Facilitating & Inhibiting Factors in the Successful Implementation of HRIS - Evidence from Organizations

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KEYWORDS	ABSTRACT
HRM, HRIS, HRMS, HRIS Implementation, HRIS Adoption.	Human Resource Information Systems at organizations have evolved to new paradigms and platforms over decades. Having different needs, size, operations and business, almost every contemporary organization has implemented HRIS for its human resource management. Some of the organizations have reaped phenomenal benefits by implementing HRIS and few are yet to realize the importance, while a reasonably good number of organizations have found it difficult to implement HRIS. An exploratory study has been conducted to discover the facilitating and inhibiting factors for the successful implementation of HRIS. Based on a sample of one hundred sixty-seven primary HRIS users at pan India level organization, exploratory factor analysis coupled with descriptive statistics, chi-square and Anova were applied to test the hypothesis and to further establish the factors leading to successful implementation of HRIS in organization. The findings of the study suggest that factors like the size of the organization, need of implementing HRIS, characteristics, impacts of HRIS on HR functions and processes, and problems that limit HRIS' use, are the factors, which play facilitating and inhibiting roles to the success of HRIS. The study is expected to add to the existing academic framework of HRIS and will also leverage HR professionals in the effective planning, designing and implementation of HRIS at their organizations

1. INTRODUCTION

The era of globalization has influenced the environments of organizations where they operate in. Organizations have become increasingly complex in managing their operations, products, processes and the most important asset, human resources. Given this backdrop, the traditional HR management systems and processes have become inadequate (Beckers & Bsat, 2002). The fast-changing technological canvas of business and the adoption of technology at work has proved to be a great boon for managers and HR stakeholders per se. This change just not leverages the organizational capabilities in general but also helps in the delivery of HR functions more diligently in particular. Increasing number of headcount multiplies HR data that leads to complexity in managing HR. Hence a comprehensive system is required to manage the entire life cycle of an employee Sanctis, 1986). Pioneer researchers have tried to make a case for HRIS wherein they have established that HRIS is not confined to merely a setup of hardware and the software-based complex organizational system. Farhat (2013) while investigating the intricacies of implementing HRIS in Indian organizations concluded that the effective implementation of HRIS requires re-engineering of business processes. Sufficient training on the new system, patience for fairly long and peace-meal exercise, system integrity, without which implementation will either fail or get delayed that will result into to distrust and lack of trust of top management. Rahman & Islam (2017) in their empirical study, established that the barriers in the

adoption of HRIS mainly involve; Financial Cost & High investment, Lack of top management support, Costly maintenance, Long-term benefit, Tall vs. Short Organizational structure, Organization's culture, and lack of HR experts and HRIS users. Kartikeyan (2017) has also been vocal in saying that without the candid support of top management, HRIS adoption will be a dream.

These findings put-forth a vital question in the adoption of HRIS, which is of course is an expensive investment. What ensures a successful implementation of HRIS against the investment leading to return on investment (ROI)? Are there factors, which can secure the investment from failing or a potentially delayed ROI and consequently losing the opportunity? Facilitating and inhibiting factors, which make or break the idea of implementing HRIS at organizations is therefore a point of concern. What works and what does not, is apprehensive for HR professionals to know in hand before rolling the ball

2. LITERATURE REVIEW

To pin down the facilitating and inhibiting factors before embarking upon the gap in past researches and conduct the primary research, the literature review work undertaken with a broad range of research papers on Human Resource Information System (HRIS).

Implementation of HRIS

Hyde & Shafritz (1977) had envisaged that HRIS would be the need of tomorrow's HRM gamut. IT's presence is universal and unavoidable in any organization for any business function. HRIS as Change Agent, Kossek et al. (1994) said that the implementation of a new HRIS represents a major form of planned organizational change for the HR functions. Hendrickson (2003) while emphasizing the need for HRIS, suggested that HRIS is just not the integration of computer hardware and software applications but it is beyond these two requirements of an information system. It involves people, policies, procedures, and data required to manage the HR functions. Hence, HRIS calls for meticulous planning before its implementation. Laval & Guilloux (2010) in a longitudinal study spread over nine years with four private schools; found out that the HR function and successful implementation of HRIS are closely linked with operational and relational aspects of HR functions and processes. Implementation of HRIS in organization positively impacts HR processes, improves decision-making and considered as user-friendly tool that enhances operational efficiency of HR workforce (Adebayao et al. 2024). Teo, Lim & Fedric (2007) concluded that implementation decision of HRIS in organizations depends on five variables. It involves departmental relative advantage, compatibility, top management support, size of the organization and HRIS expertise. The main resulting variables, which influenced the implementation of HRIS, was only organization size as significant.

Al-Dmour et al. (2017) explored how internal and external environmental factors influence both the adoption behaviour and the level of implementation of Human Resources Information Systems (HRIS) among shareholding companies in Jordan. Their findings reveal that the determinants driving the decision to adopt HRIS differ in strength and significance from those influencing the depth of HRIS application.

To have a smooth implementation of HRIS, Arnold (2007) suggested that the HRIS team should plan for a painless conversion to a new HRIS. With planning, the team can have a lesser painless conversion — and, as a result, a more efficient, more accurate HRIS can be realized. Alwis (2010) suggested that organizations intending to implement HRIS must first evaluate their employees' attitudes, organizational characteristics, culture and how the stakeholders like HR, IT & Finance will work together in this cause. Identifying the suitability of the software chosen, its cost and benefit analysis will leverage the performance of HRIS. Whether HRIS implementation significantly influences HR's Operational and Functional activities, Saleem (2012) has tried to prove that the impact is direct on HRM functions/processes. In his study as an insight into the status of HRIS implementation in organizations from service sector, has revealed that majority of HRIS was used mainly at Operational and Functional Level. Ahmer (2013) emphasized the significance of the adoption of HRIS to help modern organizations in the effective management of HR. He examined six factors and their role in the implementation of HRIS in organizations. Those involved; Innovation Factors, Compatibility, Complexity, Top Management Support, HRIS Expertise and Environmental Characteristic of Competition. He found that Innovation and Compatibility had a positive relationship with HRIS adoption.

Selection of appropriate HRIS is one of the important factors in the successful implementation of HRIS. The HRIS investment in terms of money and time must fit the objectives, mission and values of the organization. Ignoring these factors, the implementation will malfunction during the input-throughput-out process derailing the HRM's operational and functional needs (Dhande & Mane, 2017). Zaki & Saad (2018) while exploring the implementation of cloud-based HRIS at 3-star and 5-star hotels in Egypt found that smaller hotels into 3-star category are lagging in the implementation of HRIS in comparison to 5-star hotels. Their findings confirm the pioneer works of Ball (2001), Teo et al. (2007), Iwu & Benedict (2011), Lackovic (2011), Goyal & Kapoor (2013), Nagendra & Deshpande (2014) wherein the size of the organization was mentioned as the primary factor for the implementation of HRIS at organizations. Qaisar et al. (2018) while investigating the association between the extent of HRIS implementation and performance of the organization with the moderating effect of HR staff's

expertise found out that there was a direct relationship between HRIS implementation and firms' performance. Garg & Han (2018) while sharing the newer developments in the HRIS domain shared that integrating newer tools in HRIS like HR Gaming, Geo-Location Beacons, Work-life Integration, People Analytics, Six Thinking Hats and Bias-free Hiring Tools pose as a greater challenge as a future-ready HRIS.

Facilitating & Inhibiting Factors in the Implementation of HRIS

Researchers have broadly discussed the facilitating and inhibiting factors for the successful implementation of HRIS as; the size of the organization, HRIS workforce competency, functional integration of HR functions, the core HRIS team, system's complexity, system's user-friendliness and cost-effectiveness.

Quaosar et al. (2024), while using the "Unified Theory of Acceptance and Use of Technology (UTAUT) model", found in their research that the factors which are associated for the successful adoption of HRIS in organizations, include, "Performance expectations, Effort expectations, Social influence, Facilitating conditions, Hedonic motivation, and Personal innovativeness". Besaid (2023) has found in his study that thorough training of the HR workforce with empowerment help the employees navigate the new information system with confidence. Besides this, the supports from top management and guidance of HR experts are pivotal. These collectively work as facilitators in the implementation of HRIS in an organization. Jayadeva et al. (2022), concluded in their study that "IT infrastructure, Management support, HR Team's Competence and Investment Cost and Market Competition all together decide the efficiency and effectiveness of HRIS in organization. Dissanayake & Nandasena (2019) while analysing the factors which are facilitate the adoption of HRIS have grouped them into internal environmental factors (IEF) and external environmental factors (EEF). The advocated that the IEFs involve "willingness to implement HRIS, competency, organization's demographics and structure, management support, perceived benefits while the EEFs involve competition, softwares, branding, government rules and regulations". Mary & Nyagi (2012) believed that the transformation of HR through HRIS can be leveraged only when the system in question is user-friendly, cost-effective and competency of HR department. Lackovic (2011) surveyed HRIS in Croatian banks. They found that though big banks are more likely to develop advanced HRIS features than small ones, the bank size is not the only factor for HRIS development and its success factor. Jawahar & Harindran (2013) defended that users often accept and welcome HRIS in the organization mainly due to user-friendly functional integration of HR functions. Based on this, HRIS is either perceived to be a positive intervention in organizations for managing HR or rejected or not welcomed because of its unsold benefits.

Kumar & Parumasur (2013) while adding on to the findings of Jawahar & Harindran evaluated the impact of the HRIS implementation. They established that automation and ease of access HR data do impacts HR functions and processes. Haitham (2011) in his study on finding out a model which assures the successful implementation of HRIS, suggested that there are six success parameters vis-à-vis "perceived HRIS quality, perceived HRIS information quality, perceived HRIS ease of use, perceived HRIS usefulness, HRIS satisfaction and HRIS success (net benefit)". Empirical pieces of evidence confirmed that success of HRIS implementation depends on HRIS satisfaction, which, in turn, gets influenced by HRIS system quality, its information quality, its ease of use and its functional usefulness. Maier et al. (2012) while emphasizing the facilitating and inhibiting factors in the implementation of HRIS established HRIS and HR workforce motivation and satisfaction go hand in hand. HRIS implementation not only serves the HR personnel but it indirectly affects the moral and motivations of human capitals of the organization through speedy HR processes/functions; be it e-recruitment, e-payroll or employee self-service. Reza & Majid (2010) earlier confirmed this perspective of Maier et al, in their study at an Iranian oil company. They established that users' satisfaction from information provided by HRIS gets multi-fold if their expectation, need of upgrades or new systems are addressed in time. Karthikeyan (2017), explored leadership perspective on the implementation of HRIS at organizations. He suggested that any HRIS plan or initiative cannot be successful without the support of top management. Planning and logical roadmaps have fallen flat with the missing support of top management in HRIS implementation. He cautioned top stakeholders that besides supporting, they need to be patient for the realization of ROI that will not happen overnight.

Research Gaps Identified

The theoretical backdrop of the literature reflected in its findings that HRIS, though HRIS is a very powerful tool in managing human resources, yet it has been largely used as source of automating HR functions/process in organizations and limited to recruitment, training & development and payroll (Anupa, 2021). The key factors in the successful implementation of HRIS as discussed in past researches, lacked industrial endorsements and validation. Barring few studies of Laval & Guilloux (2010), Reza & Majid (2010), Lackovic (2011), Saleem (2012), Zaki & Saad (2018), the factors, which drive the successful implementation of HRIS in organizations, did not emerge from literature for HR practitioners. Greater is the number of functions, more complex the HRIS is. While talking about HR transformation through e-HRM and HRIS technology, researchers reasonably justified that user-friendly, cost-effective and competent HR workforce as the catalyst for the successful implementation of HRIS yet very few studies talked about size and structure (Mahadik & Ayarekar, 2020) of the organisation, which are also highly critical for the successful implementation of HRIS. HRIS savvy and trained HR workforce are very critical for the implementation of HRIS. Some authors discussed this, which is needed to be explored further.

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Objective of the Study

To investigate the various factors that affect the successful implementation of HRIS at organizations, the objective of this study was; *to determine the facilitating and inhibiting factors for the successful implementation of HRIS in organizations*. Basis the objective, the respective hypotheses formulated were:

Hypotheses of the Study

Hypothesis 1:   The size of the organization does not determine the implementation of HRIS in organizations.

Hypothesis 2:   The characteristics/features and needs of the HRIS are not responsible for the successful implementation of the HRIS in organizations.

Hypothesis 3:   The impact of HRIS on HRM functions/processes does not lead to the successful implementation of HRIS in organizations.

Hypothesis 4:   The problems limiting the use of HRIS do not lead to the successful implementation of the HRIS in organizations.

3. METHODOLOGY OF THE STUDY

The primary data was collected using a structured questionnaire administered on HR professionals, HR and non-HR users of HRIS while secondary data was obtained through available literature, case studies and web-sources. The test of reliability and validity were conducted during the pilot testing wherein Cronbach's alpha was found to be above 0.70 for all the scales. Given the nature of the study, purposive sampling was used. A total of 135 valid responses belonging to 102 organizations across 26 industries/sectors were part of this study. Using SPSS, the statistical technique like exploratory factor analysis, ANOVA, chi-square the results were analysed and findings were concluded. The summary of the industry/sector-wise companies whose HR representatives participated in this study, is presented below:

Industry/Sector-wise Companies under the Study

Industry/Sector	Companies
1. Agriculture & Allied	Coromandel International, KRIBHCO
2. Automobiles	Tata, Eastman Auto & Power Ltd, Asahi India Glass Ltd
3. Aviation	AMMROC
4. BFSI	DENA Bank, Edelwise, Axis Bank, OBC Bank
5. Construction	Alstrong Enterprises, SARENS, PRISM
6. E-commerce	Naaptol Online Shopping, Freecharge, Amazon India, Paytm
7. Education	BIMTECH, IMI, Monsanto, KCCIM, Jaipuria Institute of Management, SMS, Chinmaya Institute of Technology, KidZania, Pathfinder Publishing, Careers360, Crescent University, Pace Career Academy
8. Engineering &	LKB Engineering

	Capital Goods	
9.	FMCD	Daikin, Luminous, Blue Star, Videocon, Hindustan Coca-Cola Beverage, Kaleesuwari Refinery, Puri Oil Mills
10.	Food & Beverages	Elior India, Al-Chef, Sodexo
11.	Healthcare & Pharmaceuticals	BIBCOL, Hamdard Wakf Lab
12.	Hospitality	Radisson Blu MBD Hotel
13.	IT & ITES	Wipro, HCL, Confidential, Cybage Software, Tech Mahindra, ATCS, Avio Infotech, SG, COMM-IT, CodeLipi, ACIS, Accenture, Oracle PeopleSoft, Code Board Technology, IBM, NEC Global, AtoZ Info. Solutions
14.	Logistics & Transportation	Safexpress
15.	NBFC	Mahindra Finance, Reliance Commercial Finance
16.	Petroleum	Indian Oil Corporation, GRL, GAIL
17.	Power	Schneider Electric, NHPC
18.	PR	Edelman, Value 360 Communications
19.	Public Utilities	JCS Traders
20.	Real-estate	Paradise Group Builders & Developers
21.	Retail	La Marche, CP Wholesale India
22.	Science & Technology	National Institute of Immunology, Stryker

23.	Services	Giesecke and Devrient, PAN HR Consultancy & Solutions, Genpact, E-Value Serve, GFS Securities, IndiHire, Helm Analytics, Mancer Consulting, IRI International, Reeracoen, Madhavbaug, Big 4, Fortis Memorial Research Institute, Moolchand Healthcare, VLCC, Spectrum Talent Management , Maven Workforce, TA Corridor, MAWAI (SAP Partner)
24.	Steel	Chandan Steels, APL Apollo Tubes
25.	Sugar	Simbhaoli Sugars
26.	Telecom	Tata Tele-Services, Gionee

Source: This Study

Reliability and Validity Analysis

To measure inter-item consistency, composite reliability was investigated using Cronbach's alpha. Further following Fornell & Larcker's (1981) recommendation of reliability coefficient values 0.70 or above was considered. Table 2 shows that all the constructs used in this study conform to reliability and internal consistency standards. To determine whether scale items are at par with the theoretical construct, construct validity was tested. Convergent validity and discriminant validity, define the legitimacy of construct (Campbell & Fiske, 1959). Convergent validity was assessed by noting the item loading and the item with 0.7 loading indicates that majority of the item's variance (the squared loading) can be ascribed to the construct (Fornell and Larcker, 1981), demonstrating the statistical significance between the items and the constructs. Furthermore, to measure the discriminant validity, Fornell and Larcker's (1981) recommendation of comparing the variance shared between the constructs with the squared root of AVE for each construct. Since the values of AVE as shown in Table 1 are greater than the shared variances represented by the correlations between the constructs, discriminant validity of all the three constructs viz., HRIS Characteristics/Features & Needs, Impact of HRIS on HR functions/processes and Problem Affecting the HRIS Implementation, get established. The squared root of AVE is presented diagonally in Table 1 and the correlations appear in rows and columns.

Table 1: Discriminant Validity (N=135)

Variables	Mean	SD	1	2	3
Characteristics & Needs of HRIS Implemented (**1**)	4.14	.45	**.72**		
Impact of HRIS on HRM Functions/Processes (**2**)	83.75	8.47	.703**	**.71**	
Problems Limiting the Use of HRIS (**3**)	49.85	10.18	-.081	-.001	**.73**

(Source: This study)

Note: **p<0.01; *Diagonal elements are squared root of AVE values*

Table 2: Composite Reliability (CR) of the Measurement Models

Construct/Indicators	Factor Loadings	α	AVE	CR
Characteristics & Needs of HRIS Implemented		0.906	0.527	0.954
1. The HRIS modules implemented are easy to use	0.801			
2. The HRIS modules implemented to make the HR functions and processes efficient	0.692			
3. The HRIS modules implemented are accessible across intranet and internet platforms	0.625			
4. The HRIS modules are compatible with other IT platforms and future technical requirements	0.768			
5. The HRIS modules implemented are flexible for customization and developmental needs	0.769			

6.	The HRIS modules implemented have embedded scalability for future expansions	0.550			
7.	The HRIS modules implemented are reliable in terms of data and information network	0.773			
8.	The HRIS modules implemented are consistent in the use of HR functions and process	0.730			
9.	The HRIS modules implemented show great accuracy for HR data processing	0.656			
10.	Functional Need	0.740			
11.	Strategic HRM Need	0.758			
12.	Quality HR Service	0.642			
13.	Quick HR Service Delivery	0.731			
14.	Business Need	0.820			
15.	ERP Need	0.699			
16.	Competition	0.685			
17.	Time Saving in HR Processes	0.783			
18.	Reducing Paper & Stationery Work	0.763			
19.	Saving Potential Cost of Manual HRM	0.758			
Impact of HRIS on HRM Functions/Processes			.914	0.505	0.941
1.	Realization of strategic HRM plans/activities	0.702			
2.	More accurate HR information	0.673			
3.	Improved line function role in managing HR	0.751			
4.	Quick and all-time access to HR data	0.821			
5.	More up to date HR information	0.696			
6.	Better tracking of the employees' information	0.816			
7.	Simplifying work process in the HR department	0.584			
8.	Reduction in paperwork	0.654			
9.	Work duplication is eliminated	0.676			
10.	Better coordination among different functions	0.643			
11.	Eased day to day work in the organization	0.727			
12.	Quick & Quality HR service delivery	0.772			
13.	Paved path for Green HR practices	0.641			
14.	Quicker and less expensive hiring	0.859			
15.	Saved stationery and misc. costs	0.538			

16. Increased profits	0.746			
Problems Affecting the Implementation of HRIS		.879	0.547	0.939
1.　Function-wise Use	0.612			
2.　Frequent Customizations	0.649			
3.　Training	0.832			
4.　Lack of HR Supervisors/Managers Involvement	0.754			
5.　Cost	0.497			
6.　Data Integrity & Confidentiality	0.748			
7.　Vendor Support	0.648			
8.　Legal Compliance	0.771			
9.　AMC (Annual Maintenance Charges)	0.716			
10. Lack of Functional Integration	0.842			
11. Lack of Internal IT Support	0.852			
12. Lack of Competent HRIS Team	0.783			
13. Complexity in HRIS	0.823			

Data Analysis & Findings

Exploratory Factor Analysis was done to trace out Facilitating & Inhibiting Factors in the implementation of HRIS for the constructs like; Characteristics & Needs of the HRIS, Impact of HRIS on HRM functions/processes and Problems affecting the implementation of HRIS.

Characteristics and Needs of HRIS Implemented

Results indicate that the 135 variables collectively meet the necessary threshold of sampling adequacy meritoriously with an MSA value of 0.872 (Pls see Table 3). Cronbach's alpha for all the 20 items (Characteristics and Needs of HRIS Implemented) together calculated was 0.906 which shows the significantly high reliability. It is evident from the Table 4 that only four factors having Eigenvalues greater than 1 or above are explaining 66.885% of variance therefore these factors are considered more important. Rotated component matrix was used to regroup the factors (Pls see Table 5) and factors having the value greater than 0.5 were finally regrouped and renamed as shown in Table 6. Here the discarded item was, "The HRIS modules implemented are fully laced with security norms for data integrity and privacy".

Table 3: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.872
Bartlett's Test of Sphericity	Approx. Chi-Square	1579.036
	df	190
	Sig.	.000

(Source: This study)

Table 4: Total Variance Explained

Total Variance Explained					
	Initial Eigenvalues			Extraction Sums of Squared Loadings	
Component	Total	% of Variance	Cumulative %	Total	% of Variance
1	7.690	38.450	38.450	7.690	38.450
2	3.262	16.310	54.760	3.262	16.310
3	1.267	6.335	61.095	1.267	6.335
4	1.158	5.790	66.885	1.158	5.790
5	.846	4.231	71.116		
6	.716	3.580	74.696		
7	.676	3.381	78.078		
8	.645	3.226	81.304		
9	.498	2.489	83.792		
10	.476	2.379	86.171		
11	.447	2.237	88.409		
12	.404	2.018	90.427		
13	.360	1.799	92.226		
14	.322	1.608	93.833		
15	.273	1.366	95.199		
16	.240	1.201	96.400		
17	.211	1.055	97.455		
18	.202	1.008	98.463		
19	.177	.883	99.346		
20	.131	.654	100.000		

(Source: This study)

Table 5: Factor Analysis of Characteristics & Needs of the HRIS for Implementing HRIS

Rotated Component Matrix				
	Component			
	1	2	3	4
The HRIS modules implemented are easy to use	.801	.097	-.098	.065
The HRIS modules are compatible with other IT platforms and future technical requirements	.768	-.021	.130	.145
The HRIS modules implemented are reliable in terms of data and information network	.773	.120	.223	-.042

The HRIS modules implemented make the HR functions and processes efficient	.692	.158	.335	.009
The HRIS modules implemented are fully laced with security norms for data integrity and privacy	.498	-.023	.498	.250
The HRIS modules implemented are flexible for customization and developmental needs	.769	-.050	-.050	.204
The HRIS modules implemented are consistent in the use of HR functions and process	.730	.149	.315	-.028
The HRIS modules implemented have imbedded scalability for future expansions	.550	.018	.490	.052
The HRIS modules implemented show great accuracy for HR data processing	.656	.282	.403	-.006
The HRIS modules implemented are accessible across intranet and internet platforms	.625	.218	.241	.022
Functional Need	.268	.314	.740	.120
Strategic HRM Need	.262	.162	.758	.343
Business Need	-.031	.263	.188	.820
ERP Need	-.008	.241	.223	.699
Quality HR Service	.037	.409	.642	.312
Quick HR Service Delivery	.153	.326	.731	.270
Time Saving in HR Processes	.221	.783	.325	-.058
Reducing Paper & Stationery Work	.046	.763	-.064	.403
Saving Potential Cost of Manual HRM	.108	.758	-.167	.442
Competition	.283	.212	.051	.685

(Source: This study)

Table 6: Reduced Factor Matrix of Characteristics & Needs of HRIS

Factors	Name of the Factors
F1	**Factors Explaining Characteristics of HRIS**
F1a:	**EFFICIENCY CHARACTERISTICS (EC)**
	The HRIS modules implemented are easy to use
	The HRIS modules implemented to make the HR functions and processes efficient
	The HRIS modules implemented are accessible across intranet and internet platforms
F1b:	**TECHNICAL & STRUCTURAL CHARACTERISTICS (TSC)**
	The HRIS modules are compatible with other IT platforms and future technical requirements
	The HRIS modules implemented have embedded scalability for future expansions
	The HRIS modules implemented are flexible for customization and developmental needs

F1c:	DATA INTEGRITY CHARACTERISTICS (DIC)
	The HRIS modules implemented show great accuracy for HR data processing
	The HRIS modules implemented are reliable in terms of data and information network
	The HRIS modules implemented are consistent in the use of HR functions and process
	Factors Explaining Need for HRIS Implementation
F2:	COST SAVING NEED (CSN)
	Time Saving in HR Processes
	Reducing Paper & Stationery Work
	Saving Potential Cost of Manual HRM
F3:	OPERATIONAL NEED (ON)
	Functional Need
	Strategic HRM Need
	Quality HR Service
	Quick HR Service Delivery
F4:	INDUSTRIAL NEED (IN)
	Business Need
	ERP Need
	Competition

(Source: This study)

Impact of HRIS on HRM Functions/Processes

All the 135 variables collectively met the necessary threshold of sampling adequacy with an MSA value of 0.872 (Pls see Table 7). Cronbach's alpha for all the 20 items (Impact of HRIS on HRM Functions/Processes) together calculated was 0.935 which shows the high reliability. Here it is evident in Table 8 that only three factors having Eigenvalues greater than 1 explained 62.848% of variance therefore these factors are considered more important. Using Rotated component matrix, factors having the value greater than (0.5) were regrouped as visible in the Table 9 and were finally renamed in Table 10. Some discarded factors were; Simplification of Work Process, HR Administration, Timely Management Reporting, Improved Decision Making, Improved & Smooth HR Functional Integration, Saved Stationery & Misc. Costs.

Table 7: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.872
Bartlett's Test of Sphericity	Approx. Chi-Square	1759.783
	Df	190
	Sig.	0.000

(Source: This study)

Table 8: Total Variance Explained

Total Variance Explained

Component	Initial Eigenvalues			Extracted Sums of Squared Loadings	
	Total	% of Variance	Cumulative %	Total	% of Variance
1	9.188	45.938	45.938	9.188	45.938
2	1.811	9.057	54.994	1.811	9.057
3	1.571	7.854	62.848	1.571	7.854
4	.911	4.557	67.405		
5	.877	4.383	71.788		
6	.740	3.699	75.487		
7	.679	3.395	78.882		
8	.634	3.169	82.051		
9	.538	2.689	84.740		
10	.489	2.447	87.186		
11	.428	2.139	89.326		
12	.395	1.973	91.299		
13	.352	1.759	93.058		
14	.291	1.456	94.513		
15	.254	1.268	95.781		
16	.243	1.213	96.994		
17	.209	1.047	98.041		
18	.164	.819	98.860		
19	.130	.649	99.509		
20	.098	.491	100.000		

(Source: This study)

Table 9: Factor Analysis of Impact of HRIS on HRM Functions/Processes

Rotated Component Matrix

	Component		
	1	2	3
Realization of strategic HRM plans/activities	.702	-.077	.443
More accurate HR information	.673	.317	.159
Improved line function role in managing HR	.751	.106	.270
Quick and all-time access to HR data	.821	.324	-.015

More up to date HR information	.696	.366	.098
Better tracking of the employees information	.816	.173	.172
Reduction in paperwork	.450	.654	-.063
Work duplication is eliminated	.363	.676	-.054
Simplifying work process in HR department	.584	.439	.097
HR administration is more streamlined	.484	.392	.292
Quicker and less expensive hiring	.109	.114	.859
More timely management reporting	.519	.322	.501
Improved decision making	.255	.520	.539
Better co-ordination among different functions	.035	.643	.394
Improved and smooth HR functional integration	.509	.292	.521
Eased day to day work in the organization	.365	.727	.176
Quick & Quality HR service delivery	.309	.772	.258
Paved path for Green HR practices	.081	.641	.311
Saved stationery and misc. costs	.114	.418	.538
Increased profits	.194	.193	.746

(Source: This study)

Table 10: Reduced Factor Matrix of Impact of HRIS on HRM Functions/Processes

Factors	Name of the Factors
	Regrouped Factors Explaining IMPACT
F1:	**Data & Functional Efficiency (DFE)**
	Realization of strategic HRM plans/activities
	More accurate HR information
	Improved line function role in managing HR
	Quick and all-time access to HR data
	More up to date HR information
	Better tracking of the employees' information
	Simplifying work process in the HR department
F2:	**Quality HR Services (QHRS)**
	Reduction in paperwork
	Work duplication is eliminated

	Better coordination among different functions
	Eased day to day work in the organization
	Quick & Quality HR service delivery
	Paved path for Green HR practices
F3:	**Cost Effectiveness (CE)**
	Quicker and less expensive hiring
	Increased profits

(Source: This study)

Problems Affecting the Implementation of HRIS

All the 135 variables met the needed threshold of sampling adequacy with MSA value of 0.835 (Pls see Table 11). Cronbach's alpha for all the 15 items (Problems limiting the use of HRIS) was 0.896 showing the high reliability. Table 12 shows that only four factors having Eigenvalues > 1 explained 68.103 % of variance. Using rotated component matrix those were regrouped as in Table 13 having the value greater than (0.5) were finally renamed in Table 14. Some discarded factors were; Service Level Agreements & No Strategic Gain.

Table 11: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.835
Bartlett's Test of Sphericity	Approx. Chi-Square	961.105
	Df	105
	Sig.	.000

(Source: This study)

Table 12: Total Variance Explained

Total Variance Explained					
	Initial Eigenvalues			Extracted Sums of Squared Loadings	
Component	Total	% of Variance	Cumulative %	Total	% of Variance
1	5.691	37.939	37.939	5.691	37.939
2	1.924	12.829	50.768	1.924	12.829
3	1.474	9.828	60.597	1.474	9.828
4	1.126	7.506	68.103	1.126	7.506
5	.930	6.200	74.303		
6	.603	4.022	78.325		
7	.556	3.706	82.031		

8	.534	3.561	85.591		
9	.457	3.044	88.636		
10	.434	2.893	91.529		
11	.331	2.209	93.738		
12	.296	1.972	95.710		
13	.282	1.877	97.587		
14	.216	1.440	99.027		
15	.146	.973	100.000		

(Source: This study)

Table 13: Factor Analysis of Problems Affecting the Implementation of HRIS

Rotated Component Matrix	Component			
	1	2	3	4
Function-wise Use	.612	-.112	.278	.233
Lack of Competent HRIS Team	.049	.034	.227	.783
Complexity in HRIS	.110	.170	.035	.823
Data Integrity & Confidentiality	-.026	.748	.154	.376
Vendor Support	.161	.648	.386	.066
Legal Compliance	.156	.771	.006	.327
AMC (Annual Maintenance Charges)	.472	.716	.145	-.220
SLAs (Service Level Agreements)	.571	.565	.202	-.213
Frequent Customizations	.649	.410	.090	-.048
Training	.832	.076	.227	.042
Lack of HR Supervisors/Managers Involvement	.754	.227	.110	.153
Cost	.497	.392	-.013	.364
No Strategic Gain	.128	.172	.533	.467
Lack of Functional Integration	.321	.174	.842	.059

(Source: This study)

Table 14: Reduced Factor Matrix of Problems Affecting the Implementation of HRIS

Factors	Name of the Factors
	Regrouped Factors Explaining Problems

F1	FUNCTIONAL AGILITY (FA)
	Function-wise Use
	Frequent Customizations
	Training
	Lack of HR Supervisors/Managers Involvement
	Cost
F2	VENDOR MANAGEMENT (VM)
	Data Integrity & Confidentiality
	Vendor Support
	Legal Compliance
	AMC (Annual Maintenance Charges)
F3	IT INFRASTRUCTURE (ITI)
	Lack of Functional Integration
	Lack of Internal IT Support
F4	HRIS EXPERTISE (HE)
	Lack of Competent HRIS Team
	Complexity in HRIS

(Source: This study)

Descriptive Statistics

Table 15 shows descriptive statistics as the number of count, mean, standard deviation, variance and maximum and minimum values. The highest average value is of Data & Functional Efficiency i.e. 25.68 and lowest is of IT Infrastructure i.e. 6.27. Similarly, the standard deviation of the responses is maximum in Functional Agility i.e.4.010 while the lowest is Cost Effectiveness i.e. 1.419. Significance of each factor is tested with the chi-square test of significance. Each factor identified was significant at 1% level of significance as shown in Table 16. Further, these factors were found to be overall significant as tested by Chi-square test as shown in the table.

Table 15: Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Efficiency Characteristics	135	8	15	12.76	1.548
Technical & Structural Characteristics	135	6	15	11.73	1.890
Data Integrity Characteristics	135	7	15	12.54	1.761
Operational Need	135	9	20	16.96	2.384
Industrial Need	135	4	15	11.61	2.282
Cost Saving	135	6	15	12.73	1.955
Data & Functional Efficiency	135	20	30	25.68	2.825

Quality HR Services	135	10	30	25.25	2.906
Cost Effectiveness	135	2	10	7.77	1.419
Functional Agility	135	5	25	16.64	4.010
Vendor Management	135	4	20	13.15	3.426
IT Infrastructure	135	2	10	6.27	2.056
HRIS Expertise	135	2	10	6.89	1.739
Valid N (listwise)	135				

(Source: This study)

Table 16: Significance of the Factors of Characteristics/Features & Needs

Sl. No	Factors	Chi-square Value	d.f.	Significant at 1% level of significance
F1a	Efficiency Characteristics (EC)	133.385	7	.000
F1b	Technical & Structural Characteristics (TSC)	73.815	9	.000
F1c	Data Integrity Characteristics (DIC)	149.867	8	.000
F2	Operational Need (ON)	113.600	10	.000
F3	Industrial Need (IN)	117.533	11	.000
F4	Cost Saving (CS)	215.000	9	.000
F5	Data & Functional Efficiency (DFE)	78.563	10	.000
F6	Quality HR Services (QHRS)	146.859	12	.000
F7	Cost Effectiveness (CF)	87.911	6	.000
F8	Functional Agility (FA)	52.600	17	.000
F9	Vendor Management (VM)	57.111	14	.000
F10	IT Infrastructure (ITF)	83.333	8	.000
F11	HRIS Expertise (HE)	178.133	8	.000

(Source: This study)

ANOVA for Characteristics/Features of HRIS

In the post factor analysis, one-way ANOVA (Pls see Table 17) was carried out on the factors explaining the characteristics of HRIS, which were regrouped. Here Primary Use of HRIS in Organizations was considered as independent factor and factors explaining characteristics are considered as dependent factors. In the ANOVA analysis for efficiency Characteristics $F_{(2,132)}$ is 5.805, for Technical & Structural Characteristics $F_{(2,132)}$ is 7.004 and Reliability & for Data Integrity Characteristics $F_{(2,132)}$ is 3.715. We can see from Table 17 that all the three values of F test are significant as $p<0.05$ i.e. 0.004, 0.001 and 0.027.

Table 17: ANOVA for Characteristics/Features of HRIS

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Efficiency Characteristics (EC)	Between Groups	25.944	2	12.972	5.805	.004
	Within Groups	294.989	132	2.235		
	Total	320.933	134			
Technical & Structural Characteristics (TSC)	Between Groups	45.942	2	22.971	7.004	.001
	Within Groups	432.917	132	3.280		
	Total	478.859	134			
Data Integrity Characteristics (DIC)	Between Groups	22.143	2	11.071	3.715	.027
	Within Groups	393.383	132	2.980		
	Total	415.526	134			

(Source: This study)

ANOVA for Needs of Implementing HRIS

Post factor analysis, ANOVA (Pls see Table 18) was carried out on the Factors Explaining Needs were regrouped as F2: Operational Need (ON), F3: Industrial Need (IN) and F4: Cost Saving Need (CSN). Here Primary Use of HRIS in Organizations is considered as independent factor and factors explaining needs are considered as dependent factors. In the ANOVA analysis for Operational Need $F_{(2, 132)}$ is 8.699, for Industrial Need $F_{(2, 132)}$ is 4.044 and for Cost Saving Need $F_{(2, 132)}$ is 3.093. From Table 18 we can see that all the three values of F test are significant as p-values are less than 0.05 i.e., 0.000, 0.020 and 0.049.

Table 18: ANOVA for Needs of Implementing HRIS

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Operational Need (ON)	Between Groups	88.706	2	44.353	8.699	.000
	Within Groups	673.028	132	5.099		
	Total	761.733	134			
Industrial Need (IN)	Between Groups	40.298	2	20.149	4.044	.020
	Within Groups	657.672	132	4.982		
	Total	697.970	134			
Cost Saving (CS)	Between Groups	22.940	2	11.470	3.093	.049
	Within Groups	489.460	132	3.708		
	Total	512.400	134			

(Source: This study)

ANOVA for Impact of HRIS on HRM Functions/Processes

After factor analysis, ANOVA (Pls see Table 19) was carried out on the Factors Explaining IMPACT were regrouped as F1{Data & Functional Efficiency (DFE)}, F2{Quality HR Services (QHRS)} and F3{Cost Effectiveness (CE)}. Here Primary Use of HRIS in Organizations is considered as independent factor and factors explaining impact are considered as dependent factors. In the ANOVA analysis for Data & Functional Efficiency $F_{(2, 132)}$ is 12.464, for Quality HR Services $F_{(2, 132)}$ is 3.906 and for Cost Effectiveness $F_{(2, 132)}$ is 7.579. From Table 19 we can see that all the three values of F test are significant as p-value is less than .05 i.e. 0.000, 0.022 and 0.001.

Table 19: ANOVA for Impact of HRIS on Organization's Processes

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig
Data & Functional Efficiency (DFE)	Between Groups	169.858	2	84.929	12.464	.000
	Within Groups	899.446	132	6.814		
	Total	1069.304	134			
Quality HR Services (QHRS)	Between Groups	63.217	2	31.608	3.906	.022
	Within Groups	1068.220	132	8.093		
	Total	1131.437	134			
Cost Effectiveness (CE)	Between Groups	27.798	2	13.899	7.579	.001
	Within Groups	242.083	132	1.834		
	Total	269.881	134			

(Source: This study)

ANOVA for Problems in Implementation of HRIS

After factor analysis, ANOVA (Pls see Table 20) is carried out on the Factors Explaining Problems in HRIS which are regrouped as F1{Functional Agility (FA)}, F2{Vendor Management (VM)}, F3{IT Infrastructure (ITI)} and F4{HRIS Expertise (HE)}. Here Problems in Use of HRIS is considered as independent factors and implementation of HRIS is considered as a dependent factor. In the ANOVA analysis for Functional Agility $F_{(2, 132)}$ is 0.397, for Vendor Management (VM) $F_{(2, 132)}$ is 1.224, for IT Infrastructure $F_{(2, 132)}$ is 0.484 and for HRIS Expertise $F_{(2,132)}$ is 5.091. From Table 20 we can see that out of four values of F test only one i.e. HRIS expertise is significant as p-value is less than .05 i.e. 0.007 and rest are insignificant.

Table 20: ANOVA for Problems Limiting the Use of HRIS

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig
Functional Agility (FA)	Between Groups	12.869	2	6.434	.397	.673
	Within Groups	2142.064	132	16.228		
	Total	2154.933	134			
Vendor Management (VM)	Between Groups	28.640	2	14.320	1.224	.297
	Within Groups	1544.397	132	11.700		
	Total	1573.037	134			

IT Infrastructure (ITI)	Between Groups	4.125	2	2.063	.484	.617
	Within Groups	562.275	132	4.260		
	Total	566.400	134			
HRIS Expertise (HE)	Between Groups	29.029	2	14.514	5.091	.007
	Within Groups	376.304	132	2.851		
	Total	405.333	134			

(Source: This study)

Testing of Hypotheses

From the descriptive statistics tables (Pls see Table 21 & 22), we see that the average value (mean) is 3.86 and variation between data is 2.062. It is evident from the output that chi-square value is significant ($p<0.05$) therefore null hypothesis 1 i.e. *The size of the organization does not determine the implementation of HRIS in organizations*, is rejected. Therefore, it can be concluded, "*The size of the organization determines the implementation of HRIS in organizations*".

Table 21: Descriptive Statistics of Employee Strength

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Employee Strength	135	1	5	3.86	1.436	2.062
Valid N (list-wise)	135					

(Source: This study)

Table 22: Test Statistics

Test Statistics	
	Employee Strength
Chi-Square	99.630
Df	4
Asymp. Sig.	.000

(Source: This study)

In the post factor analysis one-way ANOVA was carried out on the factors which were regrouped (Pls see Table 17). In the ANOVA analysis for Efficiency Characteristics, $F_{(2,132)}$ is 5.805, for Technical & Structural Characteristics $F_{(2,132)}$ is 7.004 and for Data Integrity Characteristics $F_{(2,132)}$ is 3.715. All the three values of the F test were significant as $p<0.05$ i.e. 0.004, 0.001 and 0.027. Hence, it was established that there is a statistically significant association between HRIS implementation and the factors explaining characteristics/features of HRIS. Similarly, in the ANOVA analysis (Pls see Table 18) for Operational Need $F_{(2, 132)}$ is 8.699, for Industrial Need $F_{(2, 132)}$ is 4.044 and for Cost Saving Need $F_{(2, 132)}$ is 3.093. All the three values of F test are significant as p-value is less than .05 i.e. 0.000, 0.020 and 0.049. Thus it can be concluded that the null hypothesis is rejected resulting in the acceptance of alternate hypothesis i.e. *The characteristics/features and needs of the HRIS are responsible for the successful implementation of the HRIS in organizations.*

The Factors that were regrouped explaining IMPACT of HRIS on HRM Functions/Processes were F1{Data & Functional Efficiency (DFE)}, F2{Quality HR Services (QHRS)} and F3{Cost Effectiveness (CE)}. In the ANOVA analysis (Pls see Table 19) for Data & Functional Efficiency $F_{(2, 132)}$ is 12.464, for Quality HR Services $F_{(2, 132)}$ is 3.906 and for Cost Effectiveness $F_{(2, 132)}$ is 7.579. All the three values of F test are significant as p-value is less than 0.05 i.e. 0.000, 0.022 and 0.001. It is established that there is a statistically significant association between the impact of HRIS on HRM Functions/Processes and implementation of HRIS hence, it can be concluded that null hypothesis is rejected resulting in the acceptance of alternate hypothesis i.e. *"The impact of HRIS on HRM functions/processes leads to the successful implementation of HRIS in organizations"*.

During factor analysis, problems which limit the use of HRIS and thus its successful implementation were regrouped as F1{Functional Agility(FA)}, F2{Vendor Management(VM)}, F3{IT Infrastructure(ITI)} and F4{HRIS Expertise (HE)}. Here problems limiting the use of HRIS were independent factors and HRIS implementation was a dependent factor. In the ANOVA analysis (Pls see Table 20) for Functional Agility $F_{(2, 132)}$ was 0.397, for Vendor Management(VM) $F_{(2, 132)}$ was 1.224, for IT Infrastructure $F_{(2, 132)}$ was 0.484 and for HRIS Expertise $F_{(2,132)}$ was 5.091 respectively. Out of four F-test values, only one i.e. HRIS expertise was found to be significant as its p-value was less than .05 i.e. 0.007 and rest were insignificant. Hence, it is established that there is a statistically significant association between HRIS expertise and its successful implementation. However, there was no association between the HRIS implementation and Functional Agility, Vendor Management and IT Infrastructure. Thus it can be concluded that hypothesis four is partially and acceptable.

4. DISCUSSION, CONCLUSION & MANAGERIAL IMPLICATIONS

The findings of the analysis endorse Hendrickson's (2003) view that HRIS is not only a collection of sophisticated hardware and software. Rather, the involvement of HRIS competent team, related policies, workable processes and procedures coupled with relevant HR data, ensure the successful implementation of HRIS at organizations. Exploratory factor analysis results while underpinning the key facilitating and inhibiting factors in the successful implementation of HRIS, have established six factors vis-à-vis Characteristics/Features & Need of HRIS, Benefits, Constraints, Cost Savings and Implementation. Characteristics/Features such as user-friendliness, compatibility, reliability, efficiency, security, flexibility, consistency, scalability, accuracy and accessibility have been confirmed in the research findings of Adebayao et al. (2024); Quaosar et al. (2024); Bensaid (2023); Jayadeva (2022); Zaki & Saad (2018); Ahmer (2013). The need for HRIS pertains to meticulous HRIS planning process wherein organizations need to understand where they stand in HRM for the information system. Sanctis (1986); Kossek et al. (1994); Hendrickson (2003); Laval & Guilloux (2010) have categorically stressed need analysis in their studies to plan design and implement successful HRIS. Findings also confirmed that usage of HRIS increases and leverages its functionality if the newer features are incorporated as Anupa (2021); Garg & Han (2018) suggested it. Cost-saving parameters like; Quick and less expensive hiring, Paperwork reduction, Increased profits have been endorsed very strongly by researchers like Kavanagh, Thite & Johnson (2012); and Qaisar et al. (2018). Implementation dimensions such as AMC (Annual Maintenance Charges), SLAs (Service Level Agreements), Training, Vendor Support and Cost hold significant values in pre and post-implementation process. These have been established in the prominent research works of Teo, Lim & Fredric; Arnold (2007); Alwis (2010); Saleem (2012), and Ahmer (2013). Following the results, null hypothesis one about "size of the organization" as mentioned by Mahadik & Ayarekar (2020); Ball (2001); Teo et al. (2007); Iwu & Benedict (2011); Lackovic (2011); Goyal & Kapoor (2013) and Nagendra & Deshpande (2014) is rejected. Hypotheses two, three and four (*needs, characteristics/features of HRIS; Impact of HRIS on HRM functions/processes; Problems limiting the use of HRIS*) were tested and chi-square results have suggested the rejection of all these hypotheses consequently to the acceptance of alternate hypotheses.

5. CONCLUSION

The decision to implement HRIS at organizations stems out of their size and needs. The facilitating and inhibiting factors that play a critical role in the successful implementation of HRIS included, "Need, Characteristics/Features, Benefits, Constraints, Cost Savings and Implementation Processes. There are organizations, who have invested a good amount of money in HRIS but have failed to see the successful implementation. Researches (especially the findings of this study) though may propose statistically validated facts, which may be handy to adopt at the workplace, however, it is to be introspected by the HRIS professionals, as to why these findings fit into their HRIS set-up.

Managerial Implications

The findings of this study suggest HR professionals in general and HRIS practitioners, in particular to follow System Development Life Cycle (SDLC) approach promoted by Kavanagh et al. (2012) which involves *planning, analysis, design, implementation and control* for the effective implementation of HRIS and consider the facilitating and inhibiting factors that leverage the successful implementation of HRIS. With a forward looking approach in their current HRIS set-up, factors like; Functionality, Customisation, Integration of HRIS, User Interface, Cost-Benefit Analysis, Licensing & Hosting Fee, HR Analytics, Scale of HRIS/ERP/HR Software, will help them realise better and sustained ROI in their HRIS investment

REFERENCES

[1] Ahmer, Z. (2013). Adoption of HRIS innovation in Pakistani organization. Journal of Quality & Technology Management, 9(2), 25-50.

[2] Al-Dmour, R. H., Masa'deh, R. E., & Obeidat, B. Y. (2017). Factors influencing the adoption and implementation of HRIS applications: are they similar? International Journal of Business Innovation and Research, 14(2), 139-167.

[3] Alwis, D. C A. (2010). The impact of electronic human resource management on the role of HR managers. EKONOMIKA, 13(4), 47-60.

[4] Anupa, M. (2021). Role of human resources information system in accelerating organizational effectiveness– it companies perspective. International Journal of Management & Humanities, 5(6), 22-25.

[5] Arnold, J. (2007). Moving to a new HRIS. HR Magazine, 52(6), 125-132.

[6] Ball, K. S. (2001). The use of HRIS. Personnel Review, 30(6), 677-693.

[7] Adebayo, B., Adegoroye, A., & Alimi, A. (2024). Effect of Human Resource Information Systems (HRIS) adoption on Human Resources Management (HRM) Practices. Journal of Management Science and Entrepreneurship, 5(7), 55-74.

[8] Beckers, A. M. & Bsat, M. Z. (2002). A DSS classification model for research in human resource information systems. Information Systems Management, 19(3), 41-50.

[9] Bensaid, M. N. (2023). Antecedents of human resource information system adoption: A qualitative study in French context. Journal of Digitovation and information system, 3(1), 16-31.

[10] Dissanayake, D., & Nandasena, N. (2019). Elements influencing the success of Human Resource Information System. Annals of Management and Organization Research, 1(1), 65-75.

[11] Dhande, K. & Mane, D. (2017). Study on Human Resource Information System. International Jr. of Emerging Technologies in Engineering Research, 5(7), 33-36.

[12] Farhat, A. S. (2013). A study of HRIS in Indian banking scenario (Issues & Challenges). Altius Shodh Journal of Management & Commerce, 1(1), 271-273.

[13] Garg, P. & Han, K. (2018). High-Performance Work Practices - The Trending Approaches in India. The IUP Journal of Organizational Behaviour, 17(3), 75-90.

[14] Goyal, C. K. & Kapoor, T. (2013). Impact of the size of an organization on HRIS deployment. Altius Shodh Journal of Management & Commerce, 1(1), 297-305.

[15] Haitham, A. S. (2011). HRIS - success assessment an integrative model. Australian Journal of Basic & Applied Sciences, 5(5), 157-169.

[16] Hendrickson, A. R. (2003). HRIS - Backbone Technology of Contemporary Human Resources. Journal of Labor Research, 24(3), 381-394.

[17] Hyde, C. A., & Shafritz, J., M. (1977). HRIS - Tomorrow's system to manage HR. Public Personnel Management, 70-77.

[18] Iwu, C. & Benedict, H. (2011). Economic recession & investment in HRIS. Journal of Management Development, 32(4), 404-418.

[19] Jawahar, D. & Harindran, K. N. (2013). Role of affect in the acceptance of HRIS. IUP Journal of Management Research, 12(2), 54-74.

[20] Jayadeva, S. M., Shikhare, R. R., & Verma, S. (2022). Factors Affecting the Effectiveness of HRIS: An Empirical Study. Journal of Positive School Psychology, 6(5), 5795-5802.

[21] Karthikeyan, C. (2017). A theoretical review on HRIS implementation practices in India - A HR leadership perspective. International Journal of Management, Information Technology & Engineering, 7(7), 69-102.

[22] Kavanagh, M. J., Thite. & Johnson, R. D. (2012). Human Resource Information System (2 ed.). New Delhi: Sage Publications.

[23] Kossek, E. E., Young, W., Gash, D. C., & Nichol, V. (1994). Waiting for innovation in the HR department - Godot implements an HRIS. Human Resource Management, 33(1), 135-159.

[24] Kumar, A. N. & Parumasur S. A. (2013). Managerial perceptions of the impact of HRIS on organizational efficiency. Journal of Economic & Behavioral Studies, 5(12), 861-875.

[25] Lackovic, D. I. (2011). HRIS in Croatian banks - current practice & trends. Uporabna Informatika, 4(19),

207-214.

[26] Laval, F. & Guilloux, V. (2010). HRIS impacts implementation in an SME - a contextualist longitudinal case study. Third European Academic Workshop on Electronic HRM. 570, pp. 410-425. Bamberg, Germany CEUR.Org.

[27] Mahadik, R., & Ayarekar, S. (2020). Impact of size of organization on usage of HRIS. Asian Journal of Multidisciplinary Studies, 8, 69-74.

[28] Maier, C., Laumer, S., Eckhardt, A., Weitzel, T. (2012). Analyzing the impact of HRIS implementations on HR personnel's job satisfaction & turnover intention. Journal of Strategic Information Systems, 22, 193-207.

[29] Mary, C. M. S. A., Nyagi, B. K. (2012). A study on the present & emerging trends in e-HRM & HRIS in The Hindu. International Journal of Management, Information Technology and Engineering, 2(7), 178-189.

[30] Nagendra, A., & Deshpande, M. (2014). HRIS in HR planning & development in mid to large-sized organizations. Procedia - Social & Behavioral Sciences, 133, 61-67.

[31] Qaisar, N., Shahzad, K. & Arif, M. (2018). The extent of HRIS adoption & its impact on an organization's performance-moderating role of HR staff expertise. Abasyn Journal of Social Sciences, AICTBM-18, 1-11.

[32] Quaosar, G. A. A., Rahman, M. A., & Rahman, M. S. (2024). Factors Affecting the Adoption of HRIS: An Empirical Study Using Extended UTAUT2 Model. International Journal of Business and Management, 19(3), 213-213.

[33] Rahman, M. A. & Islam M. A. (2017). Barriers in adopting HRIS - An empirical study on selected Bangladeshi garments factories. International Business Research, 10(6), 98-103.

[34] Reza, H. & Majid, R. (2010). Measuring the effectiveness of HRIS in National Iranian Oil Company. Education, Business and Society - Contemporary Middle Eastern Issues, 3(1), 28-39.

[35] Saleem, I. (2012). Impact of adopting HRIS on three tiers of HRM - Evidence from developing economy. Business Review, 7(2), 96-105.

[36] Sanctis, G. D. (1986). HRIS - A current assessment. MIS Quarterly, 10(1), 15-27.

[37] Teo, T. S. H., Lim, G. S. & Fedric, S. A. (2007). The adoption & diffusion of HRIS in Singapore. Asia Pacific Journal of Human Resources, 45(1), 44-62.

[38] Zaki, M. & Saad, H. (2018). Adoption of Cloud HRIS in Egyptian Hotels - An experimental design research. International Joural of Heritage, Tourism & Hospitality, 12(1&2), 233-245..

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