

# An Empirical Study on Technology Transformation and its impact on Human Resource Practices

(With references to Selected MNCs in Visakhapatnam)

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## ABSTRACT

Now-a-days New technologies support all aspects of HRM, including selection and recruitment, learning and development, compensation, and performance management. Electronic Human Resource Management, processes and transmits digitized HR information. E-HRM is the application of IT for HR practices that enable easy interactions between employees and employers. HR facilitates self-service technologies for employees and managers (ESS/MSS), making it easier for organizations to enable remote learning regardless of distance (Johnson *et al.* 2016) observes that it facilitates better business outcomes “by enhancing existing non-digital capabilities and enabling new digital capabilities to create and capture value.

**Keywords:** Technology, Human Resource Practices, Electronic Human Resource Management

Information technology (IT) has significantly transformed human resource management (HRM) processes and practices over the past three decades. The era of computerization began with the implementation of a common mainframe system across industries, which quickly automated payroll functions. Today, new technologies support all aspects of HRM, including selection and recruitment, learning and development, compensation, and performance management (Lukaszewski & Johnson, 2015). Technology-enabled HR, often referred to as human resource information systems (HRIS) or e-HR, has markedly enhanced various HRM sub-functions, improving efficiency, reducing administrative burdens, and providing better services

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to employees, retirees, and job applicants (Johnson, Lukaszewski & Stone, 2016). Moreover, the advent of the Internet and innovations like software as a service (SaaS) and cloud-based information systems have empowered HRM to more effectively attract talent. With streamlined selection processes, HR facilitates self-service technologies for employees and managers (ESS/MSS), making it easier for organizations to enable remote learning regardless of distance (Johnson *et al.* 2016). From this perspective, many researchers and practitioners argue that electronic HRM (e-HRM) fundamentally changes or disrupts HRM practices within organizations, shifting the focus from administrative tasks to more strategic roles (Lepak & Snell, 1998; Srivastava & Shaw, 2003).

Technology management has demonstrated the increasing role of technology in strategic decisions. Marler and Parry (2016) note that “the emergence of HR technology, such as e-HRM, in organizations is an intended outcome of strategic decisions regarding the delivery of HRM services. Instead of changing the HRM function, the delivery of HRM services may be an intended outcome of skilling, playing a strategically imperative role” (Marler, 2009). From this perspective, the use of e-HRM technologies is considered a strategic priority to enable an organization to achieve its mission and therefore, HRM results in a strategic role (Marler, 2009). Can technology facilitate organizational strategy? For example, in the context of information technology (IT), Drnevich and Croson (2013) suggest that technology plays a key role in firm-level business strategy observes that it facilitates better business outcomes “by enhancing existing non-digital capabilities and enabling new digital capabilities to create and capture value.

## Objectives of the study

The research objective seeks to address the problem statement and lead to a direction indicating how the different constructs are connected. It also provides an opportunity to empirically test relevant hypotheses for the problem, considering the role of HR between HR technology and business outcomes and the concept of mediation for high performance work systems.

- ☐ To assess the impact of HR technology on organizational effectiveness, with a specific focus on the deployed HR solution.
- ☐ To examine the relationship between HR technology implementation and the adoption of High-Performance Work Systems (HPWS).
- ☐ To investigate the influence of HR technology on employee engagement levels.
- ☐ To determine the combined impact of HPWS and employee engagement on organizational effectiveness.

## Hypotheses

- ☐ **Hypothesis 1:** Alternative Hypothesis (H1): There is a significant positive relationship between HR technology implementation and organizational effectiveness.
- ☐ **Hypothesis 2:** Alternative Hypothesis (H1): There is a significant positive relationship between HR technology implementation and the adoption of HPWS.

- ❑ **Hypothesis 3:** Alternative Hypothesis (H1): There is a significant positive relationship between HR technology implementation and employee engagement.
- ❑ **Hypothesis 4:** Alternative Hypothesis (H1): There is a significant positive relationship between HPWS and employee engagement on organizational effectiveness.

## Research gap

Although there are contractual arguments supporting the assumption that HRM is an important discourse in business organizations, HR has not traditionally been considered a strategic partner (Lawler, 1995; Brockbank, 1999). The human resource function has traditionally been viewed as an administrative function headed by personnel managers whose main role is to focus on “cost control” and “administrative” tasks (Ulrich, 1997). Major areas that have been left out of HR’s focus are productivity improvement, quality enhancement, facilitation and mergers and acquisitions, and the critical challenges organizations typically face in building organizational capacity for bringing new products to market and continuity. If competition is such a critical business concern, the key question to ask is why it is not an important factor in the job responsibilities of HR professionals. It is assumed that HR executives in the organization feel that human resource performance does not affect such critical functions. The above arguments are supported by previous research that HR professionals have an administrative functional role (Csoka & Hackett, 1998).

Ever-changing times have forced organizations to redefine the role of HR (Dyer & Takla, 1999; Wright, 1999). Several studies have investigated the shift in priorities required by HR, studies such as APQC, Becker and Huselid, 1998; Smith and Riley, 1994; CB study, Csoka and Hackett, 1998; HRPS study, Eichinger and Ulrich, 1995. There is a growing reality that the HR function can add value in organizations, thus the human resource function is arguably, no longer a dispensable unit but acts as the brain and soul of organizations. Information Technology (IT) is primarily recognized as an “enabler” of business performance. According to Boone (1991), organizations constantly seek to expand their intelligence platform not only on the influence of the minds of their organizational members but also on the systems and processes the organization uses to expand strategic thinking. Such “thinking” means “assimilating information and looking at it with resources to inspire or imagine new ideas”. The technology that meets these organizational needs is known as information technology and has been recognized as the “enabler of organizations” (Boone, 1991). Sleazer, Wentling and Cude (2002) define IT as “a range of services, hardware and software”. Collecting, storing, retrieving and communicating information. and software”. However, information technology did not fully develop through HRM until the late 1940s, when it was used only for scientific calculations such as designing missile trajectories (Boone, 1991). In the early 1950s, companies such as GM began developing HRM for personnel and payroll systems. Using a primitive and rudimentary version of the IT done.

However, HRIS still have a long way to go before becoming electronic HR (eHR) systems. Dulebohn and Marler (2005) report that HRIS technology does not facilitate comprehensive critical analytical features required for more sophisticated planning of specific HRM activity and decision support. Since the late 1990s, “HRM is considered to be undergoing some dramatic changes and the technology has been labeled electronic human resources management (eHR)” (Gueutal & Stone, 2005). The term “eHR” as currently used encompasses important HRM responsibilities such as e-recruiting, e-selection, remote

L&D, e-compensation services and e-performance management. Researchers such as Fletcher (2005) have this. An optimistic outlook for future eHR technology “because both the HRM role and the technology have continued (and will continue) to evolve; With the help of IT, HRM personnel are freed from the day-to-day and tedious work and can thus focus their energy and time on strategic work. In other words, “IT can help transform HRM from an administrative role to an eventual strategic player” (Fletcher, 2005). Scholars such as Sleazer, Wentling & Cued (2002) note the fascinating parallel evolution of information technology (IT) and the development of human resource management (HRM). While studying a major evaluation of information technology (IT) and HRM: human resource development (HRD), Sleazer et al. (2002) reveal that these histories “both entailed struggles and challenges of evolution and revolution”, also revealing “parallel developments in the shift from tangential activities to strategic thrusts”. In the five stages defined by Sleazer *et al.* (2002), IT grew from the capability demonstrated by data processing machines for scientific, engineering and accounting functions in the 1950s to the stand-alone PC widely used by many businesses in the 1970s, electronic commerce and interfacilitator. -Organizational strategic alliances in the 1990s. HRM has also undergone drastic changes; For example: from an “invisible” administrative unit in the 1950s without complete control over any information in the organization to a central player responsible for organizational training in the 1970s from a strategic partner to an organization designing knowledge management for a business unit in the 1990s. At each stage, HRM functions were facilitated by IT advances, but IT improvements seemed to be designed to meet HR needs.

Henson (2005) concluded that in the organizational context manpower and digital technologies are “the heartbeat and tools of the HR business today”, HRM certainly directs and is primarily responsible for the management and development of the workforce, while IT is arguably the enabler. For HRM in achieving such objectives. Similarly, according to a study of Indian research on the evaluation of HRM, the opening up of the Indian economy since 1991 has led to a remarkable increase in privately owned (private sector) firms progressing to compete with MNCs. Sharp and disruptive business challenges have forced the government and public sector organizations to reorganize their organization and reorient their organizational strategy (e.g., Khanna, 2007; Som, 2007).

Such challenges demand new and better ways of working with human resources. Also, significant HR challenges facing Indian organizations are shortage of properly skilled/professional manpower and skyhigh turnover ratio (Budhwar, 2009). Organizations are increasingly concerned about the “war for talent” and a number of organizations have engaged various HR techniques such as “performance management, training and development, diversity management and employee recognition” as key HR initiatives to attract and retain talent.” (Bhatnagar, 2007).

## Electronic HR

E-HR or HRIS was introduced in India quite late but since then, it has taken a very progressive slow but steady step with increased demand for HR professional from the industry to deal with various organizational HR challenges. Slowly it has transformed from record keeping and payroll application to sophisticated e-HR applications, starting with large PSUs and increasing competitiveness of Indian MNCs and global MNCs to stay relevant and competitive in the dynamic business scenario. Geographical Indian literature indicates that various researchers have

The adoption of electronic Human Resource Management (e-HR) systems varies significantly across different sectors and organizational sizes. The effectiveness of Human Resource Information Systems

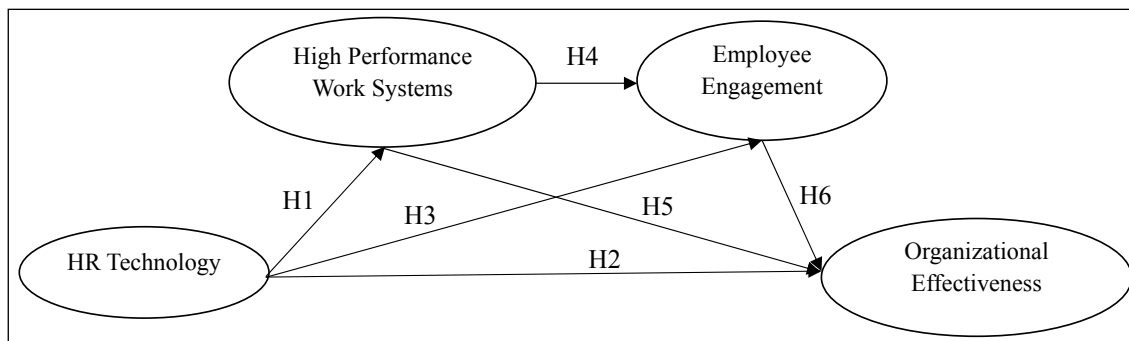
(HRIS) often depends on the type and scale of the organization. Additionally, the use of e-HRM tools and techniques is evident in various HR functions.

A comparative analysis shows that public and private organizations utilize different e-HRM tools. Employee awareness of the implementation of e-HRM systems is essential across all sectors, as is the assessment of employee satisfaction with these newly introduced systems. Moreover, it is important to identify and understand the challenges related to the deployment and use of e-HRM systems. Evaluating the application of HRIS within the broader framework of Human Resource Management (HRM) is also crucial.

Most Indian studies are conceptual studies, and there is a clear lack of empirical studies that explain the role of HRIS or e-HRM systems in achieving HRM effectiveness (Kundu, 2012). Moreover, organizational culture has a significant impact on the identification of these practices. A system designed for use in one country or continent may not be successful in different continents and regions of the world. Beliefs about the organization's responsibility and role toward the workforce, information security, and personal privacy, HR plays can be very different cross-country and cross-region. Considering the background literature, empirical studies related to HR technology, HR role, high performance work systems and business results constructs are scarce. There is work in each unique region and different geography. Therefore, it is highly relevant to conduct an empirical study covering the constructs of the study.

## Conceptual Model

As per objective and hypothesis of the work herewith given conceptual diagram in Fig. 1.



**Fig. 1:** Conceptual Diagram on the topic

## Significance of the Study

HRM and technology are some of the emerging faculties in the field of research. Over the past twenty years, existing studies on HR technology have focused on exploring the relationship between HRM and technology, considering various contexts such as 'organizational adoption' (Ball, 2001; Florkowski, 2006), and 'e-enablement of HR'. (Bondaruk & Ruel, 2005; Strohmeier, 2007), 'e-HRM adoption' (Lepack & Snell, 1998; Strohmeier, 2007), above, various literatures mainly contributed: the multi-fold important role of technology using a resource-based view, the paradigm of HR has changed (admin. strategic), HR transition from service function to organizational growth by leading, leveraging IT, HR is more cost-

effective, strategic and flexible (Snell, Stuber & Lepack, 2002). Also, ‘the transformational function of electronic-HRM on the HR function’ (Srivastava & Shah, 2003), ‘the impact of technology on the future of HRM’ (Stone *et al.* 2015), and ‘strategic HR practices are vital to organizational performance’ (Huselid, 1995). In addition to that, two separate reviews by Hoobler and Johnson (2004) found that leading HR journals contained 1% of articles, and Strohmeier (2007) could only find fifty-seven relevant peer-reviewed studies journals since 1995. Moreover, in recent studies, Stone *et al.* (2015, p. 1) note that “despite the widespread impact of technology on HRM in organizations, there has been relatively little research examining its impact”. Briefly considering the above points, we can recommend that the current research has considerable importance in assessing the impact of HR technology on constructs such as HR transformation, HPWS, and business outcomes, which provides a unique proposition for further research in the knowledge domain, not only in India.

## Scope of the study

This study aims to investigate the impact of HR technology on organizational effectiveness, with a specific focus on multinational companies (MNCs) operating in Visakhapatnam, India. The research will explore the following key areas:

- ❑ **HR Technology Adoption:** Assessing the extent to which MNCs in Visakhapatnam have adopted HR technology solutions and their level of integration.
- ❑ **High-Performance Work Systems (HPWS):** Examining the prevalence and effectiveness of HPWS practices within these organizations.
- ❑ **Employee Engagement:** Measuring employee engagement levels and identifying the factors influencing them.
- ❑ **Organizational Effectiveness:** Evaluating the overall impact of HR technology, HPWS, and employee engagement on organizational effectiveness.

Visakhapatnam, a major industrial hub in India, is home to numerous MNCs representing diverse sectors such as pharmaceuticals, IT, manufacturing, and services. This strategic location makes it an ideal setting to study the impact of HR technology on organizational effectiveness. Several factors contribute to the relevance of focusing on MNCs in Visakhapatnam:

- ❑ **Technological Advancements:** MNCs are often at the forefront of technological innovation, including HR technology. They are more likely to adopt and implement advanced HR solutions to streamline processes and enhance efficiency.
- ❑ **Global Best Practices:** MNCs typically adhere to global HR standards and best practices. Studying their HR technology adoption and its impact can provide valuable insights into international trends and benchmarks.
- ❑ **Diverse Workforce:** MNCs in Visakhapatnam often employ a diverse workforce, including both local and expatriate employees. Understanding how HR technology influences the management of such diverse teams is crucial.

- **Economic Significance:** MNCs play a significant role in the economic growth of Visakhapatnam. By examining the impact of HR technology on their performance, we can assess its potential contribution to regional development.

By focusing on MNCs in Visakhapatnam, this study aims to provide actionable insights for organizations to optimize their HR practices and achieve sustainable competitive advantage.

## Methodology

This study used a survey methodology and mostly relied on primary information collected from Chemical Industries in Visakhapatnam who responded to a prepared questionnaire. The top managers were questioned prior to the questionnaire's distribution, and consent was acquired for data gathering. In order to collect data, questionnaires were sent with higher management's approval. Some questionnaires were sent to managers and executives through email due to a shortage of time for data collection. The population of this research consisted of every Chemical Industries in Visakhapatnam. 120 respondents were chosen by the researcher due to time restrictions. The following hypothesis was formed in light of the literature research and the information gathered.

**Ho1:** Human Resource Management Practices have no significant impact on employee retention.

## Survey results

The effect of HRM practices on employee retention was examined using multiple regression analysis. Six statements were used to quantify employee retention (as the dependent variable), whereas 28 statements on a five-point Likert scale were used to quantify recruiting and selection, training and development, compensation, and performance appraisal.

**Table 1: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.705a	.497	.445	.60681

a. Predictors: (Constant), Performance Appraisal, Recruitment and selection, Compensation, Training and Development.

According to the regression model, the R value is 0.705, R Square is 0.497, and the modified R Square is 0.445. 49% of the variance in the dependent variables may be attributed to independent variables, whereas 51% can be attributed to unknown causes. Therefore, it can be said that 49% of the influence on employee retention was caused by HRM practices.

**Table 2: ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	24.508	4	6.127	16.639	.000b
	Residual	42.345	115	.468		
	<b>Total</b>	<b>66.853</b>	<b>119</b>			

a. Dependent Variable: Employee retention; b. Predictors: (Constant), Performance Appraisal, Recruitment and selection, Compensation, Training and Development.



The results of the ANOVA test indicated that the f-value, or 16.639, was significant at a level of confidence of 99 percent. Thus, a substantial association between the independent variables of Performance Appraisal, Recruitment and Selection, Compensation, Training and Development, and the dependent variable Employee Retention was created in the regression model.

**Table 3: Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t.	Sig
	B	Std. Error	Beta		
1	(Constant)	1.398	.489	2.862	.005
	Recruitment and selection	.344	.052	6.673	.000
	Training and Development	.270	.056	4.787	.000
	Compensation	.227	.057	4.470	.000
	Performance Appraisal	.202	.060	3.836	.000

a. Dependent Variable: Employee retention.

The “Employee retention” variable’s regression coefficient was 1.398 (unstandardized), its t-value was 2.862, and its associated p-value was 00.005. Consequently, it is possible to conclude that HRMP significantly impacted employee retention. Additionally, the HRMP factors—Performance Appraisal, Recruitment and Selection, Compensation, Training and Development—showed significant values below 0.05. As a result, the variables were clearly having a big influence on staff retention. As a result, the null hypothesis “Human Resource Management Practices have no significant impact on employee retention” was rejected, demonstrating that HRMP have a significant impact on employee retention

## CONCLUSION

Therefore, it can be said that HR practices are crucial for staff retention in an organisation. Different organisations are becoming more aware of the potential of their human resources as a source of competitive advantage. Paying close attention to the procedures that effectively use these assets is necessary for the building of competitive advantage via workers. This study’s main objective was to look at the impact of HRMP on employee retention in chemical industries located in Visakhapatnam, Andhra Pradesh, India. The research design used in this study was explanatory. Pre-structured questionnaires were used to collect the main data for this investigation. Managers and executives received 150 questions in all. The respondents completed 120 questions accurately, and they sent them back. In order to conduct the analysis for this study, SPSS was used. The findings of this study indicated a favourable relationship between HRMP and employee retention. According to the study’s final findings, it is clear that employee retention depends on a number of critical independent variables, including employee salary, training, empowerment, and performance evaluation. As a result, the variables were clearly having a big influence on staff retention. As a result, the null hypothesis “Human Resource Management Practices have no significant impact on employee retention” was rejected, demonstrating that HRMP have a significant impact on employee retention.



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