Intention and Usage of Human Resource Information Systems among Ghanaian Human Resource Managers

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Abstract

The purpose of this study is to investigate the intentions and usage of human resource information systems (HRIS) among Ghanaian HR managers and practitioners. In today’s global networking era, information technology has become an integral part of human resource management. This is because the increasing pressure to support strategic goals and the greater focus on shareholder value has led to changes in both job content and expectations of Human Resource professionals. Hence, the use of Human Resource Information System has been used by HR professionals to become strategic managers. Survey methodology was adopted to obtain data from HR managers and practitioners in Ghanaian companies. A net-targeted sample of 175 respondents produced 100 usable questionnaires for analysis. The study results revealed that information technology (IT) has assisted “organizations to deliver state-of-the-art HR services, and reduced operational costs of companies, regardless of the size of the firm”. Advances in IT helps in resolving many of the challenges of HRM such as attracting, retaining, motivating employees, meeting the demands for a more strategic HR function, and managing the “human element” of technological change. Furthermore, effective HRIS has a direct positive influence on organizational performance.

Keywords: information systems, human resource information systems, human resource management

1. Introduction

In today’s knowledge-based economy, the success of an organization depends largely on the performance of its human resources. As a consequence, organizations nowadays are becoming increasingly dependent on human resource information system (HRIS) in order to increase the effectiveness of their most valued assets—the human resources (Lippert & Swiercz, 2005; Toshani, Jerram, & Gerrard, 2010; Toshani, Jerram, & Hill, 2011). Human resource information system is briefly defined by Hendrickson (2003) as an integrated system used to gather, store and analyze information regarding an organization’s human resources. Other researchers view HRIS “as a dynamic database of demographic and performance information about each employee. It comprises of software, hardware and systematic procedure used to acquire, store, manipulate, analyze, retrieve and distribute pertinent information about an organization’s human resource” (Lippert & Swiercz, 2005; Kovach & Cathcart Jr., 1999; Tannenbaum, 1990). It is therefore, any technology that is used to attract, hire, retain and maintain talent, support workforce administration and optimize workforce management (Reddick, 2009; Tannenbaum, 1990). Accordingly, Human resource information systems have become one of the most vital information systems in the market. Typically, human resource management has in recent times shifted its focus on knowledge sharing and strategic workforce analysis and has become a significant contributor to the strategic management of organizations (Rodriguez & Ventura, 2003). As such, for human resource professionals to become strategic partners with top management, the use of HRIS is crucial (Ankrah & Sokro, 2012; Lengnick-Hall & Moritz, 2003).

Kassim, Ramayah, and Kurnia (2012) maintain that a good HRIS is more likely to produce a good human resource decision. They comment further that such a system should be provided to both human resource and line managers to facilitate decision making. In the competitive environment within which contemporary organisations operate. Indeed, strategic value can be derived by HRIS tools that assist with decision-making concerning vital HR functions (Farndale, Scullion, & Sparrow, 2010). HRIS allows HR functions to become
more efficient and to provide better information for decision making. The special function of HRIS is to gather, collect and help analyze the data necessary for human resource management department to perform its tasks effectively (Anthony, Kacmar, & Perrewe, 2002). The HRIS can assist organizations to improve administrative efficiency through faster information processing, improved employee communications, greater information accuracy, lower HR costs and overall HR productivity improvements (Kassim et al., 2012; Wiblen, Grant, & Dery, 2010). It can also support long range planning with information on equal employment, separations and applicant qualifications and development with information on training programs, salary forecasts, pay budgets and labor/employee relations with information on contract negotiations and employee assistance needs (Al-Shibly, 2011). Primarily, the focus of HRIS in many organizations is on administrative efficiency. Nonetheless, as organizations seek to achieve a competitive edge in the rapidly knowledge-based economy, there is a growing pressure for HR to play a more strategic role in aiding organizations achieve their long term strategic objectives (Sheehan, Holland, & De Cieri, 2006; Teo et al., 2007). Accordingly, Teo et al. (2007) contend that the growing link between HR and business strategy compels organizations to depend on their HR professionals for innovative programs and practices to nurture a more competitive workforce.

Although, organizations have spent huge sums of money on implementing various information systems, usage among end users remains low especially in developing countries as evident in e-government, e-learning, online stock trading and e-HRM (Lean, Zailani, Ramayah, & Fernado, 2009; Ramayah, 2010; Ramayah, Rouibah, Muniandy, & Rangel, 2009; Schaupp, Carter, & McBride, 2010; Yusoff, Ramayah, & Ibrahim, 2011). Despite the importance of HRIS for organisations, researchers seem to agree that HRIS adoption remains under researched (Blount & Castleman, 2009; Henriksen & Mahnke, 2005) especially in developing countries. The purpose of this study is to find out the intention and usage of HRIS among Ghanaian HR managers and practitioners. The specific objectives are: (1) to find out whether Human Resource practitioners are making use of Human resource information system (HRIS) as they manage their Human Resources (HRs) and (2) examine the relationship between the effective usage of HRIS and organizational performance. This study, thus, provides insight and understanding of HRIS adoption which is necessary given the growing organizational interest in HRIS. The research was guided by the Technology Acceptance Model (TAM).

Human resource is a major input to the success of companies. When employees in an organization are managed effectively and strategically, production could further be maximized. This research will serve as a guide to effective implementation of human resource information systems (HRIS). It would also provide reasonable insight into the effective ways of managing employee matters by the optimum use of HRIS.

2. Literature Review

2.1 Development and Role of HRIS

Originally, “information about personnel were frequently limited to employee names and addresses and perhaps some employment history, often recorded on note cards” (Kavanagh, Guentel, & Tannenbaum, 1990). The earliest automated employee information systems appeared in the 1940s, and all the way through the 1950s were run on sorting and tabulating equipment. In those days the computer system has a very limited purpose, concerned only with monitoring employee records and payroll activities. During the 1960s, personnel departments took little part in the technological advances in computing that were occurring in the accounting and finance sections. This notwithstanding, HRIS has grown in popularity since the 1960s. This is because organizations became more aware of human capital issues and began to develop formal processes for employee selection and development. There was also increasing recognition of the importance of employee morale on firm’s overall effectiveness among organizations, hence personnel management was an early candidate for office automation in payroll, benefits administration and other transaction processing applications such as employee record holding (Hendrickson, 2003; Lederer, 1984; Kavanagh et al., 1990; Martinsons, 1994). Consequently, between 1960 and 1980, “HR was integrated into the core business mission and governmental and regulatory reporting requirements for employees especially in corporate America” (Hendrickson, 2003).

Data maintained in an HRIS can be used as a competitive information resource for virtually all core management functions including planning, organizing, monitoring, controlling and leading (Hubbard, Forcht, & Thomas, 1998). HRIS technology supports strategic planning through the generation of labour force supply and demand forecasts. Also, human resource information system is of a great benefit to both employees and employers. Indeed, as technology integrates with traditionally labor-intensive HR activities, HR professional are seeing improvements in response to time and efficiency.

2.2 The Usage of HRIS

Human resource information systems have evolved into “sophisticated information technology solutions
designed to manage a wide range of human resource data and to provide analytical tools to assist management in HR decision-making” (Hendrickson, 2003). Although HRIS adoption can be challenging, the number of firms investing in HRIS have dramatically increased in recent years (Ashbaugh & Miranda, 2002; Ball, 2001). Studies acknowledged that the benefits of HRIS included “improved accuracy, the provision of timely and quick access to information and the saving of costs” (Lederer, 1984; Ngai & Wat, 2006; Tetz, 1973; Wille & Hammond, 1981). Human resource information systems have been designed to help HR managers to perform different types of duties both routine and higher level and allows HR managers to perform their new demerging roles more professionally and gain better recognition. According to Laudon and Laudon (2002), HRIS are used at three levels of organization as they offer a comprehensive set of functionality, such as training, career pathing and compensation analysis. Human resource practitioners use HRIS to their advantage to enhance faster information processing, greater information accuracy, improved planning and program development, and enhanced employee communications. Ankrah and Sokro (2012) maintain that HRIS enables HR professionals and supervisors to manage complex information entities and to plan HR efficiently.

A number of studies have examined the factors that enhance successful implementation of HRIS. Based on the above literature, the following hypotheses are postulated:

**Hypothesis 1:** Most Human Resource Managers and Practitioners use Human Resource Information Systems (HRIS) due to its acclaimed benefits.

**Hypothesis 2:** Human Resource Managers and Practitioners who use Human Resource Information Systems (HRIS) perform better than those who do not use HRIS.

### 3. Research Methodology

Considering the nature of this research, a survey research design was deployed. A structured questionnaire was the main instrument used to collect data because it is cost effective and convenience to use as HR managers and employees find it difficult to grant interviews. The target population is HR managers and Practitioners working in the HR department in Ghanaian firms because they are in the best position to throw more light on the intention and usage of HRIS among Ghanaian HR managers. Fifteen organizations were randomly from the capital city of Ghana, Accra due to proximity to the researchers and the willingness of the respondents to participate in the study. A net-targeted sample of 175 respondents from the selected organizations produced 100 usable questionnaires for analysis. The questionnaire was designed to solicit information on the use of HRIS, the types of HRIS, the availability of HRIS and how it impact on performance. The intention and attitude of HR Managers towards HRIS was also examined. The statistical package for social sciences (SPSS) was used for data capturing and analysis due to its ease of use. Simple frequencies and percentages were used to portray the true picture of the data collected as well as test of hypotheses.

### 4. Major Findings

**Table 1. Uses of HRIS?**

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep staff records and personal details</td>
<td>50</td>
<td>50.0</td>
</tr>
<tr>
<td>Data collection and data management</td>
<td>30</td>
<td>30.0</td>
</tr>
<tr>
<td>Paying of staffs and accrue leave days</td>
<td>10</td>
<td>10.0</td>
</tr>
<tr>
<td>Retrieve information for reports reasons</td>
<td>10</td>
<td>10.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Source: Field data, 2015.

From the above table, 50% representing majority of respondents indicated that HRIS is used for keeping staff records and personal data, 30% of the respondents reveal they use HRIS for data collection and management. Paying of staff and accrue leave days and the retrieval of information for reports reasons represents 10% each. According to Laudon and Laudon (2002) HRIS are used at three levels of organization as they offer a comprehensive set of functionality, such as training, career path and compensation analysis. The use of HRIS has significantly reduced HR cost by automating information and reducing the number of HR employees, and by helping employees to control their own personal information and data, conduct analysis, make decisions and communicate with others without consulting an HR professional (Awuzu & Desouza, 2003; Ball, 2001). Some of
the software that the HR departments use are Epicor, Eazy HR, Oracle, Soft HR, Attend HRM, and HR Solution. It is clear that the organizations under study have actually achieved a great deal of success where 60% of the respondents said the implantation of the HRIS was successful and the remaining 40% said it was very successful. The result relating to how often they receive training indicate that 8.9% of the employees receives training quarterly, 22.2% receives training when necessary, 15.6% says they go through training yearly, 31.1% goes through training most often, 17.8% says twice a year and 4.4% receives training monthly.

4.1 Hypotheses Testing

The chi-square statistic was used to test the hypotheses because the study was testing for goodness of fit.

4.1.1 Hypothesis One


Where $H_0$ is the null hypothesis and; $H_a$ is the alternative hypothesis.

Significance level

The significance level ($\alpha$) for this test is 0.05.

Critical value

From chi-square distribution table, a significance level of 0.05 with one degree of freedom gives a critical value of 3.841.

Decision rule

The researcher cannot accept $H_0$, if chi-square calculated is greater than 3.841 and conclude that, most Human Resource Managers and Practitioners use Human Resource Information Systems (HRIS) else the researcher will fail to reject $H_0$ and conclude that, most Human Resource Managers and Practitioners do not use Human Resource Information Systems (HRIS).

Test statistic

The test statistic is a chi-square, $\chi^2$ with (I-1)*(J-1) degrees of freedom.

$$\chi^2 = \sum_{i=1}^{I} \sum_{j=1}^{J} \left( \frac{O_{ij} - E_{ij}}{E_{ij}} \right)^2$$

Where $O_{ij}$ are the observed values; $E_{ij}$ are the expected values and; $df$ is the degrees of freedom.

Now, the calculated chi-square from Table 2 is as follows;

$$\chi^2 = \frac{(68 - 59.0)^2}{59.0} + \frac{(4 - 13.0)^2}{13.0} + \frac{(14 - 23.0)^2}{23.0} + \frac{(14 - 5.0)^2}{5.0}$$

$$\chi^2 = 1.3729 + 6.2308 + 3.5217 + 16.2000 = 27.3254$$

Table 2. Relationship between HRIS availability and HRIS use

<table>
<thead>
<tr>
<th>N = 100</th>
<th>HRIS Use</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HRIS Availability</td>
<td>Yes</td>
<td>Count</td>
<td>68</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>59.0</td>
<td>13.0</td>
<td>72.0</td>
</tr>
<tr>
<td>No</td>
<td>Count</td>
<td>14</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>23.0</td>
<td>5.0</td>
<td>28.0</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td>82</td>
<td>18</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>82.0</td>
<td>18.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

$N = 100$; $P$-Value $= 0.000$; COR $= 0.519$. 

244
The chi-square calculated is equal to 27.3254 and the critical value is equal to 3.841. Since the chi-square calculated is greater than the critical value, thus, Ho cannot be accepted. Therefore, most Human Resource Managers and Practitioners use Human Resource Information Systems (HRIS). The correlation coefficient between the two variables is 0.519, indicating that there exists a positive relationship between the availability and use of HRIS which is indeed strong.

4.1.2 Hypothesis Two

**Ho:** Human Resource Managers and Practitioners who use Human Resource Information Systems (HRIS) do not perform better than those who do not use HRIS.

**Ha:** Human Resource Managers and Practitioners who use Human Resource Information Systems (HRIS) perform better than those who do not use HRIS.

Where Ho is the null hypothesis and Ha is the alternative hypothesis

**Significance level**

The significance level (α) for this test is 0.05.

**Critical value**

From chi-square distribution table, a significance level of 0.05 with two degrees of freedom gives a critical value of 5.991.

**Decision rule**

The researcher cannot accept Ho, if chi-square calculated is greater than 5.991 and conclude that, Human Resource Managers and Practitioners who use Human Resource Information Systems (HRIS) perform better than those who do not use HRIS else the researcher will fail to reject Ho and conclude that, Human Resource Managers and Practitioners who use Human Resource Information Systems (HRIS) do not perform better than those who do not use HRIS.

**Test statistic**

The test statistic is a chi-square, $\chi^2$ with $(I-1)*(J-1)$ degrees of freedom.

$$\chi^2 = \sum \sum \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$

Where $O_{ij}$ are the observed values; $E_{ij}$ are the expected values and; $df$ is the degrees of freedom.

Now the calculated chi-square is as follows from table 1;

$$\chi^2 = \frac{(35-38.1)^2}{38.1} + \frac{(13-13.0)^2}{13.0} + \frac{(45-41.9)^2}{41.9} + \frac{(6-2.9)^2}{2.9} + \frac{(1-1.0)^2}{1.0} + \frac{(0-3.2)^2}{3.2} = 6.9954$$

**Table 3. Relationship between HRIS Use and performance**

<table>
<thead>
<tr>
<th>N = 100</th>
<th>Performance</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRIS Use</td>
<td>Yes</td>
<td>Count</td>
<td>35</td>
<td>13</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expected Count</td>
<td>38.1</td>
<td>13.0</td>
<td>41.9</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>Count</td>
<td>6</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expected Count</td>
<td>2.9</td>
<td>1.0</td>
<td>3.2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>Count</td>
<td>41</td>
<td>14</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>Expected Count</td>
<td>41.0</td>
<td>14.0</td>
<td>45.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

N = 100; P-Value = 0.000; COR = 0.266.

The chi-square calculated is equal to 6.9954 and the critical value is equal to 5.991. Since the chi-square
calculated is greater than the critical value, thus, Ho cannot be accepted. Therefore, Human Resource Managers and Practitioners who use Human Resource Information Systems (HRIS) perform better than those who do not use HRIS. The correlation coefficient between the two variables is 0.266, indicating that there exists a positive relationship between the two variables which is indeed weak. The most obvious impact has been operational—that is, automating routine activities, alleviating administrative burdens, reducing cost, and improving productivity internal to the HR function itself.

5. Conclusion

Over the years, HR Managers have implemented strategic software that reduces cost. Subjecting the hypotheses to a statistical test yielded the following: (1) Most Human Resource Managers and Practitioners use Human Resource Information Systems (HRIS) and (2) Human Resource Managers and Practitioners who use Human Resource Information Systems (HRIS) perform better than those who do not use HRIS.

Ideally, with an appropriate use of HRIS, less people should needed to perform administrative tasks such as record keeping and more time would be made available for HR Managers to assist by providing data on a strategic level. The future for effective use of HRIS worldwide is bright as it creates new paths for human resources and for the organizations that effectively use HRIS. There is a need for managers to provide effective training and regularly update their HRIS in order to outwit their competitors in this throat cutting competitive era in which companies operates. Organizations should carefully select their HRIS products and come to an agreement with the vendor on HRIS features when they invest in HRIS since the cost is very huge and failure of these systems will be a great loss to the organization. For future research, the impact of human resource information systems on organizational performance would be a good venture as well as the study of human resource information systems and its benefits to organizations. This will help to enhance the use of human resource information systems.

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