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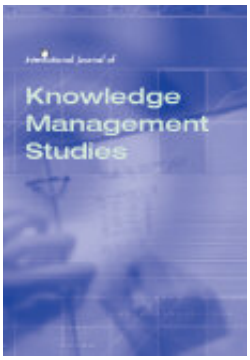

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Organisational sustainability through human resource information system

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Abstract: Workforce has always been important than all tangible and intangible resources available to an organisation. In the digital age, the millennial prefers the digital way of working and communicating. Thus, adopting technology trends in an organisation is inevitable for competitive advantage. The present scenario also focuses on the sustainable approach to carry out various processes. Sustainable business process and workforce can be maintained and achieved through human resource information system (HRIS). The use of HRIS not only enhances process efficiency but also reduces waste along with the cost of process and supports overall environmental friendliness. The study focuses on the role of HRIS in achieving sustainability and explores the role of digital culture as a mediator in the relationship between HRIS and organisational sustainability. The proposed model is based on the technical organisational and environmental theory, which covers holistic approach for achieving organisational success in alignment to the SDG goals.

Keywords: human resource information system; HRIS; technical organisational and environmental theory; culture; organisational sustainability; structural equation modelling.

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1 Introduction

Workforce is one of the most important assets of the successful organisation. Employing the workforce and engaging optimally is critical for organisational success. The various steps to do so includes formulating strong strategy in this direction for having effective workforce management through efficient human resource (HR) forecasting, staffing, scheduling, and HRs development. Global business-driven HR transformation in a current digital organisation is becoming the most strategic business component. And the usage of information and communication technology have become the integral aspect of any organisation (Nurhidayati and Zaenuri, 2023; Soumyaja and Sowmya, 2020). Human resource information system (HRIS), which is an enterprise resource planning- or ERP-based cross-functional package that manages all the information required by the HR department, has become an intrinsic part of the organisation. It is an integrated cross-functional software system that manages workforce planning/forecasting, recruitment, payroll, compensation, training and development, and strategic planning. Oruh (2013) defined HRIS as an integrated system, a combination of hardware, software, and database. This system not only stores data but analyses information about the HR department and supports strategic HR decision-making (Ali Quaosar and Rahman, 2021; Al Shehri et al., 2017; Haroun et al., 2020).

The current millennial workforce is highly technology driven and agile in their approach. Thus, the strategy of the organisation should be woven around the technology-based processes. Technology has become the driving force behind various business processes and critical for the ultimate benefits for all stakeholders (Forbes, 2017; Deloitte, 2017; Grand View Research Report, 2018; Thompson, 2023). As per the article published in *Mint* on 8 May 2019, Bersin and Chamorro-Premuzic (2019) emphasized the companies must develop a strategy of promoting digital culture (DC) for innovation and talent retention.

While strategising keeping technological advancement at the core, it is imperative for organisations to work for organisational success for which technology based efficient workforce management is need of the hour. However, while achieving the bottom line for environmental aspects should also be factored in. A sustainable organisation strives to reduce the cost of various processes and use of paper-based systems. Energy conservation is also an essential criterion of sustainability. All these factors are taken care of with the implementation of HRIS, especially the new cloud-based HRIS system. An organisation can also sustain if appropriate digital processing for talent management and employee engagement support fast and smooth work (Aggarwal et al., 2022). It provides ample opportunities to the employees for innovation and better performance (Islam, 2018; Snow et al., 2017). The use of HRIS supports in optimising the manpower, reducing the manual work and paper usage. The employees are supported also for the effective knowledge management process through its use. It also helps in energy conservation due to centralised data storage and provides necessary data instantaneously to formulate long term goals (Iqbal and Asrar-ul-Haq, 2019; Nurhidayati and Zaenuri, 2023; Soumyaja and Sowmya, 2020).

This paper aims to establish the relationship between HRIS usage and organisational sustainability. It further explores the mediating effect of organisational culture in the relationship between HRIS usage and organisational sustainability. The uses mentioned above about HRIS are on the basis TOE model. This theory successfully explains the adoption and enhancement of technology in various business processes (Mjomba and Oyagi, 2021; Wandhe, 2020).

2 Previous work

Digitisation and automation have transformed the various business processes and supported decision-making and strategic planning. Workforce management and planning too leverages the technology tools for sustainable growth.

As per Research and Markets (2020), globally the digital transformation market is projected to grow by 16.5% by the year 2025. This reflects the volume of digital expansion in organisations. However, giving importance to technology should not overlook its amalgamation with the people in the organisation and its culture. Hence an approach of DC should be adopted and provision of proper training on any new technology (Felin and Powell, 2016).

Based on this literature review, the following are objectives of the study.

- To understand the relation between use of HRIS in an organisation and organisational sustainability.
- To understand the role of DC in achieving organisational sustainability through use of HRIS.

2.1 Role of HRIS as an enterprise resource planning solution

ERP typically consists of various integrated software applications that meet the specific requirements and technical capabilities of different functional areas such as HRs, finance supply chain, and many more. In a nutshell, ERP systems drive a combined software platform using standard data definitions operating on a single database (Totah, 2019).

PeopleSoft emerged as one of the most popular ERPs for managing HRs, which also had an internet-compatible version (Totah, 2019). Much previous research has highlighted and discussed various factors contributing to the success of ERP implementation such as efficiency, effectiveness, and enhanced productivity and performance (Grabski et al., 2011; Kwahk and Lee, 2008; Nah et al., 2004). By implementing ERP systems, organisations can align the team and individual goals with corporate goals and strategies, standardise employee reviews and appraisals, tie compensation to performance, and support a performance-oriented compensation process.

2.1.1 Human resource information system

HRIS is an information system (IS) technology tool used to improve HR processes and enhance the human capital to support HR functions and managerial decisions within the organisation. Different activities from the HR Department like staffing, payroll, success planning, employee engagement, among other functions have been leveraged through technology. And the use of HRIS have become ideal for automation to do more strategic work (Bersin, 2017). HRIS does not only streamline HR operations, enhance quality decision, and make HR functions more strategic, but also motivates employees throughout the organisation towards relationship building and transparent communication (Bersin, 2017; Johnson et al., 2016; Wirtky et al., 2016).

HRIS, serves the purpose of integrated and cross-functional software, providing a seamless flow of information (Bhuiyan et al., 2014). HRIS, sometimes referred to as human resource management system (HRMS), evolved from a single function to an integrated package in 1980 while adapting to the ERP framework. So it was no longer complex record-keeping software but an involvement for better decision-making. Many pieces of research have established that HRIS leads to better organisational performance (Bal et al., 2022; Lippers and Swiercz, 2005; Troshani et al., 2011; Siengthai and Udomphol, 2016). The use of technology, specifically HRIS, streamlines all operational, middle management, and strategic functions, leading to better organisational performance.

HRIS minimises the workload and time spent in administrative work. Managers are provided with the information to make better decisions in the stipulated time (Chugh, 2014; Lengnick-Hall and Moritz, 2003). HRIS packages like PeopleSoft enhance the data management process, recruitment, training and development, and compensation decisions and lead to a better work-life balance (Tesi, 2010). According to Tesi (2010), HRIS is an integrated system which considers both technical and social aspects of organisational process. This software package supports storing organisational data and its analysis. The component of HRIS being hardware, application, people and the policies governing working process of the HR department.

2.1.1.1 HRIS-based planning and procurement

It is imperative to align HR strategy with the overall organisational strategy. It can be achieved through effective HR planning. HRIS supports effective, comprehensive HR planning due to its capacity to hold and process data regarding various skills required. Analysing workforce demand and supply becomes easy, quick and cost-effective through this IS. Automating the recruitment process helps the HR department invest more effort in strategising efficiently. The automation efficiently tracks the information and

credentials of the candidates and checks the fitment with the job openings and the skill set required (Shani and Tesone, 2010; Tao et al., 2006).

2.1.1.2 HRIS-based training

Knowledge acquisition and knowledge management are critical for modern-day organisations' continuous growth. For this, training and development needs to be designed and planned well. HRIS supports efficient ways to achieve high performance by providing ongoing learning opportunities. HRIS efficiently helps analyse training needs and subsequent designing for various training programs. Due to the seamless flow of information, execution and evaluation of the same are also possible. HRIS enhances the overall accomplishment of the training and development department (Nagendra and Deshpande, 2014; Nurhidayati and Zaenuri, 2023; Soumyaja and Sowmya, 2020).

Thus, it is evident that HRIS has a positive effect on an organisation's performance, and cloud-based HRIS is the new way of deploying an HR package. Cloud allows accessibility of data and applications anywhere; this enables work from home, thus creating a work-life balance (Bradley, 2019).

2.2 Technical, organisational, environmental framework

As a generic set of factors, the TOE framework predicts and describes the possibility of innovation or technology adoption. The framework proposes three enterprise perspectives: technology development, organisational conditions and their reconfiguration, and Industry environment. Some researchers describe technology adoption in terms of a firm's internal and external pool of technologies, their perceived usefulness, complexities and learning curve, technical and organisational compatibility, pilot test, and visibility. Whenever technology is incorporated in the business process it is associated with lot of transformation. This transformation is also termed as business reconfiguration, which involve reassessing and planning business scope, DC, organisational structure, human capital quality and other resources. HRIS usage supports holistic management of all these needs while taking care of the environment. The environmental context refers to the operational framework such as issues related to the socio-cultural environment, the readiness of business associates, government motivation and support, IT system and structure, and the overall level of competition, among others (Katebi et al., 2022).

The most crucial factor that pulls the attention to the practical implementation of the TOE framework and its construct is that it is more used in big organisations than in small and medium enterprises due to the issue of consistency and a minor error in applying this framework. However, the TOE framework is similar to the actor-network theory because it also gives importance to the interconnections and communications between the technical and social systems and strengthens competencies. Most adoption theories like TAM, TRA, TPB, etc. indicate that an organisation's structure and behaviour are governed by technology more appropriately than by people (Katebi et al., 2022; Qin et al., 2020).

An advanced TOE framework was proposed by Thong (1999), who added the decision-maker to the TOE framework, which is known as the D-T-O-E framework for emphasising appropriate decision making. TOE has been the only framework that highlights social and behavioural constructivism by identifying the relationship between

technology development while considering the environmental factors while aiming for overall organisational success. The key feature of D-T-O-E framework is that it includes both human and non-human players who may be able to determine more strongly techno-centric predictions. It removes the traditional assumptions compared to other frameworks such as TAM, TRA, TPB, etc. It is more focused on the unique decision-making process, underlining the factors as passion and growth determination of the top management, support from the senior and managerial level, their opinion and beliefs, and also their know-how about the system and skills of management (Bryan and Zuva, 2021).

TOE is a more practical and usable framework in the IS domain in business organisations and other platforms. Since it is a widely accepted construct, especially in the IS domain, it is being tested in adopting other technologies such as EDI, KM, e-business, e-commerce, e-procurement process, etc. Most researchers state that TOE is a broader and more usable construct in managing the adoption challenges and issues, decision-making process, and overall value chain, using the behavioural and technical framework (Ahmad et al., 2019; Handayani and Er, 2019).

2.2.1 TOE model and organisational sustainability through HRIS

The current digital era is witnessing the transformation of organisations through ICT. The use of technology does not only optimise the business processes or bring the overall cost but also leads to organisational sustainability. ICT-based processes are essential in achieving energy efficiency and generating less greenhouse effect. Thus, ICT usage leads to economic development and is environment-friendly.

HRIS is an essential aspect of the ICT strategy in an organisation. Since ICT deployment leads to sustainability, the same applies to HRIS implementation too. It has two-fold benefits of being environment-friendly and of leading to a sustainable HR process. HR departments and professionals also must play a role in creating policies and strategies leading to the sustainability of workforce and the organisation as a whole. HRIS supports tracking the career history of the employees and accordingly determines their skills and talents. It also helps in understanding the training needs and corresponding planning. An overall strategy can be formulated with the help of the dashboard information provided by the HRIS package (Samy et al., 2023).

One of the important ways to do this is digitisation of the HR process and functions. HRIS is an important type of ERP and an efficient way of implementing ICT in the organisation. A sustainable approach leads to the triple bottom line paradigm in organisations. Implementing HRIS enhances productivity, reduces the cost of the process, reduces waste, makes supply and demand planning better, brings transparency to the work, and increases overall organisational effectiveness. These benefits are achieved due to the following aspects of the HRIS package.

- HRIS reduces manual and paper-based working, which in turn leads to less physical storage space requirement.
- HRIS is a unique ERP for tracking and managing changes in an organisation and their corresponding reflection on the employees.
- HRIS helps in efficient workforce planning.

- HRIS provides better visibility of the HR initiatives within and outside the organisation.
- HRIS leads to a smooth coordination among various departments.

In the context of the current study, HRIS is an integrated system for providing real-time information related to HR functions and supports strategic decision making. Modern organisations strive for better performance and to be environmentally friendly. HRIS improves efficiency and productivity, streamlines processes, and reduces the cost of business processes. It provides real-time collaboration with all stakeholders too. An organisation is sustainable if it can have both economic and environmental sustainability. Using ERP-based HR functions reduces the cost overhead and provides a paperless working system. Using integrated packages saves energy and helps reduce the carbon footprint (Kavanagh et al., 2012). HRIS implementation reduces the over-allocation of resources and workload. The facility to share application instances between multiple functional areas also leads to energy conservation. All ERPs, including HRIS, use a centralised database and an efficient data centre.

The new version of HRIS is cloud-based, which is a highly sustainable technology solution (Bradley, 2019). These factors lead to environmental sustainability. Workforce sustainability is also an outcome of digital transformation, as the workforce becomes highly engaged and clear about the various processes within the organisation. Using cloud-based packages facilitates the work-from-home option too, hence the workforce has flexibility in setting a better work-life balance. It also adds to social sustainability. An employee working in an organisation, which promote DC and good work life balance is sustainable (Oruh, 2013). Use of HRIS help in achieving this by giving flexibility and less paper work for the employees. The sustainability discussed above has a major emphasis on technology.

Cloud-based HRIS leads to sustainability, saving technology infrastructure, providing 24 × 7 availability of information. Regarding the triple bottom line approach, all the three P's, profit, people, and the planet, must be emphasised. A practical software project management approach also helps achieve sustainable HRIS implementation (Mohanty and Tripathy, 2009). HRIS, like PeopleSoft, enables sustainability throughout the tenure of an employee. The time management of daily attendance, meetings, task scheduling, tracking, planning, and goal setting makes the whole process seamless and paperless through better data management, reporting facilities and support in decision making.

HRIS not only increase productivity, quality of the service, reduces the cost of operation, supports decision making but also leads to a sustainable way of working. The lower energy consumption and reduced waste thus contributing to environmental friendliness. Effective management of data and working with paperless approach HRIS is in line with the important factor for achieving sustainability as per the TOE model. As TOE model focuses on reduce, recycle and reuse (Ioannidis et al., 2021).

H1 HRIS-based planning and procurement leads to organisational sustainability.

H2 HRIS-based training leads to organisational sustainability.

2.3 DC and implementation of HRIS

Digitisation is a must for organisational survival in current digital age, and organisational culture plays a vital role in this. The attributes like a response to transformation and the ratio of change are based on the internal and external factors that are enforced on the organisation (Cummings and Worley, 2023). According to Melitski et al. (2011), the choice and expansion of technology profoundly depend on organisational culture. Selecting the appropriate technology or upgrading to a new one is only one dimension of organisational success; keeping the employees (who are the users) in tandem is also crucial. The attitude of the employees and the understanding of the organisation's larger vision affect the adaptability to the new technological ways (Bradley, 2019). Many researchers talk about the problems related to the successful implementation of ERP, specifically HRIS, but only a few studies cover the behavioural aspect of technology implementation. However, some researchers have mentioned that organisational culture plays an essential role when adopting new technology (Agarwal and Karahanna, 2000; Thompson, 2023). The organisation's culture should create a positive environment embracing technology-based business operators.

Technology has become a matter of survival rather than provide a competitive edge in today's world. As per Panorama's 2018 Report, 81% of the organisations in the world have either adopted or are adopting ERP software. This reflects the extent of digitisation. Hence, it is vital for organisational success that a culture of digital comfort is created. It is essential to imbibe a day-to-day digital process and provide an engaging experience while training for digital upgradation.

Customisable ERP/HRIS packages are available but at a huge cost of customisation. Off the shelf, ERP packages most often require process updating and much training before the package could be implemented. It is the responsibility of the leader of the organisation to create a technology-savvy culture in the organisation and support employees in managing their resistance to changes caused by the new technology (Battilana and Casciaro, 2013). Therefore, a culture of digital empowerment should be created at all levels of the organisation to implement and adopt HRIS successfully.

H3 DC has a direct and significant effect on organisational sustainability.

H4 DC acts as a mediating variable while achieving sustainability through implementing HRIS-based training.

2.4 Gap in the existing work

The current paper explores the relationship between HRIS and organisation sustainability. Further, it tries to establish the mediating role of organisational culture in the relationship between HRIS and organisation sustainability. It is evident from the literature review above that most of the work related to software implementation is done on ERP in general while significantly less work is done specifically on HRIS. Also, most researchers study the implementation part of ERP. Now the challenge is to aim for organisational sustainability which involves both workforce sustainability and environmental friendliness. It is further required to understand the role of DC organisational sustainability. The study of mediating effects of culture is also unique to the current study.

3 Research methodology

The study is empirical and uses cross-sectional approach for the primary data collected through a survey questionnaire sent to employees using HRIS in Delhi-NCR.

3.1 Measures

Scale items for the study are adopted from previous literature and Cronbach's alpha is calculated to check the reliability of measurement instruments (Gibson et al., 2014; Escobar-Rodríguez and Bartual-Sopena, 2015; Nagendra and Deshpande, 2014; Tao et al., 2006; Shani and Tesone, 2010). In addition, we also conducted interviews with respondents to obtain information about HRIS solutions and about support in their organisation to implement the same.

3.2 Description of the constructs

The proposed model is based on achieving organisational sustainability (DV) through the use of HRIS (IV). HRIS is further implemented as HRIS-based planning and procurement and HRIS-based training. The model also explores the mediating role of DC (ME) in achieving organisational sustainability through the use of HRIS.

Organisational Sustainability constructs (ORST) is the dependent variable. The DV construct has been adapted from Gibson et al. (2014). The organisational sustainability achieved through implementation of HRIS is measured through these three items measured through Likert scale.

1 Reduce over-allocating of infrastructure.

2 Share application instances between multiple organisations.

3 Operate server infrastructure at higher utilisation.

DC construct is the mediating variable. This construct has been adapted from the study of Escobar-Rodríguez and Bartual-Sopena (2015), measured on Likert-type scale through following three items:

4 Using HRIS is compatible with aspects of my work.

5 Using HRIS improves my job performance.

6 Using HRIS allows me to accomplish more work than would otherwise be possible.

HRIS is the Independent variable. It consists of two factors:

a HRIS-based planning and procurement (HRPP) is based on the study of Nagendra and Deshpande (2014), with the following three items measured on Likert-type scale:

   7 HRIS constantly analyses and matches the demand for HRs.

   8 HRIS forecasts the supply of HRs.

   9 HRIS estimates future HRs requirements of the organisation.

b HRIS-based training (HRBT) is based on the study of Tao et al. (2006) and Shani and Tesone (2010), measured on Likert scale with the following four items:

10 HRIS facilitate the use of competency-based training needs assessment in your organisation.

11 HRIS simplifies the assessment process for employee training and development.

12 HRIS helps save time in planning employee training.

13 Web-based training allows for quick, easy, and less expensive updating of training materials.

4 Data analysis and findings

4.1 Data collection and sampling

The primary data were collected using the convenient sampling method through a survey questionnaire sent to employees using HRIS in Delhi-NCR. Approximately 1,100 employees were contacted and 900 consented to be a part of the study. The respondents were briefed before the questionnaire was administered. Of these 900, 675 respondents responded and due to incomplete responses and errors in the questionnaire, 105 questionnaires were discarded. The population of the study includes the HR employees of all the companies working in Delhi NCR region. Delhi being the capital city of the country is the house of numerous industries including several corporate headquarters. These companies attract talent in the form of employees from different part of the country. Therefore, giving the researchers a good representation of Indian employees for the study. Thus, the response rate was about 75%. Krejcie and Morgan (1970) have suggested the required sample size for a study like ours was around 400. We collected valid responses from 570 respondents.

The reason for using the convenient sampling method is that no authentic list of employees using HRIS in India is available (Manrai et al., 2021). The respondents, consisting consisted of about 66% male and 33% female employees working in various organisations in the Delhi-NCR region. Table 1 shows the demographic profile of the respondents.

4.2 Data analysis

The data were analysed using five steps.

For a better understanding of the respondents, the sample geographic area, i.e., Delhi NCR was divided into 11 strategic zones. All these zones are having clusters of companies having mid-level to large level public undertaking companies' as well private limited firms. All these companies have a separate HR/talent acquisition department. The employees' working in these departments varies from 5 to 50 depending upon the size of the company. These employees are our respondents. The stratification was done in the following manner.

Table 1 Respondents profile

		Frequency	*Percent*	*Cumulative percent*
Gender	Male	380	66.7	66.7
	Female	190	33.3	100
Age	Between 20 and 30	344	60.35	60.35
	Between 30 and 40	131	22.98	83.33
	Above 40	95	16.66	100
Educational qualification	UG	318	55.8	55.8
	PG	252	44.2	100
Sector	Private	416	73	73
	Public	154	27	100

Table 2 Geographical profile

S. no.	*Stratified zone*	*Questionnaire administered*	*Response received*
1	North Delhi	100	88
2	South Delhi	100	81
3	East Delhi	100	83
4	West Delhi	100	86
5	Central Delhi	100	88
6	Noida	100	86
7	Gurgaon	100	87
8	Ghaziabad	100	78
9	Faridabad	100	81
10	Ballabhgarh	100	82
11	Bahadurgarh	100	60
Total		1,100	900

Figure 1 Location-wise respondents (see online version for colours)

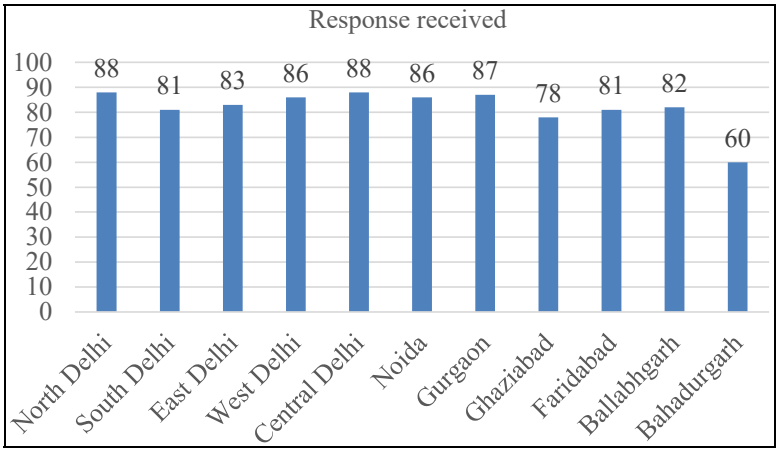

Table 1 describes the demographics where the focus is on gender, age, educational qualification and sector. Apart from this the city wise distribution for the Delhi-NCR is shown in Table 2. Figure 1 shows the total number of respondents from Delhi-NCR. This demographic supports a wide variety of respondents contributing to the better inferences.

Descriptive statistics were applied for inspection and preparation of the data. Missing values, outliers, skewness, kurtosis, and collinearity also were checked at this stage. Common method bias was tested in the second stage using Harman's (1976) single factor test. Confirmatory factor analysis (CFA) was done in the third stage to examine the fit, reliability, and validity of the model (Hair et al., 2010; Hu and Bentler, 1999). In the fourth phase, model relationships were tested using structural equation modelling (SEM) using AMOS 23 software. Finally, in the fifth phase, we assessed mediation. The subsamples were bootstrapped at 5000 and 95% bias-corrected confidence intervals (BCs) to rule out any bias in the bootstrap estimations (MacKinnon et al., 2004). The measurement and structural models were tested per the cut-off values provided by Bollen (1989) and Hu and Bentler (1999).

5 Results

5.1 Normality

Normality was assessed by skewness and kurtosis as they were normally distributed between –2 and +2 (Tabachnick and Fidell, 2007) as stated in Table 2. All values of skewness and kurtosis were computed with SPSS.

Table 3 Normality

	Mean	*SD*	*Skewness*	*Kurtosis*
HRBT1	3.670	1.2136	–0.667	–0.505
HRBT2	3.700	1.2090	–0.660	–0.495
HRBT3	3.737	1.2154	–0.723	–0.462
HRBT4	3.809	1.1421	–0.764	–0.237
HRPP1	3.993	1.1542	–1.060	0.239
HRPP2	3.916	1.2121	–0.973	–0.029
HRPP3	3.916	1.1572	–0.996	0.200
ORST1	3.614	1.1163	–0.604	–0.298
ORST2	3.712	1.1759	–0.650	–0.440
ORST3	3.802	1.0477	–0.719	0.037
ORC1	3.400	1.1744	–0.327	–0.663
ORC2	3.533	1.1707	–0.512	–0.467
ORC3	3.609	1.1661	–0.548	–0.421
Valid N (listwise)	570			

Table 3 clearly indicate that the data fulfils the prerequisites of regression and is within range of skewness and kurtosis. The further explanation is covered under Subsections 5.2 and 5.3.

5.2 Common method bias

The reliability and validity of the construct may have biases, and the relationship estimation among the variables can be skewed due to the impact of common method bias (Podsakoff, 2003). We took enough care during the data collection process to avoid biases and applied Harman's single factor, which was found to be less than 40% (Harman, 1976), indicating that the analysis satisfied the requirement to conduct the CFA and SEM (Hair et al., 2010) and the dataset was free from any serious issue of common method bias.

5.3 Reliability and validity

Results of the reliability and validity tests are presented in Table 4 using CFA and Cronbach alpha, which indicated that all factors loaded adequately on the related constructs with construct-wise average factor loading exceeding the threshold value of 0.7 (Byrne, 2010). All individual item loadings were more than 0.5 (Hair et al., 2010). The reliability of the construct items was evaluated using Cronbach's coefficient alpha, which for all the constructs ranged from 0.74 to 0.88. The reliability exceeded the conventional recommended cut-off of 0.70 (Nunnally, 1978).

Table 4 CFA: items, standardised loading and reliability

Constructs	*Scale items*	*Standardised loadings*	*Cronbach's alpha*
HRBT	HRBT4	0.738	0.887
	HRBT3	0.864	
	HRBT2	0.851	
	HRBT1	0.803	
HRPP	HRPP3	0.781	*0.853*
	HRPP2	0.819	
	HRPP1	0.839	
ORC	ORC3	0.784	*0.743*
	ORC2	0.755	
	ORC1	0.570	
ORST	ORST3	0.651	*0.758*
	ORST2	0.736	
	ORST1	0.771	

Notes: n = 570; all items were measured on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5); all standardised factor loadings were significant ($p < 0.001$).

The two most widely accepted forms of validity were tested on the data: convergent validity and discriminant validity (Hair et al., 2010). As seen in Table 4, all four factors had excellent convergent validity as the Cronbach's alpha >0.7 (Table 4), composite reliability ranged from 0.74 to 0.88, and AVE values of all constructs ranged from 0.503 to 0.665, which are above the cut-off value of 0.50 as recommended by Hair et al. (2010). Discriminant validity was assessed by comparing the squared correlation of paired constructs with the AVEs of each construct (Fornell and Larcker, 1981). If the AVEs are

more significant than the squared correlation, the construct demonstrates discriminant validity, sharing more variance with its measures than with other constructs (Fornell and Larcker, 1981; Hair et al., 2010). As seen from the Table 4, all constructs have the square root of AVE higher than their inter-correlation estimates with other corresponding constructs, which indicates that the constructs illustrate excellent discriminant validity.

Table 5 Reliability and validity table

Construct	*CR*	*AVE*	*MSV*	*MaxR (H)*	*HRBT*	*HRPP*	*ORC*	*ORST*
HRBT	0.888	0.665	0.323	0.896	*0.815*			
HRPP	0.854	0.661	0.323	0.857	0.569***	*0.813*		
ORC	0.749	0.503	0.290	0.773	0.512***	0.357***	*0.710*	
ORST	0.764	0.520	0.290	0.772	0.260***	0.402***	0.539***	*0.721*

Notes: CR, composite reliability coefficients; AVE, average variance extracted;
MSV, maximum shared variance; significance of correlations: ***p < 0.001.

Table 5 represents the result of reliability and validity of the constructs. All the dimensions HRBT, HRPP, ORC and ORST have the CR value greater than 0.7 hence the results are good.

5.4 Model fit

Results from the measurement model were used to test the model fit. The results indicated an excellent fit [CMIN = 134.467; degree of freedom (DF) = 59; CMIN/DF = 2.279; root mean square residual (RMR) = 0.055; goodness of fit (GFI) = 0.964; comparative fit index (CFI) = 0.977; Tucker-Lewis index (TLI) = 0.970; root mean square of error approximation (RMSEA) = 0.047; and standardised root mean square residual (SRMR) = 0.0471]. A look at the standardised residuals reveal that all values are smaller than 2.58 and, therefore, indicate that no modification is warranted in the adopted scale based on the assessment of the standardised residuals (Hair et al., 2010; Tabachnick et al., 2013; Hu and Bentler, 1999).

5.5 Hypothesis testing: structural equation modelling

The measurement model showed that the constructs were related to each other with visibly acceptable convergent validity, discriminant validity, and reliability levels. Thus, a structural model showing the hypothesised relationships between the latent constructs and the paths between the latent variables and their associated observed variables was examined, and relationships between the independent and dependent variables were modelled. The results related to the goodness of fit evaluation indicated an excellent fit for the structural model. The proposed framework was found to show an excellent fit for data. The structural model's GFI, CFI, and TLI values were above 0.95 (Bagozzi and Yi, 1988), and the RMSEA value was less than 0.08 (Tabachnick et al., 2013).

Figure 2 is the SEM model generated for the proposed hypothesis. The diagram shows the relationship between the independent variables HRBT and HRPP and the dependent variable ORST. The mediating effect of ORC is also reflected.

Figure 2 Proposed SEM model showing the relationship among four constructs; HRBT, HRPP, ORST and ORC (see online version for colours)

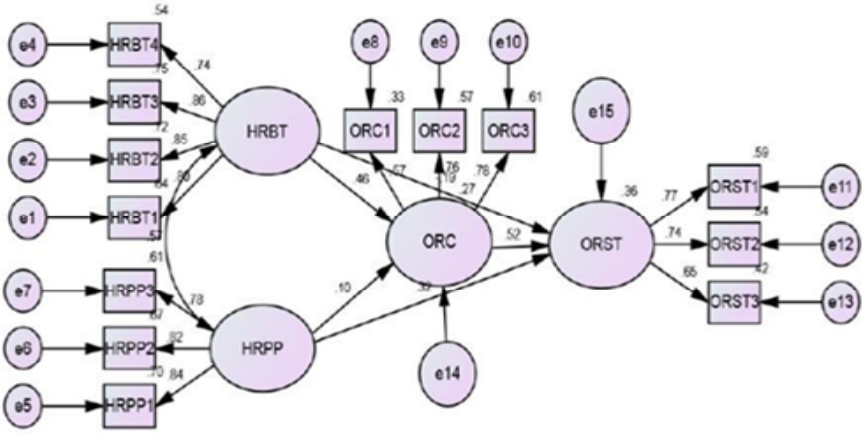

Figure 3 A path diagram of structural equation model showing the relationship among four constructs

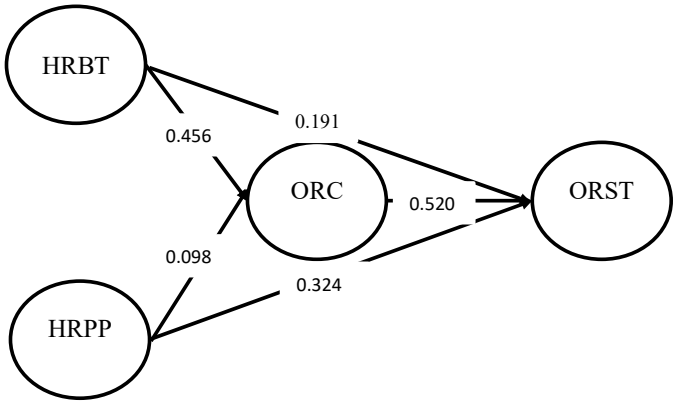

Figure 3 is a path diagram of structural equation model showing the relationship between the independent variables HRBT and HRPP and the dependent variable ORST. The mediating effect of ORC is also reflected.

Table 6 Path coefficients and its significance

			Estimate	*SE*	*CR*	*P*	*Label*
ORC	←	HRBT	0.313	0.046	6.780	***	par_11
ORC	←	HRPP	0.068	0.042	1.636	0.102	par_12
ORST	←	ORC	0.669	0.092	7.248	***	par_13
ORST	←	HRPP	0.288	0.055	5.288	***	par_14
ORST	←	HRBT	0.169	0.059	2.877	0.004	par_15

As seen in Table 6, ORST is well predicted by HRBT ($b = 0.191$; $p < 0.005$) Path coefficient analysis demonstrates the different significant relationships. HRBT affect

ORC significantly (b = 0.456; p < 0.001) followed by ORC with ORST (b = 0.520; p < 0.001), HRPP with ORST (b = 0.324; p < 0.001) and HRBT with ORST (b = 0.191; p < 0.004). On observing the value carefully, out of all the relationships with ORST, it is found that ORC to ORST has the maximum magnitude of influence.

The R^2 value of ORST observed through ORC indicates that the considered factors HRBT and HRPP explain the 30.4% variance of ORC while all the factors together explain the 49.5% variance of ORST.

5.6 Mediation effect

Table 7 shows that HRBT has an indirect effect through ORC with p = 0.001 and total effect = 0.428. At the same time, ORC is not mediating HRPP and ORST with p = 0.159.

Table 7 Direct and indirect effect

Relationship			*Direct effect*	*Indirect effect*	*Total effect*
ORC	←	HRBT	0.456 (p = 0.001)		0.456
ORC	←	HRPP	0.098 (p = 0.100)		0.098
ORST	←	ORC	0.520 (p = 0.001)		0.520
ORST	←	HRPP	0.324 (p = 0.001)	0.051 (p = 0.159)	0.376
ORST	←	HRBT	0.191 (p = 0.004)	0.237 (p = 0.001)	0.428

Table 8 Acceptance of hypothesis

Hypothesis no.	*Statement*	*Accepted/ rejected*
H1	HRIS-based planning and procurement leads to organisational sustainability	Accepted
H2	HRIS-based training leads to organisational sustainability	Accepted
H3	Digital culture has direct and significant effect on organisational sustainability	Accepted
H4	HRIS-based and training have direct and significant effect on culture	Accepted
H5	HRIS-based planning and procurement has direct and significant effect on culture	Rejected

Table 8 shows that HRIS-based planning and procurement, training, and organisational culture directly affect organisational sustainability. However, only HRIS-based training is mediated through organisational culture.

The results indicate that HRIS is one of the vital ISs within an organisation. HRIS, as described in the current paper, consists of two dimensions: HR planning and procurement and HR development. First four hypotheses are accepted and the fifth hypothesis got rejected.

HRIS supports storage and analysis of the data from predicting the organisation's workforce needs to aligning the employee performance to the organisational performance. An organisation's culture in digitisation and adaptability plays a vital role in creating a sustainable workforce and a sustainable organisation (Kalwala and Sekhar, 2019; Abeh et al., 2021).

The results reflect that both planning and procurement and development significantly impact sustainability. However, culture only mediates development and sustainability relationships. The results obtained are further supported by Shani and Tesone (2010) who specified in their study that having a recruitment module in an HRIS does have a disadvantage in that online recruitment only provides a pool of active job seekers. At the same time, often, the best candidates are passive. Poorly designed websites could also damage an organisation's image and result in the loss of desirable candidates.

HR planning and procurement and HR development are the two components of HRIS that the study uses to deliver useful insights. It demonstrates that both of these factors have a substantial impact on sustainability and that HRIS should include a holistic strategy, including personnel planning and development, to help an organisation become more sustainable (Abeh et al., 2021).

Cable and Judge (1996) believe that organisational fit is increasingly significant, not the culture fit. Due to increasing complexity, change, and employee demands, information about organisational fit can help organisations make better hiring decisions (Adeniji et al., 2019). The importance of recruiting for culture fit cannot be overemphasised because poor culture fit decisions support its impact on making good recruitment decisions.

Adeniji et al. (2019) theorised that organisational culture has no significant influence on an organisation's recruitment and selection activity, however, organisational culture's training and development programs are directly affected. Organisational culture shapes individual performance and has a direct relationship with training and development (Kozlowski and Klein, 2000; Carr et al., 2003). Training and development demonstrate a commitment to keeping employees on the cutting edge of knowledge and practice. Creativity and innovation also trigger the performance of employees and are facilitated by the organisational culture that training and development programs provide (Tushman and O'Reilly, 2002).

The study emphasises how crucial it is to consider cultural fit when hiring, particularly in the midst of organisational complexity and change. It demonstrates how matching new workers with the existing culture can result in better hiring decisions and contradicts the idea of relying exclusively on organisational fit. This discovery has ramifications for hiring and selection procedures on a practical level (Abeh et al., 2021).

The findings of the empirical result show the use of HRIS in the organisation leads to the organisational sustainability. Within implementation of HRIS the planning and procurement along with the training for the same is vital. The DC is vital for transitioning from manual to technology-based HR working. However, the HRIS planning and procurement does not show significant relation with the DC as it is automatically taken care of while the training happens to transition from manual to automation.

6 Conclusions and theoretical contribution

Automation and sustainability have become complimentary in the current digital era. Digitisation of business processes specifically use of HRIS not only eliminates inconvenience of manual work, analysis and reporting, but also leads to green output. Organisational sustainability is achieved through paperless work, energy conservation and seamless availability of data to strategies well for sustainable outcome. The results of the study establish the importance of automation and use of HRIS resulting in

sustainability. The effect of planning and procurement along with training is positive on the organisational study. Also, technology culture leads to organisational sustainability. It is clear that planning and procurement through HRIS does not lead to development of technology culture. But training leads to the development of technology culture. This indicates that it is very important to implement HRIS in the organisation and impart appropriate training. It is also vital to maintain the data of these trainings through HRIS along with mapping the process of training on it. The implementation of training through HRIS leads to effective implementation and development of technology culture finally leading to organisational sustainability organisational sustainability is the need of the hour and a very important aspect is workforce sustainability. In the digital era the use of technology is part of organisational strategy and supports both environmental and workforce friendliness. HRIS is an important part of organisational process in the digital business world. This software helps in connecting employees and the workflow optimising the operational activities. Further it supports in achieving compliance and long-term strategy formulation. However, at the individual and organisational levels, there is a tendency of resistance to change. A culture of digital empowerment therefore becomes essential at all levels of the organisation to successfully implement and adopt HRIS. HRIS improves efficiency and productivity, streamlines processes and reduces the cost of business processes. It facilitates real-time collaboration with all stakeholders too. An organisation is sustainable if it can have both economic and environmental sustainability. ERP-based HR functions reduce the cost overhead and provide a paperless working system. Using integrated packages saves energy and helps reduce the carbon footprint (Kavanagh et al., 2012; Oruh, 2013). Using HRIS with a supporting DC thus leads to a sustainable organisation established by the current study.

The current study is unique in providing the model which is based on the TOE approach. The understanding of resistance to change and adapting to new technology even in the current digital era is also highlighted in the study both through literature evidence and corresponding empirical support by establishing DC as the mediating variable in the study. The study acknowledges the importance of a DC while moving from manual HR operations to technology-based HR working. To ensure a smooth transition, it is suggested that businesses should foster a DC in addition to implementing HRIS. This discovery is especially pertinent given the current technology landscape's rapid pace. This work provides a holistic approach of combining workforce and technological sustainability.

7 Managerial implications and limitations

Technology has become the driving force behind the business, and most organisations are transforming the way they conduct business through technology implementations. HRIS has become an inevitable aspect of the HR vertical in most organisations. The portal-based HR minimises the administrative tasks of the HR department on the one hand and provides a dynamic information platform, making all these tasks run smooth and consume less time.

Many concerns relate to the organisation's culture while implementing a new technology or upgrading the existing one (Singh and Atwal, 2019). Investing in a new technology is a one-time decision and expenditure, but successfully enabling a constant

thought process of adaptation to technology and better management of resistance to change is required. Leaders and managers must build a culture of digital working so that adaptation to new technology is smooth and results in better organisational performance.

India is developing its digitisation process; however, some organisations cannot leverage the power of ICT. The HR department most of the organisations is small and still performs many operations and tasks either manually or uses less advanced technology tools. It is predicted that by 2025 India's GDP will have a 10% contribution from the IT Industry. The IT industry thus plays a vital role in the country's sustainable development. With this perspective, and considering the strategic importance of HR, it is imperative to do this kind of research work in the Indian context. It is also essential to understand whether the current use of HRIS is just for basic tasks or for strategic aspects. The study emphasises how important HRIS is as a crucial IS for businesses. It proves that HRIS is a vital component of organisational sustainability and not just a tool for administrative activities. This conclusion highlights the strategic value of HRIS in assisting businesses in long-term success by effectively managing their staff.

The study will help the digital policymaker in an organisation. Organisational culture is one of the critical aspects in successfully adopting or enhancing new technology tools. Apart from promoting a DC in the organisation, companies can utilise the TOE framework to smoothly adopt new technology and be environment-friendly in their technology approach.

The study is limited to the regions of Delhi and NCR. The geography could therefore be extended in future. Also, different sectors can be studied based on their digitisation level.

References

Abeh, A., Talib, N.A. and Mohammed, S. (2021) 'Knowledge management processes and organisational performance: a systematic review', *International Journal of Knowledge Management Studies*, Vol. 12, No. 4, pp.352–374.

Adeniji, A., Osibanjo, O., Salau, O.P., Falola, H.O., Igbinoba, E., Ohunakin, F. and Ogueyungbo, O. (2019) 'Competence model for measuring career development and organisational growth in the health sector', *Business: Theory and Practice*, Vol. 20, No. 1, pp.248–258.

Agarwal, R. and Karahanna, E. (2000) 'Time flies when you're having fun: cognitive absorption and beliefs about information technology usage', *MIS Quarterly*, Vol. 24, No. 4, pp.665–694.

Aggarwal, V., Dash, S., Yadav, P.D. and Gupta, A.K. (2022) 'Role of ICT enabled cloud learning management system tools in fostering entrepreneurship amongst youth', *2nd International Conference on Innovative Practices in Technology and Management (ICIPTM)*, pp.508–515, https://doi.org/10.1109/ICIPTM54933.2022.9754158.

Ahmad, S.Z., Abu Bakar, A.R. and Ahmad, N. (2019) 'Social media adoption and its impact on firm performance: the case of the UAE', *International Journal of Entrepreneurial Behavior and Research*, Vol. 25, No. 1, pp.84–111, https://doi.org/10.1108/IJEBR-08-2017-0299.

Al Shehri, M., McLaughlin, P., Al-Ashaab, A. and Hamad, R. (2017) 'The impact of organisational culture on employee engagement in Saudi banks', *Journal of Human Resources Management Research*, pp.1–23, DOI: 10.5171/2017.761672.

Ali Quaosar, G. and Rahman, M. (2021) 'Human resource information systems (HRIS) of developing countries in 21st century: review and prospects', *Journal of Human Resource and Sustainability Studies*, Vol. 9, pp.470–483, DOI: 10.4236/jhrss.2021.93030.

Bagozzi, R.P. and Yi, Y. (1988) 'On the evaluation of structural equation models', *Journal of the Academy of Marketing Science*, Vol. 16, No. 1, pp.74–94, https://doi.org/10.1007/BF02723327.

Bal, Y., Bozkurt, S. and Ertemsir, E. (2022) 'The importance of using human resources information systems (HRIS) and a research on determining the success of HRIS', in *Strategic Human Resource Management at Tertiary Level*, pp.197–209, River Publishers, New York.

Battilana, J. and Casciaro, T. (2013) 'Overcoming resistance to organisational change: strong ties and affective cooptation', *Management Science*, Vol. 59, No. 4, pp.819–836.

Bersin, J. (2017) *HR Technology Disruptions for 2017: Nine Trends Reinventing the HR Software Market* [online] https://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/central-europe/ce-global-human-capital-trends.pdf (accessed 10 April 2023).

Bersin, J. and Chamorro-Premuzic, T. (2019) 'New ways to gauge talent and potential', *MIT Sloan Management Review*, Vol. 60, No. 2, pp.1–4.

Bhuiyan, F., Chowdhury, M.M. and Ferdous, F. (2014) 'Historical evolution of human resource information system (HRIS): an interface between HR and computer technology', *Human Resource Management Research*, Vol. 4, No. 4, pp.75–80, DOI: 10.5923/j.hrmr.20140404.01.

Bollen, K.A. (1989) 'A new incremental fit index for general structural equation models', *Sociological Methods and Research*, Vol. 17, No. 3, pp.303–316, https://doi.org/10.1177/0049124189017003004.

Bradley, S. (2019) 'An exploratory study of the role of the human resource information system professional', *Athens Journal of Technology & Engineering*, Vol. 6, No. 1, pp.63–76, DOI: 10.30958/ajte.6-1-4.

Bryan, J.D. and Zuva, T. (2021) 'A review on TAM and TOE framework progression and how these models integrate', *Advances in Science, Technology and Engineering Systems Journal*, Vol. 6, pp.137–145, https://doi.org/10.25046/aj060316.

Byrne, B.M. (2010) *Structural Equation Modeling with AMOS: Basic Concepts, Applications, and Programming (Multivariate Applications Series)*, Routledge, Taylor & Francis Group, New York.

Cable, D.M. and Judge, T.A. (1996) 'Person-organisation fit, job choice decision and organisation entry', *Organisational Behavior and Human Decision Processes*, Vol. 67, No. 3, pp.294–311, https://doi.org/10.1006/obhd.1996.0081.

Carr, J.Z., Schmidt, A.M., Ford, J.K. and DeShon, R.P. (2003) 'Climate perceptions matter: a meta-analytic path analysis relating molar climate, cognitive and affective states, and individual level work outcomes', *Journal of Applied Psychology*, Vol. 88, No. 4, pp.605–619.

Chugh, R. (2014) 'Role of human resource information systems in an educational organisation', *Journal of Advanced Management Science*, Vol. 2, No. 2, pp.149–153.

Cummings, T.G. and Worley, C.G. (2023) 'Applying management and organization theory to organization change: more than meets the eye', in Noumair, D.A., (Rami) Shani, A.B. and Zandee, D.P. (Eds.): *Research in Organizational Change and Development (Research in Organizational Change and Development*), Vol. 30, pp.129–154, Emerald Publishing Limited, Leeds, https://doi.org/10.1108/S0897-301620220000030007.

Deloitte (2017) *Digital HR: Platforms, People, and Work 2017 Global Human Capital Trends* [online] https://www2.deloitte.com/us/en/insights/focus/human-capital-trends/2017/digital-transformation-in-hr.html (accessed 30 November 2021).

Escobar-Rodríguez, T. and Bartual-Sopena, L. (2015) 'Impact of cultural factors on attitude toward using ERP systems in public hospitals', *Revista de Contabilidad*, Vol. 18, No. 2, pp.127–137, https://doi.org/10.1016/j.rcsar.2014.04.002.

Felin, T. and Powell, T.C. (2016) 'Designing organisations for dynamic capabilities', *California Management Review*, Vol. 58, No. 4, pp.78–96, DOI: 10.1525/cmr.2016.58.4.78.

Forbes (2017) *The Millennial Expectation of Technology in the Workplace* [online] https://www.forbes.com/sites/paycom/2017/03/08/the-millennial-expectation-of-technology-in-the-workplace/?sh=1a90741a4a50 (accessed 4 May 2023).

Fornell, C. and Larcker, D.F. (1981) 'Evaluating structural equation models with unobservable variables and measurement error', *Journal of Marketing Research*, Vol. 18, No. 1, pp.39–50, https://doi.org/10.1177/002224378101800104.

Gibson, H., Andrews, S., Domdouzis, K., Hirsch, L. and Akhgar, B. (2014) 'Combining big social media data and FCA for crisis response', in *7th International Conference on Utility and Cloud Computing*, Institute of Electrical and Electronics Engineers, pp.690–695.

Grabski, S.V., Leech, S.A. and Schmidt, P.J. (2011) 'A review of ERP research: a future agenda for accounting information systems', *Journal of Information Systems*, Vol. 25, No. 1, pp.37–78.

Grand View Research Report (2018) *HR Software Market Analysis, Market Size, Application Analysis, Regional Outlook, Competitive Strategies, and Segment Forecasts, 2015 to 2022* [online] https://www.grandviewresearch.com/industry-analysis/hr-software-market (accessed 30 November 2021).

Hair, J.F., Anderson, R.E., Babin, B.J. and Black, W.C. (2010) *Multivariate Data Analysis: A Global Perspective*, 7th ed., Pearson, New York.

Handayani, S. and Er, M. (2019) 'Antecedent and business process management non-technical capabilities in social media implementation for micro, small and medium enterprises: a conceptual model', *Procedia Computer Science*, Vol. 161, pp.1114–1121.

Harman, H.H. (1976) *Modern Factor Analysis*, 3rd ed., University of Chicago Press, Chicago.

Haroun, M.H., Gohar, N. and Hanna, H.A. (2020) 'TOE model: adoption of block chain', *The Business & Management Review*, Vol. 11, No. 1, pp.179–185.

Hu, L. and Bentler, P.M. (1999) 'Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives', *Structural Equation Modeling: A Multidisciplinary Journal*, Vol. 6, No. 1, pp.1–55, https://doi.org/10.1080/10705519909540118.

Ioannidis, A., Chalvatzis, K., Leonidou, L. and Feng, Z. (2021) 'Applying the reduce, reuse, and recycle principle in the hospitality sector: its antecedents and performance implications', *Business Strategy and the Environment*, Vol. 30, DOI: 10.1002/bse.2809.

Iqbal, A. and Asrar-ul-Haq, M. (2019) 'Change readiness and knowledge sharing in organisational setting: evidence from software houses', *International Journal of Knowledge Management Studies*, Vol. 10, No. 3, pp.251–270.

Islam, I. (2018) 'Automation and the future of employment: implications for India', *South Asian Journal of Human Resources Management*, Vol. 5, No. 2, pp.234–243, DOI: 10.1177/2322093718802972.

Johnson, R.D., Lukaszewski, K.M. and Stone, D.L. (2016) 'The evolution of the field of human resource information systems: co-evolution of technology and HR processes', *Communications of the Association for Information Systems*, Vol. 38, pp.533–553, https://doi.org/10.17705/1CAIS.03828.

Kalwala, S. and Sekhar, G.C. (2019) 'Effectiveness of human resource information system: a review of literature', *International Journal of Scientific Research and Review*, Vol. 7, No. 4, pp.885–896.

Katebi, A., Homami, P. and Najmeddin, M. (2022) 'Acceptance model of precast concrete components in building construction based on technology acceptance model (TAM) and technology, organization, and environment (TOE) framework', *Journal of Building Engineering*, Vol. 45, Article ID: 103518, https://doi.org/10.1016/j.jobe.2021.103518.

Kavanagh, M.J., Thite, M. and Johnson, R.D. (2012) *Human Resource Information Systems: Basic, Applications and Future Direction*, 2nd ed., State University of New York Press, New York.

Kozlowski, S.W. and Klein, K.J. (2000) 'A multilevel approach to theory and research in organisations: contextual, temporal and emergent processes', in Klein, K.J. and Kozlowski, S.W. (Eds.): *A Multilevel Theory, Research and Methods in Organisations*, pp.7–93, Jossey-Bass, San Francisco.

Krejcie, R.V. and Morgan, D.W. (1970) 'Determining sample size for research activities', *Educational and Psychological Measurement*, Vol. 30, No. 3, pp.607–610.

Kwahk, K.Y. and Lee, J.N. (2008) 'The role of readiness for change in ERP implementation theoretical bases and empirical validation', *Information and Management*, Vol. 45, No. 7, pp.474–481.

Lengnick-Hall, M.L. and Moritz, S. (2003) 'The impact of e-HR on the human resource management function', *Journal of Labor Research*, Vol. 24, No. 3, pp.365–379.

Lippers, S.K. and Swiercz, P.M. (2005) 'Human resource information systems (HRIS) & technology trust', *Journal of Information Science*, Vol. 31, No. 5, pp.340–353, DOI: 10.1177/0165551505055399.

MacKinnon, D.P., Lockwood, C.M. and Williams, J. (2004) 'Confidence limits for the indirect effect: distribution of the product and resampling methods', *Multivariate Behavioral Research*, Vol. 39, No. 1, p.99.

Manrai, R., Goel, U. and Yadav, P.D. (2021) 'Factors affecting adoption of digital payments by semi-rural Indian women: extension of UTAUT-2 with self-determination theory and perceived credibility', *Aslib Journal of Information Management*, Vol. 73, No. 6, pp.814–838, https://doi.org/10.1108/AJIM-12-2020-0396.

Melitski, J., Carrizales, T.J., Manoharan, A. and Holzer, M. (2011) 'Digital governance success factors and barriers to success in Prague', *International Journal of Organization Theory & Behavior*, Vol. 14, No. 4, pp.451–472.

Mjomba, S.H. and Oyagi, B.N. (2021) 'The influence of human resource information system on organisational performance in Tanzania; a case of Zanzibar ports corporation', *American Journal of Humanities and Social Sciences Research (AJHSSR)*, Vol. 5, No. 1, pp.473–480, https://www.ajhssr.com/wp-content/uploads/2021/01/ZZF21501473480.pdf.

Mohanty, M. and Tripathy, S.K. (2009) 'HRIS in the Indian scenario: a case study of a large organization', *South Asian Journal of Management*, Vol. 16, No. 2, p.127.

Nagendra, A. and Deshpande, M. (2014) 'Human resource information systems (HRIS) in HR planning and development in mid to large sized organisations', *Procedia: Behavioral Sciences*, Vol. 133, pp.61–67, https://doi.org/10.1016/j.sbspro.2014.04.169.

Nah, F.F., Tan, X. and Teh, S.H. (2004) 'An empirical investigation on end-users' acceptance of enterprise systems', *Information Resources Management Journal*, Vol. 17, No. 3, pp.32–53.

Nunnally, J.C. (1978) *Psychometric Theory*, McGraw-Hill, UK.

Nurhidayati, N. and Zaenuri, Z. (2023) 'Innovation behaviour improvement strategy through knowledge-sharing behaviour based on knowledge-oriented leadership and knowledge-sharing climate', *International Journal of Knowledge Management Studies*, Vol. 14, No. 3, pp.283–306.

Oruh, E.S. (2013) 'Towards sustainable human resource information systems (HRIS) in the Nigerian banking sector: the role of new media', *Economic Insights: Trends and Challenges*, Vol. 65, No. 3, pp.1–8.

Podsakoff, N.P. (2003) 'Common method biases in behavioral research: a critical review of the literature and recommended remedies', *Journal of Applied Psychology*, Vol. 885, No. 879, pp.10–1037.

Qin, X., Shi, Y., Lyu, K. and Mo, Y. (2020) 'Using a TAM-TOE model to explore factors of building information modelling (BIM) adoption in the construction industry', *Journal of Civil Engineering and Management*, Vol. 26, No. 3, pp.259–277.

Research and Markets (2020) *The World's Digital Transformation Industry 2020–2025: Trends, Opportunities and Competitive Landscape* [online] https://www.globenewswire.com/news-release/2020/08/14/2078517/0/en/The-World-s-Digital-Transformation-Industry-2020-2025-Trends-Opportunities-and-Competitive-Landscape.html (accessed 14 April 2023).

Samy, N., Aziz, R., Tarek, M. and Ismail, M. (2023) 'HRIS mediating role the relationship between TOE and decision making', *Technology and Investment*, Vol. 14, pp.1–21, DOI: 10.4236/ti.2023.141001.

Shani, A. and Tesone, D.V. (2010) 'Have human resource information systems evolved into internal e-commerce?', *Worldwide Hospitality and Tourism Themes*, Vol. 2, No. 1, pp.30–48.

Siengthai, S. and Udomphol, A. (2016) 'The impact of human resource information system (HRIS) on organizational effectiveness: a case study of the textile industry in Thailand', *International Journal of Asian Business and Information Management*, Vol. 7, No. 3, pp.40–53.

Singh, Y. and Atwal, H. (2019) 'Digital culture – a hurdle or a catalyst in employee engagement', *International Journal of Management Studies*, Vol. 6, Nos. 1/8, pp.54–60.

Snow, C.C., Fjeldstad, Ø.D. and Langer, A.M. (2017) 'Designing the digital organisation', *Journal of Organisation Design*, Vol. 6, No. 1, https://doi.org/10.1186/s41469-017-0017-y.

Soumyaja, D. and Sowmya, C.S. (2020) 'Knowledge management and innovation performance in knowledge intensive organisations – the role of HR practices', *International Journal of Knowledge Management Studies*, Vol. 11, No. 4, pp.370–392.

Tabachnick, B.G. and Fidell, L.S. (2007) *Experimental Designs using ANOVA*, Vol. 724, Thomson/Brooks/Cole, Belmont, CA.

Tabachnick, B.G., Fidell, L.S. and Ullman, J.B. (2013) *Using Multivariate Statistics*, Vol. 6, pp.497–516, Pearson, Boston, MA.

Tao, Y.H., Yeh, C.R. and Sun, S.I. (2006) 'Improving training needs assessment processes via the internet: system design and qualitative study', *Internet Research*, Vol. 16, No. 4, pp.427–449, DOI: 10.1108/10662240610690043.

Tesi, D. (2010) *Human Resource Information Systems and the Performance of the Human Resource Function* [online] https://core.ac.uk/download/pdf/34703514.pdf (accessed 15 October 2021).

Thompson, J. (2023) *From Texting to Tweeting: Tech-Savvy Millennials Are Changing the Way We Work* [online] https://www.business.com/articles/tech-savvy-millennials-at-work/ (accessed 15 April 2023).

Thong, J.Y.L. (1999) 'An integrated model of information systems adoption in small businesses', *Journal of Management Information Systems*, Vol. 15, No. 4, pp.187–214, https://doi.org/10.1080/07421222.1999.11518227.

Totah, Z. (2019) *HR Trends in 2020: The Future of Human Resource Management* [online] https://www.selecthub.com/hris/future-of-hr-software-trends/ (accessed 15 October 2021).

Troshani, I., Jerram, C. and Rao Hill, S. (2011) 'Exploring the public sector adoption of HRIS', *Industrial Management and Data Systems*, Vol. 111, No. 3, pp.470–488, DOI: 10.1108/02635571111118314.

Tushman, M.L. and O'Reilly, C.A. (2002) *Winning Through Innovation: A Practical Guide to Leading Organisational Change and Renewal*, Harvard Business School Press, Boston, MA.

Wandhe, P. (2020) 'A role of effectiveness of human resource information system (HRIS) in 21st century', *International Journal of Advanced Research in Science*, DOI: 525.102020/IJARSCT.

Wirtky, T., Laumer, S., Eckhardt, A. and Weitzel, T. (2016) 'On the untapped value of e-HRM: a literature review', *Communications of the Association for Information Systems*, Vol. 38, pp.20–83, https://doi.org/10.17705/1CAIS.03802.