

Management Critical Success Factors for Implementation of the E-HRM System in Gaza Strip's High Education Sectors

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Abstract: Electronic human resource management (e-HRM) is a system that provides comprehensive online assistance to handle all the human resource management procedures and tasks needed. The implementation of this system is affected by many management factors. Such factors have been called critical success factors (CSFs). This research is intended to examine the effect of CSFs on the successful implementation of e-HRM in the high education sectors in Gaza Strip. The six initial CSFs defined by literature are internal communication, top management support, leadership characteristics, expertise of the work team with the task and the requirements of E-HRM. The primary data were collected from among 101 respondents. The data collection was analyzed using IBM SPSS 20 statistical applications. The finding of the results indicated that the important CSFs are involvement the HR team, leadership characteristics, team experience, requirements and support top management. The Pearson correlation analysis indicates a positive relationship exists between all CSFs and the implementation of e-HRMs. In addition, the stepwise regression explored the positive effects (60%) of CSFs (HR team involvement, team experience and leadership characteristics). on the implementation of e-HRM. Finally, it indicates that requirements and top management support are not effective dimensions. On the basis of these results, the study recommends increased management support and increased interest in enhancing team experience.

Keywords — CSFs, e-HRM, Gaza strip, High Education Sectors

1. INTRODUCTION

In recent decades the technology of information and communication (ICT) became a crucial factor for the success of modern business processes. Improved competitive advantages, economic indicators, quality of jobs and cost efficiency are the main benefits of using ICT [1]. It also improves the communication between companies and their customers internally and externally [2]. To achieve these advantages, many organizations have turned the human resource management (HRM) processes into electronic human resource management (e-HRM). As a result, spending on software development grown significantly to meet current and future needs [3, 4]. According to [5], global information technology (IT) has invested more than \$457 billion in business software growth in 2019, an increase of 9 per cent from 2018. In Palestine, there is awareness of the value of e-HRM in decision making, which significantly contributes to the adoption and development of e-HRM [6].

However, the Standish Group reported a partial or complete failure of 83.9 percent of IT projects [7]. To reveal the causes of this failure, several studies, such as [8-11] have been involved in the concept and assessment of critical success factors (CSFs) influencing software efficiency. Following these studies, the current research addresses the CSFs that have affected the implementation of the E-HRM systems in the high education sector in Gaza Strip. The key aims of this analysis are to:

- Identify and rate CSFs in Gaza Strip's high education sectors.

- To investigate the relationship between CSFs and the implementation of e-HRM in Gaza strip's high education sectors.
- To determine the extent of e-HRM implementation according to the respondents' opinions in Gaza strip's high education sectors.
- To investigate the impact of CSFs on the implementation of e-HRM in Gaza strip's high education sectors.

2. RESEARCH QUESTIONS

In order to achieve the objectives, this research addresses the following questions:

- What are the CSFs in the high education sector in the Gaza strip?
- To what extent is human resource management implemented in the high education sector in Gaza strip?
- what is the relationship between CSFs and the implementation of e-HRM in Gaza Strip's high education sectors.
- What are the effect of CSFs on the implementation of High Education E-HRM systems in Gaza strip?

3. RESEARCH HYPOTHESES

According to research questions, the developed hypotheses are:

H1: There is a significant relationship between CSFs (Leadership characteristics Internal communication, Work team's expertise, Requirements and specifications, Top management Support, and Customer training and education)

and the implementation of e-HRM in the high education sector in the Gaza Strip?

H2: There is a significant impact of CSFs on the implementation of e-HRM in the high education sector in the Gaza Strip?

4. CRITICAL SUCCESSES FACTORS

When implementing electronic systems, critical success factors (CSFs) are considered an important issue [2, 12]. The success of the implementing E-HRM processes are constrained by several criteria called success constraint that refers to the measures that used to judge the success or failure of software [2, 13]. According to [13], the success or failure of software is measured by triple constraint: time, cost and performance. In addition to these factors, [14] adds three new constraints to project success criteria, which are: customer acceptance, minimum scope changes and without changing the corporate culture.

Although, many current studied reported that failure rate of software is very high [7]. In order to better understand why these software succeed or failed, and how improve the project's chances of success, many researchers addressing the critical success factors (CSFs) that significantly contribute to the success or failure of these software [9, 15, 16]. For example, [9] studied the CSFs of IT projects. They concluded that commitment and motivation are the highest CSFs of implementing the software. The same research carried out by [17] which identified the main CSFs in public software projects. The factors found in this research were client involvement, high priority of the requirements, and good communication between the clients and the external environment. [12] presents a comprehensive literature survey of key performance factors affecting software projects from 1990 to 2010. He found that the most CSFs of software projects are the clear and frozen requirements, realistic estimation of the schedule and budget, and competent project manager. [18] identified CSFs that influence IT project performance. These factors are unclear requirements, over drawn budget, and schedule mismanagement. [19] studied the CSFs that related to Enterprise Resource Planning Implementation. They concluded that the most critical CSFs for successful implementation of ERP systems were top management support and engagement, training and education, project management, clear vision and goals, change management and communication.

Many researchers have examined the relationship of CSFs and the chance of success of software projects to bet better understanding. For example, [8] investigated the correlation between CSFs and software project success. They concluded that there are positive associations between three CSFs (team experience with the methodologies and task of software development and project monitoring and control) and successful software projects. In the same vein, [16, 18] confirmed that there is a positive relationship between CSFs and project performance. [16] conducted a survey to explore

the relationship between CSFs and project performance. They developed conceptual framework by identifying five variables for project success namely Project Management Action, Project Procedures, Human Factors, External Issues and Project Related Factors. However, few studies in the literature that have examined the relationship of CSFs and the success chance of e-HRM. [20] explore the relationship between multiple dimensions of top management support and success of projects. As a result of this research, all dimensions of top management support have a significant positive effect on project success in Pakistan's public sector.

From the previous study, 44 CSFs were identified from 18 publications. These factors are grouped into six main categories: Customer Learning and Education, External Communication, Top Management Support, Project Manager Skills, Work team Task Expertise, Requirements and Specifications and Project Involvement Team. Table 1 shows the CSFs and references in the literature.

Table 1: A Review of CSFs

<i>CSFs</i>	<i>References</i>	<i>Description</i>
1. Customer training and education.	[8, 12, 13, 15-17, 19, 21-23]	Customers' training and education is increasing their perception of the product.
2. Internal communication.	[8, 9, 12, 15, 16, 18, 19, 21, 22, 24]	Internal communication refers to coordination between work teams, managers and stakeholders through the sharing of information between work team members [15].
3. Top management Support.	[8, 12, 13, 15, 19-21, 23, 24]	Top management plays a key role in creating innovation by providing the right environment to make decisions which support the effective development and implementation of knowledge
4. Leadership characteristics.	[8, 10, 13, 15, 17]	The key leadership characteristics are efficiently solving problems, working with a clear outcome focus, looking for different perspectives and helping others

5. Work team's expertise with the task	[8, 12, 16, 21-24]	Personal responsibility, clear understanding of their roles, problem solving, technical and soft skills are key features of work team experience.
6. Requirements and specifications	[8, 12, 17, 18, 21, 22]	Software requirements and specifications set out what the software must do and what it should not do. Many software projects fail because of unrealistic and unfulfilled requirements.

5. ELECTRONIC HUMAN RESOURCE MANAGEMENT (E-HRM) SYSTEM

The term of E-HRM was emerged in 1990's as a result of increased using the ICT [3]. The term of E-HRM consists of two parts, the first being 'E' which means the electronic technology being used. That's mean the E-HRM is using the electronic technology to support the HRM activities [2].

Since the emergence the E-HRM concept, several researchers intended to address the definitions of E-HRM and their impact on the organizations behavior. For instances, [25] defined e-HRM as a way of implementing HRM strategies, policies and practices in organizations by using ICT. [26] defined it as a way of implementing HR strategies, policies, and practices in organizations through the internet. [27] stated that the main goal of e-HRM is to convert the HRM function to adapt the organization strategic. Also [26] concluded that the e-HRM help the organizations to improve employee competences, HR's administrative efficiency and cost reduction. According to [28] E-HRM is a business solution that offers integrated online support to manage all procedures, tasks, data and information needed to manage human resources in a modern business. [2] addressed the role in using the e- recruitment system. They concluded that the e-recruitment system is very important to the enterprise as a function of E-HRM in order to perform it. To take advantage of the Internet, many organization change their cores by transferred their HRM systems to E-HRM systems [3, 29].

The biggest advantage of using E-HRM are decreased organizational time and costs, better internal communication, improved service, HR reorientation and organizational efficiency [25, 30]. E-HRM offers a number of functions like managing employee information, e-learning, online recruiting, e-performance management, e-compensation and e-training [4].

In this paper we follow the definition of e-HRM as functions and processes that e-HRM applications provide in order to achieve organizational goals. In Gaza Strip, multiple studies have shown that e-HRM is available and plays a significant role in the electronic management change [31]. The current study focuses on the effect of certain CSFs that

have been identified throughout the literature review that may affect the success of e-HRM systems.

6. RESEARCH METHODOLOGY

This study is based on a literature review that related management CSFs and the implementation of the e-HRM system. The initial questionnaire consisted of 52 items measuring six dimensions of CSFs (leadership characteristics, internal communication, work team's expertise, requirements and specifications, top management support, and customer training and education). The responses were recorded using five points like scale (from 1: very disagree with 5: very agree). The questionnaire was developed in Google-Docs and the data were processed using Microsoft Excel 2010 and SPSS 20. The reliability and construct validity of the initial questionnaire was examined from statistical reliability analysis and factor Analysis. To test the research hypothesis, the stepwise multi regression techniques were utilized. Modeling regression is one of the most commonly used methods to estimate the effect of an independent variable on the dependent variables.

6.1 SAMPLING

The study focused on high education sector in Gaza, where the random sample included 101 respondents. The analysis of survey shows that the majority of respondents were 74.75% male, while the female was 25.25%. 30.3% of the sample work in the field of IT, 30.3% in HRM and 39.39% in academia 61.62% of the sample work experience over 10 years, 29.29% between 5 and 10 years and 9.09% less than 5 years as shown in Table 2.

Table 2: Demographics of the Study

<i>Characteristics</i>		<i>Sample Number</i>	<i>Percentage %</i>
1. Gender	Male	76	74.75
	Female	25	25.25
2. Education	Postgraduate	68	66.67
	Undergraduate	33	33.33
3. Experience /Years	Less than 5 years	9	9.09
	Between 5 and 10 years	29	29.29
	More than 10	63	61.62
4. Job	IT	30	30.30
	HR	32	30.30
	Academic	39	39.39

6.2 RELIABILITY AND VALIDITY ANALYSIS

Data reliability has been tested using the Alpha Coefficient of Cronbach's alpha. For this study, the

Cronbach's alpha was 0.95, indicating high reliability. This can therefore be known that the reliability is achieved.

6.3 FACTOR ANALYSIS

Factor analysis method was used in this study to reduce the dimensions of CSFs. This method depends on the Eigenvalues and the cross loading in order to determine the number of dimensions in the instrument. Eigenvalues are important factors in which components with Eigenvalues greater than 1 are more significant and factors less than 1 with Eigenvalues are negligible. Cross loading refers to the two or more dimensional distribution of items. The component analysis and varimax rotation for CSFs dimensions were run on 29 items from a survey of 86 respondents. The results show only five dimensions that eigenvalues greater than 1.0 and 11 items were eliminated due to cross loading as seen in the table 3.

Table 3. Results of Factor Analysis

Factors	Items				
	5	4	3	2	1
Factor 1: HR Team Involvement					
1. HR Team has a strong vision and long term goals.	0.68				
2. HR Team is involved in determining system requirements.	0.79				
3. HR personnel are trained to use the system	0.78				
4. The HR department staff's requests are promptly responded to by the system.	0.71				
Factor 2: Leadership Characteristics					
1. Decisions are taken using team participation.		0.71			
2. Information is received to perform the tasks successfully.		0.73			
3. The relationship between the members of the team is respected, regardless of		0.69			

their job titles.					
4. Requirements priorities are precisely defined.		0.58			
5. Standard templates / documents are used to describe HR system requirements.		0.54			
Factor 3: Team Experience					
1. The support feature can be shared between team members about job tasks			0.53		
2. There is a clear understanding of the nature of the roles and tasks of the team.			0.75		
3. The team is characterized by its ability to solve problems effectively.			0.71		
4. The staff has the ability to take personal responsibility for the results of the work.			0.58		
5. The staff have sufficient skills to perform tasks effectively.			0.81		
6. The staff has the ability to initiate and make suggestions to solve problems.			0.62		
7. The team can prioritize to meet business needs.			0.67		
Factor 4: The requirements of Implementation e-HRM system					
1. Strategic information of the organization is obtained on a regular basis.				0.47	
2. Clear definition of the organization's policies and procedures in				0.72	

place.					
3. e-HRM system Requirements are determined precisely.				0.64	
4. All HR system Requirements are documented according to scientific methodology.				0.79	
5. The risks that may affect system building are carefully identified and analyzed.				0.84	
6. There is a printed brochure distributed to all employees as a guide to using this system.				0.71	
Factor5: Top Management Support					
1. Concerned with computerizing all e-HRM processes.					0.82
2. Allocates the necessary resources to develop the e-HRM system.					0.73
3. Allocates a special budget for the development e-HRM system.					0.73
4. Involved in determining the requirements of e-HRM system.					0.79
5. Believes in the importance of e-HRM system					0.88
6. Focuses on improve the performance of employees using of modern technology.					0.77

The results of table 3 showed that five CSFs factors are identified. These factors have contributed together 80.57 % of the total variance explained by the CSFs. The identified are HR team involvement, leadership characteristics, team experience, and top management support.

7. RESULTS AND DISCUSSION

7.1 CSFs in Gaza Strip's High Education Sectors

The results in Table 4 show that the level of the CSFs is 74.12 %. Also the results show that the respondents believe that the most important CSF is requirements with the highest frequency of (77.2%). Followed by leadership management with the frequency of (77.2%), and team experience with the frequency of (74%).

TABLE 4: CSFS IN GAZA STRIP'S HIGH EDUCATION SECTORS

No.	e-HRM Functions	Mean	Frequency %
1.	Team Involvement	3.56	71.2
2.	Management Support	3.55	71
3.	Requirements	3.86	77.2
4.	Leadership	3.85	77
5.	Team Experience	3.71	74.2
CSFs		3.70	74.12

7.2 Implementation Level of e-HRM Systems

The results in Table 5 show that the implementation level of the e-HRM is 74.6 %. It also show that the e-attendance system, the staff authority, updated data on a regular basis, the employee portal and the reduction of cost functions are available. Where, the e-training system needs to be enhanced.

Table 5: e-HRM systems Level

No.	e-HRM Functions	Mean	Frequency %
1.	Supports most daily routine tasks.	3.62	72.4
2.	Information collected electronically	3.67	73.4
3.	Reduce the cost of HR practices	3.88	77.6
4.	E-monitor of employee performance	3.65	73
5.	Electronic attendance and leave are recorded	4.18	83.6
6.	Staff performance is assessed electronically by the line manager.	3.74	74.8
7.	The training needs are identified electronically.	2.97	59.4
8.	There is an employee portal that manages personnel services.	3.88	77.6

No.	e-HRM Functions	Mean	Frequency %
9.	Employee data is updated regularly on the website	3.79	75.8
10.	Provide the staff with various degrees of authority.	3.94	78.8
11.	Flexible enough to handle any new organizational changes.	3.71	74.2
e-HRM		3.73	74.6

7.3 Correlation Analysis

The Pearson correlation coefficients have been analyzed for the correlation between CSFs (team engagement, management support, requirements, security and leadership), and e-HRM implementation and the results are presented in table 6. The results shows that the correlation coefficient between CSFs and e-HRM in Gaza Strip equals 0.723 and the p-value (Sig.) equals 0.000. This means that there exists a significant relationship between CSFs and e-HRM in Gaza Strip.

Table 6: Correlation Coefficient between CSFs and of e-HRM in Gaza Strip

CSFs	Person Correlations	Sig
Team Involvement	.689**	.000
Management Support	.492**	.000
Requirements	.569**	.000
Leadership	.603**	.000
Team Experience	.711**	.000
CSFs	.723**	.000

** Correlation is significant at the 0.01 level (1-tailed).

Team experience is strongest relationship (p=0.711), followed by team involvement (p=0.689), leadership (p=0.603) and e-HRM requirements (p=0.569), as seen in table 5. This is followed by management support (p=0.492). This indicates that all CSF (independent factors) relate positively to the implementation of e-HRM (dependent factor). Hence, The first hypothesis is therefore accepted.

7.4 Regression Analysis

In this study, the impact of CSFs on the implementation of High Education e-HRM systems in Gaza were analyzed by stepwise multiple regression. The results were revealed as presented in the table 7.

Table 7: Impact of CSFs on e-HRM in Gaza Strip

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	.895	.377		2.377	.020
1. Team Involvement	.774	.113	.587	6.877	.000
2. Team Experience	.345	.129	.227	2.664	.009
3. Leadership	.461	.193	.373	2.395	.020

Where:

R=0.711, R²=0.602, Adjusted R²=0.590, F value=67.553, Sig. F=0.000

The regression analysis indicates that the value of R is 0.711 and p-value is 0.000, which indicates that CSFs and e-HRM are positively related. The R Square = 0.602 states that 60% of the total variance in the dependent variable (e-HRM) is explained by CSFs and 40% by others. Based on these results, the regression equation E(1) predicated as the following:

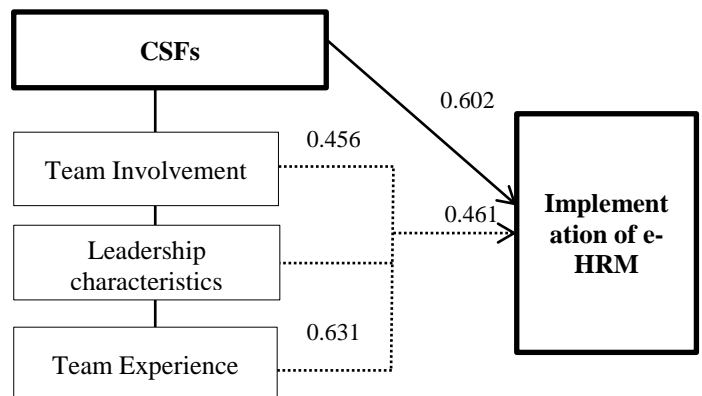
$$e\text{-HRM} =$$

$$0.895 + 0.774 \text{ Team Involvement} +$$

$$0.345 \text{ Team Experience} + 0.461 \text{ Leadership} + e \text{ E (1)}$$

Previous regression has shown that the increase in team factors such as Involvement Experience and Leadership characteristics will have a positive impact on the implementation of e-HRM. On the other hand, it points out that top management support and e-HRM requirements have no effect on the implementation of the e-HRM. Hence, The second hypothesis is therefore accepted. Considering these results, Figure 1 represents in this analysis the model of relationships between independent variables (CSFs) and dependent variable (e-HRM implementation).

Figure 1: Research Model



8. CONCLUSIONS

The objective of this study is to investigate the impact of CSFs on the implementation of e-HRM in the Gaza strip. The six initial CSFs identified according to literature which are internal communication, top management support, leadership characteristics, work team's expertise with the task and requirements. These factors are reduces factor analysis method to five factors which are HR team involvement, leadership characteristics, team experience, requirements and top management support. The Pearson correlation analysis indicates that there is a positive relationship between all CSFs and e-HRM implementation. Moreover, the stepwise regression explored the positive effects (60%) of CSFs (HR team involvement, team experience and leadership characteristics) on e-HRM implementation. Finally, it indicates that leadership characteristics, requirements and top management support are not effective dimensions according to respondents view.

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