HUMAN RESOURCE INFORMATION SYSTEMS OF MEDIUM-SIZED FIRMS

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Abstract

The purpose of the study was to investigate the characteristics of human resource information systems (HRIS) that influence the success of the same. Findings led to identify the important characteristics of HRIS that influence its success in medium-sized firms in a developing country, Sri Lanka. The research adds value to the existing literature on antecedents and outcomes of HRIS in medium-sized firms

Keywords

JEL Classification

Introduction

Human resource information system is any organized approach by an organization to acquire, store, analyze, maintain, retrieve, and distribute pertinent information about its human resources [1]. Systems can be either manual or use computerized processes to perform required tasks. The term human resource information system (HRIS) is largely used to refer to a technology-based system or a software solution used to automate and carry out human resources management tasks within an organization. Over time, HRIS has been improved from a simple database management system to a more sophisticated organization-wide web-based system of human resource information. Human resource information system improves administrative efficiency by implementing internally consistent human resource policies and practices and through speedy information processing, greater information accuracy, and swift communications [2]. Human resource information system could transform the human resource management function into a strategic business partner by not only contributing to lower HR costs and improve overall HR productivity in human resource administration functions but also providing information to support strategic decision making of the organization [2] [3] [4].

The purpose of the current study was to investigate characteristics of HRIS that enhance its success in medium-sized firms. Hall and Torrington [5] observed a relationship between organizational-size and computer use to perform personnel tasks, where higher the number of personnel employed the higher is the use of computer for personnel work. Martinsons [6] showed that smaller organizations are less likely to use HRIS. However, within the last two decades HRIS market has grown rapidly across business sectors and HRIS software vendors has identified small and medium-sized firms as a growth area for their products [7]. Although medium-sized firms reported to spend large amounts of money on HRIS software [8], research on HRIS to date is oriented more towards larger firms, in developed countries. From the ongoing discussion on the HRIS in the literature, two main research themes can be identified, i.e., benefits of HRIS use and perceptions of users towards HRIS use. Of the former, an extensive array of research already available. Of the latter, however, little is known about the users' perception of what HRIS characteristics determines the success of HRIS in medium-sized firms in developing countries. In this regard, the HRIS literature identifies that the use of HRIS largely remains in the hands of its end-users and their perceptions on its adoption [9] [3] [10]. End users of HRIS are of two types, i.e., users associated with the HR function and others, such as middle-level managers who are interested in human resource information for decision making and control and senior-level managers who deals with strategic planning and decision making [11]. The current study investigated perceptions of managerial-level employees for their experiences of HRIS use in medium-sized firms in a developing country, Sri Lanka.

The next section reviews the literature within the scope of the study. It is followed by the presentation of methodology followed. Subsequently, the findings of the study are presented together with a discussion on the implications of findings for theory and practice.

Literature review

HRIS success and characteristics

The success of HRIS has been widely measured against user perceptions [12] [13] [14]. For the study the success of HRIS has been measured against user satisfaction regarding usefulness. User satisfaction reflects the net feeling of pleasure or displeasure based on all the benefits that an individual expects to experience from interaction with a system [15]. Perceived usefulness referred to "the degree to which a person believes that using a particular system would enhance his or her job

performance" [16, p. 320], and the term perceived usefulness has been constantly found to be identified in connection to individual use of a technology [13] [17].

A system's characteristics such as quality and ease of use have important influence on HRIS success [17]. In this regard, Avgerou [18] noted that technology implementations in developing countries largely ignore a systematic analysis of organizational and broader contexts within which the innovation is embedded. Previous research [8] [19] emphasized the need of HRIS being in line with not only information system strategic plan but also corporate strategic plan. However, Ngai and Wat [19] pointed out that although HRIS system's characteristics provide quick response and access to timely information, the greatest barrier in implementations was insufficient financial support; the latter is very true for small and medium-sized firms. The literature identifies quality of a system in terms of information quality and system quality [13]. Information quality focuses on the nature of the output produced by a system such as information accuracy, information preciseness, information completeness and output timeliness whereas system quality focuses on performance characteristics of the system such as processing speed, time of response, ease of access and presenting integrated reports [13]. Another important characteristic is a system's ability to provide pleasant and fulfilling experience for users. In this regard, the term ease of use is referred to the "degree to which an individual believes that using a particular system would be free of effort" [16, 195]. Previous studies showed positive relationships between HRIS characteristics and the success of information systems [20]. Based on the above reviewed literature, it is hypothesized:

H1: Characteristics of HRIS significantly positively related to success of HRIS

Methodology

In Sri Lanka, firms with less than 10 employees are identified as micro enterprises, those with 10-49 employees are identified as small enterprises; those with 50-99 employees are identified as medium enterprises; and those with more than 100 employees are identified as large enterprises. For the study, a sample of medium-sized firms that implemented HRIS and using the system for at least 3 years was selected. The literature suggests differing experiences of information systems by different user groups [4]. Respondents were a cross section of managerial-level employees from non-IT division and non-HR division, who were using the system for at least one year in the respective firms. These individuals use HRIS as a managerial tool for processing routine transactions, generating regular reports for decision making and control, and strategic planning and decision making [11]. The respondents had considerable understanding about the HRIS System in their current organizations. Web-based questionnaire was used for the data collection. Responses were received from 288 individuals who fulfilled above mentioned sample selection criteria attached to 26 firms. With regard to demographic characteristics of the respondents, mean age was 32 (S.D. = 3.12); mean firm-tenure was 3.42 (S.D. = 1.68); 35% were female, and 75% had bachelor's degree as the highest level of educational qualification.

HRIS success was defined as the extent to which individuals believe that using HRIS would improve their task performance. It was measured by 7-items on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The items used are given in Table 2. The characteristics of HRIS were measured by 13-items on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The items used are given in Table 3. Factor analysis, correlation, and multiple regression were used for data analysis.

Results

Functions of HRIS

The distribution of functionalities of HRIS provides information on the purposes for which HRIS is widely used by the firms. The functionalities were broadly categorized based on HR practices' use in context as proposed by Lepak et al. [21] rather than a more generic categorization of practices in and of themselves. The results are shown in Table 1.

Table 1: Functions of HRIS (source: authors)

Function	% of existence
Transactional - data posting services:	
Personal details of staff	100
Employment history	93
Payroll	81
Job descriptions and categories	78
Notifications to staff	76
Skill and competency log	70
Traditional - data activity capabilities:	
Time and attendance	100
Leave applications and approvals	96
Training applications and bookings	86
Travel applications and monitoring	84
Performance evaluation	78
Applicant tracking	68
Transformational - strategically aligned analytical services:	
Turnover analysis	58
Payroll projections	51
Training and development needs assessments	45

Tables 2 shows the results of factor analysis for HRIS success. The analysis yielded one factor, which explained a variance of 55%.

Table 2: HRIS success (source: authors)

	Factor loading
I can provide accurate information to my supervisor with HRIS	.803
I make fewer requests to obtain routine information with HRIS	.759
I can continuously monitor progress of my work with HRIS	.758
I have access to information that are not previously accessible to make better decisions	.750
I can make precise decisions with HRIS	.733
Information flow has enhanced with HRIS	.731
I can provide timely information to my supervisor with HRIS	.647
Eigenvalue	3.84
% of Variance	54.97
Cronbach's Alpha	.862
AVE	.550
CR	.895

Tables 3 shows the results of factor analysis for the characteristics of HRIS. The analysis yielded three factors, which were named as strategic, quality and user friendliness. The three factors explained a total variance of 68%. Means and standard deviations of the variables and correlations are shown in Table 4.

Table 3: HRIS characteristics (source: authors)

	Strategic	Quality	User friendly
My organization sufficiently funds to implement a technically feasible HRIS	.832		
Continuous improvements are made to our HRIS	.824		
The importance of suing HRIS has been clearly communicated to me	.766		
HRIS is aligned with corporate objectives	.711		
Use of HRIS is promoted by my organization	.601		
The use of HRIS is supported by my organization	.580		
HRIS allows information to be readily accessible		.797	
HRIS provides accurate information		.741	
HRIS provides information on time		.717	
HRIS automated repetitive job tasks		.572	
Web application icons are easy to understand			.884
Web application layout is easy to understand			.851
Web application graphics helps in the navigation of the web site			.818
Eigenvalue	3.29	2.86	2.68
% of Variance	25.33	22.04	20.64
Cronbach's Alpha	.887	.813	.855
AVE	.527	.506	.725
CR	.868	.801	.888

Table 4: Correlations (source: authors)

		Mean	SD	1	2	3	4	5	6	7	8
1	Age (yrs)	31.87	3.12	-							
2	Sex[1]	-	-	.169	-						
3	Tenure-firm (yrs)	3.42	1.68	.383**	.005	-					
4	HRIS experience (yrs)	3.78	1.98	.517**	.081	.423**	-				
5	Strategic	3.73	.64	.116	.104	.061	.196*	.73			
6	Quality	3.65	.62	.111	.108	.093	.168*	.457**	.71		
7	User friendly	3.63	.69	.138*	.042	.080	.140*	.294**	.338**	.85	
8	HRIS success	3.55	.66	.116*	.103	.116*	.125*	.440**	.502**	.381**	.74

Notes: [1]binary coded variables, **$p < 0.01$, diagonal entries, square root of AVE where appropriate; off-diagonal entries, correlation between constructs

The results of the regression analysis are shown in Table 5. The HRIS characteristics of strategic, quality and user friendliness significantly positively related to its success supporting H1. Regression coefficient of 0.517 ($p < 0.001$) suggests that all three variables account for 51% of the variation of HRIS success.

Table 5: Summary of regression analysis (source: authors)

Variable	HRIS success	
	β	R^2(Adj.)
Age (yrs)	.011	.517***
Sex[1]	.020	
Tenure-firm (yrs)	.105	
HRIS experience (yrs)	.165*	
Strategic	.385***	
Quality	.488***	
User friendly	.349***	

Discussion of findings and implications

The study investigated characteristics of HRIS that enhance its success in medium-sized firms in Sri Lanka. The study helped to enhance the understanding of managerial-level employees' (non-IT and non-HR) perceptions towards HRIS characteristics and success in these firms.

Human resource information refers to any form of data of personnel engaged in an organization and these are very supportive in making various types of decisions. Findings showed that HRIS had capabilities of providing transactional, traditional and transformations services (Table 1). However, the use for transformational human resource activities is considerably lower with compared to other two. Transactional activities that aid in administrative and record keeping activities such as maintaining personal details of staff and employment history are widely available. Traditional activities that aid in managing the workers and work context such as maintaining time and attendance, leave applications and approvals, training applications and bookings, and travel applications and monitoring are widely available. Of the transformational activities, HRIS is mostly used for turnover analysis. These findings suggest that HRIS in the medium-sized firms have not helped to make considerable transformation of the human resource management function towards performing a strategic role in the business. Human resource management function mainly contributes to perform routine processing and compliance activities. Our findings support the observations of previous research conducted in medium-sized firms [8] [11], and also in general [3].

The results of the factor analysis showed that the measures used are relevant and valid. One of the important characteristics emerged from the study is that HRIS need to be strategic. In other words, HRIS should stem from business strategy of firms; funding availability and top management support are also important (Table 3). The literature [22] suggests that lack of top management support and funds are the main obstacles for HRIS adoption. A system's ability to fulfill end-users' needs are in the forefront of considerations. The findings showed the importance of user-friendliness of HRIS. Overall, the results of the regression analysis showed that HRIS characteristics of strategic, quality and user-friendliness significantly positively predict its success. Overall, the findings suggest that HRIS success in medium-sized firms stem from worthy HRIS characteristics.

While investigations on medium-sized enterprises in a developing country context add immense value to the existing literature, the study design had certain limitations. The study was conducted in medium-sized firms, and line managers who fulfilled the sample selection criteria responded using a survey questionnaire based on self-report method. Further, the study investigated a selected number of HRIS characteristics and criteria of HRIS success. The findings showed that HRIS characteristics account for 51% of the variation of HRIS success. Therefore, future research could be designed to incorporate other characteristics and success measures of HRIS in the context of medium-sized firms in different countries.

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