

The Complementary Relationship between Human Resources Accounting and Human Resources Information System

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Abstract

Human resource management has continued to evolve over the years given the rapid technological advancements. Human resource information systems (HRIS) and human resource accounting (HRA) are some of the components of strategic human resource management that have experienced tremendous changes. This study examines the complementary relationship between HRA and HRIS. The study's findings help to address the existing gap in literature regarding the link between the two. The study utilizes a qualitative descriptive research design in which a sample of 17 participants is included. Data is collected using a structured self-administered questionnaire and analyzed through thematic analysis. The study found that HRIS applications and tools support HRA activities whereas HRA activities ensure HRIS generates complete and accurate information regarding an organization's human resource. Insights obtained from the study findings can be used to promote better integration of HRA into HRIS tools and applications.

Keywords

Human Resource Accounting, Human Resource Information Systems, Human Resource Management, Complementary Relationship

1. Introduction

Human resource management (HRM) is a term used to refer to tasks and activities that are beneficial in maximizing the performance of employees in an organization. Over the past few years, HRM is increasingly evolving and dynamic as organizational leaders are constantly looking to improve quality, productivity, and effectiveness. New models and ways to promote the value and effectiveness

of HRM have been developed and are used by organizations. The evolution of HRM is fueled by rapid technological advancements and increased globalization (Aljamaan, 2017). Human Resource Information Systems (HRIS) are some of the models that have emerged in HRM. HRM also entails the management of accounting information, which is used extensively in organizational strategic decision making.

Rapid technological advancements have contributed to the emergence of new models and ways of human resource management. Human resource professionals are increasingly looking for measures to enhance the effectiveness of their processes and activities. These efforts have contributed to the development of new models for HRM including Human Resources Accounting and Human Resource Information Systems (HRIS). The development of these new models and ways of HRM has been influenced by the fact that organizational leaders are increasingly cognizant of the various kinds of technology that could enhance the effectiveness of their organization. Human Resource Accounting and HRIS have become critical components of modern HRM initiatives as they play a critical role in strategic decision-making processes.

HRIS is a term used to refer to integrated systems that are used to collect, store, and analyze information about the human resources of an organization (Gupta, 2013). The concept of HRIS was first introduced over five decades ago and has evolved beyond its initial purpose of changing paper records into computerized databases. The contemporary HRIS tools can be used by human resource professionals to carry out various activities on a daily basis. Through these tools, organizations implement more complex computerized systems to help ensure their records are accurate and up-to-date. HRIS tools are considered critical in today's HRM as they help enhance efficiency with regards to HR decision-making.

According to Al-Hattami & Kabra (2018), human resource accounting is one of the sub-systems within the accounting information system used in HRM. Human resource accounting provides all financial and non-financial information regarding human resources. It achieves this by gathering data regarding the organization's human resources from a variety of sources and examines the data based on certain rules of accounting. The results of this process are then provided to all interest parties in order to promote the realization of desired goals and objectives. Therefore, human resource accounting plays a critical role in understanding the accounting aspect of strategies and activities adopted in human resource management.

While HRIS and human resource accounting have become critical components of HRM, there is limited data on the link between these two concepts. There is limited data on the link between human resource accounting and HRIS despite the role they play in HRM and strategic decision-making in an organization. In addition, there is an erroneous assumption that human resource accounting primarily focuses on accounting or financial information. This assumption negates the role non-financial information plays in human resource accounting processes and systems. The limited data on the two concepts has

contributed to a lack of understanding of the role accounting information plays in human resource information systems and human resource management.

The purpose of this study is to explore the complementary link between human resources accounting and human resource information systems. The study seeks to demonstrate how these two concepts are inter-related and play an important role in human resource management processes. This study is important in the field of human resources management as it provides insights on the link between financial and non-financial information in human resource practices. By exploring the relationship between human resources accounting and HRIS, the study demonstrates how non-financial and financial information are critical in HRM. In this case, HRM practices should incorporate the collection, analysis, and use of financial and non-financial data in a complementary manner. Secondly, the study addressed the existing gap in literature regarding the complementary link between human resources accounting and HRIS. Through this, the study addresses the need for human resource professionals to design accounting information systems as part of HRIS tools for better decision-making in HRM. The integration of accounting information into HRIS would also enhance an organization's strategic decision-making.

This study seeks to achieve the following objectives:

- 1) To provide insights regarding human resource information systems.
- 2) To provide insights regarding human resources accounting.
- 3) To analyze the comparative relationship between human resources accounting and human resource information systems.
- 4) To clarify the significance of financial/accounting information in human resource information systems.

2. Literature Review

Human resource accounting and human resource information systems have been the subject of numerous studies in the human resources field in the recent past. Studies have been carried out on these concepts because of the evolving and dynamic nature of HR practices due to rapid technological advancements. Existing literature has examined these concepts from various perspectives to help enhance HR practices and processes.

2.1. Human Resources Accounting (HRA)

First, Existing literature demonstrates that there is no universal definition of the concept of human resources accounting as numerous definitions exist (Mahmoodi, Babaei, & Mohamade, 2013). Human resources accounting (HRA) is defined as the process of identifying and measuring human resource information and providing the information to relevant stakeholders (Islam, Kamruzzaman, & Redwanuzzaman, 2013). This definition suggests that HRA is a tool that can be used to report an organization's assets in management accounting and financial accounting. HRA is also defined as the process of gathering, measuring, and

providing information regarding human resources to promote an organization's effective measure (Mahmoodi, Babaei, & Mohamade, 2013).

HRA entails accounting for human capital as part of an organization's assets. When HRA is employed to account for human capital as an organizational asset, the process generates numerical data regarding the value and cost of humans as organizational sources (Al-Hattami & Kabra, 2018). As a result, the organization's management embraces and adopts a human resource perspective in decisions that include humans.

HRA entails accounting for expenditures associated with human resources as assets instead of the conventional accounting (Bullen & Eyler, 2010). Traditional accounting differs from human resource accounting since the former treats human-resource-related expenses as expenditures that lessen profit. Since HRA entails a different way of accounting for costs related to human resources, it plays a critical role in enhancing HRM and financial accounting and reporting. It provides a mechanism through which human resources are given emphasis and importance in today's accounting and HRM framework (Rao, 2014). Biswas contends that HRA plays a critical role in HRM as it provides information that the management can use to evaluate its decisions with regard to human resources (Biswas, 2013). By providing such information, HRA gives investors the opportunity to accurately assess and understand the whole picture of the organization.

2.2. Human Resource Information Systems (HRIS)

HRIS is defined as a systematic procedure of gathering, storing, retrieving, maintaining, and validating data regarding an organization's human resources (Gupta, 2013). HRIS tools have become common in modern HRM practices because they provide a means for ensuring the smooth running of an organization's internal operations. HRIS provides a framework for organizations to achieve incremental leaps in efficiency and response time for human resource work, which are traditionally complex and labor-intensive. Over the past few decades, HRIS is viewed as a function of information systems, which are becoming more important for today's organizations (Buzkan, 2016). Information systems have become more important for organizations because of the increased awareness of the role technology plays in enhancing operations and competitive advantage. Organizations are increasingly implementing HRIS tools because of the role of information systems in enhancing their operations across all areas including human resources. Therefore, HRIS is essentially an intersection between information technology and human resources through a human resource software solution (Gupta, 2013). HRIS comprises computer applications, databases, and hardware and software that are essential for the collection, storage, maintenance, manipulation, and delivery of human resources information and function (Al-Shawabkeh, 2015).

According to Johnson, Lukaszewski & Stone, information systems have tradi-

tionally had a major impact on the functioning of organizations and their overall effectiveness (Johnson, Lukaszewski, & Stone, 2016). This major impact has in turn provided the adoption of information systems into human resource practices through the development of HRIS. HRIS is viewed as electronic human resource management as it is used to support core functions, decisions, and processes (Johnson & Gueutal, 2011). Qadir & Agrawal (2017) attribute the emergence of HRIS to the re-engineering of conventional HRS processes and applications through information technology. This journey has involved transforming HRM from the conventional attendance sheet to balance sheet in order to achieve strategic human resource management. As technology is increasingly adopted in HRM practices, many human resource practices and functions have been re-engineered to result in the establishment of HRIS. Additionally, the journey has entailed the transformation of the role of human resource professionals and jobs. HRIS has become critical in today's HRM practices because of the role of HR professionals as strategic partners with top management (Beadles II, Lowery, & Johns, 2005).

HRIS has become an important management information system that improves an organization's human resource administration functions (Nagendra & Deshpande, 2014). This significance is attributable to HRIS's role in automating most HR planning functions (Weeks, 2013). Some of the HR planning functions automated by HRIS include identification of potential employees, maintaining complete employee records, and developing programs for employee talent development. As an important management information system, HRIS helps in coordinating and controlling major functions relating to human resources (Bal, Bozkurt, & Ertermsir, 2012).

2.3. Relationship between HRA and HRIS

Qadir & Agrawal suggest that the relationship between HRA and HRIS is evident in the development of HRIS tools (Johnson & Gueutal, 2011). In this case, the development of HRIS following the adoption of technology in human resources has involved transforming traditional HR functions and practices. This process has included changing the role of HR from conventional attendance sheet to balance sheet. As a result, the change has provided an opportunity for accounting in human resources to be integrated in HRIS. However, there is minimal integration of HRA into today's HRIS as the two concepts are not considered inter-related. This poor integration is attributable to the challenges facing many organizations in the execution of HRA (Cherian & Farouq, 2018). While HRA is viewed as a critical tool for measuring performance, challenges in its execution has contributed to poor integration into HRIS applications (Bhosale, 2015).

Marler & Boudreau contend that there is limited evidence on the link between HRA and HRIS (Marler & Boudreau, 2017). HRA is viewed as an important component of modern HRM practices because of the evolving role of HR professionals and jobs (Kariyawasam, 2016). The adoption of technology into hu-

man resource practices has provided a framework for the development of HRA tools, which are increasingly used. Existing literature provides evidence on the role HRA plays in improving the efficiency of HR practices. Through providing a different way of accounting costs relating to human resources, HRA has been found to enhance organizational performance. However, there is limited evidence in academic research on the relationship between human resource accounting and human resource information systems.

3. Research Methodology

Before The identification of a suitable research methodology is an important step in enhancing the reliability and credibility of a study's findings. Qualitative, quantitative, and mixed-methods research are the three research methodologies that are suitable for different studies based on various factors. One of the factors that play an essential role in determining the research methodology is the nature of the issue under investigation. Qualitative approaches are suitable for studies that are exploratory, descriptive and explanatory whereas quantitative approaches are suitable for studies involving cause and effect relationships or testing hypotheses (Creswell, 2014). Given the nature of the issue under investigation, a qualitative research design was employed. This approach was used because the issue under investigation is exploratory in nature.

3.1. Research Design

This study employed qualitative descriptive research design, which is an approach that focuses on identifying the nature of specific issues or events under study (Lambert & Lambert, 2012). Qualitative descriptive studies involve naturalistic data through which researchers attempt to describe some phenomena, objects, or particular situations under study. In essence, descriptive studies focus on providing an accurate description of a research issue or problem. Qualitative descriptive research design is well suited for this study since the researcher seeks to explore how human resource accounting complements human resource information systems and address the gap in existing literature. Through this research design and approach, the researcher seeks to describe the phenomenon rather than make his own decisions/judgments or make interpretations.

3.2. Sample/Data

To collect data for understanding the relationship between HRA and HRIS, 20 human resource leaders and professionals working in different organizations were requested to participate. The group of 20 participants was identified from the researcher's professional networks of human resource practitioners. Sample size calculations were carried out using an *F* test for repeated measures to determine whether it was a reasonable sample size. The calculations targeted detecting 80% and an alpha error of 5%, which is regarded as the most suitable level of acceptance when calculating the probability of Type 1 error (Das, Mitra, &

Mandal, 2016). The sample power was 0.96 with an alpha error of 0.05, which implies that the research generated the minimum recommendation to realize a powerful sample. Since the sample power was 96% and alpha error 5%, the sample size is reasonable for this research.

The study sample was identified using convenient sampling. Convenient sampling is a sampling technique in which a study sample is identified from members that are conveniently available to the researcher (Etikan, Musa, & Alkassim, 2015). The study participants were selected based on their geographical proximity, availability, and easy accessibility. The researcher ensured that these participants are human resource professionals and leaders with knowledge regarding the study variables. Data was collected from the study participants using a structured self-administered questionnaire. The self-created questionnaire incorporated open-ended questions divided into two categories *i.e.* demographic information and questions regarding the study variables.

3.3. Measures

Demographic data in the structured self-administered questionnaire included age, gender, education, and work experience. Data relating to the study variables included human resource accounting, human resource information systems, and the relationship between HRA and HRIS. The questionnaire was distributed among 20 human resource leaders and professionals of different organizations. Prior to distributing the questionnaires, the purpose of the study and questions were explained to participants. A total of 17 questionnaires were completed and returned within the 1-month data collection period.

3.4. Data Analysis

For data analysis, the researcher utilized thematic analysis, which is a qualitative data analysis technique that entails examining data for emerging themes and patterns that are used to answer the research question(s). This data analysis technique is used to identify, analyze, organize, describe, and report themes/patterns in a dataset (Nowell et al., 2017).

3.5. Ethical Considerations

Some of the ethical issues in this study include privacy and confidentiality of participant data and use of data. The researcher addressed these considerations by ensuring voluntary participation and limiting the use of data from participants to the research purpose only. In addition, study participants were not required to provide any personal identification information.

4. Results and Analysis

4.1. Profile of Study Participants

Personal and demographic information of the study participants such as age, gender, education, and work experience is presented in **Table 1** below.

Table 1. Profile of study participants.

Variable	Category	Frequency	Percentage
Gender	Male	10	58.8
	Female	7	41.2
Age	25 years and below	2	11.8
	26 - 30 years	5	29.4
	31 - 35 years	8	47.1
	36 - 40 years	1	5.85
	Above 41 years	1	5.85
Educational Level	High School Diploma	0	0
	Diploma	2	11.8
	Bachelor	10	58.8
	Masters	5	29.4
	PhD	0	0
Work Experience	1 - 5 years	8	47.1
	6 - 10 years	5	29.4
	11 - 15 years	3	17.65
	16 - 20 years	1	5.85
	21 years and above	0	0

4.2. Emerging Themes/Patterns

Most of the study participants were male (58.8%) as shown in the table above with varying educational levels and work experience. A significant proportion (47.1%) of the participants were individuals aged between 31 - 35 years while most of them (58.8%) had a Bachelor's degree. On the other hand, 47.1% and 29.4% of these participants had a work experience of between 1 - 5 years and 6 - 10 years respectively. Participants' work experience seemingly influenced their understanding of the research topic. In essence, participants relied on their work experience when completing the self-created questionnaire. In addition, participants' educational level also shaped their competence and knowledge of the issue. A higher educational level was seemingly linked to in-depth understanding of the complementary relationship between HRA and HRIS. While there were differences in age and gender of study participants, they had no impact on their understanding of the issue and responses to the questionnaire.

The study participants indicated that human resource accounting and human resource information systems are critical components of today's HR practices. They defined human resource accounting as the process of measuring data or costs of human capital. On the other hand, these participants consider HRIS as applications, tools or software used in HR processes and practices to carrying out various HR functions. Study participants contend that HRIS systems have become vital in their work because they automate processes relating to HR plan-

ning and functions. The study provided significant insights into the relationship between HRA and HRIS as shown in the following themes and patterns.

4.2.1. Theme #1: HRIS Supports HRA

One of the emerging themes in the dataset is the idea that human resource information systems support human resource accounting. 88% of the study participants reported that they utilize HRIS tools, applications or software to carry out accounting functions in human resources. Since HRIS tools are used for HR planning and function, these participants stated that HRIS supports HRA by providing necessary tools, processes, and applications for carrying measuring the costs of human capital. They use HRIS to collect, store, retrieve, maintain, and validate data on human capital expenses.

4.2.2. Theme #2: HRA Facilitates the Generation of Complete Information on HR

Secondly, the study participants suggested that HRA supports HRIS by facilitating the creation of complete information on an organization's human resources. 58.8% (10 respondents) reported that modern HR functions and processes incorporate collecting, maintaining, and storing accounting information. HRA provides a framework for ensuring that HRIS incorporates such information and generates a clear picture of an organization's human resources. The remaining respondents (41.2%) stated that without accounting information, HR information stored in HRIS is not complete as shown in **Figure 1** below.

5. Discussion

As technology is increasingly adopted in human resources, HR leaders and professionals need to enhance the efficiency of HR planning and function for their organizations. HRIS and HRA have emerged as two critical components for improving the efficiency of an organization's human resources. These two components are inter-related and share a complementary relationship. The study has shown that HRIS is the foundation with which HRA activities are carried out. Without HRIS tools and applications, it would be difficult for HR leaders and professionals to accurately measure human capital or carry out HRA activities.

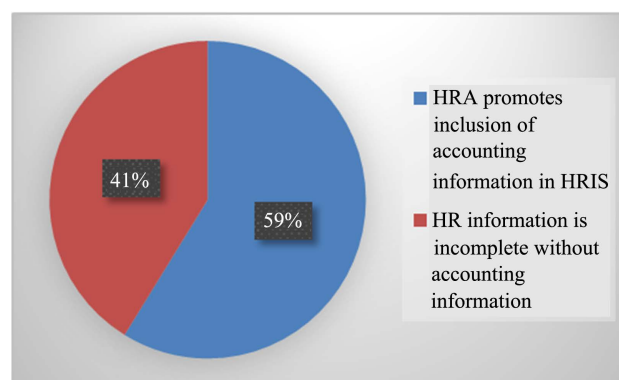


Figure 1. HRA generation of complete HR information.

The study's findings concur with existing studies on the role of HRIS in HRA activities. According to Bal, Bozkurt & Ertemsir, HRIS provides support for administrative tasks or activities like attendance management and payroll (Weeks, 2013). The support for administrative tasks becomes the premise upon which HRIS supports HRA activities (Totah, 2020). HRIS applications serve as the platform for the development of financial accounting software for improved organizational financial performance (Bhuiyan, Rahman, & Gani, 2015).

The study also demonstrates that HRIS plays a critical role in the collection, maintenance, and storage of complete human resource information as noted by Aggarwal & Kapoor (2012). However, information stored in HRIS applications is not complete without the inclusion of accounting information. As reported by study participants, accounting information should be integrated into HRIS to help generate an accurate picture of the organization. By promoting the integration of accounting/financial information into HR planning and function, HRA ensures HRIS generate an accurate picture of an organization's human resources. As HRIS is used in HRM processes and activities, accurate, relevant, and timely information that reflects the organization's true picture is essential for strategic human resource management (e Silva & Lima, 2018).

6. Future Research

While this research provides significant insights regarding the complementary relationship between HRA and HRIS, it has several limitations. First, a small sample size was utilized for this study, which could limit generalizability of its findings. Secondly, the researcher only recruited participants from his professional network and did not consider other HR professionals who could provide more insights on the issue. The study was carried out within 1-month period due to time and financial constraints. Therefore, larger-scaled studies on this issue should be carried out to promote better integration of findings into HR practices and solutions. Secondly, studies should be carried out to examine how to better integrate HRA into HRIS tools and applications.

7. Conclusion

The present study examines the complementary relationship between human resources accounting and human resource information systems. The results of this study confirm the significant relationship between these two components and their significant positive influence on each other. As evident in the study, HRIS supports HRA activities by providing necessary tools and applications for measuring the human capital. On the other hand, HRA facilitates the generation of accurate information regarding an organization's human resources by ensuring HRIS incorporates accounting information. This suggests that HRIS and HRA should go hand in hand as they complement each other in strategic human resource management. Insights obtained from the study findings can be used to promote better integration of HRA into HRIS tools and applications.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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