

The Impact of Electronic Human Resource Management Practices on the Effectiveness of HR Management Performance by Application to Saudi Universities

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Abstract

The current study aims to provide a general overview of the role of electronic human resource management (E.HRM) practices in the effectiveness of HR management performance (EP.HRM) in government universities in the Kingdom of Saudi Arabia. The study sample consisted of three government universities located in the southwest region of the country. The researcher designed a questionnaire as a tool to collect primary information, and a total of 370 faculty members and staff members responded to the survey. The data were analyzed using various statistical methods such as mean, standard deviation, Pearson correlation coefficient, and multiple regression analysis using the SPSS statistical package.

The study revealed a positive and significant relationship (at the 0.05 significance level) between electronic human resource management practices and the effectiveness of HR management performance. All correlation coefficients were positive and significant at the 0.05 significance level. It was evident that these practices have a significant positive impact on the effectiveness of HR management in its functions, except for the management of employee complaints and grievances, where the positive impact was moderate. This can be attributed to the sensitive and confidential nature of complaint and grievance issues that require direct interaction between the parties involved. Additionally, there were some weak inhibiting factors that hindered the optimal utilization of electronic HR management practices.

These results can assist HR management practitioners in improving the effectiveness of their performance by enhancing electronic HR management practices and addressing barriers to optimal utilization.

Keywords: *Electronic Human Resource Management Practices - Effectiveness of Human Resource Management Performance - Saudi Universities.*

1. Introduction

Human resources are considered the most asset in any organization. Therefore, they require careful management. The goal of human resource management is to ensure that the organization has the right number of people with the required knowledge, skills, abilities, and competencies, in the right place, at the right time, at a reasonable cost, and who are motivated and committed to fulfilling the organization's current and strategic needs (Li & Ye, 2015). Since the higher education sector represents one of the important pillars of the development of human societies and tools for their advancement, in addition

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to its role in the creation and dissemination of knowledge, the need to develop human resource departments in all institutions has emerged to ensure their effectiveness in performing their functions and implementing their activities, in line with the challenges of the current era and keeping up with its developments (Alshobaki & Naser, 2017). It requires a gradual transformation of human resources from traditional conventional activities to electronic activities. The concept of electronic human resource management practices has emerged as a means for this transformation in light of the technological and technical advancements witnessed by the world to increase the effectiveness and efficiency of the work of these departments.

Human resource management is considered the most important part of an organization due to its focus on the human element. Therefore, it was necessary to find methods and techniques that contribute to facilitating human resource management, reducing the complexity of processes and procedures (Strohmeier, 2020). This has led to a continuous increase in the number of organizations that adopt electronic human resource management (Aityassine & Alsayaha, 2022) to ensure adaptation to the surrounding environment (Steen, 2020) and a desire to be at the forefront (Camaru, 2010). Electronic human resource management meets the growing and changing requirements of employees and ensures the availability of human resource management services at any time and place (Davoudi & Fartash, 2022), time management, quick access to personal and job-related information for employees, and reduces administrative costs (Mine & Ebru, 2015). It also helps to address the expected technological challenges and, with the assistance of advanced information technology, human resource management has entered the era of electronic human resource management (Lin, 2011).

Electronic human resource management practices gain greater importance in societies that seek changes and transformations in their economy, shifting from a traditional economy to a knowledge-based economy that relies on knowledge and human capital as essential resources. Human resource management and its practices are responsible for harnessing and investing in the potential of this resource and preserving it.

The role of human resource management in the Kingdom of Saudi Arabia has become increasingly significant under the National Transformation Program 2020 and the Vision 2030 of the Kingdom. One of the goals of these initiatives is to achieve effective government performance in serving citizens, which can only be accomplished through a transformation of human resource management programs, strategies, and practices in various government institutions. This transformation involves shifting from the traditional concept of HR management to a strategic management approach that encompasses activities and practices covering all aspects related to the human element. This ensures high productivity, reduces performance costs and government expenditures, and improves the level of service provided to citizens.

Based on the information provided, this study focuses on the relationship between electronic human resource management and the effectiveness of human resource management. It covers the following theoretical aspects in detail: the definition of electronic human resource management, types of electronic human resource management, its goals, significance, and obstacles. It also explores the concept of the effectiveness of human resource management, its areas, and the evaluation of the level of electronic human resource management practices. Furthermore, the study examines the impact of these practices on the efficiency and effectiveness of human resource management at King Khalid University in the Kingdom of Saudi Arabia, from the perspective of the academic and administrative staff. The study aims to provide recommendations that contribute to enhancing the level of these practices, considering the growing role of the higher education sector in achieving economic and social development in societies. It emphasizes the importance of the services provided to citizens through the optimal utilization of human resources to achieve the goals of the university institution efficiently and effectively.

The authors noticed - to the best of her knowledge - the absence of studies related to measuring the level of human resource management practices, especially electronic practices, in Saudi public and private institutions. This prompted her to conduct an in-depth field study to assess the level of these practices and the challenges they face, and to examine their impact on the effectiveness of human resource management in government universities in the Kingdom of Saudi Arabia.

2. Literature Review

2.1. Electronic Human Resource Management.

In general, the concept of Electronic Human Resource Management (E-HRM) is the result of a series of developments in traditional human resource management practices, which were limited to executing routine HR tasks such as employee recruitment, compensation, and leave management. These activities expanded through the automation of traditional HR practices (Al-Hamad et al., 2022). E-HRM revolves around the use of information technology to enable HR management within an organization to align its strategies with organizational strategies and provide better services to the human resources with lower costs and increased efficiency and effectiveness. It involves transforming manual HR procedures into automated processes using specifically designed techniques (Yusoff & Nur-Zahiyah, 2015). It refers to a system used to collect, store, process, retrieve, and transform information about human resources within an organization (Shelash & Al-Namlan, 2018). It also involves planning and implementing information technology to support a group of individuals who collaborate in performing HR management tasks and functions. The most commonly used functions of E-HRM include electronic human resource planning, acquisition of human resources (recruitment and selection), development of human resources (training and development, career management), reward management (performance evaluation, compensation and benefits), and protection of human resources (health and safety, employee relations/legal issues) (Mine & Ebru, 2015).

The importance of Electronic Human Resource Management (E-HRM) can be attributed to its key role in enhancing administrative work, executing HR tasks, and providing necessary information to manage HR operations with lower costs, effort, and increased speed, quality, and efficiency. E-HRM also increases the effectiveness of communication and continuous interaction, as well as transparency in information sharing. It reduces costs through automation of HR activities and ensures accurate and high-quality information. It decreases printing and distribution costs and enhances employee satisfaction by improving service quality and fostering a culture of transparent and competitive information sharing among employees (Parry et al., 2007). E-HRM allows for higher performance achievement and empowers HR function by focusing more on value-added activities (Shrivastava et al., 2003). It provides a more efficient and strategic way to achieve organizational goals and creates new ways to commit to organizational success (Li & Ye, 2015).

E-HRM supports the HR function in meeting the needs of human resources and enables managers to make decisions and access the necessary information for managing the organization's human resources. It also empowers employees themselves to access and update their records and documents as needed (Ruel et al., 2004).

2.2. Effectiveness of Human Resource Management Performance.

Effectiveness in human resource management is considered a term used as an indicator of the success of management. It is determined by the extent to which it achieves the defined objectives, including the level of goals achieved by HR management according to the planned policies regarding employee relations. These policies contribute to increasing satisfaction, loyalty, productivity, innovation, and the desire for knowledge and

intellectual capital development in alignment with organizational goals (Prasad et al., 2019). The important role of efficiency and effectiveness criteria in improving organizational performance and providing sufficient flexibility to overcome the challenges of the work environment and HR functions has emerged (Dradka, 2014). Measuring the effectiveness of HR management is particularly important in the current era of information and communication revolution due to the significant development of human resources' capabilities and skills (Desler, 2009). The efficiency and effectiveness of HR management play a fundamental role in improving organizational performance and providing complete flexibility to overcome internal and external challenges and changes in the work environment (Abdullah, 2017). Furthermore, important measures of HR management effectiveness include its contribution to maintaining the organization's competitiveness, sustainability in developing employee capabilities, fostering flexibility in innovation and development support, and motivating employees to increase productivity and contribute to the organization's resources (Menendez and Montes-Botella, 2017).

The authors believe that the effectiveness of human resource management is an important indicator that reflects its achievement of objectives and its ability to optimize the utilization of human resources within the organization. It also reflects its level of adaptability to the internal and external environment.

2.3. Electronic Practices and the Effectiveness of HR Management

The use of electronic practices in human resource management enables HR managers to achieve high levels of efficiency and assists them in making informed decisions and reducing costs, especially in the era of globalization and international competition. It accelerates transaction processing, reduces information-related errors, and improves tracking and performance monitoring (Al-Hamad et al., 2022). The goals of organizations in the context of human resource management typically fall under a set of objectives, including efficiency, effectiveness, consistency, stability, skill development, and achieving a sense of belonging and loyalty. These goals require the effective management of human resources in specific areas and functional practices related to acquiring, recruiting, developing, and compensating employees. These practices play a vital role in influencing employee behavior, performance, motivation, and direction towards efficiently and effectively achieving organizational objectives. Since effectiveness is measured by the level of achieving specific goals, the effectiveness of human resource management is linked to its practices and functions being carried out efficiently and effectively, enabling the attainment of its own objectives as well as the organization's overall goals. This is reflected in a range of activities that develop human resource strategies and implement them, aimed at improving performance and enhancing the competence, skills, and knowledge of the workforce to achieve the organization's strategic objectives (Abu-Nahel et al., 2020).

These areas and practices can be summarized as follows:

- Human resource planning: Ensuring the timely availability of human resources through planning and forecasting.
- Recruitment and selection: Attracting and selecting suitable candidates for various positions.
- Training and development: Improving the efficiency and effectiveness of employees through various training programs.
- Performance evaluation: Assessing the performance of employees to ensure alignment with organizational goals and job satisfaction.
- Compensation management: Determining and providing appropriate and fair compensation for employees based on their efforts and performance.

By effectively implementing these areas and practices, organizations can optimize their human resources and enhance overall performance and productivity.

3. Methodology

The study aimed to explore the relationship between electronic human resource management practices and the effectiveness of HR management performance in government universities in the southwest region of the Kingdom of Saudi Arabia, which constituted the study population. The level of electronic HR management practices, including dimensions such as electronic training, electronic performance evaluation, and electronic compensation, was considered as the independent variable. The level of effectiveness of HR management performance, including training, performance evaluation, compensation, and management of employee complaints and grievances, was considered as the dependent variable. A questionnaire was used as the main appropriate tool for collecting primary data, which was analyzed using statistical software (SPSS). The study sample consisted of faculty members and employees in government universities in the southwest region of the Kingdom of Saudi Arabia.

3.1 The research hypotheses

Despite the availability of a range of literature and studies on the topic of electronic human resource management practices, such as Alkerdawy (2016) which found that the use of electronic HR management positively affects talent management, and Salih et al. (2022) which emphasized the importance of awareness regarding electronic practices as they directly impact the achievement of entrepreneurial dimensions in business projects, these studies did not directly investigate the relationship between the level of electronic human resource management practices as an independent variable and its impact on the effectiveness of HR management performance, with a focus on dimensions related to employees themselves, which they can directly perceive and envision, such as training, performance evaluation, compensation, and management of complaints and grievances. Therefore, this study aims to bridge this knowledge gap by formulating the following hypotheses:

Hypothesis 1: There is a statistically significant relationship between the levels of electronic human resource management practices (electronic training, electronic performance evaluation, and electronic compensation) and the effectiveness of HR management performance in its domains (training, performance evaluation, compensation, and management of employee complaints and grievances) in government universities in the southwest region of the Kingdom of Saudi Arabia.

Hypothesis 2: There is an effect of electronic human resource management practices (electronic training, electronic performance evaluation, and electronic compensation) on the effectiveness of HR management performance in its domains (training, performance evaluation, compensation, and management of employee complaints and grievances) in government universities in the southwest region of the Kingdom of Saudi Arabia.

These hypotheses will be tested to determine the presence and nature of the relationship between electronic HR management practices and the effectiveness of HR management performance in the specified domains.

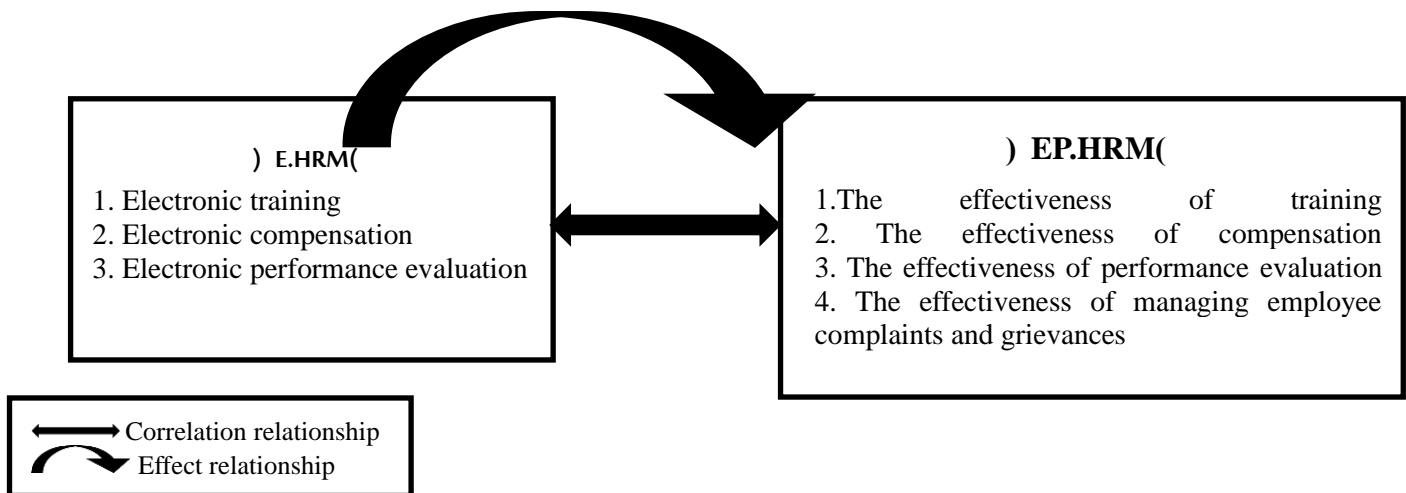


Figure 1: General framework of the study variables

3.2 Reliability and validity

It is Clear from table 1 that the result of validity test for each dimension of the research was greater than (0.60) and the overall validity for questionnaire was (0.936), which means that the questionnaire meets high validity requirements, also the result of reliability test for each dimension of research was greater than (0.60) and the overall reliability of the questionnaire was (0.967), which means that the questionnaire meets high reliability requirements.

Table 1 Validity and reliability

Variables	Validity	Reliability	Statements Numbers
Electronic Training	0.753	0.868	3
Electronic Performance Evaluation	0.843	0.918	5
Electronic Compensation	0.827	0.909	4
Obstacles	0.883	0.940	5
Training	0.934	0.966	5
Evaluation Appraisal	0.894	0.946	5
Compensation	0.949	0.974	8
Employee Complaints	0.953	0.976	5
All Questionnaire paragraphs	0.936	0.967	40

4. Results and discussion

The characteristics of the study sample can be presented according to some personal and functional data Table 2 shows that (187) of the study sample represent (50.5%) of the faculty members, and they are the largest group in the study sample, as well as (186) of the study population representing (50.3%) of females, and they are the largest group in the study sample.

Table 2 Descriptive Analysis for research sample

Descriptive		Freq.	percentage
Gender	Male	184	%49.7
	Female	186	%50.3
Current Position	employee	183	%49.5
	Faculty member	187	%50.5

4.1 Descriptive analysis of the independent study variable

(Electronic Practices for Human Resources Management)

Table 3 presents the findings regarding the approval of electronic human resource management practices from the perspective of the study participants. The results indicate a high level of approval, with a mean score of 4.21 out of 5.00, indicating a strong agreement on the study tool. The standard deviation was 0.449, indicating a relatively low level of variability among the responses. Among the electronic practices, electronic compensation received the highest approval, with a mean score of 4.23 out of 5.00 and a standard deviation of 0.515. E-training ranked second with a mean score of 4.21 out of 5.00 and a standard deviation of 0.516. Electronic performance appraisal ranked third, with a mean score of 4.20 out of 5.00 and a standard deviation of 0.522.

Table 3 Descriptive analysis of the electronic practices for human resources management (E.HRM)

Variables		Mean	standard deviation	Relative Weights
Electronic training	X1	4.09	0.565	81.89%
	X2	4.28	0.67	85.51%
	X3	4.25	0.651	84.92%
Average		4.21	0.516	84.11%
Electronic Performance Evaluation	X4	4.07	0.554	81.35%
	X5	4.38	0.704	87.51%
	X6	4.16	0.642	83.24%
	X7	4.18	0.74	83.57%
	X8	4.23	0.674	84.59%
Average		4.20	0.522	84.05%
Electronic compensation	X9	4.08	0.548	81.57%
	X10	4.41	0.682	88.27%
	X11	4.16	0.642	83.24%
	X12	4.26	0.659	85.30%
Average		4.23	0.515	84.59%
Total score for all electronic practices of human resource management		4.21	0.449	84.25%

4.2 Descriptive analysis of the dependent study variable

(Effectiveness of Human Resources Management Performance)

It is clear from Table 4 that the level of effectiveness of the performance of human resources management came to a large degree from the point of view of the study members, with an arithmetic average of (3.88 out of 5.00), which shows that the degree of approval indicates (OK) in the study tool, and it was also found that the effectiveness of compensation came in first place, with an average of (4.05 out of 5.00), and the degree of great effectiveness, while the effectiveness of performance evaluation came in second place, with an average of (4.04 out of 5.00), and in third place came the effectiveness of training, With an average approval (4.00 out of 5.00), and a high degree of effectiveness, while the effectiveness of the Employee Complaints Department came in fourth and last place, with an average approval (3.35 out of 5.00), and an average degree of effectiveness.

Table 4 Descriptive analysis of Effectiveness of Human Resources Management Performance(EP.HRM)

Variables		Mean	standard deviation	Relative Weights
Training Effectiveness	X18	3.93	0.79	78.59%
	X19	4.04	0.844	80.70%
	X20	4.00	0.857	79.95%
	X21	3.99	0.9	79.84%
	X22	4.06	0.809	81.24%
Average		4.00	0.748	80.06%
Performance Appraisal Effectiveness	X23	3.95	0.616	79.08%
	X24	4.23	0.792	84.59%
	X25	4.00	0.815	80.05%
	X26	4.04	0.817	80.81%
	X27	3.96	0.94	79.19%
Average		4.04	0.673	80.75%
Compensation Effectiveness	X28	3.95	0.655	79.08%
	X29	4.23	0.846	84.65%
	X30	4.01	0.765	80.11%
	X31	4.11	0.823	82.16%
	X32	4.01	0.796	80.22%
	X33	4.07	0.802	81.35%
	X34	4.03	0.816	80.54%
	X35	3.96	0.869	79.19%
Average		4.05	0.687	80.91%
Complaints	X36	3.18	1.184	63.51%

Variables		Mean	standard deviation	Relative Weights
Management	X37	3.20	1.224	63.95%
	X38	3.43	1.169	68.59%
	X39	3.49	1.151	69.78%
	X40	3.48	1.174	69.62%
Average		3.35	1.084	67.09%
The total score of all dimensions of the level of effectiveness of human resource management		3.88	0.604	

4.3 Descriptive analysis of obstacles to benefiting from electronic practices for human resources management

It is clear from data in table 5 that total score of the respondent's answers to the variable paragraphs was (2.85) which is considered as a low response score according to the gradient distribution of categories used in the study tool.

The most important obstacles to benefiting from electronic services and practices for human resources management was the lack of introductory and guidance information related to how to benefit from electronic services for human resources management with an arithmetic average(3.12), as for the loss of a sense of security and psychological comfort towards electronic transactions in general, was the least important obstacle in benefiting from electronic practices for human resources management with an arithmetic average(2.59)

Table 5 Obstacles to benefiting from electronic practices for human resources management

Statement	Paragraphs	Mean	standard deviation	Relative Weights	Grade
X13	Loss of sense of security and psychological comfort towards electronic transactions in general.	2.59	1.147	51.89%	5
X14	Difficulty accessing the Internet in some university branches	3.11	1.257	62.11%	2
X15	Lack of introductory and guidance information related to how to benefit from electronic services for human resources management	3.12	1.232	62.49%	1
X16	Lack of spread of information technology culture and awareness of its importance at the university	2.71	1.241	54.16%	4
X17	Some administrative and academic leaders have stuck to traditional management	2.74	1.27	54.76%	3

Statement	Paragraphs	Mean	standard deviation	Relative Weights	Grade
	methods instead of electronic ones				
Variable		2.85	1.016	57.08%	-

5. Research hypotheses validity

5.1 Relationship between E.HRM and Effectiveness of Human Resources Management Performance

It is clear from the table 6 that there is a statistically significant correlation with different percentages at a significance level of 0.05 between electronic human resources management practices in their dimensions (electronic training - electronic performance evaluation - electronic compensation) and the level of effectiveness of human resources management in its fields (training-evaluation Appraisal- compensation - complaints management and employee grievance).

And it can be said that there a statistically significant relationship at the significance level (0.05) between the practices of electronic human resources management and the level of effectiveness of human resources management .

Table 6 Correlation matrix

Study variables		Training Effectiveness	Performance Evaluation Effectiveness	Compensation Effectiveness	Complaints Management Effectiveness	Effectiveness of the performance of human resources management
Electronic training	correlation coefficient	**0.334	**0.323	**0.289	0.265	**0.308
	Significance level	0.000	0.000	0.000	0.001	0.000
Electronic Performance Evaluation	correlation coefficient	**0.327	**0.327	**0.395	**0.149	**0.381
	Significance level	0.000	0.000	0.000	0.004	0.000
Electronic compensation	correlation coefficient	**0.374	**0.383	**0.464	**0.137	**0.431

	Significance level	0.000	0.000	0.000	0.008	0.000
The level of electronic practices for human resources management	correlation coefficient	**0.397	**0.398	**0.452	**0.143	**0.438
	Significance level	0.000	0.000	0.000	0.006	0.000

** Correlation is significant at the 0.01 level

Table 7 Results of Multiple Regression Analysis to the degree of impact of electronic human resource management practices on the effectiveness of human resource management

Significance level	R squared	Correlation analysis	F.Value	Mean Squares	Degree Of Freedom	Sum of Squares	Variance	Independent variable	Model
*0.00	0.158	0.397	69.004	32.578	1	32.578	Regression	Training Effectiveness	E.HRM Practices
				0.472	368	173.738	Residuals		
					369	206.316	Summation		
*0.00	0.158	0.398	69.121	26.440	1	26.440	Regression	Performance Appraisal Effectiveness	
				0.383	368	140.766	Residuals		
					369	167.205	Summation		
*0.00	0.204	0.452	94.276	35.484	1	35.484	Regression	Compensation Effectiveness	
				0.376	368	138.512	Residuals		
					369	173.996	Summation		
*0.006	0.118	0.343	67.0721	8.903	1	8.903	Regression	Effectiveness of managing complaints and grievances of employees	
				1.153	368	424.334	Residuals		
					369	433.237	Summation		
*0.00	0.192	0.438	87.396	25.799	1	25.799	Regression	All dimensions of human resource management effectiveness	
				0.295	368	108.631	Residuals		
					369	134.429	Summation		

Based on the findings presented in Table 7, there is a statistically significant positive relationship (at a significance level of 0.01) between electronic human resource

management practices and all dimensions of human resource management effectiveness. The Pearson's correlation coefficient was calculated to be 0.438, indicating a significant positive correlation. The coefficient of determination, indicating the percentage of variance explained, was 0.192, suggesting that approximately 19% of the variance in the dependent variable (all dimensions of human resource management effectiveness) can be attributed to the impact of electronic human resource management practices. The calculated p-value was statistically significant at the 0.01 significance level, indicating that electronic human resource management practices have a significant impact on predicting the overall level of human resource management effectiveness by 19%.

6. Conclusion

Electronic human resource management practices aim to achieve several objectives that revolve around creating real value for the organization. This is done through the use of information technology applications and techniques to increase efficiency, effectiveness, and the competitive ability of the organization. It also contributes to improving the organization's image, enhancing the strategic orientations of HR management, facilitating the performance of its functions, increasing performance and productivity rates, and improving relationships among various functional sectors. Additionally, it enables the implementation of employee training programs more quickly and provides a more efficient way to achieve goals and facilitate the execution of HR management functions, creating opportunities for creating new avenues for organizational success (Li & Molin, 2015). The use of information technology is considered an effective source for ensuring organizational dynamism (Hosseini & Nematollahi, 2013). This study aimed to investigate the impact of electronic human resource management practices on the effectiveness of its functions and found a positive correlation and impact of the independent variable, electronic HR management practices with its dimensions (electronic training, electronic performance evaluation, electronic compensation), on the dependent variable, the level of effectiveness of HR management performance with its dimensions (training, performance evaluation, compensation, management of employee complaints and grievances) in government universities in the southwest region of the Kingdom of Saudi Arabia. Therefore, it is necessary for government universities to focus on enhancing electronic HR management practices, which in turn will contribute to the development and enhancement of the effectiveness of HR departments in their functions.

Finally, this study was not without limitations, which the researcher will mention as opportunities for conducting further research on the study topic. For example, the study was conducted on government universities located in the southwest region of the Kingdom of Saudi Arabia and was not generalized to a sufficient number of government universities in different regions of the country. Additionally, the sample size that responded to the study questionnaire may not accurately represent the population, which hinders the generalizability of the study results. Therefore, the researcher recommends conducting studies on the relationship between the study variables in all government universities in the Kingdom and investigating the impact of electronic practices on organizational behavior and the effectiveness of employee performance.

Share

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