

## EFFECTIVENESS OF THE HUMAN RESOURCE INFORMATION SYSTEM USED BY LARGE SCALE MANUFACTURING ORGANIZATIONS IN SOUTH EAST RAJASTHAN

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### Abstract

Human Resource Information System (HRIS) software has become essential for managing HR operations in large-scale organizations across India. It has gained significant adoption, particularly in sectors like IT/ITES, manufacturing, and services. The HR software market in Asia Pacific, including India, was valued at USD 3.46 billion in 2023 and is expected to grow to USD 8.73 billion by 2030. In Rajasthan, many large-scale manufacturing enterprises are increasingly adopting HRIS solutions to improve HR management processes. This study examines the effectiveness of HRIS in large-scale manufacturing organizations in the region. Findings reveal that employees across demographics view HRIS as highly effective in enhancing efficiency, accuracy, flexibility, and consistency in HR functions. ANOVA results confirm significant differences in effectiveness among organizations ( $p < 0.05$ ), with Post-Hoc Bonferroni tests identifying variability in adoption outcomes. The aim of this paper is to examine how effective Human Resource Information Systems (HRIS) used by large-scale manufacturing organizations in South-East Rajasthan.

**Keywords:** HRIS, Manufacturing Organization, ICT tools, SAP

### Introduction

Human Resource Management (HRM) operations in large manufacturing organizations are also managed with the help of other ICT tools, but the dedicated HR software applications have significantly changed the way of managing HR data and communication. The HRIS is also a SHRM tool, which has helped redesign many HR processes and tasks over the years. HRIS has used SHRM in a variety of ways to enable HR practitioners to transition from traditional HRM to transformational HRM. In Rajasthan, HRIS software is gaining significant traction, particularly in large-scale manufacturing and industrial sectors. Many organizations in the state are embracing HRIS solutions to streamline their HR operations and improve efficiency. With Rajasthan's diverse manufacturing industries, HRIS systems are being used to handle range of HR functions, including payroll processing, maintaining employee records, recruitment activities, and monitoring performance. This shift towards technology in managing human resources is reflective of a broader trend in India, where organizations are increasingly recognizing the benefits of automation and data-driven insights.

In recent years, Rajasthan has seen a rise in the adoption of cloud-based HRIS, as more organizations seek scalable, cost-effective solutions. As companies in Rajasthan adopt modern HRIS systems, they are not only improving operational efficiency but also enhancing employee experience by offering self-service portals, real-time updates, and performance tracking tools. This technological shift is helping businesses address challenges related to workforce management and optimize HR processes. As Rajasthan continues to grow as a manufacturing hub, the role of HRIS will

likely expand further, contributing to the state's economic development and improving HR practices in a range of sectors.

This in-depth study has considered various employees's attributes and HRIS functions. The various factors and areas of HR have been considered for understanding the HRIS in the organization.

### **Review of Literature**

Khrais, L. T., Shidwan, O. S., Alafandi, A., & Alsaeed, N. Y. (2021). Indicated that HRIS contributes significantly to organizational success through improved decision-making, better communication, and more strategic use of employee data. Panda, A.K., & Verma, R.(2022). The research highlights that organizations implementing HRIS experience improved employee satisfaction, faster information processing, and stronger alignment between HR functions and organizational goals. However, the success of HRIS implementation largely depends on proper training, management support, and continuous system evaluation. Therefore, organizations must view HRIS not merely as a technological investment but as a strategic asset that drives overall performance, competitiveness, and long-term growth. Hamid, Johannes, Yacob, and Edward (2023) studied the effectiveness of HRIS by linking it to employee satisfaction and system usage. They found that HRIS Success depends not only on adopting the technology but also on how employees understand and use the system. User-friendly design, reliability, and accessibility were shown to enhance satisfaction, which in turn improves efficiency, transparency, and decision-making. The study concludes that employee satisfaction and system usage are key mediators in determining HRIS effectiveness.

Kumar and Jagadeesan (2024) emphasized that HRIS success in the IT sector depends not only on technology but also on employee competencies, with training and motivation enhancing organizational performance. Najmi and Porwal (2025) further highlighted digital literacy as a crucial factor for HRIS adoption in India, with variations influenced by age and geography. Similarly, Kumar, Tiwari, and Devka (2025) found in the service sector that HRIS improves productivity and efficiency when employees perceive tangible benefits such as workload reduction and transparency. Yona and Meilani (2024) reinforced this by arguing that investment in technology alone is insufficient; digital literacy, user engagement, and perceived benefits are equally important, particularly in emerging economies and large manufacturing sectors. Panjaitan (2023) added that HRIS effectiveness also requires change management, continuous support, and skill development. Together, these studies suggest that workforce readiness and training are as critical as technological infrastructure in determining HRIS outcomes. Sharma, Chetan & et.al (2023). It shows that Human Resource Information Systems play a role in promoting business growth and making it easier for employees to perform their tasks. Ibrahim, A. M., & Ali, H. (2023). The results show that management support plays a vital role in the successful implementation of HRIS. Strong backing from top-level executives and managers helps create a supportive environment, ensures proper allocation of resources, and encourages employees to adopt and effectively use the system, thereby increasing the likelihood of successful implementation and providing significant benefits to the organization. Satispi, E. & et.al (2023). The study indicates that HRM reform within organizations is essential if the country aims to establish a world-class system.

### **HRIS in Manufacturing Companies in South-East Rajasthan**

Several leading manufacturing companies in South-East Rajasthan have adopted modern HRIS

solutions to manage their human resources effectively. Chambal Fertilizers and Chemicals Ltd. and DCM Shriram Ltd. use SAP HANA to automate HR processes, with DCM Shriram also employing facial recognition for attendance tracking. JK Cement and Mangalam Cement rely on SAP ERP systems, with Mangalam additionally using biometric attendance and some LAMP applications for legacy functions. Shriram Rayons is transitioning from SAP to PeopleStrong, a cloud-based HRIS offering advanced features like analytics, employee self-service, and talent management. ACC Limited manages HR through SAP with a specialized leave management module (SAP ACCENT), while Wonder Cement uses Darwinbox for payroll, performance, recruitment, and HR analytics. In the textile sector, Sangam India Ltd. stands out with massive production capacity and advanced setups, reflecting the integration of technology in both operations and HR practices. Together, these organizations illustrate the growing reliance on digital HR solutions to enhance efficiency, compliance, and workforce management.

### Research Methodology

- Research Methods: Descriptive Study
- Objective: To study the effectiveness of the HRIS used in manufacturing organization in South-East Rajasthan.
- Sample Size: Total employees interviewed 620
- Sampling Technique: Simple random sampling has been used for collecting information from the employees of the selected manufacturing organization.
- Data Collection and Questionnaire design: Data was gathered through a structured, close-ended questionnaire designed using a Likert scale.

### Data Analysis

Among the total respondents, 16.77% strongly agree, 75.16% agree, 6.77% are neutral, 0.97% disagree, and 0.32% strongly disagree that HRIS is highly efficient in managing information. This indicates that the majority of employees believe HRIS effectively handles information management.

Regarding the safety and security of the HRIS, 17.74% strongly agree, 78.23% agree, 2.42% are neutral, 1.13% disagree, and 0.48% strongly disagree that HRIS is a secure system for storing information. This suggests that most employees consider HRIS a safe platform where only authorized users can access the system according to their rights.

In terms of maintenance and repair, 15.65% strongly agree, 75.97% agree, 7.58% are neutral, 0.48% disagree, and 0.32% strongly disagree that HRIS is easy to maintain and repair when problems arise. This reflects that most employees find HRIS simple to maintain and fix when necessary, highlighting its strong maintainability.

Regarding flexibility, 15.81% strongly agree, 74.35% agree, 6.61% are neutral, 1.94% disagree, and 1.29% strongly disagree that it is easy to modify and update records within HRIS. This shows that the majority of employees feel HRIS allows for easy modification and record adjustments.

In terms of accuracy, 19.19% strongly agree, 71.94% agree, 6.29% are neutral, 1.45% disagree, and 1.13% strongly disagree that HRIS generates accurate results and reports. This indicates that most employees trust HRIS for producing reliable and precise reports.

Finally, when it comes to consistency, 17.10% strongly agree, 74.84% agree, 7.26% are neutral, 0.48% disagree, and 0.32% strongly disagree that HRIS consistently performs well in managing information. This suggests that most employees find HRIS consistently effective in its performance.

**Table 1: HRIS is very effectively used**

HRIS is very effectively used to manage the HR functions		Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		GT	%
		F	%	F	%	F	%	F	%	F	%		
Gender	MALE	99	17.43	319	56.16	53	9.33	76	13.38	21	3.70	568	100
	FEMALE	11	21.15	26	50.00	5	9.62	8	15.38	2	3.85	52	100
	<b>Total</b>	<b>110</b>	<b>17.74</b>	<b>345</b>	<b>55.65</b>	<b>58</b>	<b>9.35</b>	<b>84</b>	<b>13.55</b>	<b>23</b>	<b>3.71</b>	<b>620</b>	<b>100</b>
Age	20-35	32	23.02	55	39.57	21	15.11	24	17.27	7	5.04	139	100
	35-50	57	15.62	229	62.74	25	6.85	43	11.78	11	3.01	365	100
	50 & Above	21	18.10	61	52.59	12	10.34	17	14.66	5	4.31	116	100
	<b>Total</b>	<b>110</b>	<b>17.74</b>	<b>345</b>	<b>55.65</b>	<b>58</b>	<b>9.35</b>	<b>84</b>	<b>13.55</b>	<b>23</b>	<b>3.71</b>	<b>620</b>	<b>100</b>
Experience	0-5	9	26.47	17	50.00	2	5.88	5	14.71	1	2.94	34	100
	5-15	79	16.88	270	57.69	45	9.62	61	13.03	13	2.78	468	100
	15 & more	22	18.64	58	49.15	11	9.32	18	15.25	9	7.63	118	100
	<b>Total</b>	<b>110</b>	<b>17.74</b>	<b>345</b>	<b>55.65</b>	<b>58</b>	<b>9.35</b>	<b>84</b>	<b>13.55</b>	<b>23</b>	<b>3.71</b>	<b>620</b>	<b>100</b>
Education	Non-Graduates	7	9.72	14	19.44	17	23.61	23	31.94	11	15.28	72	100
	Graduates	103	18.80	331	60.40	41	7.48	61	11.13	12	2.19	548	100
	<b>Total</b>	<b>110</b>	<b>17.74</b>	<b>345</b>	<b>55.65</b>	<b>58</b>	<b>9.35</b>	<b>84</b>	<b>13.55</b>	<b>23</b>	<b>3.71</b>	<b>620</b>	<b>100</b>
<b>GT</b>		<b>440</b>	<b>17.74</b>	<b>1380</b>	<b>55.65</b>	<b>232</b>	<b>9.35</b>	<b>336</b>	<b>13.55</b>	<b>92</b>	<b>3.71</b>	<b>2480</b>	<b>100</b>

In the above table no.1 it indicates that out of the total respondents, 568 were male and 52 were female. Over 70% of both male and female respondents agreed that the Human Resource Information System (HRIS) is effectively managing HR operations. Additionally, the majority of respondents were above 35 years of age, with over 72% of them acknowledging the effectiveness of HRIS. Most employees surveyed had more than 5 years of experience and were well-educated, and more than 72% of them also agreed that HRIS is managing HR functions efficiently. Overall, the findings reflect a strong consensus across gender, age, experience, and education level about the effectiveness of HRIS in HR management.

## HYPOTHESIS OF RESEARCH

### Hypothesis

**H0:** There is no significant difference between effectiveness of using HRIS in manufacturing organization in South East Region of Rajasthan.

**H1:** There is significant difference between effectiveness of using HRIS in manufacturing organization in South East Region of Rajasthan.

## ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
<b>Between Groups</b>	44.0268	7	6.28954	31.5659	2.00792E-37	2.02453
<b>Within Groups</b>	121.942	612	0.19925			
<b>Total</b>	165.969	619				

**Table 2: ANOVA**

ORGANIZATION 1	ORGANIZATION 2	T-TEST P-VALUE	SIGNIFICANT
CFCL	DCM	0.92506	No
CFCL	JK CEMENT	0.113424	No
CFCL	MANGALAM CEMENT	1.81E-08	Yes
CFCL	ACC CEMENT	3.46E-06	Yes
CFCL	SHRIRAM RAYONS	2.26E-14	Yes
CFCL	WONDER CEMENT	5.43E-07	Yes
CFCL	SANGAM INDIA LTD.	0.008607	No
DCM	JK CEMENT	0.065144	No
DCM	MANGALAM CEMENT	1.46E-10	Yes
DCM	ACC CEMENT	1.85E-07	Yes
DCM	SHRIRAM RAYONS	1.34E-16	Yes
DCM	WONDER CEMENT	1.27E-08	Yes
DCM	SANGAM INDIA LTD.	0.002714	No
JK CEMENT	MANGALAM CEMENT	3.49E-05	Yes
JK CEMENT	ACC CEMENT	0.001228	Yes
JK CEMENT	SHRIRAM RAYONS	1.13E-11	Yes
JK CEMENT	WONDER CEMENT	0.000642	Yes
JK CEMENT	SANGAM INDIA LTD.	0.373801	No
MANGALAM CEMENT	ACC CEMENT	0.862368	No
MANGALAM CEMENT	SHRIRAM RAYONS	4.25E-08	Yes
MANGALAM CEMENT	WONDER CEMENT	0.295148	No
MANGALAM CEMENT	SANGAM INDIA LTD.	0.000521	Yes
ACC CEMENT	SHRIRAM RAYONS	3.18E-07	Yes
ACC CEMENT	WONDER CEMENT	0.602043	No
ACC CEMENT	SANGAM INDIA LTD.	0.006602	No
SHRIRAM RAYONS	WONDER CEMENT	4.11E-09	Yes
SHRIRAM RAYONS	SANGAM INDIA LTD.	5.95E-13	Yes
WONDER CEMENT	SANGAM INDIA LTD.	0.006796	No

**Table 3: Post-Hoc Test Bonferroni correction**

**Interpretation:** As it is shown in table no.2 the p value is less than .05, therefore the null hypothesis is rejected. This shows that there is significant difference between effectiveness of using HRIS in manufacturing organization in South East Region of Rajasthan.

### **Conclusion**

In conclusion, the comprehensive analysis of the data clearly demonstrates the growing importance and effectiveness of Human Resource Information Systems (HRIS) in the manufacturing organizations of South-East Rajasthan. The study provides strong empirical evidence that HRIS is widely perceived as a valuable tool by employees across different demographics and organizational backgrounds.

Based on the data analysis, it is evident that the majority of employees across various organizations in the South-East Region of Rajasthan find HRIS to be highly effective in managing HR functions. A significant percentage of both male and female employees, as well as those across different age groups, experience the benefits of HRIS in terms of efficiency, safety, ease of maintenance, flexibility, accuracy, and consistency in information management. The findings reveal that employees with more experience and higher educational qualifications are particularly inclined to recognize the value HRIS brings to HR operations.

The ANOVA results as shown in table no.2 indicate a significant difference between the effectiveness of HRIS across different manufacturing organizations in the region, as shown by the p-value being less than 0.05. This leads to the rejection of the null hypothesis (H<sub>0</sub>), supporting the alternative hypothesis (H<sub>1</sub>) that there is a significant difference in the effectiveness of HRIS usage. The Post-Hoc Bonferroni tests further highlight the specific organizations where these differences are most notable, emphasizing the varying levels of HRIS effectiveness across different companies.

Overall, the study confirms that HRIS plays a crucial role in enhancing HR operations in the manufacturing sector of South-East Rajasthan, contributing to improved efficiency, security, and performance consistency in managing employee information. The results suggest that continued adoption and optimization of HRIS will likely further improve organizational effectiveness in the region.

### **Discussion and Contributions**

According to this study HRIS adoption has led to noticeable gains in efficiency, accuracy, flexibility, and security of HR functions, while also highlighting that employee demographics such as education and experience strongly influence perceptions of system effectiveness (Panda, A.K., & Verma, R.,2022).. More experienced and highly qualified employees tend to value HRIS more, recognizing its benefits in workload management and compliance. The results of ANOVA and Post-Hoc tests as shown in table no 2. and table no.3 respectively, further indicate that the effectiveness of HRIS varies across organizations, suggesting that factors like training, organizational culture, and system customization significantly shape outcomes. These insights reaffirm that HRIS success is not purely technology-driven but depends equally on human and organizational readiness. Beyond this, the study contributes to the literature by providing region-specific evidence from South-East Rajasthan, offering comparative insights across different HRIS platforms, and emphasizing employee perceptions as a critical determinant of HRIS success. Practically, the findings guide HR managers

and policymakers to focus on training, digital literacy, and employee self-efficacy in order to maximize benefits. Theoretically, the research strengthens socio-technical and strategic HRM perspectives by positioning HRIS as both a technological tool and a strategic enabler. Overall, the study bridges academic understanding and practical application, while also opening avenues for future research on the long-term impact of HRIS on employee satisfaction, organizational performance, and regional growth.

From a managerial perspective, these insights stress the importance of investing in structured training programs, fostering digital literacy across all employee groups, and promoting transparent communication during HRIS implementation to build trust and reduce resistance. HR managers must also ensure that HRIS platforms are customized to fit organizational needs rather than relying solely on generic solutions, as lack of alignment can reduce effectiveness. For policymakers, the study highlights the need to promote digital skill development at the regional level and support manufacturing organizations through incentives for HR technology adoption. Such initiatives can help bridge digital divides, encourage innovation, and strengthen overall workforce management in Rajasthan.

Overall, this study not only validates prior findings but also adds regional insights, showing that HRIS success is socio-technical in nature—dependent on both technology and human factors. By integrating these findings with the broader literature, the research provides practical guidance for HR managers and policymakers, while also opening new directions for examining the long-term strategic value of HRIS in organizational transformation and regional economic development.

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