

The Impact of Internal Environmental Factors on The Level of Adoption of Human Resource Information System: The Case of Manufacturing Companies in Western Province of Sri Lanka

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Abstract: The aim of this study is to identify the impact of internal environmental factors on the level of adoption of Human Resource Information System (HRIS). The current study was designed to identify the impact of internal environment factors on the level of adoption of HRIS in manufacturing companies in western province of Sri Lanka. A structured questionnaire was designed, pre-tested, modified, and used to capture data on a cross-section of HRIS adoption manufacturing companies in Western province. Findings of this study concluded that internal environmental factors such as socio technology skills of CEO, top management support, centralization and HRIS experience of employees have a positive impact on the level of adoption of HRIS. In addition, this study provides some insights into the level of adoption of HRIS by manufacturing companies, which will aid HR practitioners to acquire a better understanding of the current status, benefits, and barriers on adoption of HRIS. However, there may be other factors which need inclusion to better explain extent of adoption of HRIS in manufacturing companies in western province of Sri Lanka.

Keywords: Internal Environmental Factors, Adoption, HRIS, Top Management, Socio Technology

1. Introduction

In the current era, information technology plays a major role in management in various functions of the organization, especially in Human Resource Management. Increased competition and continuous economic growth have allowed implementing proper technology applications for a rapid growth in the areas of Human Resource Management [1]. HR professionals should think widely about the achievement of organizational goals and objectives through the adoption of HRIS [2]. The human resource information system (HRIS) is “the composite of databases, computer applications, and hardware and software necessary to collect/record, store, manage, deliver, present, and manipulate data for human resources” [3]. It is a systematic computerized process of HRM functions in an organization. The adoption of HRIS helps to achieve competitive advantage in the industry [4].

HRIS is used extensively in organizations of all sizes and it is adopted and implemented in organizations generally. There are several factors affecting the level of adoption of HRIS in any organization. Previous studies have categorized those factors as internal and external environmental factors. This study is conducted to identify the impact of internal environmental

factors that affect the success in the adoption of HRIS. Internal environmental factors are those that represent organizational characteristics which influence adoption of HRIS. Yang indicated that adoption could be influenced in organizations that show high level of centralization and since top management can make adoption decision irrespective of resistance from lower level managers or employees [5]. Organization size, supporting organization settings including a skilled workforce are important factors in successful innovation adoption [6]. Top management support shows influencing action on HRIS. Research findings from Yang show that, CEO's attitude and interest towards information and communication technology (ICT) is important to promote HRIS adoption [7]. However most of the studies showed that management is also needed which is a positive influence on HRIS adoption [8],[9].

Over the last two decades, there has been a numerous study concentrating on HRIS applications and usage. While most of these studies have focused on the type of application that lead in HRIS and the context necessary for the successful implementation of HRIS as well as the conditions that support successful HRIS but few of them have focused on the adoption and utilization of HRIS and its effectiveness [10],[11],[12],[13],[14],[15],[16].

It is also noted that the majority of these studies have examined the adoption of HRIS applications as an innovation in service sectors such as public universities, hospitals, banks, and account offices, while few studies were conducted in manufacturing sectors [17]. Hence this study has chosen manufacturing firms in western province of Sri Lanka since most the leading firms are concentrated in western province of Sri Lanka.

The aim of this study is to investigate internal environmental factors influencing HRIS adoption in organizations. According to the review and analysis it is clear that several factors influence the HRIS adoption. Among those the internal environmental factors such as social technology skills of CEO, top management support, centralization and HRIS experiences of employees have showed more influencing impact in adopting the system. The main objective of this study is to identify the impact of internal environmental factors on the level of adoption of HRIS of manufacturing firms in western province of Sri Lanka. Therefore, based on the objectives the intended purpose is further divided and specified by the following four research questions:

- RQ1.** Find out whether social technology skills of CEO impact on the level of adoption of HRIS?
- RQ2.** Does the management commitment impact on the level of adoption of HRIS?
- RQ3.** Find out whether IT experiences and capabilities of employees impact on the level of adoption of HRIS?
- RQ4.** Does the degree of centralization impact on the level of adoption of HRIS?

2. Methodology

2.1 Conceptual Framework

Many researchers have found the factors that affect the adoption of HRIS and several theories have been developed relating to the adoption of information system in industries. Conceptual framework was developed after a thorough analysis of previous studies [18],[19],[20]. The model explores the impact of internal environmental factors on the level of adoption of HRIS. According to the framework, internal environmental factors is the independent variable that included four dimensions such as top management support, social technology skills of CEO,

centralization and HRIS experiences and capabilities and Adoption of HRIS is the dependent variable in this study. The conceptual model reveals that Adoption of HRIS is the ultimate result and internal environmental factors influence to the ultimate result of the adoption.

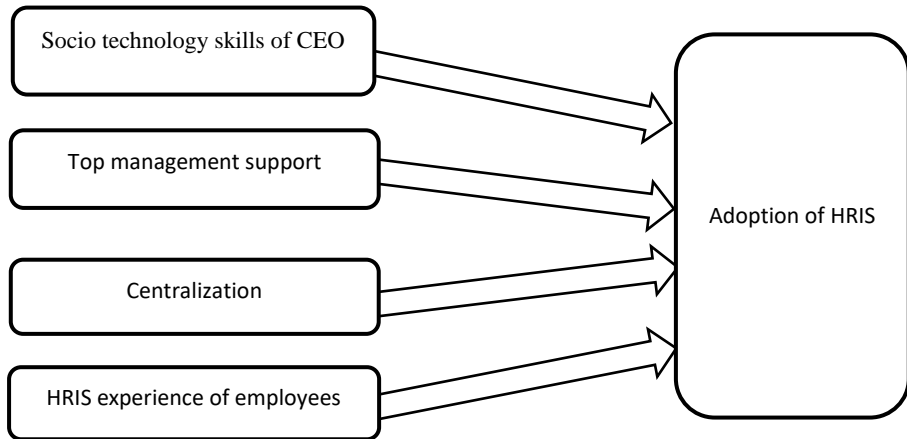


Fig 1: Conceptual Framework integrating internal environmental factors and adoption of HRIS factors.

This section provides a brief description of operational definitions of the constructs in the conceptual framework.

- A. Adoption of HRIS:** The organizational adoption of HRIS can be defined as the process of initiating and implementing of IS in order to perform HR tasks. Some experts believe that easy access to critical information will become an integrated part of much strategic decision-making process. HRIS is used extensively in organizations of all sizes. HRIS is adopted and implemented in organizations generally. There are several factors affecting the successful application of information systems and this study has narrowed down to identify the internal environmental factors that affect the successful application of HRIS.
- B. Top management support:** Top management support was recognized as an important element adopting information technology. [21] defined the term “top management support” as the extent of top management commitment and willingness to adapt their organizational culture and management process to meet the requirements of the adopting HRIS applications. Yap suggested that top management could identify future business opportunities by exploiting information technology. And with active involvement and support, the top management could guide right direction for adoption of innovation [22].
- C. Socio technology skills of CEO:** CEO’s or decision maker’s characteristics are more influential in attempting a most powerful decision [23]. According to Murphy and Southey, Socio technology skills of CEO can be defined as the CEO’s extent of technical and knowledge of IT, social network skills, decision making skills, commitment to adoption of IT innovation, support for the use of new technology and ability to gain consensus on ideas [24]. However, the positive socio-technology skills of the CEO (decision-maker) such as young age, experience, educational level, their ability to develop networking and communication skills, the power of authority and their attitude toward adoption are significantly related to the level of adopting HRIS [25].

- D. Degree of centralization:** Degree of centralization refers to the extent to which power and control are concentrated in the hands of few individuals [26]. It also refers to the degree of delegation of authority in an organization, that means the less authority is delegated in an organization the greater its centralization [27]. It impacts adoption when decisions are made at higher hierarchical levels in the organization. Opinions on the optimal degree of centralization differ from study to study. [28] conclude that more formalized and centralized organizations have lower levels of innovativeness. Arad added that a flat structure, autonomy, and work teams will promote innovation, whereas specialization, formalization, standardization and centralization will inhibit innovation [29].
- E. HRIS experience of employees:** HRIS experience and capabilities is a crucial factor in innovation adoption. It could be explained as knowledge of employees in HRIS [30]. HRIS staff should possess knowledge in more than one functional area; at least IS and HR functions. Availability of skilled HRIS professionals is essential in ensuring success. HR expertise could be achieved through user training [31]. Training enhanced technology competency which could affect the speed and coverage of adoption of innovation [32]. Organizations could delay adoption of innovation until the staff acquired sufficient technical skills and knowledge of operating HRIS. Research suggested that organizations with technology competency are more likely to adopt innovations. If the staff lacked in HRIS knowledge and skills, the rate of application of IT to HR departments could be slow.

2.2 Data gathering instruments

Data was collected through a standard questionnaire which was developed based on the existing measurement scales in literature which was already tested and validated widely by various researches in the domain of adoption of HRIS and internal environmental factors. The survey method was characterized by both online questionnaire and distributing questionnaires manually. For selecting the sample researcher used stratified sampling method and the survey was carried among 100 human resource executives in manufacturing industry in Western province, Sri Lanka.

The survey questionnaire comprises three parts. Part I comprises with ten questions (10) to assess the dependent variable; Adoption of HRIS, and part II comprises 4 Sections (4) to assess the independent variable; Socio demographic factors of CEO, Top management support and commitment, Degree of centralization and HRIS experience of employees. All the statements in part I and II were put on the five-point Likert scale.

2.3 Data analysis techniques

The collected data was analyzed using SPSS statistical package for windows. SPSS is a widely used program for statistical analysis in social science. To make sure that this study is truly measuring what it set out to measure and to provide assurance that the findings reflect an accurate measure, information regarding validity and reliability were considered. Further the statistical calculations such as correlation and regression were conducted in order to address the research questions.

3. Results

Cronbach's alpha is the most common measure of internal consistency ("reliability"). It is most commonly used when we have multiple Likert questions in a survey/questionnaire that form a scale and we wish to determine if the scale is reliable. The alpha values for the Adoption of HRIS (0.882), Socio technology skills of CEO (0.866), Top management support (0.946), Centralization (0.733) and HRIS experience of employees (0.899) indicated that the items formed a scale of reasonable internal consistencies in its reliability since value of the reliability test are more than 0.7.

Pearson's Correlation analysis was carried out as identify the relationship between variables of internal environmental factors and adoption of HRIS. Thus, following alternative hypotheses were proposed and analyzed in order to identify the relationships between variables of internal environmental factors and adoption of HRIS.

- H1:** Social technology skills of CEO has an impact on the level of adoption of HRIS
- H2:** Management commitment has an impact on the level of adoption of HRIS
- H3:** IT experiences and capabilities of employees has an impact on the level of adoption of HRIS
- H4:** Degree of centralization has an impact on the level of adoption of HRIS

Table 1: Pearson Correlation analysis of internal environmental factors

Factor	Coefficient	p-Value	Relationship
Social technology skills of CEO	0.564	0.000	Moderate Positive
Management commitment	0.631	0.000	Moderate Positive
IT experiences and capabilities of employees	0.374	0.005	Weak Positive
Degree of centralization	0.492	0.000	Moderate Positive

According to Table 1 there is statistical evidence to claim significant positive relationship between internal environmental factors and adoption of HRIS of manufacturing companies in Western province Sri Lanka.

Regression models were used to predict one variable from one or more other variables. For the purpose of identifying the importance variables influencing the dependent variable researcher used the regression analysis.

Table 2: Regression analysis of internal environmental factors

Predictor	R	R-Square
Social technology skills of CEO	0.564	0.318
Management commitment	0.631	0.398
IT experiences and capabilities of employees	0.374	0.140
Degree of centralization	0.492	0.242

Dependent Variable: Adoption of HRIS

According to Table 2, it could be concluded that social technology skills of CEO explain 31.8 percent variance in adoption of HRIS. Therefore, this finding revealed that socio technology skills of CEO has a positive impact on adoption of HRIS. Hence, H1 is accepted. The Regression R - Square results of top management support explain 39.8 percent variance in

adoption of HRIS. This finding revealed that top management support has a positive impact on adoption of HRIS. Hence, H2 is accepted. The Regression R - Square results of centralization explain 14 percent variance in adoption of HRIS. Therefore, centralization has a positive impact on adoption of HRIS. Hence, H3 is accepted. R - Square results of HRIS experience of employees explain 24.2 percent variance in adoption of HRIS. Therefore, this finding revealed that HRIS experience of employees has a positive impact on adoption of HRIS. Hence, H4 is accepted.

4. Findings and Discussion

This study aimed to study the impact of internal environmental factors on the level of adoption of HRIS. The Pearson correlation result of the study indicated that there is a moderate positive relationship between socio technology skills of CEO and adoption of HRIS. A greater support was reported by a number of scholars who found that socio technology skills of CEO had a positive effect on adoption of HRIS [33],[34]. The findings of this study also revealed that there is a moderate positive relationship between top management support and adoption of HRIS. Most of the previous researchers found that there is a positive relationship between top management support and adoption of HRIS [35],[36],[37].

Further the findings of this study also stated that there is a weak positive relationship between centralization and adoption of HRIS. Previous researchers found that there is both positive and negative relationship between centralization and adoption of HRIS [38][39][40]. Furthermore, the findings indicated that there is a moderate positive impact of HRIS experience of employees on adoption of HRIS. To claim evidence to this finding most of the previous studies also found that there is a positive relationship between these two variables [41],[42],[43].

5. Conclusion

This study was conducted to examine the impact of internal environmental factors on the adoption of HRIS. As per the hypotheses analyzed and tested in this study, it was found that internal environmental factors such as socio technology skills of CEO, top management support, centralization and HRIS experience of employees have a positive and significant effect on the level of adoption of HRIS. The findings of the study suggested that socio technology skills of CEO, top management support, centralization and HRIS experience of employees are the important determinants on the adoption of HRIS. The research has contributed to the body of knowledge in the area of HRIS research through providing a greater understanding and important insights into the determinants factors that affect the organizational adoption of HRIS within Sri Lankan context.

There are some limitations that exist during the process of this research. The sample size chosen for the study is 100. It is agreed that the bigger the sample is, the more representative the results are. Moreover, the researcher has chosen four determinants to investigate the adoption of HRIS, but there are also many other potential determinants that may affect the adoption of HRIS. Further this study has considered only the internal environmental factors. Therefore, the external environmental factors can also be included as the inclusion of the variables which might provide a better interpretation of the study. This study is conducted on the level of adoption of HRIS of manufacturing companies in western province of Sri Lanka since this province had the highest number of firms. But future studies could be replicated to

other areas in Sri Lanka and in different sector to generalize the applicability of HRIS applications in Sri Lanka. On the whole the researcher could conclude this study based on the findings of Pearson and regression analysis that the extent of HRIS being practiced is considered to be moderate in Sri Lankan manufacturing companies. Hence, the management of the organization could use this research findings in decision making for adopting such technology. In addition to that the study could support HR managers in manufacturing industry to adopt HRIS applications confidently and it helps to build HR divisions as strategically important sections of modern businesses. The academics also can understand the level of HRIS adoption in the context of Sri Lankan manufacturing companies.

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