


Linking Competitive Strategies with Human Resource Information System: A Comparative Analysis of Bangladeshi Organization

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ABSTRACT

Understanding how human resource information system (HRIS) is linked with competitive strategies (CSs) has become an important research topic in the field of strategic human resource management (SHRM) and information systems (IS). This study intends to find a relationship between HRIS and CSs and the resulting competitive advantages gained from the relationship that impact the organization's overall performance. A semi-structured questionnaire survey based on the face-to-face interview method was conducted among human resource (HR) executives of the selected Bangladeshi business organizations to collect data and find results. The result shows that HRIS implementation has a significant influence on CSs. Again, HRIS contributes to leveraging benefits from these strategies. The statistical findings reveal that HRIS pay-off (36%) is positively correlated (37%) with CSs to a lower-medium extent, but this correlation insignificantly affects business performance in this horizon. Finally, a framework is developed showing how to leverage HRIS pay-off based on findings and literature.

KEYWORDS

Bangladesh, Competitive Advantage, Competitive Strategy, HRIS Pay-Off, Human Resource Information System, Organizational Performance, Strategic Human Resource Management

1. BACKGROUND

The organization is a cohesive organism that learns to adopt or realize higher ways of doing things primarily in response to its setting. The question then is what the organization ought to do to keep up or to optimize its situation? Ought it to become specialized in its financial condition, information systems (IS), or human resource (HR)? To answer these questions, we must initially see what different researchers concluded. Coff (1994) argued that HR is a vital source of sustainable competitive advantage (CA) attributable to causative ambiguity and systematic information, creating them irreproducible. Ben Moussa and El Arbi (2020) mentioned that if management trusts their staffs, provides them challenging assignments, and engage them affectively, they reciprocally respond with high motivation, high commitment, high creativity, and high performance. What does that mean to us? It means that sources of CA leveraged from making sustainable competitive strategies (CSs)

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that have shifted from financial resources to technology resources and later to human resources. In other words, success does not rely totally on the scale of the budget or the merchandise supporting technologies. It mostly depends on employees' attitudes, competencies, and skills; their ability to get commitment and trust, communicate aspirations, and add advanced relationships.

IS is strategically valuable for recognizing strategic intent (Arvidsson et al., 2014). We all recognize that one of the prominent sources of CA is HR, and then what will we need to do to attain CA through them? The solution lies in CSs and HR practices shifted to human resource information system (HRIS). HRIS is a collection of computer hardware, software, databases to record, store, manage, manipulate, and retrieve data as and when necessary for the HR functions (Irum & Yadav, 2019). By working with new ways over extensive integrated systems by adopting new practices, human resource management (HRM) operations can be considered forward-thinking and cutting-edge technology (Barrett & Oborn, 2013). According to Robert Kaplan and Marvin Bower, the HR scorecard demonstrates how improved measurements play a vital role in linking HR initiatives to business strategies and significant increases in shareholder value (as cited in Becker et al., 2001). From an IS perspective, organizations striving to leverage a strategic alignment between information technology (IT) and business areas often underestimate the role of HRM in creating business value (Oehlhorn et al., 2020).

2. RATIONALE

There is an extreme need for organizations to manage changes during the technological age to compete and maintain their interest. Strategic human resource management (SHRM) is the crucial factor in efficiently managing these changes (Bhattacharyya & Atre, 2020; Kovach et al., 2002; Noutsu Fobang et al., 2019). On the other hand, meaningful use of data is fundamental to tackling workplace reshaping due to technological advancements (Kovach et al., 2002). Boateng (2007) stated that IT drives HR transformation from HRM into SHRM. This strategic role mainly enhances HR competencies and thus labels the success of HR professionals and practitioner motive. It is obvious that the correct management of organizational personnel using IS is essential for achieving potency and effectiveness in day-to-day operation. If they are appropriately managed and organized, it will lead to the general performance exceedingly positively to accomplish short-term and long-term goals; otherwise, it will lead to poor performance. Except techno-based knowledgeable personnel like analysts, these systems cannot produce a fruitful result in the case of gaining CA. Before developing a linkage between CSs and HRIS practices, there should be a principle. This principle provides a basis for predicting, studying, refining, and modifying every strategy and approach in specific circumstances.

Mahmood and Nurul Absar (2015) revealed some changes or evolution of new HRM practices in Bangladesh's private and public sector organizations. Kovach et al. (2002) stated, "this evolution has resulted in firms being able to leverage HRIS for administrative and strategic competitive advantage" (p. 44). Iqbal et al. (2018) showed that practices of electronic HRM (E-HRM) significantly influence labor productivity. Despite browsing many studies directly concerning HRIS and the appropriate use of HR within the context of organizations in Bangladesh, it is scarce to ascertain research analysis on this work's realm. Most of the HRM practices in Bangladesh have tried to show how HRM can improve the organization's performance and employee satisfaction. The aspect of IS on the organization's HR management and development is highly neglected in Bangladesh. On the other hand, the proper linkage of CSs with HRIS is not seen. Grant and Newell (2013) cited in their study that "the effective management of human resources can make significant contributions to organizational performance (OP) and that human-resource-related issues are central to the creation of sustainable competitive advantage" (p. 187). Contemporary organizational developments, such as the growth of knowledge-based and networked organizations, suggest that the strategic importance of HR-related issues becomes more significant (Lawler III et al., 2004). Thus conducting a study linking CSs with HRIS is vital to HR personnel, IS specialists, academicians, and other relevant stakeholders. Though Rahman et al. (2018) conducted a study on E-HRM implementation in government organizations in Bangladesh,

no alike study linking CSs with HRIS is found specifically concerning this aspect in the Bangladeshi context. Therefore, conducting this study is rationalized.

3. OBJECTIVE AND ORGANIZATION

Primarily, the current study aims to find out and show the linkage of HRIS with the organization's CSs. It further reveals the strategic importance of HRIS in HR development, especially for Bangladeshi organizations. Again, in this study, there is an attempt to find out the answer to the following questions:

RQ-1: Whether CSs has an impact on an organization's performance or not?

RQ-2: Whether organization's compatibility has a significant impact on business growth or not?

RQ-3: Whether HRIS contributes to an organization's financial performance or not?

RQ-4: Whether HRIS is linked up positively or negatively with the organization's CSs?

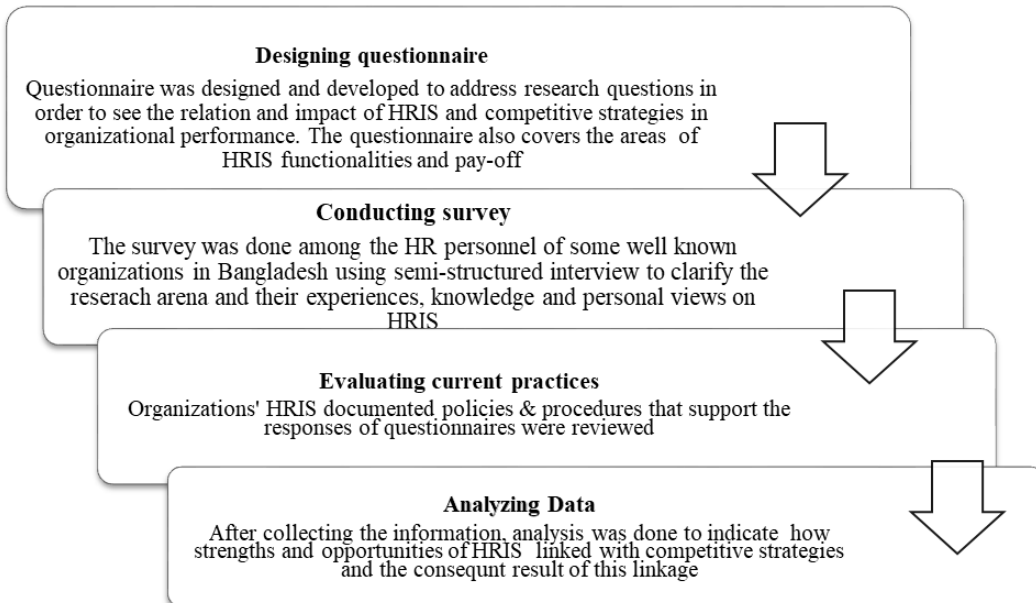
RQ-5: Has there any supported relationship between business growth and HRIS pay-off?

The organization of the study follows a sequential order for showing the linkage and the impact of HRIS on an organization's CSs. The previous parts of the study cover the background, rationale as well as objective and research questions. The forthcoming part discusses the methodology followed in this study. Then the fifth part covers the literature review. The sixth part shows the survey results describing interviewee information, CS pattern, CA, HRIS impact, and respondents' opinion followed by exploring the findings and evaluation in seventh part. Next, leveraging HRIS pay-off for CA is described through a model following the results outlined. The final part is about the summary discussion and conclusion involving recommendation, implication, limitation, and plan for future research.

4. METHODOLOGY

This study is conducted based on both primary and secondary data. The questionnaire survey was adopted to generate the preliminary data, which is the direct research design. The researchers designed a semi-structured questionnaire and used it to collect the primary data. After the interviewee's information, the researchers included four different parts in the questionnaire including CS pattern, CA, HRIS, and open-ended questionnaire. More than 30 questions are used in the questionnaire. Then the researchers gathered the data by filling up the formative questionnaire from HR executives of selected organizations in Bangladesh and got insights through a face-to-face interview technique. The researchers used both the qualitative and quantitative data, also known as mixed approach in the study and adopted a descriptive method for data analysis. The researchers analyzed the feedbacks received from eight organizations. They visited thirteen organizations where eight organizations responded, so the overall response rate was about 62 percent. The collected data were organized and tabulated in such a way so that the insights can be found. In preparing tabulation, some statistical functions like the mean, standard deviation, regression method, ANOVA test were applied to find the hypothetical results. Secondary sources of data were also considered. The secondary data sources were various articles from the related journals, different books, book chapters, conference papers, thesis papers, organizational reports, online sources, some empirical judgments, and assumptions. The researchers used the SPSS computer package (version 20.0) and Microsoft excel 2010 to analyze the collected data. Finally, based on findings and existing literature analysis, a framework is developed. The study is conducted through a systematic process. The procedure is shown in figure 1.

Figure 1. Process of research conduction



5. LITERATURE SYNTHESIS

Many studies are found on IS, HRIS, SHRM, HRM practices, CSs, and OP from existing literature. Some literatures that are relevant to this study is mentioned in this part. In this part, the researchers outline different definition of terms associated to this study and the results found from the previous studies.

The strategy involves a company's competitive moves and business approaches that its managers are trying to enhance business growth, attract and satisfy customers, tackle competitors successfully, do the operations and attain targeted performance (Thompson et al., 2008). Smith and Kelly (1997) believed that future economic and strategic advantage depend upon the organizations that effectively attract, develop, and retain various clusters of the most influential and brightest human talent within the marketplace. A CSs are a series of decisions that provide a business CA over its rivals (Schuler & Jackson, 1987). A business organization attains sustainable CA when considerable numbers of buyers prefer its product offering over the competitors and when the basis for this preference is durable (Thompson, 2008). Again, Schuler and Jackson (1987) recognized CSs apparently for cost reduction, innovation, and quality improvement. They conjointly initiated varied sorts of worker behavior and strategies of HRM for every CS. Porter's (1985) classifications of generic CSs initiate CS for the first time. He argued that an organization might achieve superior performance during a competitive trade by pursuing a generic strategy of overall market leadership, differentiation, or focus approach to industry competition. Irene and Frank (2004) argued that skillful, enthusiastic, and adjustable personnel strategic value are enhanced through competitive pressures from the environment. Boxall (1998) showed how HR strategy build and defend superior CA and ended that HR yields this advantage. Effective management of HR is thus the prime source of CA. Progressively, the delivery, support, and management of HR depend upon technology - specifically, HRIS (Johnson & Gueutal, 2010).

Beyond understanding business requirements, HR professionals need to raise their strategic value and also the importance of HRM practices by improving their competencies in three areas of designing organization, managing change, and measuring performance (Boudreau & Ramstad, 2005; Cascio,

2005; Kates, 2006; Lawler III et al., 2004; Ulrich & Beatty, 2001). Accurate and practical roles of all those liable for strategy formulation, implementation, and analysis together with HR professionals and HRIS analysts ought to play along. HRIS analysts are IT experts in the field of HRM. Developed countries' organizations adopt HRIS as an essential factor for achieving the strategic purpose (Noutsas et al., 2017) though developing countries are also in the race. Through the increasing use of the computerized system within the industrial operations of developed economies, organization's HR functions got accustomed to IS exceptionally throughout the 1980s. HRIS is primarily seen as a sub-function of management information systems (MIS) that supports an organization's HR functions. The organization's success can mostly rely on the coordinated, strategic management, and integration of its HR and IT (Kovach et al., 2002). Achieving this strategic coordination needs those folks who are liable for developing, implementing, operating, and maintaining an HRIS to possess extensive data of the organization's HR programs, the link between HR programs and strategic planning, and also the potential possession of information and communication technology (ICT) (Rampton et al., 1999).

HRM is the means to grow the functional activities that directly contribute to the profitability and determine its success in achieving CA. HRIS plays a crucial role in supporting the whole operations of the HR division. HRIS is not just computer hardware and HR-related software. Although HRIS includes hardware and software, it also includes people, organizations, policies, procedures, and data (Kavanagh et al., 2014) to acquire, store, manipulate, analyze, retrieve, and distribute human information resources. These are not technology but the art of human and human management. HRIS is the database, software, and computer systems that organizations use to take care of their HR in payroll, time off, worker records, benefits management, and more. These systems are associated with the intersection of HR and IT through HR software (Rietsema, 2021). Celia et al. (1995) defined HRIS as implementing system that acquire data and generate information about the personnel to assist in planning, forecasting, developing, and controlling them. Several recent studies identified that while the HR function has become more strategic in its orientation, it is not yet a full strategic partner in many organizations (Dye, 2006; Lawler & Boudreau, 2009; Weis & Finn, 2005).

Whereas investments in IT are still done for each potency and effectiveness function, the strategic information system (SIS) era is premised on management. It was proactively seeking out opportunities for CA through IT, with approaches to IS strategy formulation accommodating the necessity for each alignment of IS/IT investments with company strategy and assessing the troubling impact of technology, and also the choices for its use in shaping business strategy (Peppard & Ward, 2004). Using HRIS aims to provide accurate information to make HR-related decisions and reduce HR executives' manual work. HRIS has the potentiality of transforming HR into a more efficient and strategic function by allowing them to move beyond simple administrative activities to strategic applications. During HRIS implementation, converting manual system to automated system or switching to a new system from an old system is unfortunately easy for data integrity to be compromised (Rietsema, 2021). HRIS mainly supplements HR functions from HR planning to performance management (Irum & Yadav, 2019). There is a relationship between HRIS functions and HRM functionalities. More specifically, performance development, knowledge management (KM), and records and compliance as dimensions of HRIS have a relationship with HR functionalities and an effect over them (Obeidat, 2012). According to Karake (1995), the strategic posture of an organization leads to a proactive attitude for its managers who seek to satisfy stakeholders' interests, thus enable the organization to achieve CA and more business opportunism. Managers have a relatively positive view of the impact of the HRIS on organizational effectiveness, with the most significant degree of confidence placed on the impact of HRIS on time management and HR functions. The results confirm that a well-implemented and managed HRIS enables readily available information to be translated into more information share, knowledge transfer, and management.

Consequently, the HRIS can enhance the speed and quality of decision-making and realize the HR strategy, thereby enhancing organizational effectiveness (Kumar & Parumasur, 2013). The necessity to integrate HRM with IS has become a sine qua non as modern organizations realize that their people and information resources are part and parcel of their survival. That is why HRIS is

used extensively in all organizations irrespective of size, tenure of establishment, and operational complexities (Bhuiyan & Rahman, 2014). HR professionals consider HRIS to support strategic HR tasks and perceive it as an enabling technology. Large-size organizations are most likely to experience many HRIS usage in support of strategic HR tasks. Again, there was an insignificant difference in proportion to the organization's size regarding HRIS usage for committed management support and support to build trade union relations (Sadiq et al., 2012).

Robin (1992) reported that HR personnel gave much attention to personnel strategy development and policies to promote organizational goals. Nevertheless, HRIS facilitates strategic value by designing and implementing internally consistent policies and practices that confirm HR's contribution to accomplishing business goals (Troshani et al., 2011). Later, it was found that for strategic integration, HRIS leads to improved managerial performance and changes how organizations are managed (Katou & Budhwar, 2006; Pablos, 2004; Troshani et al., 2011). Thus, organizations can derive value through HRIS tools that assist with decision-making regarding essential HR functions (Farndale et al., 2010; Troshani et al., 2011). As a result, organizational effectiveness is triggered by the strength of the HRIS that can explain individual personnel behaviors (Bowen & Ostroff, 2004).

Wynen and Kleizen (2017) studied US public sector organizations and found a negative linear relationship between employee turnover and OP. The study of Garcí'a-Sa'nchez et al. (2015) revealed that HRIS has a strong relationship and positive impact on varied SHRM decisions, whereas OP depends on these decisions. The empirical results of Awan and Sarwar (2015) showed that HRIS and SHRM play a vital role in increasing the performance of banks. Different SHRM activities in banks like business method re-engineering, healthy union relations, determination of management worker relations, training and development, and higher cognitive process feature a sturdy relationship with HRIS. HRIS brings additional advantages to the bankers and provides the organizations a brand new and more elevated look. It has become a more vital issue with SHRM tasks. Celia et al. (1995) researched the link between HRIS and an organization's culture. They found that the higher the cultural relevance, the riskier the implementation because of the increased potential for cultural incompatibility. Oghojafor et al. (2014) found no significant relationship between competitive strategy and OP in terms of differentiation approach, whereas there is a highly significant effect.

A study on HRIS adoption among the 500 listed Singaporean organizations was conducted by Teo et al. (2001). This study shows that most organizations (60.3%) adopted HRIS use it for traditional purposes and 7.9% organizations use for a strategic objective. Another similar study conducted by Lin (1997) on the adoption of HRIS in Taiwan found that for the different levels of HRIS, MIS is the most demanding area by the Taiwanese organization for HRIS implementation (Andersen, 2001). Arifin and Tajudeen (2020) examined the effect of the human resource management information system (HRMIS) on Malaysian armed forces (MAF) personnel. They identified seven factors that affect MAF personnel's use, mentioning the system's quality, information, service, ICT infrastructure, security, commander support, and training. Additionally, Garcí'a-Sa'nchez et al. (2015) identified the KM process as the mediating factor of top management support for ICTs and OP. If HRIS is evaluated positively, upper job satisfaction and lower turnover intention can be found (Maier et al., 2013). Maamari and Osta (2021) showed that successful implementation of HRIS highly influences employees' job satisfaction. L'Écuyer et al. (2019) confirmed that the capabilities of small- and medium-sized enterprises' (SMEs) HRIS affect the HR performance by aligning strategies with the high-performance work system (HPWS). Mazhar et al. (2020) found that HPWS practices in various commercial banks in Pakistan influence OP positively. Ben Moussa and El Arbi (2020) studied on HR department of Tunisian companies showing HRIS impact. They found that the more the individuals become engaged in organizational activities, the more positive and effective outcomes are generated in terms of their innovation capability. Mulat (2015) conducted a close study where he found that 31% of participants replied unfavorably with the statement that their organizations' HRIS eliminates unsuitable candidates early and emphasizes promising candidates. 46.1% of respondents believed that their HRIS performs comprehensive tracking and reporting of candidates with efficiency. Nearly 50%

of participants responded with a neutral position that their HRIS leverages employee's talent within the right place and at the right time. 35.4% of executives believed that their HRIS recruiting scheme was better utilized and met their expectations, while 37% disagreed. Davarpanah and Mohamed (2020) found that user-perceived benefits from HRIS is inferred in situations of user satisfaction and situational normality.

From the discussion, it is evident that HRIS has a pay-off. However, in every sector, this pay-off differs. Again, CSs and effective HRM are crucial for organizational success. Existing works of literature prove that the application of HRIS in different contexts is one of the highly researched issues across countries. All studies reveal the message that the central role of HRIS is efficient management of the HR functions of any organization. Overwhelmingly, no specific studies were found explicitly based on linking HRIS with CSs showing their impact on Bangladeshi organization's performance. Based on the research questions outlined in this study and the literature review, following five hypotheses are formulated.

H1: CS has a positive impact on an organization's performance.

H2: Organization compatibility has a significant impact on business growth.

H3: There is significantly positive correlation between organization's financial performance and HRIS contribution.

H4: HRIS has a positive impact on business growth.

H5: HRIS has a significantly supported relationship between HRIS contribution and business growth.

6. SITE VISIT SURVEY RESULTS

The researchers obtained respondent's information through face-to-face site visit interviews. The analysis of these collected data are discussed in this part consecutively.

6.1 Interviewee Information

The researchers interviewed eight organizations' HR and/or IT managers who deal with HRIS related jobs. Apart from a system analyst, almost all interviewees found senior executive or executive position in the HR division of their respective organizations. They hold various academic degrees with priority for a major in HRM and IT. Most of the participants are from HRM career background. However, people can access human resource development (HRD) discipline in Bangladeshi organizations from any educational background except for few organizations. Most of the respondents had no specific choice for career selection, and even those who chose a particular career build-up failed eventually. The interviewees had been servicing their corresponding organizations ranging from 2 to 28 years. Accordingly, most respondents claimed that the person with little or no IT knowledge could cope with the IT-enabled system. On the other hand, retaining IT knowledgeable people are also tricky. Again, some executives think the work environment is challenging. The recognition for work and the high esteem in this field is the motivation for working in HR division. Most believe, there is no other particular area that makes it especially rewarding. Some respondents were reluctant to share their contact details in this survey where others were interested in admitting their connection.

6.2 Competitive Strategy Pattern

In the telecommunications sector, T1 emphasizes expertise and distinct resource strength that the rivals cannot imitate, and T2 aims to provide their products at low cost, differentiation-based products exercising market niche and practicing knowledge and resource strength. For hospitals, the only interviewed organization H1 hesitated about their CS disclosure; thus, the researchers failed to find out the specific CS for that organization. B1 and B2 aim to provide their products at low cost, differentiation-based products, exercising market niche, and practicing expertise and resource

strength in the banking sector. B3 strives to be the industry's low-cost provider strategy. B4 follows creating a differentiation-based advantage and developing expertise and resource strength strategy.

6.3 Competitive Advantage

The researchers have shown the overall customer satisfaction profile based on 6 different bases (e.g., product quality, reliability, customer's needs fulfillment, overall satisfaction, continuous purchasing intention, recommendation to other customers) within a 7-point Likert scale where 1 is lowest, and 7 is the highest score. It is regarded as how customers are satisfied with the services provided by different sector organization. T2's customer satisfaction level is comparatively better than T1. H1 scores a very much satisfactory remark, where B2 is relatively better than B1, and B3's score could not be measured for data insufficiency, B4 obtains the highest score (strongly satisfactory) that possesses highest satisfaction score in this sector. C1's score is found very satisfactory. The bases for customer satisfaction ranges from satisfactory to very satisfactory. The cross-sectional overall scores from different sectors are very satisfactory.

Regarding the customer satisfaction rating of the surveyed organizations, it is found that 50% of customers are very much satisfied, 25% are satisfied, and 12.5% are strongly satisfied, and at the same time 12.5% customers are dissatisfied with respective organization's services.

The CSs of the interviewed organizations found for T1 are weak. CSs of T2, B1, B2, B4, and C1 are very strong, where H1 is weak, but B3 is strong. The scores and remarks are based on overall scores of CSs leveraging from low-cost provider, differentiation, focused low-cost, and focused differentiation strategy. The CSs score is shown on average and placed on the right side of the table ranging from strong to very strong. The overall organization-wide CSs is strong.

The surveyed organization's CSs are found as 62.5% powerful, where the other 25% strong, and 12.5% weak. Most of the organization has positive financial growth, specifically net profit growth rate from the previous year except one organization. These ratings are 29.66%, 69.12%, 465.48%, 34.7%, and -19.2% for B3, B2, B1, T1, and B4 respectively.

In case of increment or decrement of the number of HR in the respective organization, most organizations were not interested in sharing as they consider it as confidential information. Regarding HR growth, B4 has a 7.41% increment, whereas B3 and H1 increase 9.32% and 13% respectively. Nevertheless, T1 reduces its by 10% in the specified year.

Almost every organization did not evaluate the pay-off gained from HRIS. T1 had estimated an overall IT pay-off as 50%. It is found from the site visit survey that the majority of organizations have a solid financial condition (see table 1). Except for a few organizations, most of the organization's annual report showed a positive growth of the organizations' performance compared to previous years.

Table 1. Organization-wide scenario for financial condition after HRIS implementation

Organizational Sector	Business Growth Rate	Financial Condition
T1	34.7	5 Extraordinary
T2	-	1 Bad
H1	13	4 Very Good
B1	465.48	5 Extraordinary
B2	69.12	3 Good
B3	29.66	3 Good
B4	-19.2	2 Moderate
C1	-	3 Good

Number of cases read: 8 Number of cases listed: 8

The researchers found 37.5% organizations as apparently good and very good, and 25% best for achieving CA.

The aggregate CSs are rated as T1, T2, and B2 to be good where H1 and B3 are very good, B4 and C1 are best (see table 2). These rates are based on customer satisfaction profile, organization's competitiveness, business growth, and financial condition. All in all, the overall CSs are very good.

Table 2. Overview of competitive strategy scenario

The base of competitive advantage	Organization-wise rating									Remark
	T1	T2	H1	B1	B2	B3	B4	C1	Overall	
Customer satisfaction profile	5	5	6	-	6	5	7	7	5.86	Very Good
Organization's ability to compete successfully	5	5	6	-	5	6	7	6	5.71	Very Good
Business growth	5	5	5	-	5	7	7	6	5.71	Very Good
Organization's financial condition	5	5	6	-	5	7	7	7	6.00	Very Good
Average score	5	5	5.75	-	5.25	6.25	7	6.5	5.82	-
Remark	Good	Good	Very Good	-	Good	Very Good	Best	Best	-	Very Good

6.4 Human Resource Information System

All interviewed organizations were found to rely on technology for conducting HR activities partially or semi-partially or fully; thus it is obvious more or less, they practice HRIS. Most organizations rely on technology for daily works by few or large, including HR planning, recruitment, selection, training, compensation, performance management, and transformational activities. Most interviewees think that by pursuing technology in HR activities, they get benefit for the ease of administration, report generation, frequent reviews, improved productivity, analysis, attendance management, reduced error, and less time in performing jobs. All organizations' professionals think that there is a positive impact of HRIS for accomplishing CSs. HRIS has a positive contribution to the organization's low-cost provider strategy. The survey report found that 50% of interviewees think that there is a contribution of HRIS on differentiation strategy, 37.5% stated no contribution, and 12.5% did not answer. 75% of interviewees think that HRIS positively contributes to the focused low-cost strategy, where 25% think the reverse contribution. 62.5% of interviewees agreed that HRIS has a positive contribution to the focused differentiation strategy, where 12.5% did not agree with this statement, and 25% think that it is not feasible with HRIS. Whatever perceptions found on different dimensions, all interviewees provide their consent on HRIS having a positive impact on overall organizational goal achievement.

6.5 Open Ended Question

The survey result shows that different organizations adopt dissimilar HRIS applications from various vendors. The HRIS applications and vendors used in surveyed organizations are listed as Oracle, Workday, ERP, BCSHRS, HR Matrix, SAP ERP, HRMS, and HRM System. Other organizations rely on their in-house developed HR software. The organizations installed the application many years back from today. The organization-wise picture for using HRIS is shown in table 3.

Combined with the most common modules found from the survey are goal setting, recruitment/selection/e-recruitment/hire or fire, payroll/salary processing, performance management, compensation

Table 3. Organization-wise scenario of HRIS implementation and its contribution to CSs

Organizational Sector	HRIS Application Name	Implementation Year	HRIS Vendor	HRIS Contribution to CSs
T1	Workday & ERP	2011	Workday & Oracle	Bad
T2	BCSHRS	2010	BCSHRS	Satisfactory
H1	HR Matrix	2009	The HRMATRIX	Attractive
B1	ERP	2010	SAP	Overwhelming
B2	Did Not Mention	N/A	N/A	Attractive
B3	HRMS	1999	In-house	Likely
B4	HRM System	2005	In-house	Likely
C1	HRMS	2012	In-house	Satisfactory

management/performance appraisal sub-system, promotion management, effort log, reporting, analytics, attendance system, overtime management, absenteeism management, leave management, training information system, personnel management system, employee information, time management, document management system, annual confidential report (ACR), central authentication, and more. Rather than these common modules, some HR professionals addressed material management, financial accounting, and cost management as a module in their HRIS application.

The survey found that the job duties in the HR division vary from organization to organization. One organization considers some job responsibilities as entry-level employees' duties where other organizations regard as mid-level job duties. Again, the mid-level job duties of some organizations are regarded as the job responsibilities of the top-level employees in other organizations. The job responsibilities at various levels found are enumerated here.

- § **Entry-Level:** doing a clerical performance, report generation, documentation, overtime entry, disciplinary actions, house allocation, storing employee information/data entry/work with the system/employee information entry, working with e-recruitment, initiating hiring/firing in the system, transferring/posting, preparing payroll report, and identity card.
- § **Mid-Level:** monitoring technical site, doing system modification, recommendation, supervision, promotional actions; accomplishing recruitment and selection process, working with personnel management system (PMS), training and development, tax calculation, implementing new projects or long term goals, delegating tasks, evaluating performance, heading departments/sections/sub-sections, making routine decision; approving loans/advances, and separating benefits.
- § **Top-Level:** making long-term strategic decisions, target fixation, action plan, decision-making authority, authorization, distributing action plans among divisions, posting, new project launching, creating a new section, monitoring overall HR activities, initiating training and development, and strengthening sanction.

No organizations agreed on sharing their strategic data. Some interviewees agreed to provide HRIS data with the consent of the higher authorities. Therefore, it was not easy to access the confidential information. Finding HRIS's contribution to the organization's net profit was difficult though a respondent mentioned that it contributes to their organization's profitability by 100%, where another mentioned 20%. No single respondent refuses the statement that HRIS is lagging and has no potentiality for growth. They think the field is growing day by day. From the respondents' point of view, the challenges might differ from organization to organization and individual to individual. Although the obstacles found to be most critical, many organizations are converting paperwork into a paperless platform. Lack of system know-how and experience, recruiting qualified workforce

directly and ensuring their retention, system integration failure/ERP down, updating software, setting up peoples' mind, managing resistance to change, workforce absorption are some of the difficulties found. However, respondent of B1 mentioned that no critical challenges they are facing nowadays.

Few respondents specified the unique characteristics and competencies of the people who succeed in HRIS. Attention to detail, quick learner, patience, sharing attitude, teamwork, sufficient working knowledge of computer, system development, proficiency of English language all are mentioned as the characteristics and competencies for HRIS professional. Again, hardworking and IT skills, combined expertise and function, usage of software and HR-related experience, business and system knowledge, experience in administration and well-known IT expert facilitate most in this field. IT expertise, business acumen, system development know-how, and sound knowledge of MS Office are functional technical skills. Side by side, query language, C, C++, database, java, C sharp, oracle, visual studio, operational ERP experience, overview of system workflow, and operational process integration for advanced-level applications are recommended skill sets. These skills are identified as beneficial for the functional and technical employees in this field.

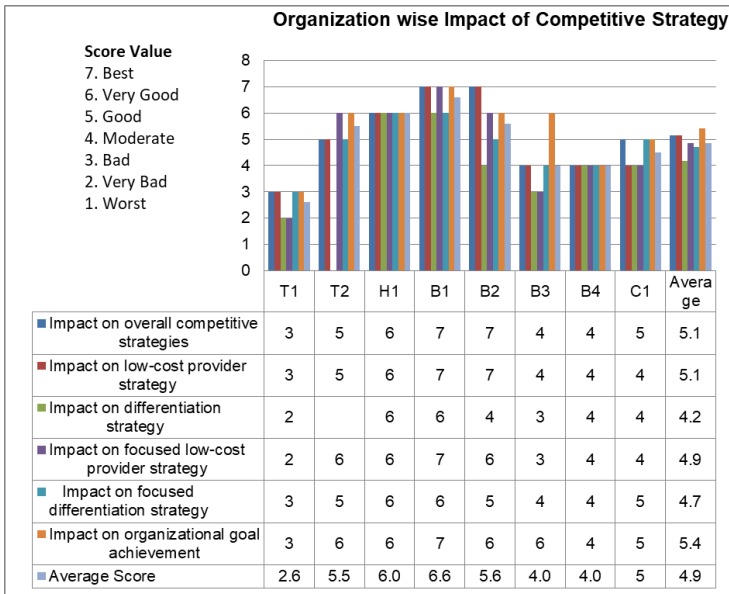
Some respondents considered revealing salary is conflicting with organizational privacy. However, some specified that entry-level salary ranged from BDT 15,000 to 55,000. Again, in mid-level, salary ranged from BDT 35,000 to 120,000. Similarly, top-level salaries ranges from BDT 60,000 to 300,000. It mainly depends on organization type, size, culture, salary structure, and the experience and expertise of HR people. Some respondents thought that they enjoy the work environment, learning opportunity, job security, promotion, and an immediate effect of activities on the career than other job fields' offer. The HRIS field is evolutionary in Bangladesh. From the interview, it is found that the future will be a paperless platform based on HRIS. Countrywide online recruitment system, one-machine, one-employee concept, no physical work environment rather facility to work from anywhere and HR analytics for prevailing organizational value might be seen in coming days in HR development in Bangladesh. They concluded that web-based HRIS in practice and fully integrated system facilitate internal shareholders. Much manual work can still be streamlined, and process simplification from other ends is required. Again, reduced working time, improved work efficiency, easy to get HR-related information, fast reports preparation and supply to top management, easy administration and decision making accordingly, radical time saving, increasing employee productivity, the achievement for success, security and correctness, timeless transaction, high communication, and contribution from more young people are required to get out the best of the HRIS.

7. FINDINGS REGARDING HRIS IMPACT ON ORGANIZATIONAL PERFORMANCE

From the organization site visit survey, various interviewees expressed their opinion regarding HRIS and CSs. Figure 2 illustrates the impact of HRIS on achieving CSs in the surveyed organization.

Here data provided by T1 indicates that it has a bad impact on overall CSs, low-cost strategy, focused differentiation, and organizational goal achievement; very bad impact on focused low-cost provider strategy and focused low-cost provider strategy. On an average, a destructive HRIS impact was found on CS. T2 has a good effect on overall CS, low-cost strategy, focused differentiation strategy, and a very good impact on differentiation and organizational goal achievement. Overall, it has a very good effect. H1 has a very good effect on all the strategic approaches involving the overall impact. According to B1, HRIS has the best effect on overall CS, low-cost provider strategy, focused low-cost provider strategy, organizational goal achievement, and overall achieves the best impact. In the case of B2, there is the best impact on comprehensive CS and low-cost provider strategy, very good impact on focused low-cost provider strategy and organizational goal achievement, good impact on focused differentiation strategy, and moderate impact on differentiation strategy. B3 achieves a very good impact on organizational goal achievement, a moderate impact on overall strategy, a low-cost provider strategy, a focused differentiation strategy, a bad impact on differentiation strategy, a

Figure 2. Organization-wise impact of HRIS on CSs



focused low-cost provider strategy, and an averagely moderate impact on CSs. B4 scores a moderate effect of HRIS in all criteria of an organization's CSs. C1 has a good impact on overall CSs, focused differentiation strategy, organizational goal achievement; moderate impact on low-cost provider strategy, differentiation strategy, focused low-cost strategy; overall it has a good effect of HRIS in CSs.

On an average, the impact of HRIS on an organization's CSs can be described as attractive, satisfactory, and likely has the same 22.2% impact where overwhelming and bad have an 11.1% impact (see table 4). No organizations referred to other departments or organizations in this regard.

From table 5, the researchers state that H1 is accepted for being the P-value less than 0.05. Thus, it is confirmed that the statement of the CS has an impact on the organization's performance.

Table 4. The rate at what extent HRIS contributes to the overall CSs of an organization

		Percent	Valid Percent
Valid	Bad	11.1	12.5
	Likely	22.2	25.0
	Satisfactory	22.2	25.0
	Attractive	22.2	25.0
	Overwhelming	11.1	12.5
	Total	88.9	100.0
Missing	System	11.1	
Total		100.0	

Table 5. Correlation between CSs and CA

		N	Sig.
Pair 1	What CS the org. pursues achieving CA & rate of achieving CA	8	0.042

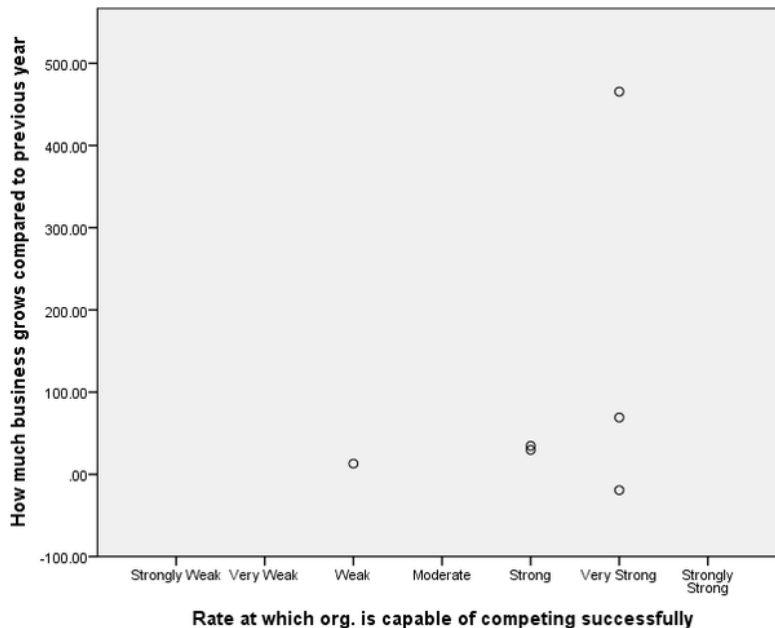
The sig value from table 6 is 0.47, which is more than 0.05, indicating that we cannot accept the H2. So an organization's compatibility has no significant impact on business growth. Though the Pearson correlation score here is 0.37, there is a positive correlation between an organization's compatibility and business growth with a lower positive relationship between the two aspects. It indicates that if an organization's compatibility grows, the business might enjoy a growing operation, but this growth may not be significant.

From figure 3, the researchers conclude that an organization's competitiveness is linear as the score has gradually risen to some extent, although these interactions are not significant.

Table 6. Correlation between organization's compatibility and business growth

		The rate at which org. is capable of competing successfully	How much business grows compared to the previous year
The rate at which org. is capable of competing successfully	Pearson Correlation	1	0.367
	Sig. (2-tailed)		0.474
	N	8	6
How much business grows compared to the previous year	Pearson Correlation	0.367	1
	Sig. (2-tailed)	0.474	
	N	6	6

Figure 3. Organization's compatibility profile



From table 7, it is seen that there is a positive correlation between an organization's financial condition and HRIS contribution, which means the higher contribution of HRIS generates a more incredible financial performance. This level of correlation is significantly strong as the score is greater than 75%. On the other hand, the sig. value is found to be 0.425, which is greater than 0.05. It

Table 7. Correlation between organization's financial condition and HRIS contribution

		Estimation of organization's financial condition	How HRIS contributes to the organization's overall net profit in percentage
Estimation of organization's financial condition	Pearson Correlation	1	0.786
	Sig. (2-tailed)		0.425
	N	8	3
How HRIS contributes to the organization's overall net profit in percentage	Pearson Correlation	0.786	1
	Sig. (2-tailed)	0.425	
	N	3	3

indicates that H3 cannot be accepted, which means there is no statistically significant correlation between an organization's financial performance and the contribution of HRIS.

As the sig. value found in Table 8 less than 0.05, the researchers conclude with a 95% confidence level that H4 is accepted, indicating a strong positive correlation between HRIS contribution and business growth.

From table 9, it is seen that HRIS contributes 35.7% growth in business, and other factors explain the remaining 64.3% of the growth.

In table 10, the value of β tells us that when HRIS has not implemented or does not contribute to the net profit, then the business growth rate is 7.64. Then, 0.67 explains how much business growth be achieved if HRIS is implemented or otherwise delivers its pay-off. On the other hand, the P-value of ANOVA and sig value ($0.118 > 0.05$) explain no statistically significant relationship between HRIS pay-off and overall business growth, thus H5 is rejected. It explains that HRIS has no significant supported relationship between HRIS's contribution and business growth.

Table 8. Paired samples correlations between business growth and HRIS contribution

		N	Correlation	Sig.
Pair 1	How much business grows compared to previous year & How HRIS contributes to the organization's overall net profit in percentage	2	1.000	0.000

Table 9. Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.597 ^a	0.357	0.250	24.69435
a. Predictors: (Constant), How HRIS contributes to the organization's overall net profit in percentage				

Table 10. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.643	11.879		0.643	0.544
	How HRIS contributes to the organization's overall net profit in percentage	0.672	0.368	0.597	1.825	0.118
a. Dependent Variable: How much business grows compared to the previous year						

Equation 1. Constructing regression equation

$$Y = a + b \times X$$

$$Y = 7.64 + 0.67 \times \text{HRIS_Pay-off}$$

What will the business growth rate be after a year when HRIS pays 35.7% to the business? For this case, the growth rate is predicted to be able to provide a business growth of about 31.56% next year by calculating as follows:

$$Y = 7.64 + 0.67 \times 35.7$$

$$Y = 7.64 + 23.92$$

$$Y = 31.56$$

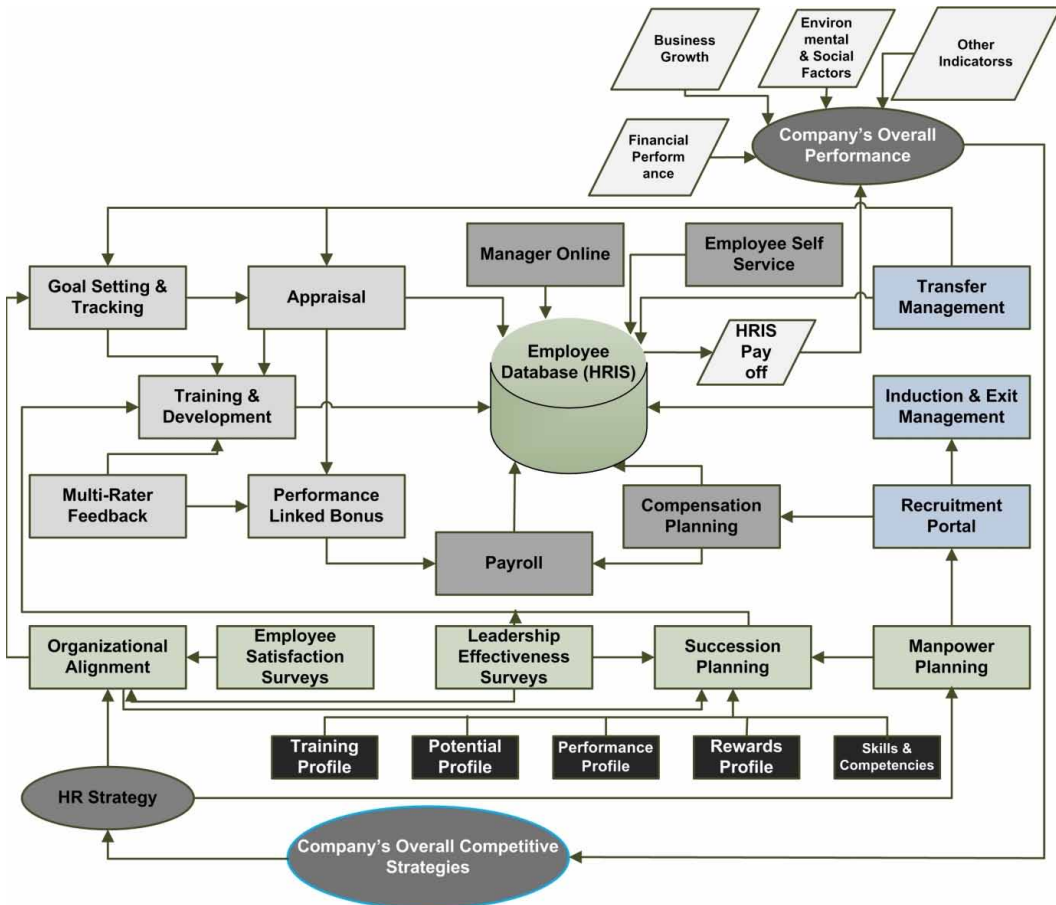
8. FRAMEWORK FOR HRIS PAY-OFF LINKED WITH COMPETITIVE STRATEGIES

Research shows that implementing HRIS enhances an organization's growth through long-run productivity and gain. Along with increasing workers' potency, HRIS is also transforming HR functions. Researchers highlight five keys to leverage HR technology to assist business leaders in perceiving and managing this transformation. Again, an outline of challenges to be addressed and an inventory of five trends to observe. Currently, this technology is moving quickly to internet-based systems to deliver knowledge and services like employee self-service (ESS), online recruiting, web-based coaching, applicant online testing, and online benefits management. There are varieties of organizations that support internet portals that offer HR-related services from one portal. To leverage this sort of technology needs leaders specialized in underlying HR processes supported by HRIS.

From figure 4, the HRIS pay-off is leveraged by combining the company's overall CSs. HRD is accountable for developing the HR strategy when broad CSs are created. This strategy is developed by involving the required workforce, which might be crammed up by crucial business leadership positions by distinctive internal employees. Succession planning needs training profile, potential profile, performance profile, rewards profile, and necessary skills and competencies. Succession planning may also be satisfied by the leadership effectiveness survey, and this survey can also play a role in organizational alignment, which also contributes to streamlined succession planning. Organizational alignment has impacts of employee satisfaction and leadership effectiveness survey, which is linked up with HR strategy on the other hand. It contributes to the successful execution and implementation of the HR strategy. External HR workforce planning requires an HR recruitment portal for hiring the necessary people to conduct the business profitably. This recruitment portal is linked up with induction and exit management and compensation planning. For sustainable organizational alignment, setting organizational goals needs to be made and tracked considering the transfer management. Goal setting and tracking have an impact on appraisal management. The appraisal is also taken upon transfer management.

Based on the assessment and multi-rated feedback, HR personnel set up a performance bonus. The payroll system generates paycheques combined with performance bonuses and compensation planning. Based on goal setting and tracking, succession planning, leadership effectiveness survey, multi-rated feedback, and training and development decisions are made. Payroll, training and development, compensation planning, appraisal, working online, employee self-service, transfer management, and induction and exit management data are linked and stored in the HRIS database. These data are regularly updated when any changes are made in a module or sub-system in the HRIS. After a certain period, HRIS performance is evaluated, and thus HRIS pay-off is found. This pay-off contributes to the overall OP, primarily through financial performance, business growth, environmental and social growth, and others.

Figure 4. A framework for HRIS system workflow linked up with organization's CSs Source: Adopted and revised from Buller and McEvoy (2012); Kavanagh et al. (2014)



9. DISCUSSION AND CONCLUSION

This study finds a correlation (37%) between HRIS impact on CSs that does not significantly affect the business performance in Bangladeshi organization. There is a positive correlation between organization compatibility and business growth. A strong positive correlation between HRIS contribution and business growth is found, and HRIS has a 36% pay-off positively correlated with CSs to a lower-medium extent. For the regression function, it is inferred that at the obtained HRIS pay-off, the business might grow at 32%.

One vital issue that will set an organization apart from its competitors is its HR. The quality of the organization's personnel, enthusiasm, and satisfaction with their jobs and the organization all severely impact its productivity, reputation, and customer service level. The essential function of HRs today is to ensure efficient and effective use of human talent to accomplish an organization's goals and objectives. Formulating an applicable CA through the employee programs for an organization requires analyzing the organization's business strategy and HR practices following HRIS implementation. The organization requires developing a complete HRIS model that should support long-term planning, build core competencies, and establish sensing capabilities.

Insufficient ICT infrastructure, lack of commitment and involvement from top management and all staff, resistance from staff, a concern of access to information by unauthorized persons,

lack of IT specialists, difficulty in computerizing much paperwork in implementing HRIS hinder perceived benefit of HRIS. Thus, these factors are considered as the restrictions of implementing HRIS in Bangladesh. Finally, organizational CSs, combined with HRIS, will result in high employee satisfaction, high performance, longer tenure, willingness to accept change, and overall performance. It can be concluded that HRIS is an excellent tool for the HR division and the organization as a whole, but there are still some bones to pick up, and the actions that HRIS has not absorbed need to focus.

9.1 Recommendation

HRIS is considered as a valuable resource in HR and strategic decision-making (Kovach et al., 2002). Hence, implementing HRIS does not guarantee a positive pay-off. There is evidence that many corporate strategies often fail because they do not address salient people-related issues. There is conjointly a risk that enormous investments in HRIS will not improve HR professionals' satisfaction or render the strategic HR tasks performance. It might be an outgrowth of low technology acceptance among supposed users, inappropriate technology decisions, or different factors. Till a lot is understood, investments in these innovations ought to proceed with caution (Boateng, 2007). Organizational change issues need to be considered when implementing IS in small organizations (Levy & Powell, 2000). It is necessary to follow a strategic vision in performing organizational practices based on its capabilities (Devece et al., 2019). Employee engagement is positively related to flexible work arrangements (Ugargol & Patrick, 2018).

The future is unpredictable; however, the organization should form the aptitude to sense the modification. To link CSs with HRIS in Bangladesh, organizations should follow several things. With keeping the details in mind, the below-mentioned recommendations specifically for organizations in developing countries like Bangladesh are made.

- Knowledgeable HRIS analysts should be appointed, and a need-based training program should be arranged from time to time
- HR strategy should target achieving CA through the workers and exploiting practices that support this strategy
- HR executives need to revise their existing HRIS recruitment and selection procedures to provide various functionalities
- Organizations need to implement an HRIS that links employee performance to corporate business goals and priorities
- The organizations should have fairer evaluation and when necessary amend their current HRIS compensation and benefits scheme to stop turnover
- Organizations should continue to develop their capacity for HRIS at both the strategic and the tactical levels

9.2. Implication

Positive HR programs translate into a positive impact on the organization. Many organizations emphasize HR that have created a distinction inside the organization's performance. These organizations acknowledge the importance of their workers in making a difference and providing the essential ingredient for its CA. The current study result has implications to the HRIS analysts, HRM executives, scholars, and other relevant stakeholders especially of Bangladeshi and other developing nations.

9.3. Limitation

This study covers a thorough analysis of HRIS, which is central to achieving CA. Any good work is not out of the limitation; this study is also the same. Again, as organizations consider CSs and HR data their confidential resource, it is not easy to collect them. Thus, the actual scenario cannot be revealed with appropriate data. Again, there are few implementations of HRIS in Bangladesh; as a

result, limited sources are available. Consequently, the data were collected only from selected top-ranked organizations cannot correctly reveal the actual scenario.

9.4 Future Study

While this research has realistic result in HRIS, it provides a platform for future research in the relevant area that ought to think about various problems. First, a detailed analysis is needed to explore the role of HRIS in CSs, especially with a larger sample size and a higher response rate, interviewing many spot real users of HRIS, owners, vendors, trainers, and other relevant stakeholders so that a more profound analysis is generalized. Second, HRIS represents a significant investment decision for organizations of all sizes. Researchers can conduct a further study as a guide to develop a proper roadmap that guides the investors to make a strategic decision in this field. Third, an in-depth survey on HRIS usage in support of an organization's performance needs further examination. Thus, a group of researchers would find excellent and real-time research results to minimize existing limitations and find possible HRIS implications on CSs for the concurrent study.

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