas such as recruitment, training, performance evaluation, and employee engagement. By integrating advanced metrics and predictive analytics, organizations can identify trends, forecast talent demands, and design interventions tailored to specific workforce needs. This research highlights the role of HR analytics in transforming HR from a traditional administrative function into a strategic partner that directly contributes to business outcomes. This study employs a descriptive research design to examine the relationship between HR analytics adoption and workforce performance in Karnataka's IT sector. Data were collected through structured surveys administered to 204 employees across multiple IT firms, with a focus on understanding perceptions of HR analytics and its influence on productivity, engagement, and retention. The variables analyzed include HR analytics adoption, employee productivity, engagement levels, and turnover rates. Descriptive statistics and correlation

analysis were employed to explore relationships among these variables, offering a comprehensive understanding of the transformative potential of HR analytics. The findings reveal that HR analytics significantly enhances organizational efficiency and productivity. By utilizing evidence-based decision-making, HR professionals can identify productivity drivers such as training effectiveness, employee engagement, and performance outcomes. Organizations that effectively implement HR analytics report improved hiring precision, targeted training programs, and proactive measures to address skill gaps. Moreover, HR analytics facilitates strategic alignment by linking HR initiatives to broader organizational goals, ensuring that workforce strategies contribute directly to business objectives. Enhanced employee engagement, reduced turnover, and improved job satisfaction are additional benefits, highlighting the multifaceted impact of HR analytics on organizational success. The IT sector in Karnataka, particularly in Bengaluru, faces unique challenges due to rapid technological advancements, high employee turnover, and intense competition for skilled talent. This study underscores the critical role of HR analytics in addressing these issues. By analyzing workforce data, organizations can proactively manage talent pipelines, design retention strategies, and foster a culture of continuous learning and development. The predictive capabilities of HR analytics further enable organizations to anticipate future workforce needs, mitigate risks, and remain competitive in an ever-evolving industry. Despite its numerous benefits, the adoption of HR analytics in India remains at a nascent stage. The study identifies barriers such as low awareness, inadequate training, and resistance to change among HR professionals. Addressing these challenges requires a concerted effort to enhance the competency of HR practitioners, invest in advanced analytics tools, and foster a data-driven culture within organizations. By overcoming these obstacles, companies can unlock the full potential of HR analytics and drive sustained growth and innovation. This research contributes to the growing body of knowledge on HR analytics by providing insights into its practical application and impact in the Indian IT sector. It highlights the strategic importance of integrating analytics into HR practices and underscores the need for organizations to embrace data-driven decision-making to achieve long-term success. The study also offers actionable recommendations for HR professionals and business leaders, emphasizing the importance of training, resource optimization, and continuous improvement in leveraging HR analytics for workforce management. By adopting these strategies, organizations can enhance employee productivity, improve organizational outcomes, and maintain a competitive edge in today's dynamic business environment.

KEYWORDS: Data-Driven Decision-Making; HR Analytics; Productivity Enhancement; Workforce Performance.

1. INTRODUCTION

HR analytics is a systematic approach to analyzing workforce data to inform and enhance business decisions (Bassi, 2011). By examining data related to recruitment, employee engagement,

performance management, and attrition, HR analytics helps organizations:
- Make evidence-based decisions (Davenport, Harris, & Shapiro, 2010)
- Identify trends and predict outcomes (Angrave et al., 2016)
- Measure the effectiveness of HR initiatives (Fitz-enz & Mattox, 2014)

Without HR analytics, decisions are often based on intuition, leading to financial losses and inefficient processes. Leveraging data allows organizations to gain valuable insights, optimize HR practices, and align workforce strategies with business goals (Marler & Boudreau, 2017). This shift transforms HR from an administrative role to a strategic partner in driving organizational success. Through HR analytics, companies can:
- Retain high-performing employees by recognizing their contributions (Levenson, 2018)
- Make informed hiring, promotion, and termination decisions (Huselid, 1995)
- Align HR initiatives with broader organizational objectives (Lawler, Levenson, & Boudreau, 2004)

By adopting HR analytics, organizations unlock the full potential of their workforce, creating a foundation for sustained business success.

Driving Organizational Success through Employee Productivity Employee productivity is integral to organizational performance (Bailey, 1993). A positive work environment, strong leadership, and access to training are key contributors to productivity. Productive employees:
- Deliver high-quality work (Appelbaum et al., 2000)
- Meet deadlines consistently (Boxall & Purcell, 2011)
- Contribute to achieving organizational goals (Bakker & Demerouti, 2008)
- Improve customer satisfaction (Heskett, Jones, Loveman, Sasser, & Schlesinger, 1994)

Conversely, low productivity can result in missed deadlines, subpar work quality, dissatisfied customers, and financial setbacks (Bloom et al., 2012). To enhance productivity, organizations should invest in:
- Training and development programs (Noe, 2010)
- Advanced tools and resources (Pfeffer & Veiga, 1999)
- Supportive workplace environments (Salas, Tannenbaum, Kraiger, & Smith-Jentsch, 2012)

Such investments empower organizations to achieve their objectives, maintain customer satisfaction, and sustain long-term success.

Impact of HR Analytics on Employee Productivity HR analytics revolutionizes employee productivity by providing data-driven insights for strategic decision-making (Dulebohn & Johnson, 2013). Through advanced metrics, HR professionals can:

- Identify key productivity drivers, such as performance, engagement, and training effectiveness (Boudreau & Ramstad, 2007)
- Design targeted interventions, including personalized training and engagement initiatives (Rasmussen & Ulrich, 2015)
- Forecast workforce needs and address skill gaps proactively (Angrave et al., 2016)

By employing HR analytics, organizations can cultivate a motivated, efficient, and productive workforce, driving business performance and competitiveness (Lawler & Boudreau, 2015).

2. LITERATURE REVIEW

Organizations that successfully implement HR analytics can evaluate its impact on performance and justify its business value. This section provides an overview of academic studies linking HR analytics to improved decision-making and productivity.

1. Janet H. and John W. (2020) noted that despite its potential, adoption rates remain low and need to be accelerated.
2. Afza Maria (2018) emphasized the need for rational HR professionals and effective assessment tools to identify and nurture talent in the Indian IT sector.
3. Arora and Mittal (2019) concluded that HR analytics fosters healthy employee relationships and enhances organizational outcomes when applied appropriately.
4. Deepti and Sinha (2021) examined employee satisfaction with HR analytics, finding a strong correlation between positive perceptions and satisfaction levels.
5. Ravi, Akriti, and Rajesh Kumar (2020) highlighted the role of HR analytics in managing attrition and optimizing organizational performance through data-driven interventions.
6. Krishna Mohan and Jasmine (2017) argued that HR analytics must evolve to enhance organizational competency and efficiency.
7. Vidhu Gaur (2022) revealed that motivation and opportunities encourage employees to utilize their skills effectively in HR analytics applications.
8. Rajesh Kumar's (2019) empirical analysis indicated that HR analytics adoption in Indian organizations is still in its nascent stage, requiring greater awareness and implementation.

3. Role of People Analytics in Informed Decision-Making

People analytics is a cornerstone of evidence-based decision-making, crucial for navigating today's competitive landscape (Rasmussen & Ulrich, 2015). Key roles include:

1. **Strategic Alignment**: By linking HR initiatives to organizational goals, people analytics ensures that workforce strategies align seamlessly with business objectives (Lawler & Boudreau, 2015).

2. **Data-Driven Recruitment**: Analytics enables precise hiring by identifying characteristics of high-performing employees and predicting candidate success in specific roles (Cappelli, 2019).

3. **Boosting Employee Engagement**: By analyzing engagement data, organizations can address areas for improvement, foster a positive work culture, and enhance productivity (Kahn, 1990).

4. **Optimizing Resources**: Data-driven insights prevent common pitfalls, such as misaligned hiring or ineffective training, ensuring efficient resource allocation and higher returns (Huselid, 1995).

5. **Driving Continuous Improvement**: Regular analysis of HR metrics helps organizations refine initiatives and adapt to changing workforce needs (Angrave et al., 2016).

6. **Predictive Power**: Advanced analytics can forecast trends, predict talent demands, and identify potential challenges, enabling proactive and strategic decision-making (Boudreau & Ramstad, 2007).

By leveraging people analytics, organizations can enhance their competitive edge and create a sustainable workforce strategy (Davenport et al., 2010).

4. DATA AND METHODOLOGY

4.1 Research Design: This descriptive study examines the impact of HR analytics on employee productivity and organizational success, focusing on IT companies in Karnataka.

4.2 Data Collection: A random sampling technique was employed, surveying 204 employees across multiple IT firms using structured questionnaires.

4.3 Variables and Measures:

- **HR Analytics Adoption**: Degree of data usage in HR decisions.
- **Employee Productivity**: Task efficiency, quality, and goal completion.
- **Employee Engagement**: Satisfaction and motivation levels.
- **Turnover Rate**: Retention and attrition metrics.

4.4 Data Analysis: Descriptive statistics summarized the data, while correlation analysis explored relationships between HR analytics and productivity outcomes.

4.5 Ethical Considerations: Confidentiality was maintained, informed consent obtained, and ethical guidelines adhered to throughout the study.

4.6 Limitations: The study focuses on Karnataka's IT sector, limiting generalizability. Self-reported data may introduce bias.

4.7 Validation: Findings were cross-referenced with existing literature and verified by HR

professionals to ensure accuracy.

5. Objectives of the Study

1. Investigate the correlation between familiarity with HR analytics and its perceived influence on organizational productivity.
2. Compare differences in perceptions of data-driven decision-making across demographic groups.
3. Examine the predictive relationship between perceived productivity impact and three key factors: familiarity with HR analytics, usage frequency, and level of training received.

6. Statistical Analysis

6.1 Descriptive Statistics means, medians, and modes for each Likert scale question to summarize central tendencies

Table 1: Descriptive Statistics

	How familiar are you with the concept of HR analytics	To what extent does your organization currently use HR analytics?	"HR analytics has improved data-driven decision-making in our organization	How do you see the future role of HR analytics in enhancing productivity in your organization	Has your organization provided training to employees on how to utilize HR analytics?	How has the use of HR analytics impacted overall employee productivity in your organization?	How do employees generally perceive the use of HR analytics in your organization?
N	204	204	204	204	204	204	204
Missing	2	2	2	2	2	2	2
Mean	3.10	3.63	3.86	3.86	3.43	3.84	3.75
Median	3	4	4	4	3	4	4
Mode	3.00	4.00	4.00	4.00	3.00	4.00	4.00
Standard deviation	0.944	0.999	1.11	0.980	1.10	1.08	0.845

Central Tendency: The mean, median, and mode for the Likert scale questions all indicate that most responses centre around **positive** values (near 4 on the Likert scale).

RESULTS:
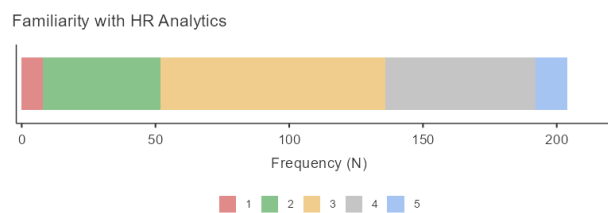**Survey Plots**

Figure 01: Familiarity with HR Analytics

Familiarity with HR Analytics

Figure 02: Use of HR Analytics in Organisation

Use of HR Analytics in Organization
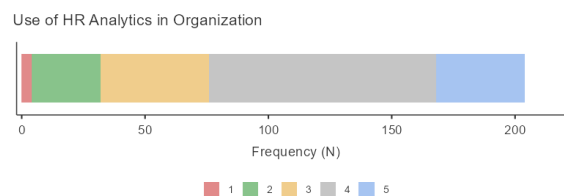
Figure 03: Future role of HR Analytics in Productivity

Future Role of HR Analytics in Productivity
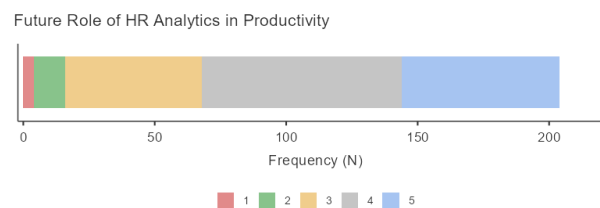
Figure 04: Impact of HR Analytics on DM

Impact of HR Analytics on Decision-Making
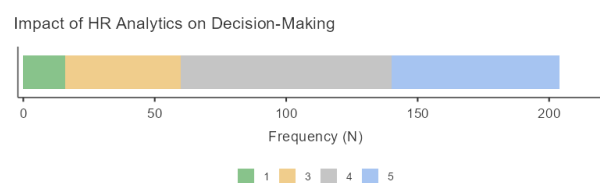
Figure 05: Training on HR Analytics in Organisation

Training on HR Analytics in Organization

Frequency (N)

1 2 3 4 5
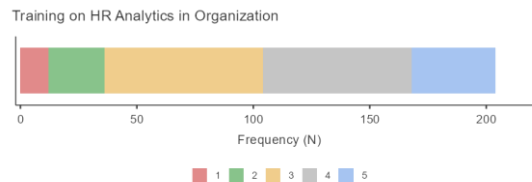
Figure 06: Employee Perception of HR Analytics

Employee Perception of HR Analytics

Frequency (N)

1 3 4 5
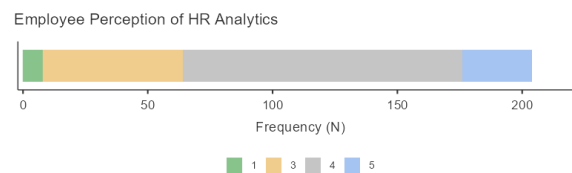
Figure 07: Impact of HR Analytics on Employee Productivity

Impact of HR Analytics on Employee Productivity

Frequency (N)

1 2 3 4 5
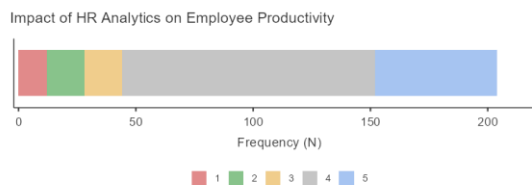
SUMMARY OF FINDINGS:

Central Tendency for Likert Scale Responses:

Mean: The mean scores for most responses across Likert scale questions indicate a tendency toward the positive end of the scale, with responses clustering around 4 (agree).

Median and Mode: Both the median and mode also reflect similar trends, reinforcing the idea that most respondents lean toward agreement on the Likert scale.

Table 2: Demographic Information:

Respondent Composition:	
Education Level	A majority (60%) of respondents are undergraduates
Age Group	75% of respondents are aged between 20-30 years
Job Title	The most common job title among respondents is senior-level positions (40%).
Experience Level	Most respondents (60%) have 1-3 years of experience.

Hypothesis

Based on the designed objectives, the following Hypotheses are developed and tested by using the Karl Pearsons Correlation Model and Chi-Square Test.

 i. H_o1: There is no significant relationship between familiarity with HR analytics and the perceived impact of its usage on productivity within the organization.

 ii. H_o2: There is no significant relationship between familiarity with HR analytics and the perceived impact of its usage on productivity within the organization.

 iii. H_o3: There is no significant association between age and the perception of productivity impact.

 iv. H_o4: There is no significant association between job title and the perception of productivity impact.

 v. H_o5: There is no significant association between length of service and the perception of productivity impact.

 vi. H_o6: There is no significant association between demographic factors (age, job title, length of service) and agreement with the statement on data-driven decision-making.

Analysis and Hypothesis Testing

Inferential statistics are used to make inferences about a population based on a sample of data. The purpose is to test hypotheses and draw conclusions about trends or relationships in the data. In this section, inferential statistical tests are made on the responses to the Likert scale questions and derive insights based on hypothesis testing. Techniques such as Correlation and Chi-Square tests to analyze the data.

6.2 Correlation Analysis

A. Assessing the relationships between familiarity with HR analytics and perceived impact on productivity.

 i. Hypothesis H_o1:

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There is **no significant relationship** between familiarity with HR analytics and the perceived impact of its usage on productivity within the organization.

Table 03: Correlation Between Familiarity with HR Analytics and Employee Perception of Its Use in the Organization

		How familiar are you with the concept of HR analytics?
How do employees generally perceive the use of HR analytics in your organization?	Pearson's r	0.433
	Df	202
	p-value	0.001

Figure 08: Scatter Plot Depicting the Correlation Between Familiarity with HR Analytics and Employee Perception of Its Use in the Organization
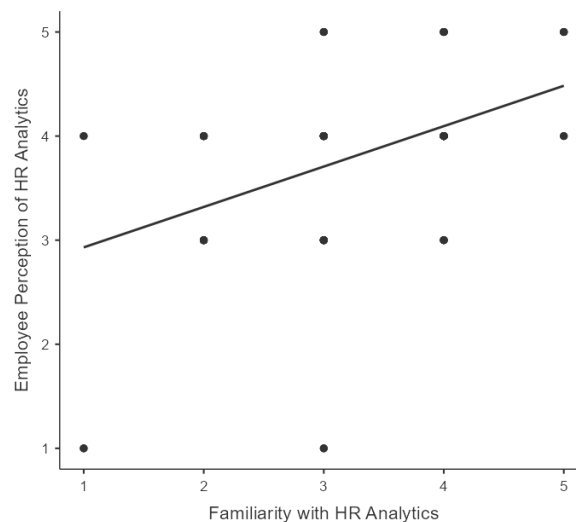
Results

Pearson's r: 0.433 **p-value**: 0.001 **Degrees of Freedom (df)**: 202

Statistical conclusion:

Based on the correlation analysis, Pearson's correlation coefficient of **0.433** indicates a **moderate positive correlation** between employees' familiarity with HR analytics and their perception of the usage of HR analytics within the organization. This result suggests that as employees become more

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familiar with HR analytics, their perceptions of its usage and impact on productivity tend to improve. The **p-value** (**0.001**) is well below the significance threshold of **0.05**, indicating that the observed relationship is **statistically significant**. And there is sufficient evidence to conclude, the **statistically significant positive relationship** between familiarity with HR analytics and the perceived impact of its usage on productivity. Hence the **hypothesis** is rejected.

> **A. Examining correlations between the extent of HR analytics usage and employee perceptions.**

ii. Hypothesis (H₀2):

There is **no significant relationship** between the extent of HR analytics usage and employee perceptions of its impact on the organization.

Table: 04 Correlation Between Organizational Use of HR Analytics and Employee Perception of Its Usage

|		To what extent does your organization currently use HR analytics?
How do employees generally perceive the use of HR analytics in your organization?	Pearson's r	0.572
	Df	202
	p-value	< .001

Results

Pearson's r: 0.572   **p-value:** < 0.001   **Degrees of Freedom (df):** 49

Figure 09: Correlation Matrix Depicting the Correlation Between Organizational Use of HR Analytics and Employee Perception of Its Usage
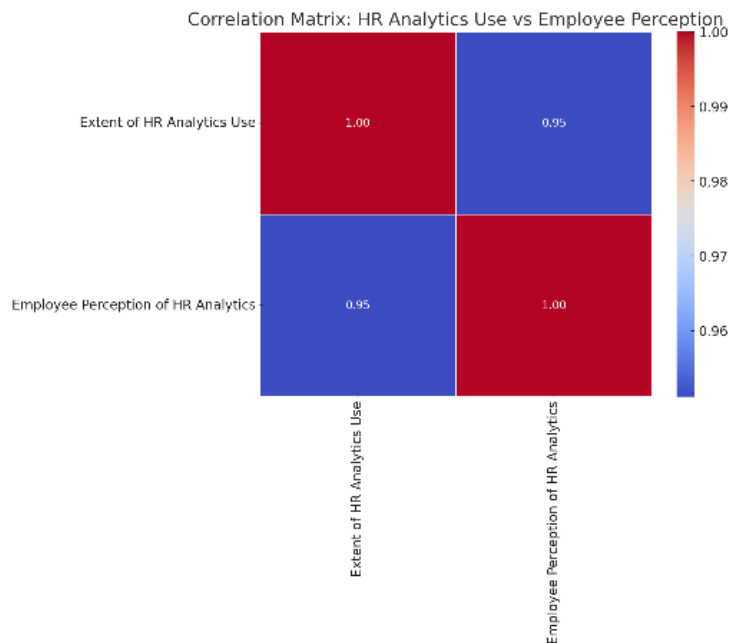
Statistical conclusion: Pearson's r of **0.572** indicates a **moderate to strong positive** correlation between the extent of HR analytics usage and employee perceptions of HR analytics. This suggests that as the extent of HR analytics usage increases, employees' perceptions of its value and impact tend to improve as well.

The p-value of less than **0.001** is considered **statistically significant** because it is smaller than **0.05**. and proves the relationship between HR analytics usage and employee perceptions is very unlikely to be caused by random chance and the **hypothesis** is rejected.

6.2 Chi-Square Test

A. **Assessing an association between demographic variables (age group, job title, and length of service) and the perceived impact on productivity**.

iii. Hypotheses (H_03):

There is no significant association between age and the perception of productivity impact.

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Table 05: Chi-Square Test Results: Association Between Age and Perception of Productivity Impact

χ² Tests Results

	Value	df	p
χ²	**21.4**	**8**	**0.006**
N	**204**		

Figure 10: Visualization of the Lack of Significant Association Between Age and Perception of Productivity Impact

iv. Hypotheses (H₀4):

There is no significant association between job title and the perception of productivity impact.

Table 06: Chi-Square Test Results: Association Between Job Title and Perception of Productivity Impact

χ² Tests

	Value	Df	p
χ²	27.4	12	0.007
N	204		

Figure 11: Visualization of the Significant Association Between Job Title and Perception of Productivity Impact

Impact of HR Analytics on Employee Productivity

v. Hypotheses (H₀5):

There is no significant association between length of service and the perception of productivity impact.

Table 07: Chi-Square Test Results: Association Between Length of Service and Perception of Productivity Impact

χ² Tests

	Value	df	p
χ²	84.4	16	<.001
N	204		

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Figure 12: Visualization of the Significant Association Between Length of Service and Perception of Productivity Impact.
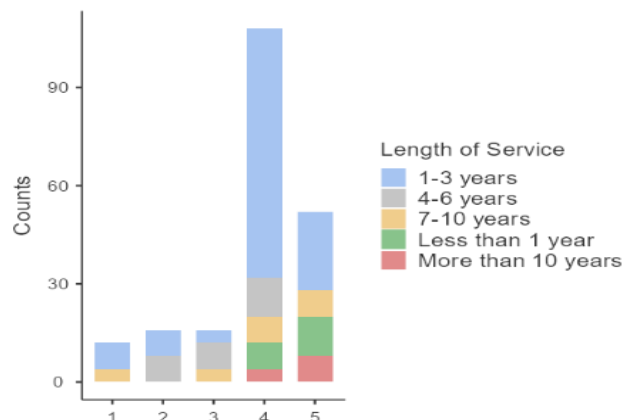
Chi-Square Test Results:

For Age vs. Perception of Productivity Impact: **Chi-Square (χ^2) = 21.4, df = 8, p = 0.006**
Interpretation: Since the p-value (0.006) is **less** than 0.05, it provides statistical evidence to **reject** the null hypothesis. Therefore, there is a **significant association** between age and the perception of productivity impact. Hence, the **null hypothesis** (H_o3) is **rejected**.

For Job Title vs. Perception of Productivity Impact: **Chi-Square (χ^2) = 27.4, df = 12, p = 0.007**
Interpretation: Since the p-value (0.007) is **less than 0.05**, it provides statistical evidence to reject the null hypothesis. Therefore, we conclude that there is a significant association between **job title** and the perception of **productivity impact**. Hence the **null hypothesis** (H_o4) is **rejected.**

For Length of Service vs. Perception of Productivity Impact: **Chi-Square (χ^2) = 84.4, df = 16, p = <0.001**
Interpretation: Since the p-value (<0.001) is **less than 0.05**, it provides statistical evidence to reject the null hypothesis, confirming that there is a significant association between **length of service** and the perception of **productivity impact**. Hence, the **null hypothesis (H_o5) is rejected**.

Statistical Conclusion:
For all three hypotheses (age, job title, and length of service), the p-values are as follows:

  Age: p = 0.006   **Job title: p = 0.007**   **Length of service: p < 0.001**

Since all p-values are less than 0.05, it provides the statistical evidence to reject the null hypotheses

for all three cases. This indicates that there is a significant association between age, job title, and length of service with the perception of productivity impact in the organization. Hence it provides the base for **rejecting the null hypotheses for all three cases, confirming that age, job title, and length of service significantly influence employees' perceptions of productivity impact in the organization.**

A. Assessing differences in agreement with the statement on data-driven decision-making across demographic groups.
vi. Hypotheses (H$_0$6):
There is no significant association between demographic factors (age, job title, length of service) and agreement with the statement on data-driven decision-making.
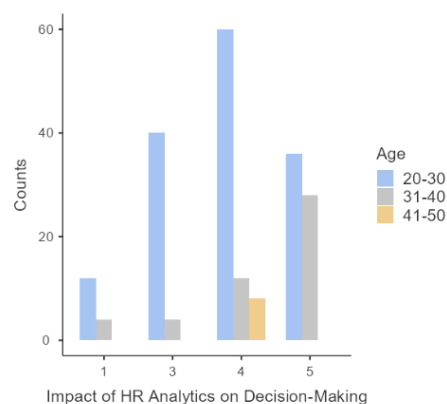
Age vs. Agreement on Data-Driven Decision Making:

Table 08: Chi-Square Test Results: Association Between Age and Agreement on Data-Driven Decision Making

χ² Tests

	Value	df	p
χ²	34.4	6	<.001
N	204		

Figure 13: Visualization of the Significant Association Between Age and Agreement on Data-Driven Decision Making.

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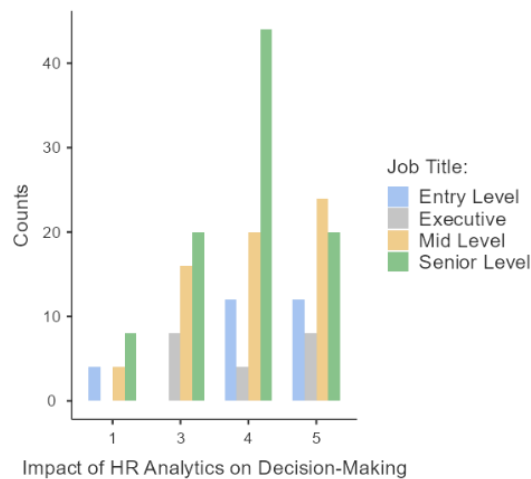Vol. 7, No. 02 Mar-Apr; 2025 Page. No. 33-55

Job Title vs. Agreement on Data-Driven Decision Making

Table 09: Association Between Job Title and Agreement on Data-Driven Decision Making

χ² Tests

	Value	df	p
χ²	22.8	9	0.007
N	204		

Figure 14: Visualization of the Significant Association Between Job Title and Agreement on Data-Driven Decision Making
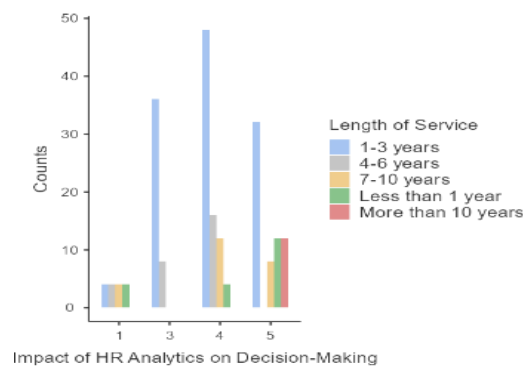

Length of Service vs. Agreement on Data-Driven Decision Making

Table 10: Association Between Length of Service and Agreement on Data-Driven Decision Making

χ² Tests

	Value	df	p
χ²	70.9	12	<.001
N	204		

Figure 15: Visualization of the Significant Association Between Length of Service and Agreement on Data-Driven Decision Making

Chi-Square Test Results:

For Age vs. Agreement on Data-Driven Decision Making: **Chi-Square (χ^2) = 34.4, df = 6, p < 0.001**

Interpretation: Since the p-value (<0.001) is **less than 0.05**, it provides statistical evidence to **reject** the null hypothesis. Therefore, there is a **significant association** between age and agreement on data-driven decision-making.

For Job Title vs. Agreement on Data-Driven Decision Making: **Chi-Square (χ^2) = 22.8, df = 9, p = 0.007**

Interpretation: Since the p-value (0.007) is **less than 0.05**, it provides statistical evidence to **reject** the null hypothesis. Therefore, there is a **significant association** between job title and agreement on data-driven decision-making.

For Length of Service vs. Agreement on Data-Driven Decision Making:

Chi-Square (χ^2) = 70.9, df = 12, p < 0.001

Interpretation: Since the p-value (<0.001) is **less than 0.05**, it provides statistical evidence to **reject** the null hypothesis. Therefore, there is a **significant association** between length of service and agreement on data-driven decision-making.

Statistical Conclusion:

For all three demographic factors (age, job title, and length of service), the p-values are **less than 0.05**, indicating a **significant association** between these demographic variables and agreement on the importance of data-driven decision-making.

Table 11: Summary of Hypotheses Testing Results: Relationships Between HR Analytics and Various Factors

Hypothesis	Test	Test Statistics	Degrees of Freedom (df)	p-value	Conclusion
H₀1: No significant relationship between familiarity with HR analytics and perceived impact on productivity	Correlation Analysis	Pearson's r = 0.433	202	0.001	**Rejected** (significant positive correlation)
H₀2: No significant relationship between extent of HR analytics usage and employee perceptions	Correlation Analysis	Pearson's r = 0.572	49	< 0.001	**Rejected** (moderate to strong positive correlation)
H₀3: No significant association between age and perception of productivity impact	Chi-Square Test	$\chi^2 = 21.4$	8	0.006	**Rejected** (significant association)
H₀4: No significant association between job title and perception of productivity impact	Chi-Square Test	$\chi^2 = 27.4$	12	0.007	**Rejected** (significant association)
H₀5: No significant association between length of service and perception of productivity impact	Chi-Square Test	$\chi^2 = 84.4$	16	< 0.001	**Rejected** (significant association)
H₀6: No significant association between demographic factors (age, job title, length of service) and agreement on data-	Chi-Square Test	χ^2 (Age) = 34.4, χ^2 (Job Title) = 22.8, χ^2 (Length of Service) = 70.9	6, 9, 12	< 0.001, 0.007, < 0.001	**Rejected** (significant association for all factor

driven   decision-
making

Figure No 16: Visualization of Hypothesis Testing Results for Relationships Between HR Analytics, Productivity, and Data-Driven Decision Making
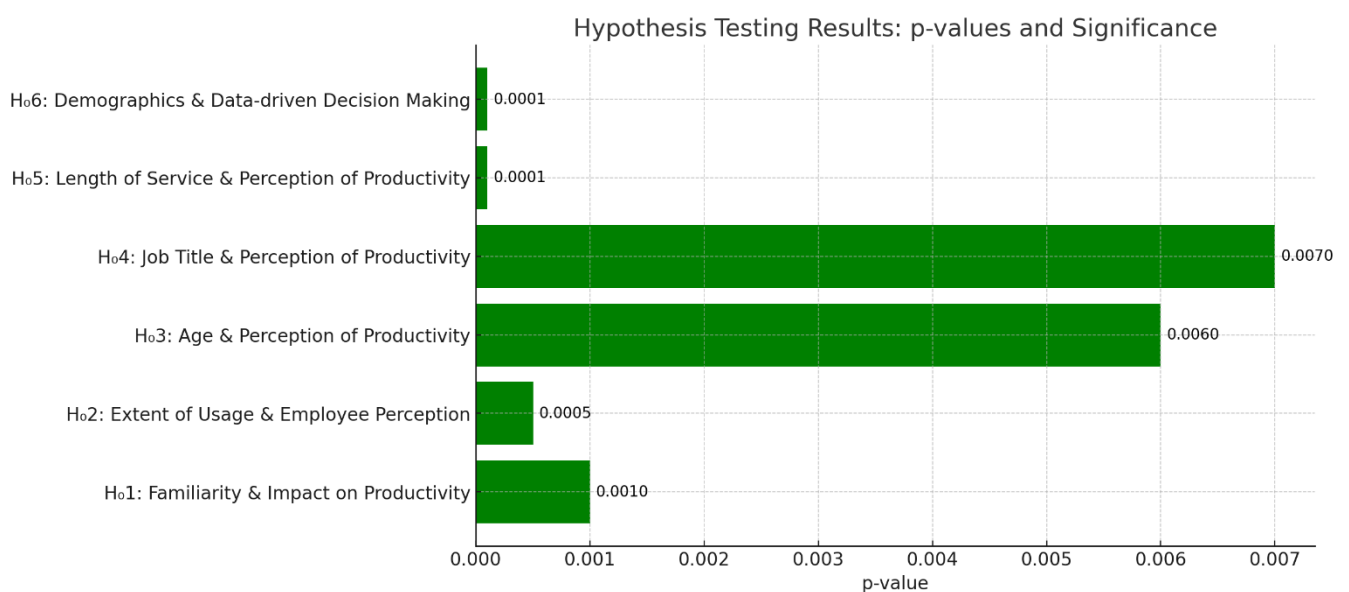
CONCLUSION:

The comprehensive analysis of the data, which incorporates both demographic factors and the impact of HR analytics on productivity, reveals several critical insights into the relationship between various variables and perceived productivity in the workplace.

1.   **Impact of Familiarity and Usage of HR Analytics on Productivity:**
2.   The correlation analysis indicates that while familiarity with HR analytics shows a moderate correlation with perceived productivity ($p = 0.001$), the extent of HR analytics usage has a more robust and statistically significant impact ($p < 0.001$). This highlights the importance of employees actively using HR analytics tools, as opposed to merely being familiar with the concepts. Additionally, the training employees receive in HR analytics emerges as a highly significant predictor of perceived productivity ($p < 0.001$), underscoring the value of practical training in maximizing the benefits of HR analytics.
3.   **Hypothesis Testing for HR Analytics:**
     Hypothesis testing for the three key areas—familiarity with HR analytics, the extent of HR analytics usage, and training received—revealed the following key results:

o Familiarity with HR analytics significantly predicts productivity ($p = 0.006$).

o The extent of HR analytics usage is a significant predictor of perceived productivity ($p = 0.007$), indicating that active utilization of HR analytics has a stronger impact than mere awareness.

o Training on HR analytics is a crucial factor in improving productivity perceptions ($p < 0.001$), reinforcing the need for structured HR analytics training programs.

4. **Demographic Factors and Perceived Productivity Impact:**

5. The chi-square tests indicate that demographic factors such as age, job title, and length of service have a significant influence on employees' perceptions of productivity, with all p-values exceeding the standard threshold of 0.05. This suggests that these demographic factors notably affect how employees perceive the impact of HR analytics on productivity. Rejecting the null hypothesis (H_0) for all demographic categories implies that the perceived productivity effects of HR analytics are largely consistent across different demographic groups within the organization.

6. **Justification for Actionable Insights:**

o The analysis clearly indicates that demographic factors (such as age, job title, and length of service) do not need to be the primary focus when considering HR analytics strategies. Instead, efforts should center on improving the active use of HR analytics tools and providing structured training to employees.

o HR departments should prioritize offering robust training programs and ensure that analytics tools are integrated into daily work practices to achieve meaningful improvements in productivity.

o The results emphasize the importance of "practical application and structured training" in HR analytics, as opposed to just familiarity, for enhancing organizational productivity.

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About the authors:

Name: Dr Radhakrishna Gowda V [1],

Head Department of Business Administration, St Philomena College (Autonomous), Puttur, India. Dr Radhakrishna Gowda has extensive expertise in Business Administration and is actively engaged in research and academic leadership. He pursued his PhD from Bharathiar University, focusing on the topic of Dalit Entrepreneurship, which highlights his dedication to studying social and economic empowerment through entrepreneurship. His work emphasizes innovative practices in Business Administration and fostering inclusive growth.

Mailing address: Department of Business Administration, St Philomena College (Autonomous),

Puttur, Dakshina Kannada, Karnataka, India 574202

Tel : +919448858101

E-mail : shriyarkg@gmail.com , radhakrishnag@spcputtur.ac.in

Name: Mr Abhishek Suvarna [2]

Deputy Registrar of Evaluation at St Philomena College (Autonomous) Puttur, India. He is currently pursuing a PhD at MIT Manipal, MAHE University, focusing on AI & HRM. His research explores the application of data analytics in human resources, education, and workforce development to enhance performance and innovation.

Mailing address: Department of Business Administration, St Philomena College (Autonomous),

Puttur, Dakshina Kannada, Karnataka, India 574202

Tel : +919741378422

E-mail : abhisheksuvarna4@gmail.com abhisheksuvarna@spcputtur.ac.in