



RESEARCH ARTICLE

Impact of Electronic Human Resource Management Practices on Perceived Organization Performance: Moderating Role of Information Technology Capability on Jordanian Universities

Naji Mohammad Awwad AL Rawashdeh^{1*}, Dr. Nur Amalina Mohamad Zaki², Dr. Nik Hazimah Binti Nik Mat³, Dr. Juhaizi Bin Mohd Yusof⁴, Dr. Siti Nur 'Atikah Zulkifli⁵

^{1,2,3,4,5} Affiliation: Faculty of Business, Economics and Social Development, Universiti Malaysia Terengganu, Terengganu, Malaysia.

ARTICLE INFO	ABSTRACT
Received: May 22, 2024 Accepted: Jul 24, 2024	<p>The Jordan private universities have experienced severe problems forced by the competition of the public and international universities translating to rapid perceive organizational performance changes in the higher education system. This arise due to differences in tastes and demands of the students which sporadically has increase the numbers of working technological usage, as well as positive changes in the attitude of HR toward new innovations, such as IT-capability and electronic human resource management (E-HRM) that is now becoming a valuable strategic tool for universities to gain perceive organizational performance. However, the implementation of E-HRM in developing countries, such as Jordan requires a holistic understanding of the factors that influence the use of E-HRM towards perceived organizational performance. To address this issue, a multi-dimensional theoretical model was introduced to provide empirical evidence on E-HRM practices and their impact on the perceive organizational performance of private Jordanian universities and their business implications. A multi-stage sampling technique was adopted to divide the total population (4260) of the study which are administrative staff of selected private Jordanian universities into three regions (north, central and southern) with a sample size of 353 distribution and a response rate of 181. Finding shows out of the direct relationship of E-HRM (e-recruitment e-selection, e-training, e-communication, e-compensation and e-performance appraiser) only two (2) hypotheses were supported while the indirect relationship of IT capability supported all the five (5) hypotheses. This means that successful implementation of e-HRM will provide perceived organizational performance with a full mediation of IT capability. The implication of this study will be essential as a contribution to the stakeholder in study (human resources department) of Jordan private universities in term of using the supported factors as a potential or operational tools to achieve perceive organization performance, reduce pressure from trading partners, formalization of system development and securing the management of data as well as provide leadership policy information intensity.</p>
Keywords	
E-Recruitment and Selection	
E-Training	
E-Compensation	
E-Communication	
E-Compensation	
E-Performance Appraisal and Perceived Organization Performance	
*Corresponding Author: naji.rawashdeh@yahoo.com	

1. INTRODUCTION

The advent and advancement of IT have transformed HRM departments, rendering traditional paperwork and file management obsolete (Vanishree & Raghavendra, 2017; Alqaraleh, Almari, Ali & Oudat, 2022; Alnabhan, Al-Jaafreh, Abadleh, Atoum, Hammouri & Al-dalahmeh, 2021). The adoption of Human Resource Information System (HRIS) has become a fundamental tool in Electronic Human Resource Management (e-HRM), making HRM functions more reliable, efficient, faster, and cost-effective (Hosain, 2017; Alnabhan, Al-qatawneh, Alabadleh, Atoum & Alnawwyseh, 2020). Today, HRM performance is closely intertwined with organizational performance, leading organizations to shift from traditional HRM tools and procedures to strategic HRM by leveraging the power of Information Technology (IT) and HRIS to achieve their ambitious goals (Masum et al., 2015; Thuneibat, Ali, Alqaraleh & Thneibat, 2022; Abadleh, (2019). E-HRM has been used interchangeably with HRIS, virtual HRM, and web & internet-based HRM by (Bondarouk and Ruël, 2009; Ahmad, Atta, Alawawdeh, Aljundi, Morshed, Dahbour & Alqaraleh, 2023; Abadleh, Han, Hyun, Lee & Kim, 2014). Numerous organizations across the globe have recognized the value of investing in Information and Communication Technologies (ICT) to improve their performance. By leveraging Web technologies, HR management functions have become more accessible to employees and managers, a concept known as e-HRM (Hosain, 2017; Aljaafreh, Abadleh, Alja'afreh, Alawasa, Almajali, & Faris, 2022). This trend has resulted in the adoption of various high-level e-HRM systems, such as Enterprise Resource Planning (ERP) systems, HRM service centers, Interactive Voice Response (IVR), and web applications (Ahmed, 2019; Al Tarawneh, Alqaraleh, Ali & Bani Atta, 2023). Implementation of e-HRM has contributed significantly to enhancing organizational efficiency, effectiveness, and financial capability, allowing companies to focus on core job responsibilities rather than day-to-day tasks. With the advent of Artificial Intelligence, e-HRM is poised to leverage innovative ideas that can revolutionize HR management further. By embracing e-HRM, organizations can improve services to HR department clients, increase efficiency, reduce costs, and transform HR into a strategic partner that helps achieve organizational goals (Al-kasasbeh et al., 2016; Alqaraleh, Thuneibat & Nour, 2020; Abadleh & Qatawneh, 2022).

Improving organizational performance (OP) has always been a top priority for organizations as it directly impacts value creation, reputation, and competitive advantage (Phillips et al., 2019). However, some organizations struggle to achieve their goals due to a misconception of how to manage their OP. The absence of a single measure to gauge OP may also contribute to this issue, as OP is often perceived as an organization's ability to meet stakeholder requirements and sustain growth. Within this context, OP can be evaluated from three perspectives: financial performance, operational performance, and organizational effectiveness (Abu-Jarad et al., 2010, Wartika et al., 2015; Alqaraleh & Nour, 2020; Maayah, Abadleh & Al-Subehat, 2022). While e-HRM practices offer a range of unique benefits to organizations, they also come with significant costs and contingencies (Ahmed, 2019, Rathee and Bhuntel, 2021; Alqaraleh & Ahmad, 2018). These costs are not limited to the system itself, but also include the expenses related to improving organizational processes, employee training, and the time required by HR and top management to implement, utilize, and develop these systems. Risks are also associated with employee resistance to change, their reluctance to use the system, and potential isolation from the team. Current research emphasizes the importance of studying e-HRM in the Jordanian context. Previous studies suggest that the implementation of e-HRM in Jordan would be significant for decision-makers at various level to minimize cost that embrace higher profitability and ultimately lead to competitive advantages over time (Bian, 2012, Ong and Puteh, 2017, Alkhodary, 2021; Thuneibat, Alqaraleh & Nour, 2021). As such, the need for the current study to investigate the impact of e-HRM practices and information technology capability on the performance of private Jordanian universities.

2. LITERATURE REVIEW

2.1. HRM practices

Human resource management (HRM) practices are a common feature within organizations. HRM practices are defined as organizational activities which related to staffing, hiring, performance appraisal, compensation, and training (El-Ghalayini, 2017; Abadleh, Al-Mahadeen, AlNaimat& Lasassmeh, 2021). A growing body of empirical research has examined the effect of certain HRM practices on organizational performance. There is relatively a long list of best HR practices whether single practice or in bundles that can affect performance. However, still no consensus is achieved on what are the HRM practices that is highly essential to HRM in contributing the performance of organization (Boselie et al., 2005; Abadleh, Tareef, Btoush, Mahadeen, Al-Mjali, Alja'afreh & Alkasasbeh, 2022). HRM practices play an important role in enhancing organizational performance. The use of high-performance work practices, including the employee recruitment, selection, incentives, rewards, performance appraisal, employee engagement and providing training and development to the employees, can improve the skills, abilities and knowledge of the organizations (Ghanam and Cox, 2007; Abadleh, al-saraireh, salman, akasasbeh, hammouri & ra'fat, 2022). The improvement in the skills and knowledge of competent employees tends to increase their level of satisfaction, motivation, commitment with the organization and can lead to low turnover and can enhance the retention of the competent and potential employees.

2.1.1 HR planning (workforce planning)

HR planning is the process that aims to forecast an organization's future needs in terms of workforce. According to (Yadav and Dabhade, 2014; Oyelakin & Johl, 2022), HR planning refers to good strategic business and people management. These processes aim to estimate future needs of manpower and compare them with the available labor force. Noe et al. (2010) explained that HR managers determined the supply and demand for human resources to avoid any labor shortages or surpluses by taking the right action to face these potential problems.

2.2 Electronic human resources management (e-HRM) practices

2.2.1 E-Recruitment

According to Dhamija (2012), e-Recruiting is the “use of the internet to attract potential employees to an organization and hire them; online recruitment is also known as e-Recruitment, is the practice whereby the online technology is used websites particularly as a means of assessing, interviewing, and hiring personnel”. This definition did not handle the issue of different means and ways, which it offers by using e- recruitment in any organization. In addition, the definition did not include the benefit of using such this technology. On the other hand, Sharma (2014) asserted that organization seeks to hire the best-qualified candidates who have the proper potentials that fit the organization's objectives through different electronic means such as electronic bulletin, online request forms. Using this means of recruitment means less cost of HR activities, promoting HR processes, giving chance for a larger number of applicants to apply for the job, and giving the organization a good reputation.

2.2.2 E-Selection

AlKerdawy, 2016 came up with the same vein that organizations have been extensively using e-Selection. the term generally indicates using different technological forms and applications (e.g., web-based job applications, web-based tests, video conference interviews) to assist organizations that handle certain tasks like job analyses, gathering applicant data, assessing individuals, and making

selection decisions. This process is meant to grab qualified employees who can achieve the goals of the organization. Additionally, Parry, 2011; Sanjeev & Makkar, 2014 stated that one of the most important ways that organizations use to increase likelihood of incumbents meeting role requirements is online selection systems. This can be done through different tests like online, audio and video conferencing. They confirmed the important role of using e-Selection to choose and select the target employees who can achieve the organization requirements.

2.2.3 E- Communication

From the point of view of Dwitawati, 2018; Bontis et. al., 2001; Khashman and Al-Ryalat 2015 communication which is performed through electronic means is called e-Communication. This process is typically carried out through means like the World Wide Web, e-mail, e-bulletin, blog, e-conference, and so on. Although this point of view clearly pointed out to the electronic means which e-Communication are comprised, it didn't elucidate which means is considered the most popular, beneficial, and more commonly used in organizations. Under other conditions, e-Communication has been the dominant type of communication, particularly the e-mail, which is considered the preferred means of communication. The use of e-mail has been rated about 75% in companies (Bontis, Fearon, & Hishon 2003; Khashman and Al-Ryalat 2015). In another meaning, e-Communication is one of the fundamental functions of e-HRM since managers and employees spend a lot of time in their workday in internal and external communication, the using company website can facilitate this function by using electronic mails and others electronic channels. Moreover, using technology in communication in the organization will enhance and improve the process of communication between managers and employees also with the external environment such as stakeholder's and community.

2.2.4 E-Training

E-Training is viewed as the technological means of transmitting skills and knowledge using the internet as a medium between the employee and the instructor (Mohsin & Sulaiman, 2013). Using such this technology, sharing data, information, and knowledge between different departments in different locations will save transporting employees' cost. In other words, e-Training will enhance the level of efficiency. Similarly, e-Learning indicates to learning or education and the programmers of training, that were be web- based systems. Moreover, e-Learning refers to applications that are used to create and transfer knowledge in the organization (Parry, 2011; Oyewale & Johl, 2021a). In addition, e-Learning comprise different type applications like web-based programs for learning for example: computer-based learning, online classrooms and online collaboration (Gueutal, Stone, & Salas, 2005). Over and above this, Agarwal and Lenka (2018) declared that e-learning implementation is used by employees to be a reference to test their evaluation, learning, personal developments, promotions and gathering information about the HR policies of any organization and applying for new jobs. Furthermore, Armstrong (2016) observes that online training can be the most efficient way to dispense training in the government organizations from the specialist point of view. Because it will reduce the overall instructor's cost, printed materials, and indirect costs such as travel time. Also, can reduce the lodging and travel expenses, workforce down times

2.2.5 E-Compensation

E-Compensation is known as a subsystem within a larger system. It is a technological means meant to follow up the benefit package records of the employee and the essential compensation information. It also aids managers to analyze the effect of prevailing incentive mechanisms and their integrity (AlKerdawy, 2016). Although this definition covered the most important sides of e-compensation as a subsystem like manage essential employee information in a general way and it deals with some aspect such as integrity, this definition lacks a detailed about types of information

which this subsystem can tackle with and how can this technology benefit from other programs which organization used. Hendrickson (2003) came up with another definition described this way to manage all different types of benefit package records of the employee in the organization and manage all sorts of detailed employee information. He asserted that e- compensation supplies a system to manage and track participation in benefits different programs in organization. These cover insurance, compensation, profit sharing and retirement. The process of these factors needs all sorts and types of information to be gathered and administered, particularly sickness and the nature of accidents, medical report, regulation controlling staff behavior, individual implicated and government information.

2.2.6 E-Performance appraisal

E-Performance appraisal can be defined as a software program which facilitates the completion of performance evaluation online. The vital benefit for performance management system is to give more control to employee behavior, also to ensure that its alignment with the goals of organization. These programs can help the manager to be able to measure employee performance and make a periodic report to employees (Cardy and Miller, 2005; (Oyewale & Johl, 2021b). This definition inc. as the basic benefits that a manager or supervisor can use to assess performance and evaluate indicators that take into consideration the objectives and goals of the organization, as well as control the behavior of employees. Farr, Fairchild, & Cassidy (2013) defined e-Compensation in a short term, and they didn't identify how this subsystem helps managers to make sure that employees are doing their daily tasks and their behavior in organization. They defined the terms as the adoption of smart software rather than the traditional means to obtain, save, interpret, measure, and record the personal activities within the organization to get the manager informed about the level of conduction.

2.2.7 Perceived organizational performance

The U.S. Department of Energy, in 2005, stated that effective management relies on the ability to measure performance and results accurately. Performance measurement is defined as a systematic approach to evaluating progress towards achieving predetermined goals. This includes information on how efficiently resources are utilized to produce products and services (outputs), the quality of those outputs (how well they are delivered to clients and the level of customer satisfaction), outcomes (the results of a program activity compared to its intended purpose), and the effectiveness of government operations in terms of their specific contributions to program objectives (Kanji and e Sá, 2002). There are two main aspects to measuring organizational performance: financial and nonfinancial. Financial aspects, such as net earnings and returns on investment, are focused on short-term gains rather than long-term strategic goals. On the other hand, nonfinancial aspects are related to product quality, work processes, and customer satisfaction, which can be subjective and difficult to manage (Andrews and Smith, 1996; Yusuf & Oyelakin, 2022). Creating value or enhancing existing value is crucial for organizational effectiveness, and this is largely achieved through the efforts of the employees. The resource-based view of the firm introduced the idea of a "best fit" perspective, which suggests that the effectiveness of a firm's resources depends on its strategic and HRM goals, as well as its competitive environment. The concept of technical and strategic effectiveness of HRM was introduced by (Huselid et al., 1997), which suggests that HRM seeks approval for its activities in socially constructed environments. To be labeled as successful or effective, HR or employee management policies and decisions must create above-average value for all stakeholders and meet their expectations, thereby gaining legitimacy and acceptance in the eyes of external entities.

2.3 Hypotheses development

2.3.1 Relationship between (e-Recruitment & e-Selection) and perceived organizational performance.

Online selection systems are important because they are one of the means that organisations use to increase the likelihood of incumbents meeting role requirements. This is assessed through various tests such as online, audio and video conferencing (Parry, 2011; Sanjeev and Makkar, 2014). Khan, Awang, & Ghouri, (2013) conducted study to pinpointing the impact of e-recruitment on the attitude of graduate jobseekers in Bangladesh. The study reveals that the effectiveness of e-recruitment depends upon advertisement placement where perceived advantages and ease of use have significant impact on candidates' intention to apply. However, Malik, & Mujtaba, (2018) explored the impact of latest technological developments (especially the concept of E-Recruitment) in the context of recruitment and how it has facilitated the modern-day HR managers. The result proved that e-recruitment has significant impact on effectiveness of HR department in private sector of Pakistan. This determined that effective reference ensures e-communication being reliable than other forms of communication in way that organizations planning to recruit personnel should use the company website to get the desired staff for the work needed. This should be through e-recruitment in the process to track and hire suitable individuals for work prescribed by the organization. Thus, among e-HRM variables that were significant, e-recruitment and selection had the most significant positive influence on organizational performance. Hence, the following hypothesis was developed:

On the other hand, technology can be used to improve employees' communication. Past study has shown that e-HRM includes personnel communication via electronic mails. Available statistics showed that the penetration rate of online communication, mainly e-mail is higher than 75 percent in corporate environments, thus making e-mail to emerge as the communication medium of choice (Bontis et. al., 2003; Khashman and Al-Ryalat 2015). As such, Merono-Cerdan, & Soto-Acosta, (2007) investigated external web content and its influence on organizational performance through developing a framework that allows evaluation of external web content of business web sites and examines the influence on organization performance. The study views external web content as e-information, e-communication, and e-transaction and found significant relationship with organization performance. It confirms that external web content is not related to business size and differs slightly by business industry. This will provide E-HRM to reduced organizational costs, improved better and faster communication between manager and employees, and ultimately reduced the processing time for e-HR usage in organizations.

In this instance, managers are able to design, manage, and report compensation policies in a more effective way by using web-based software tools (Dulebohn & Marler, 2005: 167; Oyelakin, 2022). Thus, past study showed that e-compensation tools facilitate the conduct of bureaucratic duties by the flow of real-time data and knowledge. This shows that electronic charging can be benefited in the maintenance of wage equality (Dulebohn & Marler, 2005: 166–167). An organisation using the compensation management online enables it to gather, store, analyse, and distribute the compensation data or information to anyone at any time. As such, provide e-HRM the records of all the employees sitting in different geographical locations to be stored and ensures that new candidates are hired from any part of the world and compensated accordingly (Purohit, 2018).

However, the inclusion of e-performance management system has been seen to be critical for organizations to assess performance through electronic means. It provides the relational in e-HRM function to support business processes. The tool has simplified performance contracting and appraisal. Using e-Performance Management, the goals of the organisation are linked to the balanced scorecard elements giving the organisation an overall view of performance capability from departments, sub departments and down to individuals (Ravisha & Pakkeerappa, 2013). Njeje, & Ochieng (2018) examined the effect of e-performance management systems on organisation

performance. The results showed that e-performance management has a significant effect on the organization performance and recommended firms to improve more on data management in areas of performance assessment to allow for timely and speedy delivery of services to the employees.

Based on this, following hypotheses are developed.

H1: e-Recruitment and e-Selection will have a significant positive relationship with perceived organizational performance.

H2: e-Training will have a significant positive relationship with perceived organizational performance.

H3: e-Communication will have a significant positive relationship with perceived organizational performance.

H4: e-compensation will have a significant positive relationship with perceived organizational performance.

H5: e-Performance appraisal will have a significant positive relationship with perceived organizational performance.

2.3.2 IT capability relationship between (e-Recruitment & e-Selection) and perceived organizational and firm performance.

A firm's IT capability consists of its IT infrastructure, human IT resources (technical and managerial skills), and IT-enabled intangibles such as knowledge assets (Bharadwaj 2000). IT capability can help firms improve their business performance by increasing revenues, reducing costs, or both (Porter 1980). Also, IT capability can help firms differentiate themselves from their competitors, increase switching costs and customer loyalty, and allow them to proactively access customer preferences and reduce search costs (Chae et al. 2014). Using resources-based view (RBV) of firm performance, the theory explains the relationship between organisation resources and sustaining competitive advantage for superior performance relative to competitors (Barney, 1991; Fahy, 2000). However, this relationship and influence has not been explicitly explained. Jordanian universities are one of the early adopters of new information technologies in Jordan. Meaning that the effect of IT capability on organisational performance needs more in-depth study.

Previous studies have tested IT capability as a moderator towards perceived organization performance but limited in study with inclusive results (De Búrca et al., (2006); Paulraj et al. (2007); Yongmei et al. (2008); Huang et al. (2009); Ravichandran et al. (2009); Said et al. (2009); Chi et al. (2010); Shao et al. (2010); Kmiecik et al. (2012); Chakravarty et al. (2013); and Chi et al. (2016); and Ul-Hameed et al. (2019)). This shows that there is a need to understand the effect of the IT capability attributes on the relationship between e-HRM implementation and organisational performance. This is because most studies have focus on a direct relationship between IT and organisation performance and fail to take into consideration those intervening firm capabilities that are improved by IT, and which are true facilitators of performance improvement (Tippins & Sohi, 2003). Other studies have relied on erroneous assumption that adoption of IT would improve performance (Dewett and Jones, 2001). While IT can improve efficiencies, it may not provide competitive advantage, because the same technology could be adopted by competing organization. Therefore, Tippins and Sohi (2003) proposed that, IT related benefit can only be realized when organisation develops IT competency and then use it as a set of co-specialized resources to leverage other complementary resources. Empirical study includes: Yongmei et al. (2008) suggested that IT capability would be an important moderating variable linking IT investments to firm performance. Shao et al. (2010) examined the moderating effect of chief information officers' (CIO's) competence on IT investment and organisation performance. The study re-conceptualized CIO's competence into

six sub-dimensions (includes interpersonal communicative ability, political skills, dynamic leadership, strategic IT knowledge, business knowledge and IT management experience) based on RBV and KBV to explain the phenomenon of IT productivity paradox. But the conflicting results from previous research relating information technology (IT) investments and firm performance suggest that there is no direct relationship between IT investments and firm performance. Nevertheless, the resource-based view (RBV) of the firm is introduced in the current study as a research tool to examine how IT resources and capabilities affect perceived organization performance. A theoretical rationale model is then used to investigate the relationship between IT investment and perceived organizational performance as shown in below Figure 2.1. Based on this, the following hypotheses are developed:

H6. IT capability positively moderates the influence of e-Recruitment and e-selection on organizational performance.

H7. IT capability positively moderates the influence of e-Training on organizational performance.

H8. IT capability positively moderates the influence of e e-Communication on organizational performance.

H9. IT capability positively moderates the influence of e-Compensation on organizational performance.

H10. IT capability positively moderates the influence of e-Performance appraisal on Organizational performance.

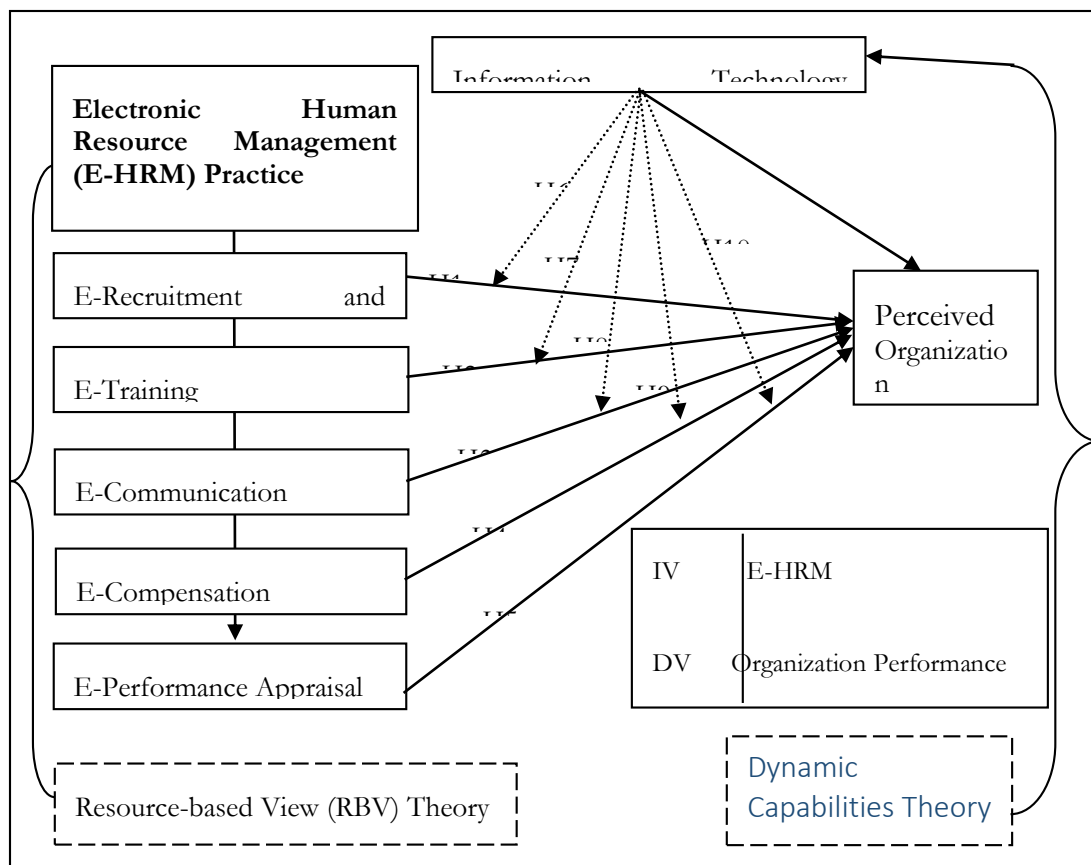


Figure: 2.1: Research model

3. METHODOLOGY

The quantitative study approach was adopted as a research method in the present study. It is basically based on a questionnaire for collecting data and revealing the range of accepting or rejecting the hypotheses stated in the study in the light of responses and orientations gathered. This is utilized because it allows collecting a large amount of data from a big number of populations and its flexibility that allows to measure the participants' responses to a limited number of questions, which leads to an adequate comparison and statistical aggregation of the data (Hamer & Collinson 2014). In so doing, the current study distributed questionnaire to administrative staff in the Jordanian universities under investigation as questionnaire is an effective method used as a tool to collect large amounts of data in a short time (Saunders et al., 2009). In this study, the target population are all the administrative staff in all department in private Jordanian universities. This administrative staff member who was surveyed are not in faculty roles or teaching, but they conduct administrative functions only, those who are employed in the administrative departments of the university (presidency department, finance department, Public & international relations department, health care department, Library, admission & registration department, and faculties and deanships department). In this study the total number of the private universities involved are sixteen (16) in three geopolitical zone in Jordan which are Northern, Central, and Southern which in total comprises of 4260 administrative staff for the selected private Jordanian universities (Accreditation and Quality Assurance Commission, 2022) as show in Table 3.1. Out of the total distributed questionnaire, 353 responses were returned and used for the study. As the population of the current research is relatively large, the study opted for random sampling. This reduces the bias that might occur if selected few universities only as it might not provide the true nature of reality within the system.

Table Error! No text of specified style in document..1: Population of the study

Region	Governorate	No. of all Private Universities	Population (No. of all administrative staff)
Northern	Irbid, Jerash, Ajloun	4	531
Central	Amman, Zarqa, Mafraq, Salt, Madaba	10	3536
Southern	Karak, Tafilah, Ma'an, Aqaba	2	193
Total	12	16	4260

Note. Data were extracted from Accreditation and Quality Assurance Commission for Higher Education Institutions (2022).

The data of the current study was collected using an end-to-end questionnaire. The questionnaire was divided into three sections: Section A consisted of a list of questions intended to probe the demographic variables of the respondents. Section B will consist of the questions aimed at gauging the respondents' evaluation of electronic human resources management adopted by the Universities in the Jordan adopted from previous studies, and which could possibly influence Organizational learning, using a five-point Likert scale. While section C covered the adopted variable and measurement items for organizational performance (Heneman, 2007; Boxall & Purcell, 2003; Jobber,

2007; Vacek, 2009; and VentureLines, 2015). The questionnaire items were anchored according to the Five Point Likert Scale (5 strongly agree, 4 agree, 3 neutral, 2 disagree, 1 strongly disagree).

4. DATA ANALYSIS

The data collected for this study was analyzed quantitatively. As mentioned earlier, this study has five independent variables, one dependent, and one moderating variable. To analyze the data related to all these variables, several statistical techniques were used. SPSS- Statistical Package for the Social Science version 27 and Smart-PLS version 4, was used to run the relevant statistical tests of the study. The data was prepared for statistical analysis by coding, revising, and cleaning through the SPSS. A coding sheet was used to transcribe the data from the questionnaire (Sekaran & Bougie, 2010). This data preparation method was designed to guarantee that data was error-free and that any problems that may affect the results were avoided. Thereafter, measurement and structural model assessment was carried out as explained in the following section (Joe F. Hair Jr. et al., 2017).

Table 4.1: Convergent validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
EC	0.91	0.91	0.93	0.61
ECP	0.94	0.94	0.95	0.63
EPA	0.91	0.92	0.93	0.61
ER	0.82	0.83	0.88	0.65
ET	0.89	0.90	0.92	0.61
IIBS	0.72	0.70	0.80	0.50
IIC	0.95	0.96	0.97	0.91
IPS	0.93	0.94	0.95	0.84
ITC	0.82	0.87	0.89	0.69
ITK	0.87	0.87	0.91	0.71
OIC	0.81	0.83	0.89	0.72
POP	0.92	0.93	0.94	0.72
SIC	0.89	0.95	0.92	0.75

Table 4.1 presents the results of the measurement model where the Cronbach's alpha shows that all items measured are above 0.70 and meet the recommended internal consistency score for PLS measurement model (Mcneish & Mcneish, 2018). This is in line with recommendation by Joseph F. Hair et al., (2013) who mentioned that the Cronbach's alpha should be used as the internal consistency reliability lower bound and recommended greater than (> 0.70) as the acceptable score. Additionally, many studies opined that in order to determine the reliability of constructs, it is

important to identify the composite reliability (CR) for each construct and agreed that the score should be greater than 0.70. This is because it has the ability to weigh the indicator from different aspect. Based on this, the present study assessed the composite reliability as reported in Table 4.1 and found that all items or indicators are above 0.7 as recommended. Lastly, this study test for AVE to determine that the set of items should signify the same underlying construct that can be verified by their uni-dimensionality. For the present study, the perceived organization performance AVE was not achieved initially, as some values were seen to be below the 0.5 threshold. However, 2 items were deleted out of the 6 items used and a rerun of the PLS algorithm was carried out and then all item values were seen to achieve above 0.5. Table 4.1 shows that Average Variance Extracted (AVE) for every latent variable is greater than the recommended value of 0.5 (50%) which indicates that every construct could explain more than half of the variance to its measuring items on average (Joe F. Hair Jr. et al., 2017). The next section explains the structural model of the study.

4.1 Direct and indirect analysis

In order to determine statistical inferences of the study model, PLS-SEM the present study employs the bootstrapping procedure. This is an approach that is regarded as a non-parametric resampling procedure which focuses on the variability assessment of statistical examination of the sample data rather than employing parametric assumptions to determine the precision of the estimates (Streukens & Leroi-Werelds, 2016). Based on this, all the hypothetical relationships in the framework was examined through the use of the path coefficient (β), t-statistics, confidence interval and p-value and shown in Table 4.2 below.

Table 4.2: Path coefficient (direct) result

Hypotheses	β -value	Confidence Interval Bias Corrected		T-statistics	P -values
		2.50%	97.50%		
ER -> POP	0.102	-0.066	0.266	1.162	0.000
ET -> POP	0.274	0.029	0.057	1.992	0.046
EC -> POP	0.300	0.106	0.527	2.786	0.005
ECP -> POP	-0.153	-0.447	0.526	1.314	0.189
EPA -> POP	0.044	-0.220	0.278	0.349	0.727

The present study determining the positive significant relationship between e-recruitment (ER), e-compensation (ECP), and e-performance appraisal on Perceived Organization Performance POP. Table 4.2 shows non positive effect of the path coefficient assessment (t-statistics) and (P-value) of three (3) independent variables on the dependent variable. The result depicts an indication of a non-significant effect of ER, ECP and EPA on perceived organization performance as $t = 1.162, 1.314$ and 0.349 , thus below the recommended parameter level. (Janadari et al., 2013) mentioned that the value of the path coefficient (t-value) must be greater than 1.96 at 0.05 level (5000 subsamples) of P-value as employed in the present study. This shows the low-level strength of the relationship between ER,

ECP and EPA on POP while e-training (ET) and e-communication have a high strength of 1.992 and 2.786 at 0.046 and 0.005 (500 subsamples) as hypothesized in the study model.

4.2 Moderation effect analysis

In order to have an existing moderation within a model, there must be a third variable that plays or affects as an intermediate role between the independent and dependent variables relationship respectively. The present study considers the effect of ITC as the moderating variable on independent variables (e-HRM) to derive an outcome of POP (dependent variable). Ringle & Sarstedt, (2022) stated that no separate test must be carried out to determine the effect of meditation. Thus, the bootstrapping for direct and indirect path coefficients must be carried out at once as presented in Table 4.3. The bootstrapping result is shown in Table 4.3 below and explained in the following sections.

Table 4.3: Path coefficient (indirect) result

Hypotheses	β -value	Confidence Interval Bias Corrected		T-statistics	P-values
		2.50%	97.50%		
ITC x ER -> POP	0.018	0.271	0.629	3.161	0.020
ITC x ET -> POP	0.001	0.269	0.506	2.005	0.016
ITC x EC -> POP	0.111	0.109	0.410	1.986	0.040
ITC x ECP -> POP	0.052	0.101	0.211	2.455	0.049
ITC x EPA -> POP	0.091	0.152	0.402	2.634	0.020

The results of the moderation analyses presented in Table 4.3 show the significant relationship of IT capability positively moderates the influence of e-recruitment and e-selection (ER), e-training (ET), e-communication (EC), e-compensation (ECP) and e-performance appraisal on perceived organizational performance (POP). The table presents four measurements criteria, where the original sample size (β) is within the recommended threshold. According to (Ain et al., 2018), to derive a strong positive relationship among variables, β -value must be between +1 or -1. As such, the current moderation hypotheses 6, 7, 8, 9 and 10 are 0.018, 0.001, 0.111, 0.052, and 0.091 for the β - value, indicating that there is a positive moderation relationship of IT capability between the influence of ER, ET, EC, ECP, and EPA on POP. Also, the result of the t-statistics shows a higher significant value of 3.161, 2.005, 1.986, 2.455 and 2.634. This depicts a strong significant relationship that IT capability positively moderates the influence of ER, ET, EC, ECP and EPA on POP based on the study by (Joe F. Hair et al., 2020) which mentioned that the t-statistics should be higher than 1.960 using two tails procedure. This shows that all the moderating hypotheses 6-10 are supported. Furthermore, the P-value also confirmed this result. According to (Kock, 2014), P-value should be greater than 0.05 in order for the hypothesis to be supported or not supported. Thus, the P-value of 0.020, 0.016, 0.040, 0.049 and 0.020 of hypothesis 6-10 shows that they are all within the recommended threshold. As such, hypothesis 6-10 are supported.

5. CONCLUSIONS AND RECOMMENDATIONS

The purpose of the current study is to investigate the relationship between e-HRM, and perceived organization performance, while the ITC is investigated as a moderator between the above-mentioned relationships. The study achieved its goals to improve the knowledge in Jordanian universities by identifying the potential factors of e-HRM practices and their value creations, how e-HRM practices influence organizational performance, how HR personnel job satisfaction influences the "e-HRM practices - organizational performance" relationship, and how universities' experience with e-HRM significantly influences the "E-HRM practices - organizational performance" relationship. Furthermore, the PLS model's application in contributing to knowledge development revealed its relevance to assessing e-HRM concerns. The study gave a holistic picture of both the adoption and post-adoption of e-HRM, and value creations based on an evaluation of click and mortar enterprises with varying levels of expertise in IT applications in universities.

Knowledge enhancement was made by providing empirical evidence on issues related to e-HRM applications in Jordan Universities both in private and public Universities. The proposed model indicated that 2 hypothesized relationships out of 5 direct hypotheses were supported, while three hypothesized relationships were not significantly supported. The path coefficient presents in Table 4.2 indicates that senior director characteristics, such as e-Training, e-Communication on Perceived Organizational Performance were significant factors of E-HRM practices. While Other dimensions (E-Recruitment, E-Compensation, E-Performance appraisal,) were found to have non-significant relationship. This shows that E-HRM practices cannot influence organizational performance alone, since significant positive relationships were established. However, the influence of information technology capability moderately and partially moderates the relationship "E-HRM usage on perceived organizational performance" as present in Table 4.3 where all hypotheses tested were positive and significant. In the following sections, these findings will be discussed in detail and explain the hypotheses tested concerning the way people were affected following the answers to objectives research questions.

Firstly, the current study is consistent with previous studies that do not find e-recruitment and selection as dimension of e-HRM to reduce the degree of uncertainty that can provide perceive organization performance. Accordingly, Attewell, (1992) provided another idea to support this findings that, the fewer the knowledge and skill barriers, the more likely a company will embrace an information system. This finding not only supports previous research in Western countries, such as New Zealand (Al-Qirim, 2008) and the United States (Agarwal and Prasad, 1998), but also confirms the findings of research in developing countries such as Malaysia (Iqbal et al., 2018a), Indonesia (Masum et al., 2016), and Singapore (Galhena, 2022). Furthermore, the current findings is similar with the findings of (Ghobakhloo et al., 2011), who identified that e-recruitment and selection do not play the most significant predictors of e-HRM adoption towards achieving perceived organization performance. Based on this study, the new e-recruitment significance along the IT could eliminate universities' old recruitment processes such that efficiency, development, learning online facilitation, web base training as well as tracking system will ultimately enhance operations and expertise consequences of technology in achieving perceive organization performance. This is because a combination of new and old IT systems is required in universities towards IT knowledge and skills in order to integrate into the university system with contemporary technology. This established the recognition that qualified employees through online or web base suggestions for university innovation and lead to perceived organization performance. As a result, managers and policymakers need to prioritize e-training as a form of technological resources such as physical infrastructure, intangible knowledge, and the recruiting of IT-skilled workers. Managers must also recognize that empowering employing with specialized IT skill sets which are web base within the traditional IT

environment, as well as implementing strategic initiatives to promote University expansion can enable e-HRM implementation to achieved perceive organization performance (Aboelmaged, 2014). The current study also believe that, the implication of e-communication become an important consideration to adopt when considering e-HRM practice by Universities in Jordan (Sila, 2013; Rahayu and Day, 2015). One possible explanation is that organizations are more successful and are able to achieve perceive organization performance with the return on investments than the actual financial resources when there is enhance, web-base, open door, intra mail intranet and internet interaction (Kuan and Chau, 2001; Chong and Chan, 2012). Even though the costs of the set ups are high, there are other expenses like subsequent training costs as well as other ongoing expenses that would be reduced after modern communication system are set and enhance e-HRM practices that will up and ultimately lead to perceived organization performance (Chong, 2006, Clark and Saunders, 1992; Ghobakhloo et al., 2011).

Lastly, the moderation testing of information technology capability of the current study provides a significant and positive relationship between all e-HRM dimensions on perceive organization performance. As previously indicated, five dimensions (e-recruitment and selection, e-training, e-communication, e-compensation, and e-performance appraisal) where chosen as drivers of E-HRM practises (independent variables) and moderated by information technology on perceived organization performance. Result shows that all the moderation hypotheses (H6, H7, H8, H9, and H10) were all significant and positive along the ITC on POP. This is determined, based on the parameters (T-statistics, P-Value, β -Value and confidence interval) of the indirect relationship presented in Table 4.13. As a result, the study's findings supported the proposed hypotheses H6, H7, H8, H9, and H10 of a positive relationship between E-HRM practises and moderated by information technology on perceived organisational performance. As a result, this study provides empirical findings that E-HRM practises have a considerable impact on organisational performance. Previous studies suggested that IT application has a considerable influence on organisational performance (Gardner et al., 2003, Ruël and Van der Kaap, 2012). The current results are consistent with past studies on developed and developing countries. The findings revealed that E-HRM practises, and organisational success were inextricably related. The outcomes mirrored universities' plans to improve E-HRM technology utilisation. In other words, the findings showed that universities should begin looking into E-HRM investment as soon as possible along information technology capability to achieve perceive organization performance. Furthermore, external factors such as the government and industry groups should play a role in promoting E-HRM investment. Universities may benefit from an awareness campaign and the availability of E-HRM incentives.

REFERENCES

- Abadleh, A. (2019). Wi-Fi RSS-based approach for locating the position of indoor Wi-Fi access point. *Komunikácie-vedecké listy Žilinskej univerzity v Žiline*, 21(4), 69-74.
- Abadleh, A., & Qatawneh, M. (2022). Deep Neural Network-based Approach to Identifying Road Lanes. *International Journal on Artificial Intelligence Tools*, 31(08), 2250043.
- Abadleh, A., Al-Mahadeen, B. M., AlNaimat, R. M., & Lasassmeh, O. (2021). Noise segmentation for step detection and distance estimation using smartphone sensor data. *Wireless Networks*, 27, 2337-2346.
- Abadleh, A., AL-SARAIREH, A. F. N. A. N., SALMAN, A. H. E., AKASASBEH, S. A. A., HAMMOURI, A., & RA'FAT, A. M. D. (2022). COVID-19 disease recognition using distributed data mining and deep learning. *Journal Of Theoretical And Applied Information Technology*, 100(2).
- Abadleh, A., Han, S., Hyun, S. J., Lee, B., & Kim, M. (2014, June). ILPS: Indoor localization using physical maps and smartphone sensors. In *Proceeding of IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks 2014* (pp. 1-6). IEEE.

- Abadleh, A., Tareef, A., Btoush, A., Mahadeen, A., Al-Mjali, M. M., Alja'afreh, S. S., & Alkasasbeh, A. A. (2022, June). Comparative analysis of TCP congestion control methods. In 2022 13th International Conference on Information and Communication Systems (ICICS) (pp. 474-478). IEEE.
- Abu-Jarad, I. Y., Yusof, N. A. & Nikbin, D. 2010. A Review Paper On Organizational Culture And Organizational Performance. *International Journal Of Business And Social Science*, 1.
- Agarwal, S., & Lenka, U. (2018). Managing Organization Effectiveness Through E-Human Resource Management Tool-E-Learning: Indian Cases A Qualitative Approach. *People: International Journal Of Social Sciences*, 4(1), 298-312.
- Ahmad, A. Y. A. B., Atta, A. A. M. B., Alawawdeh, H. A., Aljundi, N. A., Morshed, A., Dahbour, S. A., & Alqaraleh, M. H. (2023). The effect of system quality and user quality of information technology on internal audit effectiveness in Jordan, and the moderating effect of management support. *Applied Mathematics*, 17(5), 859-866.
- Ahmed, M. 2019. E-Hrm Practices And Its Impact On Organizational Performance: A Study On The Manufacturing Industry In Bangladesh. *European Journal Of Business And Management*, 11, 50-60.
- Ain, N., Nasaruddin, N., Rahman, I. A., & Musa Jaber, M. (2018). Pls-Sem Model Of Leadership Characteristics Facing Challenges In Malaysia Construction Industry. *International Journal Of Engineering & Technology*, 7(3), 620-624.
- Al Tarawneh, E., Alqaraleh, M. H., Ali, B., & Bani Atta, A. (2023). The impact of the efficiency and effectiveness of electronic accounting information systems on the quality of accounting information. *Information Sciences Letters*, 12(3), 1685-1692.
- Ali, A. D. B. M. (2020). The Influence Of E-Hrm On Employee Performance In Selected Construction Companies.
- Aljaafreh, A., Abadleh, A., Alja'afreh, S. S., Alawasa, K., Almajali, E., & Faris, H. (2022). Edge deep learning and computer vision-based physical distance and face mask detection system using Jetson Xavier NX. *Emerging Science Journal*, 7, 70-80.
- Al-Kasasbeh, A. M., Halim, M. A. S. A., & Omar, K. (2016). E-Hrm, Workforce Agility And Organizational Performance: A Review Paper Toward Theoretical Framework. *International Journal Of Applied Business And Economic Research*, 14(15), 10671-10685.
- Alkerdawy, M. M. A. (2016). The Relationship Between Human Resource Management Ambidexterity And Talent Management: The Moderating Role Of Electronic Human Resource Management. *International Business Research*, 9(6), 80-94.
- Alkhodary, D. (2021). The Impact Of E-Hrm On Corporates Sustainability: A Study On The Smes In Jordan. *International Journal Of Entrepreneurship*, 25(6), 1-15.
- Alnabhan, M., Al-Jaafreh, S., Abadleh, A., Atoum, M., Hammouri, A., & Al-dalahmeh, M. (2021). Enhanced D2D communication model in 5G networks. *International Journal of Computing and Digital Systems*, 10(1), 217-223.
- Alnabhan, M., Al-qatawneh, E., Alabadleh, A., Atoum, M., & Alnawwyseh, M. (2020). Efficient Handover Approach in 5G Mobile Networks. *Int. J. Adv. Sci. Eng. Inform. Technol*, 10(1).
- Alqaraleh, M. H. S., & Ahmad, N. (2018). The impact of the board of directors characteristics on the completeness of financial reports in Jordan. *International Journal of Academic Research in Business and Social Sciences*, 8(11), 151-160.
- Alqaraleh, M. H. S., & Nour, A. N. I. (2020). The impact of the audit committee on the timeliness of the annual financial reports in Jordanian companies listed in the Amman Stock Exchange. *International Journal of Critical Accounting*, 11(4), 287-298.
- Alqaraleh, M. H., Almari, M. O. S., Ali, B., & Oudat, M. S. (2022). The mediating role of organizational culture on the relationship between information technology and internal audit effectiveness. *Corporate Governance and Organizational Behavior Review*, 6(1), 8-18.

- Alqaraleh, M. H., Thuneibat, N. S. M., & Nour, A. (2020). The factors affecting the adherence of Islamic accounting standards AAOIFI in Jordan. *Journal of Governance and Regulation*, 9(4).
- Andrews, J. & Smith, D. C. 1996. In Search Of The Marketing Imagination: Factors Affecting The Creativity Of Marketing Programs For Mature Products. *Journal Of Marketing Research*, 33, 174-187.
- Armstrong, M. 2006. *A Handbook Of Human Resource Management Practice*, Kogan Page Publishers.
- Barney, J. (1991). Firm Resources And Sustained Competitive Advantage. *Journal Of Management*, 17(1), 99-120.
- Bharadwaj, A. S. (2000). A Resource-Based Perspective On Information Technology Capability And Firm Performance: An Empirical Investigation. *Mis Quarterly*, 169-196.
- Bian, L. 2012. An Empirical Study On Factors That Influencing The Adoption Of Electronic Human Resource Management (E-Hrm) Among Firms In Northeast Of China/Bian Linlin. University Of Malaya.
- Bondarouk, T. V. & Ruël, H. J. 2009. Electronic Human Resource Management: Challenges In The Digital Era. *The International Journal Of Human Resource Management*, 20, 505-514.
- Bontis, N. 2001. Managing Organizational Knowledge By Diagnosing Intellectual Capital: Framing And Advancing The State Of The Field. *Knowledge Management And Business Model Innovation*, 267-297.
- Bontis, N., Fearon, M., & Hishon, M. (2003). The E-Flow Audit: An Evaluation Of Knowledge Flow Within And Outside A High-Tech Firm. *Journal Of Knowledge Management*, 7(1), 6-19.
- Boselie, P., Dietz, G. & Boon, C. 2005. Commonalities And Contradictions In Hrm And Performance Research. *Human Resource Management Journal*, 15, 67-94.
- Cardy, R. L. & Miller, J. S. 2005. *Ehr And Performance Management*. The Professional Practice Series, 138.
- Chae, H. C., Koh, C. E., & Prybutok, V. R. (2014). Information Technology Capability And Firm Performance: Contradictory Findings And Their Possible Causes. *Mis Quarterly*, 38(1), 305-326.
- Chakravarty, A., Grewal, R., & Sambamurthy, V. (2013). Information Technology Competencies, Organizational Agility, And Firm Performance: Enabling And Facilitating Roles. *Information Systems Research*, 24(4), 976-997.
- De Búrca, S., Fynes, B., & Brannick, T. (2006). The Moderating Effects Of Information Technology Sophistication On Services Practice And Performance. *International Journal Of Operations & Production Management*, 26(11), 1240-1254.
- Dewett, T., & Jones, G. R. (2001). *The Role Of It Edisi 19*. Jakarta [Id]: Erlangga.
- Dhamija, P. (2012). E-Recruitment: A Roadmap Towards E-Human Resource Management. *Researchers World*, 3(3), 33.
- Dulebohn, J. H., & Marler, J. H. (2005). E-Compensation. The Professional Practice Series, 166.
- Dwitawati, I. (2018). Pengembangan Deanlep Application Pada Fakultas Sains Dan Teknologi Uin Ar-Raniry Banda Aceh. *Circuit: Jurnal Ilmiah Pendidikan Teknik Elektro*, 2(2).
- El-Ghalayini, Y. 2017. Human Resource Management Practices And Organizational Performance In Public Sector Organization. *Journal Of Business Studies Quarterly*, 8, 65.
- Fahy, J. (2000). The Resource-Based View Of The Firm: Some Stumbling-Blocks On The Road To Understanding Sustainable Competitive Advantage. *Journal Of European Industrial Training*, 24(2/3/4), 94-104.
- Farr, J. L., Fairchild, J., & Cassidy, S. E. (2013). Technology And Performance Appraisal. *The Psychology Of Workplace Technology*, 77-98.
- Ghanam, D. & Cox, P. 2007. Dynamic Capabilities: The Strategy-Hrm Intersect? *International Journal Of Learning And Intellectual Capital*, 4, 57-74.
- Gueutal, H. G., Stone, D. L., & Salas, E. (2005). *The Brave New World Of Ehr: Human Resources Management In The Digital Age*. (No Title).

- Hair Jr., J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-Sem Or CB-Sem: Updated Guidelines On Which Method To Use. *International Journal Of Multivariate Data Analysis*, 1(2), 107. <https://doi.org/10.1504/ijmda.2017.10008574>.
- Hair, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing Measurement Model Quality In PLS-Sem Using Confirmatory Composite Analysis. *Journal Of Business Research*, 109(August 2019), 101–110. <https://doi.org/10.1016/j.jbusres.2019.11.069>.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial Least Squares Structural Equation Modeling: Rigorous Applications, Better Results And Higher Acceptance. *Long Range Planning*, 46(1–2), 1–12. <https://doi.org/10.1016/j.lrp.2013.01.001>.
- Hamer, S., & Collinson, G. (2014). *Achieving Evidence-Based Practice: A Handbook For Practitioners*. Elsevier Health Sciences.
- Hendrickson, A. R. (2003). Human Resource Information Systems: Backbone Technology Of Contemporary Human Resources. *Journal Of Labor Research*, 24(3), 381.
- Hosain, S. 2017. The Impact Of E-HRM On Organizational Performance: Evidence From Selective Service Sectors Of Bangladesh. *International Journal Of Human Resources Management (Ijhrm) Issn (P)*, 2319-4936.
- Huang, C. C. (2009). Knowledge Sharing And Group Cohesiveness On Performance: An Empirical Study Of Technology R&D Teams In Taiwan. *Technovation*, 29(11), 786-797.
- Huselid, M. A., Jackson, S. E. & Schuler, R. S. 1997. Technical And Strategic Human Resources Management Effectiveness As Determinants Of Firm Performance. *Academy Of Management Journal*, 40, 171-188.
- Janadari, M. P. N., Ramalu, S., & Wei, C. (2013). Evaluation Of Measurement And Structural Model Of The Reflective Model Constructs In PLS – SEM. 187–194.
- Kanji, G. K. & E Sá, P. M. 2002. Kanji's Business Scorecard. *Total Quality Management*, 13, 13-27.
- Khan, N. R., Awang, M., & Ghouri, A. M. (2013). Impact Of E-Recruitment And Job-Seekers Perception On Intention To Pursue The Jobs. Khan, Nr, Awang, M., & Ghouri, Am (2013). Impact Of E-Recruitment And Job-Seekers Perception On Intention To Pursue The Jobs. *Management & Marketing*, 11(1), 47-57.
- Khashman, A. M. & Al-Ryalat, H. A. 2015. The Impact Of Electronic Human Resource Management (E-HRM) Practices On Business Performance In Jordanian Telecommunications Sector: The Employees Perspective. *Journal Of Management Research*, 7, 115-129.
- Kmieciak, R., Michna, A., & Meczynska, A. (2012). Innovativeness, Empowerment And It Capability: Evidence From Smes. *Industrial Management & Data Systems*, 112(5), 707-728.
- Kock, N. (2014). One-Tailed Or Two-Tailed P Values In PLS-SEM ? One-Tailed Or Two-Tailed P Values In PLS-SEM ? *Scriptwarp Systems*. *International Journal Of E-Collaboration*, 11(December), 1–7.
- Maayah, R., Abadleh, A., & Al-Subehat, E. (2022, November). Analysis of RSS Patterns to Detect Rogue Access Points. In *2022 International Conference on Emerging Trends in Computing and Engineering Applications (ETCEA)* (pp. 1-5). IEEE.
- Malik, M., & Mujtaba, M. (2018). Impact Of E-Recruitment On Effectiveness Of HR Department In Private Sector Of Pakistan. *International Journal Of Human Resource Studies*, 8(2), 80-94.
- Masum, A. K. M., Alam, M. G. R., Alam, M. S. & Azad, M. A. K. Adopting Factors Of Electronic Human Resource Management: Evidence From Bangladesh. *2016 International Conference On Innovations In Science, Engineering And Technology (Iciset)*, 2016. Ieee, 1-4.
- Mcneish, D., & Mcneish, D. (2018). Psychological Methods Thanks Coefficient Alpha , We ' Ll Take It From Here Thanks Coefficient Alpha , We ' Ll Take It From Here. *Psychological Methods*, 23(3), 412–433.
- Miller, D., & Friesen, P. H. (1986). Porter's (1980) Generic Strategies And Performance: An Empirical Examination With American Data: Part I: Testing Porter. *Organization Studies*, 7(1), 37-55.

- Mohsin, M., & Sulaiman, R. (2013). A Study On E-Training Adoption For Higher Learning Institutions. *International Journal Of Asian Social Science*, 3(9), 2006-2018.
- Njeje, D. A., Chepkilot, R., & Ochieng, I. (2018). E-Performance Management Systems And Organization Performance Of Sacco's In Kenya. *Journal Of Business And Management*, 20(5), 89-98.
- Noe, R. A., Tews, M. J., & Mcconnell Dachner, A. (2010). Learner Engagement: A New Perspective For Enhancing Our Understanding Of Learner Motivation And Workplace Learning. *The Academy Of Management Annals*, 4(1), 279-315.
- Ong, M. H. A. & Puteh, F. 2017. Quantitative Data Analysis: Choosing Between Spss, Pls, And Amos In Social Science Research. *International Interdisciplinary Journal Of Scientific Research*, 3, 14-25.
- Oyelakin, I. O. (2022). Does Iso 14001 And Green Servitization Provide A Push Factor For Sustainable Performance ? A Study Of Manufacturing Firms.
- Oyelakin, I. O., & Johl, S. K. (2022). Green Servitization As A Means Of Sustainable Performance: Evidence Of Listed Manufacturing Firms. *Cogent Engineering*, 9(1). <https://doi.org/10.1080/23311916.2021.2014250>
- Oyewale, O. I., & Johl, S. K. (2021a). The Effect Of Green Servitization On Malaysian Manufacturing Firm Sustainability: A Moderating Role Of Iso 14001:2015 Environmental Management System. *Annals Of The Romanian Society For Cell Biology*, 25(3), 4563-4570.
- Oyewale, O. I., & Johl, S. K. (2021b). The Effect Of Green Servitization On Malaysian Manufacturing Firm Sustainability: A Moderating Role Of Iso 14001:2015 Environmental Management System. *Annals Of The Romanian Society For Cell Biology*, 25(3), 4563-4570.
- Parry, E. & Tyson, S. 2011. Desired Goals And Actual Outcomes Of E-Hrm. *Human Resource Management Journal*, 21, 335-354.
- Paulraj, A., & Chen, I. J. (2007). Environmental Uncertainty And Strategic Supply Management: A Resource Dependence Perspective And Performance Implications. *Journal Of Supply Chain Management*, 43(3), 29-42.
- Phillips, S., Thai, V. V., & Halim, Z. (2019). Airline Value Chain Capabilities And Csr Performance: The Connection Between Csr Leadership And Csr Culture With Csr Performance, Customer Satisfaction And Financial Performance. *The Asian Journal Of Shipping And Logistics*, 35(1), 30-40.
- Purohit, M. (2018). A Study On Relational E-Hrm And Its Outcomes In It Sector (With Special Reference To Pune Region). *Iosr Journal Of Business And Management (Iosr-jbm)*, 20(7), 1-3.
- Rathee, R. & Bhuntel, M. R. 2021. A Study On Employee Perception About The Use Of E-Hrm In It. *Scms Journal Of Indian Management*, 18, 37-47.
- Ravichandran, T., Liu, Y., Han, S. & Hasan, I. 2009. Diversification And Firm Performance: Exploring The Moderating Effects Of Information Technology Spending. *Journal Of Management Information Systems*, 25, 205-240.
- Ringle, C. M., & Sarstedt, M. (2022). A Primer On Partial Least Squares Structural Equation Modeling (Pls-Sem) (Issue September 2021). <https://doi.org/10.1007/978-3-030-80519-7>
- Said, R., Hj Zainuddin, Y., & Haron, H. (2009). The Relationship Between Corporate Social Responsibility Disclosure And Corporate Governance Characteristics In Malaysian Public Listed Companies. *Social Responsibility Journal*, 5(2), 212-226.
- Sanjeev, R., & Makkar, D. U. (2014). Determining Employees' Perception Through Effective Hris: An Empirical Study. *Journal Of Strategic Human Resource Management*, 3(3).3
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research Methods For Business Students*. Pearson Education.
- Shao, Z., Feng, Y., Choudrie, J., & Liu, Y. (2010). The Moderating Effect Of A Chief Information Officer's Competence On It Investment And Firm Performance.4.

- Sharma, N. (2014). Recruitment Strategies: A Power Of E-Recruiting And Social Media. *International Journal Of Core Engineering And Management (Ijcem)*, 1(5), 15-35.
- Streukens, S., & Leroi-Werelds, S. (2016). Bootstrapping And Pls-Sem: A Step-By-Step Guide To Get More Out Of Your Bootstrap Results. *European Management Journal*, 34(6), 618-632. <https://doi.org/10.1016/j.emj.2016.06.003>.
- Thuneibat, N. S. M., Ali, B., Alqaraleh, M. H., & Thneibat, H. (2022). The mediating role of innovation on the relationship between information technologies and reducing tax evasion. *Information Sciences Letters*, 11(2), 13-23.
- Thuneibat, N. S. M., Alqaraleh, M. H., & Nour, A. I. (2021). An Empirical Analysis of Environmental Cost Accounting in Mining Companies in Jordan. *Journal of Hunan University Natural Sciences*, 47(11).
- Tippins, M. J., & Sohi, R. S. (2003). It Competency And Firm Performance: Is Organizational Learning A Missing Link?. *Strategic Management Journal*, 24(8), 745-761.
- Ul-Hameed, W., Shabbir, M., Imran, M., Raza, A., & Salman, R. (2019). Remedies Of Low Performance Among Pakistani E-Logistic Companies: The Role Of Firm's It Capability And Information Communication Technology (Ict). *Uncertain Supply Chain Management*, 7(2), 369-380.
- Vanishree, K., & Raghavendra, H. (2017). A Study On Implications Of Digital Revolution In The Field Of Hr. *Adarsh Journal Of Management Research*, 127-131.
- Yadav, R. K. & Dabhade, N. 2014. Work Life Balance And Job Satisfaction Among The Working Women Of Banking And Education Sector-A Comparative Study. *International Letters Of Social And Humanistic Sciences*, 21, 181-201.
- Yongmei, H., & Wenyan, L. (2008). Malmquist Index Analysis Of The Dynamic Changes In Scientific Research Productivity Of Some Chinese Universities Before And After Merger. *Frontiers Of Education In China*, 3(3), 429-447.
- Yusuf, A. H., & Oyelakin, I. O. (2022). Impact Of Covid-19 On Malaysian Economy: A Study Of Consumer Product Manufacturing Firms. *Journal Of Hunan University Natural Sciences*, 49(1), 314-321.