

-RESEARCH ARTICLE-

## ENHANCING THE SUSTAINABILITY PERFORMANCE THROUGH E-HRM AND UNVEILING OF THE LABOUR PRODUCTIVITY AND ORGANIZATIONAL AGILITY IN THE JORDANIAN PUBLIC UNIVERSITIES

**Enas Ali Theeb AlNawafleh**

Al-Balqa` Applied University - Ma'an College

Email: [enas.nawafleh@bau.edu.jo](mailto:enas.nawafleh@bau.edu.jo)

<https://orcid.org/0000-0001-7363-1880>

**Fayiz Emad Addin al-sharari**

Al-Balqa` Applied University - Ma'an College

Email: [fayiz.sharari@bau.edu.jo](mailto:fayiz.sharari@bau.edu.jo)

<https://orcid.org/0000-0003-2299-7342>

**Ghaith Abdulraheem Ali Alsheikh**

Human Resources Department, Faculty of Business,  
Amman Arab University

Email: [ghaith88@aau.edu.jo](mailto:ghaith88@aau.edu.jo)

<https://orcid.org/0000-0003-2426-5292>

**Ruba Risheed Al-Ghalabi**

Al-Balqa' Applied University - Amman College for  
Financial and Managerial Science

Email: [rubarisheed@bau.edu.jo](mailto:rubarisheed@bau.edu.jo)

<https://orcid.org/0000-0002-5278-5642>

Citation (APA): AlNawafleh, E. A. T., al-sharari, F. E. A., Alsheikh, G. A. A., Al-Ghalabi, R. R., Hamdan, K. B. (2022). Enhancing The Sustainability Performance Through E-Hrm and Unveiling of The Labour Productivity and Organizational Agility in The Jordanian Public Universities. *International Journal of eBusiness and eGovernment Studies*, 14 (2), 242-263. doi:10.34111/ijepeg.202214132

**Khaled Bany Hamdan**

Human Resources Department, Faculty of Business,  
Amman Arab University  
Email: [banyhamdan@aau.edu.jo](mailto:banyhamdan@aau.edu.jo)

### —Abstract—

Globalization and recent information and communication technology advances have made the world more complex, dynamic, and uncertain. As a result, in these highly competitive higher education demands, they typically seek novel strategies to set them apart from their competitors. As a result, electronic, human resources became a critical factor in achieving their objectives. The purpose of this study is to examine the relationship between E-HRM implementation and sustainability performance (SP), both directly and indirectly, by incorporating labor productivity (LP) and organizational agility (OA) variables, both practically and theoretically. A quantitative approach based on the questionnaire technique was used to test this model. 370 questionnaires were distributed to academics from Jordan's public universities using a proportionate random sampling technique. Structural Equation Modeling (SEM) methodology was used to analyze the data, and SPSS and Smart PLS were used for analysis. The findings showed that E-HRM had a significant influence on LP and SP and that LP positively impacted SP. The study also found that LP had a significant mediate effect on the relationship between E-HRM and SP. Finally, the results showed that OA moderates the relationship between e-HRM and the SP path in Jordanian public universities. The study's findings benefit many business sectors concerned about new practices in e-HRM and business practices that promote sustainability. The researcher suggests conducting further studies on E-HRM and applying this study to other sectors in Jordan.

**Keywords:** E-HRM, sustainability performance, labor productivity, organizational agility, Jordan

## 1. INTRODUCTION

There is a growing concern in advanced economies that university teaching and research should be directed toward specific economic and social goals (McDonnell-Naughton et al., 2022). Understanding the differences in capacity between higher education institutions around the world for such economic and social purposes is an important area of research, particularly for many developing countries (Sáez de Cámara et al., 2021). Higher education institutions (HEIs) are a critical source of growth because they serve as a knowledge-breeding platform that can help any nation grow. A key challenge is to strengthen the role that universities play, through their staff and students, in contributing to regional development, maintaining a competitive advantage, and thus participating in the larger political and cultural leadership of their communities.

The educational system's requirements and challenges necessitate new solutions in today's international context. Universities require students who can think, create, innovate, and learn, and universities must play an important role in helping students develop these skills (Arocena et al., 2021). Higher education (HE) goals have evolved. Still, one constant has been assisting people in developing and integrating into society so they can shape their surroundings' socioeconomic conditions (Darling-Hammond et al., 2019).

Improving the long-term performance of universities is a global concern in all countries; However, in developing countries like Jordan, the challenges are greater (Mohammed et al., 2020). One of the most important characteristics that differentiate one country from another is its ability to manage higher education institutions and important programs effectively and innovatively. In contrast, the managerial ability that could improve job performance is related to the size and quality of services in the founder's higher education system. As a result, Jordanian higher education institutions (both public and private) need to make the university a compass movement through which policies and university ethics are applied to the system for efficient job performance (Al-Husseini et al., 2018; Jameel et al., 2020).

As a result, e-HRM has evolved into the newest theme of HRM to streamline operations to perform the HR function faster and reduce costs (Muayad, 2020). As a result, one of the problems Jordanian universities face is an increase in administrative and other expenses (Alfawaire et al., 2021). Furthermore, E-HRM has the potential to improve services to HR customers (both employees and management), increase efficiency and cost-effectiveness in HR, and enable HR to transform into a strategic partner, all of which contribute to long-term performance (Talukdar et al., 2021).

Furthermore, productivity at Jordanian universities has suffered a significant decline. Researchers have demonstrated that, even with vast human resource management initiatives such as OA at their disposal, productivity has not improved significantly. As a result, it is clear that very few studies on E-HRM, particularly its impact on productivity in another sector, have been conducted in Jordan. In addition, there is insufficient evidence to demonstrate a link between the existence of E-HRM and the implementation of these policies in Jordanian universities. As a result, there is a significant knowledge gap that this research must fill. Against this backdrop, the study seeks to determine how E-HRM affects employee productivity.

In general, the promotion of long-term performance has always been of great importance at all universities due to its direct relation to value creation (Anwar et al., 2020). Although universities constantly strive for superior outcomes, influence, and competitive advantage, some struggle to achieve these goals, possibly due to management's inaccurate assessment of their long-term performance (Ferraris et al., 2020). Furthermore, the lack of a unified measure/scale for measuring sustainable

performance may be related to the presentation of sustainable performance as the organization's ability to meet the needs of stakeholders to maintain survival and continuity. As a result, an agile workforce significantly contributes to an agile organization's success, and ignoring this factor can jeopardize organizational agility (Malik et al., 2021). Furthermore, OA can be achieved through employee collaboration, loyalty, and skills, which derive primarily from employees' skills, knowledge, acuity, experience, and intelligence (Herlina et al., 2021).

Implementing agile practices and processes would be beneficial if they contributed to the organization's efficient operation (Menon et al., 2020). As a result, the researchers used a multi-grade fuzzy method to assess OA and validate the results. Although studies have assessed agility in the higher education sector, no assessments of skill in higher education have been conducted thus far. This gap has provided the impetus for this research.

## 2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

To meet global business challenges, companies must develop a sustainable operating model (T. R. Shah, 2022). "Sustainability" refers to an organization's ability to withstand the unpredictability of social, environmental, and economic factors over time (Rahman et al., 2021). In other words, sustainability refers to an organization's ability to meet the needs of its stakeholders over time by incorporating economic, environmental, and social factors into its business strategies. It is a hot topic, and organizations' plans are based on it (Vieira Nunes et al., 2021). Because sustainability is a novel concept in the twenty-first-century economy, researchers and human resource professionals are attempting to determine the role of human resource management in achieving sustainable organizations. Given the external environment's unpredictability, organizations must develop a long-term model (Miceli et al., 2021). It is the last stage of human resource management's evolution (E-HRM). A multidimensional model is required to achieve high performance while addressing multiple external and internal environmental stakeholders and placing HRM at the heart of organizational sustainability (Muqaddim et al., 2021). In modern times, E-HRM competencies have been recognized for incorporating sustainability at various organizational levels (Talukdar et al., 2021).

E-HRM is the use of information and communication technology (ICT) in organizations to implement HR strategic policies and practices (Nedumaran et al., 2021), or it can be defined as "the planning, implementation, and application of information systems for both networking and supporting actors in their shared performance of HR activities" (Jadav, 2021). E-HRM can be used for all HR functions, from traditional to transformational, to improve organizational effectiveness and sustainability (Rathee et al., 2022). It can also manage the entire employee lifecycle, from hiring to firing. To perform the greatest number of transactional activities, self-service systems have been developed with the assistance of dynamic software (Bhattacharyya, 2021). All HR

departments worldwide are transitioning to E-HRM in the twenty-first century, thanks to rapid advancements in web-based technologies. Many researchers have discussed and explained various possible benefits and outcomes for the use of e-HRM, such as operational, relational, and transformational impacts (Alkhodary, 2021), cost reduction, improving strategic orientation and global orientation (Jadav, 2021), improvement of efficiency and cost reduction related to HRM (Kaur, 2021), facilitation of a more strategic role for HRM (Kaur, 2021), facilitation of a more strategic role for HRM (Al-Harazneh et al., 2021).

Organizations must create E-HRM strategies that include core policies and practices and a solid framework for long-term HRM (Mugerwa, 2020). Before progressing to a sustainable society, sustainability must begin at the individual, departmental, and organizational levels (Larsson et al., 2020). E-HRM must be aligned with the organization's mission, goals, formulation, and development of human capital strategies to be a dominant element of organizational sustainability (Makieła et al., 2021). E-HRM must work with top management to embed changes in firm strategies related to OA, LP by keeping them up to date on new business processes and developing business ethics as further grounds for competitive advantage (Alrawashdeh, 2021; Sutha et al., 2021). These types of E-HRM practices can assist an organization in achieving a sustainable environment by striking a balance between economic, social, and environmental integrity. Sustainability is a new topic in the field of E-HRM, and more empirical research is needed to recognize and assess E-value HRMs in developing sustainable organizations. An organization's survival in a competitive environment has compelled it to create unique competencies quickly. To perform effective and efficient E-HRM functions, corporations must shift from physical technology to information technology. Only a few studies have found a connection between E-HRM and SP (Alkhodary, 2021; Muqaddim et al., 2021; Rahman et al., 2021; Shamout et al., 2022).

Some researchers have confirmed that E-HRM improves an organization's capabilities and, thus, its performance and sustainability (Bag et al., 2021; L'Écuyer et al., 2020). It also has a positive relationship with organizational responsiveness (Zhou et al., 2021), which improves organizational efficiency and effectiveness. E-HRM contributes to technological effort and sustainability from the standpoint of technological development (Rahman et al., 2021; Shamout et al., 2022), and technological change increases LP (Iqbal, Ahmad, & Allen, 2019). According to Saxena et al. (2022) and Bril et al. (2021), organizational innovation activities (both product and process innovations) help to improve HR employees' productivity, which has a positive impact on SP. However, while scholars have indicated that the role of LP as a mediator between E-HRM and SP is important, empirical research on this topic is limited.

These findings will be used to determine whether the level of service provided by E-HRM mediates the relationship between E-HRM and LP. Although a practitioner survey found a positive relationship between E-HRM and LP (Nurshabrina et al., 2020), there

is a need to investigate this link to promote theory building (Muqaddim et al., 2021; Rahnjen Wijayadne, 2021), as there is little agreement on how E-HRM influences SP (Nurlina et al., 2020). The positive effects of E-HRM on SP are not guaranteed (El Idrissi et al., 2021). A system that encourages error-free administration or allows employees to complete tasks faster (i.e., improves HR service quality) (Meijerink et al., 2021) is more likely to assist organizations in enhancing LP (Iqbal et al., 2018).

E-HRM is used in a variety of ways by organizations. To begin, the breadth of E-HRM refers to the number of E-HRM practices used by a company (Myllymäki, 2021). Second, E-HRM depth refers to how deeply each E-HRM practice is embedded (Talukdar et al., 2021). We investigate the relationships between E-HRM and LP by varying the extent to which public universities use various e-HRM practices.

Labor productivity, which refers to how efficiently an organization's labor force works, is an important outcome (Iqbal et al., 2018). E-HRM systems provide employees with unique opportunities to develop their skills and thus contribute to the organization's success (Bag et al., 2021; Iqbal, Ahmad, & Allen, 2019; Shamout et al., 2022). E-HRM practices can provide a more efficient and effective way to perform HR processes, potentially leading to higher LP (N. Shah, Chalu, et al., 2020; N. Shah, Michael, et al., 2020).

Rather than simply utilizing technology for HRM processes, the primary goal of E-HRM as an employment system is to increase employee productivity (Hoq, 2021). According to existing research, the extent to which e-HRM practices are used influences the creation of E-HRM value: organizations with more E-HRM practices outperform those with fewer E-HRM practices (Lazazzara et al., 2020; Škudienė et al., 2020). We argue that the more e-HRM practices a workplace implements, the more likely that establishment will see productivity gains (Nurshabrina et al., 2020), and we hypothesize that E-HRM has a direct and positive impact on employees' perceptions of LP.

This study's main contribution was using OA to identify the moderation role between E-HRM and LP. As defined by Khakivatan et al. (2021), agility refers to an organization's ability to sense, perceive, and predict workplace changes. Sutha et al. (2021) defined agility as the ability to overcome unexpected challenges, confront workplace threats, and capitalize on and benefit from changes as opportunities for growth and progress. Early proponents of a comprehensive classification of agile attributes included Marhraoui et al. (2022). These characteristics have been classified into four major categories: responsiveness, competency, flexibility, and quickness. As a result, modern organizations have identified E-HRM as a competitive business solution capable of providing the perfect support for managing all HRM processes, activities, data, and required information at the organization while reducing costs.

Furthermore, the OA is used as a mediator by the researcher. It aids in the management of the E-HRM-LP relationship. Many organizations and businesses have faced uncertain

competition, which technological innovations have exacerbated, changes in market environments, and shifting customer needs (Ni et al., 2021). As a result, agility is one approach to organizational evolution and adaptation (Sahota et al., 2021).

The following research hypotheses are developed following the prior literature:

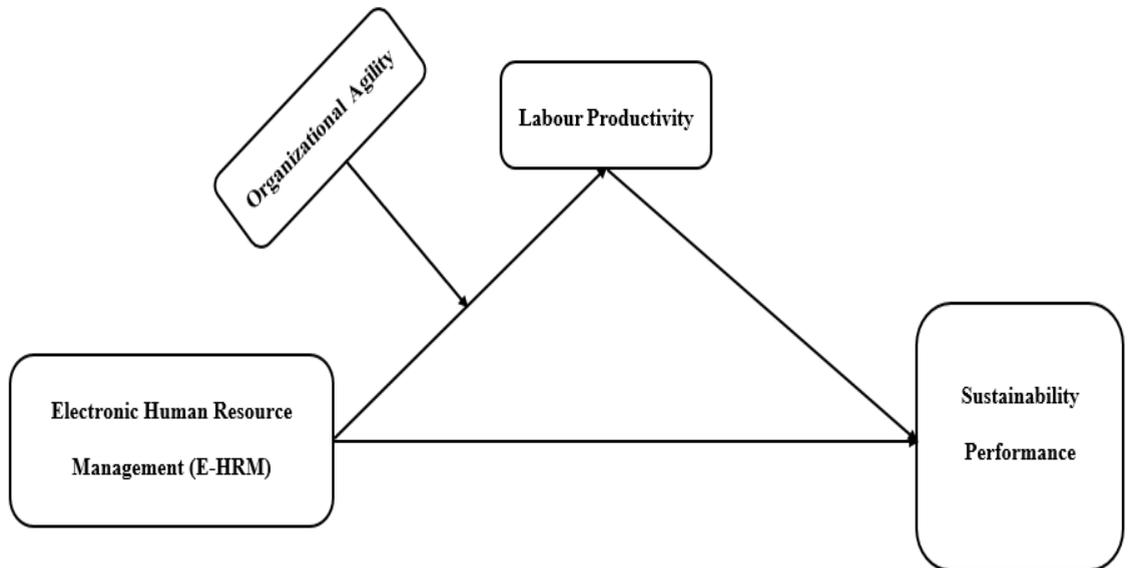
**H<sub>1</sub>:** E-HRM has a significant influence on sustainability performance.

**H<sub>2</sub>:** E-HRM has a significant influence on labor productivity.

**H<sub>3</sub>:** Labour productivity has a significant influence on sustainability performance.

**H<sub>4</sub>:** Labour productivity has a mediating influence on the relationship between E-HRM and sustainability performance.

**H<sub>8</sub>:** Organizational agility has a moderating influence on the relationship between E-HRM and labor productivity.



**Figure 1:** Research Framework

### 3. RESEARCH METHODOLOGY

A research project is a formal and systematic application of the scientific method to examine emerging issues (Wolf, 2019). Meanwhile, the research design enables the investigation of the research problem. This can be accomplished by developing a research process that yields a specific answer to specific questions. Meanwhile, Flick (2018) has classified the approaches based on their purpose and research type, which is exploratory research. As a result, the design of this study is a quantitative descriptive

survey. A single survey research objective guides this study. As a result, the questionnaire necessitates a thorough data collection procedure. According to [Inuwa et al. \(2017\)](#), determining an employee's performance in higher education requires investigating their thoughts and behavior. As a result, this study employs a survey design to obtain the necessary information from the determined sample.

This study's target population consists of academics from Jordan's public universities. The main reason for selecting academics in universities as a sample is that they are the most influential factor in influencing the SP of universities ([Baltaru, 2019](#); [Igbojekwe et al., 2015](#); [Wenz et al., 2010](#)). These employees worked during the academic year 2021/2022.

Jordan's population was over 10,000 academics ([Ministry of Higher Education & Scientific Research 2020](#)). According to [Sekaran et al. \(2016\)](#), the sample size should be 370. The size of the target population determined the sample size used in this study. In addition, the proportionate random sampling technique is used in this study. The goal is to ascertain the number of employees included in the scope of the study's sample. Various statistical software has been used to perform data analysis represented by the Structural Equation Model (SEM), specifically Partial Least Squares, to achieve reliability in data analysis (PLS-SEM).

#### 4. DATA ANALYSIS

The statistical software SmartPLS (version 3.3.5) was used in the study to evaluate the measurement model and structural model (hypotheses test). Individual indicator reliability, convergent validity, and discriminant validity were all assessed in this study's measurement model. [Table 1](#) displays the results of individual indicator reliability and concurrent validity. For all items, the factor loading ranged from 0.735 to 0.896. Items with loadings of 0.7 or higher, as a result, should be kept ([Hair et al., 2019](#)). Furthermore, the constructs' Cronbach's alpha and composite reliability values were greater than the suggested threshold of 0.70 and higher ([Hair Jr et al., 2021](#)). Meanwhile, [Table 1](#) shows that all constructs achieved values greater than the suggested threshold value of 0.50 for the Average Variance Extracted (AVE) ([Hair Jr et al., 2021](#)). The results of the measurement model evaluation are shown in [Figure 1](#).

**Table 1. The Results of Individual Indicator Reliability and Convergent Validity**

Construct	Items	Loadings	Cronbach's Alpha	Composite Reliability	AVE
Electronic Human Resource Management	E-HRM1	0.834	0.907	0.930	0.727
	E-HRM2	0.797			

	E-HRM3	0.886			
	E-HRM4	0.896			
	E-HRM5	0.848			
<b>Organizational Agility</b>	OA1	0.799	0.909	0.930	0.688
	OA2	0.825			
	OA3	0.735			
	OA4	0.878			
	OA5	0.869			
	OA6	0.864			
<b>Labour Productivity</b>	LP1	0.793	0.898	0.925	0.711
	LP2	0.870			
	LP3	0.872			
	LP4	0.873			
	LP5	0.805			
<b>Sustainability Performance</b>	SP1	0.778	0.901	0.922	0.628
	SP2	0.863			
	SP3	0.834			
	SP4	0.747			
	SP5	0.803			
	SP6	0.759			
	SP7	0.755			

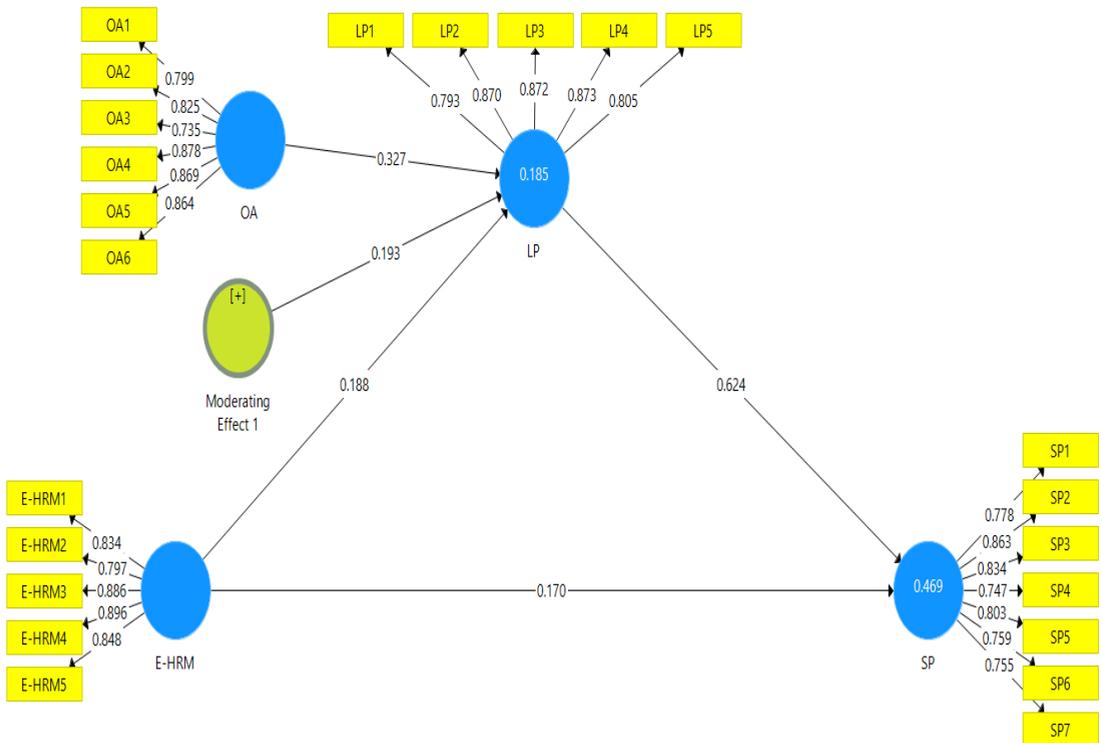
Regarding discriminant validity, the Heterotrait-Monotrait Ratio was used in this study (HTMT). The introduction of HTMT resulted from criticisms of the Fornell-Larcker criterion in SmartPLS. The addition of HTMT removes the limitations of the Fornell-Larcker criterion, which has an unsatisfactory low sensitivity and is incapable of detecting a lack of discriminant validity (Henseler et al., 2015). Table 2 shows that the HTMT values for each construct ranged from 0.165 to 0.711, all of which were less than 0.85 (Henseler et al., 2015).

**Table 2. Discriminant Validity by HTMT**

Construct	E-HRM	Organizational Agility	Labour Productivity	Sustainability Performance
E-HRM				

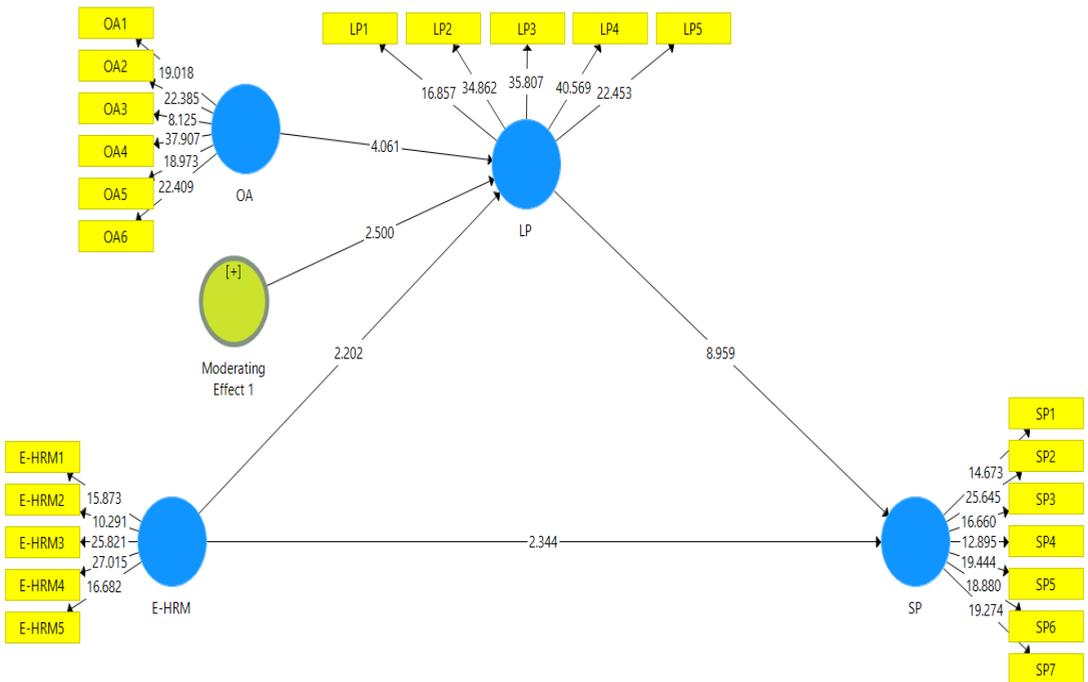
<b>Organizational Agility</b>	0.165			
<b>Labour Productivity</b>	0.246	0.365		
<b>Sustainability Performance</b>	0.346	0.307	0.711	

The structural model evaluation aims to determine the relationship between constructs (Hair et al., 2019). The test was run on the hypothesized model with SmartPLS (version 3.3.5) using the PLS-SEM algorithm to generate the path coefficients shown in the figure below.



**Figure 1:** The Results of Measurement Model Assessment

Then, using 5000 resamples, this study used the bootstrapping techniques embedded in SmartPLS (version 3.3.5) to generate the p-values and t-values for each path coefficient. As strongly advocated by Preacher et al. (2008), bootstrapping is increasingly being used to examine path coefficients.



**Figure 2:** The Results of Structural Model Assessment

Table 3 shows that electronic human resource management has a significant positive effect on SP (Path Coefficient = 0.170; T-Value = 2.344; P-Value = 0.010; 95% LL= 0.046; 95% UL= 0.282), as a result, H1 was approved. Furthermore, electronic human resource management has a significant positive impact on LP (Path Coefficient = 0.188; T-Value = 2.202; P-Value = 0.014; 95% LL= 0.037; 95% UL= 0.315), as a result, H2 was approved. Meanwhile, LP has a significant positive effect on SP (Path Coefficient = 0.624; T-Value = 8.959; P-Value = 0.000; 95% LL= 0.494; 95% UL= 0.726), thus H3 received approval.

Table 4 shows the results of the testing for mediating and moderating effects. According to the findings, LP mediated the relationship between electronic human resource management and SP (Indirect Effect = 0.118; T-Value = 2.235; P-Value = 0.013; 95% LL= 0.026; 95% UL= 0.196), therefore H4 was supported. Moreover, the results indicated that OA moderated the relationship between electronic human resource management and LP (Indirect Effect = 0.193; T-Value = 2.500; P-Value = 0.006; 95% LL= 0.070; 95% UL= 0.321), therefore H5 was supported.

**Table 3. Hypotheses Testing**

No.	Hypotheses	Path Coefficient	T-Value	P-Value	Confidence Interval		Decision
					95% LL	95% UL	
H1	E-HRM→SP	0.170	2.344	0.010*	0.046	0.282	Supported
H2	E-HRM→LP	0.188	2.202	0.014*	0.037	0.315	Supported
H3	LP→SP	0.624	8.959	0.000**	0.494	0.726	Supported

Note: \*: p<0.05; \*\*: p<0.001

**Table 4. Testing of Mediating and Moderating Effect**

No.	Hypothesis	Indirect Effect	T-Value	P-value	Confidence Interval		Decision
					95% LL	95% UL	
H4	E-HRM→LP →SP	0.118	2.235	0.013*	0.026	0.196	Supported
H5	E-HRM→OA→LP	0.193	2.500	0.006**	0.070	0.321	Supported

Note: \*: p<0.05; \*\*: p<0.01

## 5. DISCUSSION

The effect of E-HRM on SP is not addressed in the literature. This study discusses the impact by providing evidence of the links between E-HRM and SP. The PLS-SEM bootstrapping method yields a significant positive relationship between E-HRM and SP at ( $\beta=0.170$ ,  $t\text{-value}=2.344$ ,  $p\text{-values}=0.010$ ) at ( $P<0.05$ ). Because this result is positive but only 5% significant, we can conclude that a positive relationship exists between the variables. Our study's findings demonstrated that E-HRM is important for decision-makers in various firms to reduce costs and embrace environmental sociability to gain a competitive advantage over competitors. According to [Talukdar et al. \(2021\)](#) findings, the importance of E-HRM stems from several factors, including the fact that it provides a method for managers, employees, and HR professionals to interpret, manage, or update the information required for managing the organization's human resources. Furthermore, [Waheed et al. \(2020\)](#) demonstrate that E-HRM application affects HRM technical and strategic effectiveness and efficiency, improving the HR service level and providing HR staff with the opportunity to become a strategic partners. [Rahman et al. \(2021\)](#) demonstrate that E-HRM plays a strategic role in enhancing SP in terms of competition and efficiency because it provides cost savings, flexible services, and employee participation.

Furthermore, E-HRM is positively and significantly related to LP in Jordanian universities. We found it statistically significant at 95 percent confidence interval ( $\beta=0.188$ ,  $t\text{-value}=2.202$ ,  $p\text{-values}=0.014$ ) significance at  $p<0.05$ , indicating support for H2. This result is consistent with previous LP research ([Iqbal et al., 2018](#)). One of the primary reasons for implementing e-HRM is to increase employee productivity ([Iqbal, Ahmad, & Allen, 2019](#); [Nurshabrina et al., 2020](#)). We discovered that e-HRM could help with LP. According to the findings, e-HRM practices significantly and positively impact managers' perceptions of LP. The findings are consistent with those of ([Muqaddim et al., 2021](#); [Rahnjen Wijayadne, 2021](#)), who argue that e-HRM has improved significantly.

The researcher developed hypothesis H3 to test the relationship between LP and SP. The PLS-SEM bootstrapping method yields a significant positive relationship between LP and SP at ( $\beta=0.624$ ,  $t\text{-value}=8.959$ ,  $p\text{-values}=0.000$ ) at ( $P<0.01$ ). Because this result is positive and supported, we can conclude that the variables have a positive relationship. In other words, LP is positively and significantly related to SP in Jordanian universities. Thus, labor productivity gaps persist among Jordanian universities, and improving the LP of universities that lag remains challenging even for the best-performing countries. Greater innovation adoption and further economies of scale are required to close the gap between weaker and stronger performers.

The current study hypothesized that LP could act as a positive mediator between E-HRM and SP. Employee productivity is an important consideration in determining SP. For testing whether H4 is mediating, the coefficient of indirect effect is 0.118, with a P-value

of 0.013 ( $p < 0.05$ ). As a result, it is possible to conclude that E-HRM and SP have a significant LP relationship. According to the current literature, there has been a significant increase in sustainability-related measures over the last two decades due to the increased attention paid to sustainability during the previous two decades. Universities significantly impact society; they play a critical role in advancing science, technology, innovation, justice, talent development, empowerment, and wealth creation, all while fostering an environment for thinkers, researchers, and professionals and strengthening the spirit of cooperation and responsibility. They also create and disseminate new ideas to promote individual and social life in an environment that fosters free intellectual thought and scientific criticism. As a result, achieving those lofty goals will require HRM sustainability in universities.

This study looked into the positive moderating effect of OA on the E-HRM-SP relationship. Organizational agility is critical in examining the relationship between E-HRM and employee SP. The p-value of 0.006 was less than the assumed value of 0.05, indicating that the hypothesis is supported. Organizational agility has an impact on SP in Jordanian public universities. As a result, an agile workforce is a significant contributor to the realization of an agile organization, and ignoring this factor may compromise university agility. OA can also be accomplished through worker cooperation, allegiance, and capability, primarily derived from the worker's skills, knowledge, acuity, experiences, and intelligence (Al-kasasbeh et al., 2016).

## 6. LIMITATIONS AND RECOMMENDATION

The current study has shed some light on the significance of E-HRM, LP, and OA on SP. However, the recent study has several significant limitations. These constraints limit the interpretation of findings. To begin, this study used a cross-sectional data collection method, i.e., the survey method, which obtains participants' perceptions at a single point in time. As a result, this study is not suitable for proving causal relationships over time, and thus the explanation of factors influencing SP is limited. To overcome this limitation, path analysis via SEM was used to determine whether the correlations between variables reflect the causal hypotheses. As a result, future research may benefit from considering longitudinal research designs to infer more precise cause-and-effect relationships.

Second, because the data from the current study was limited to Jordanian public universities, the findings may not be generalized in a larger context across cultures and industries. Different industries and business environments may affect SP from E-HRM, LP, and OA, so future research should look into these relationships in different contexts. The cross-level model should be tested in other cultures or countries to address this issue. It would be interesting to investigate whether the relative predictive power found in this study applies to other countries and compare any results caused by national or cultural differences.

A methodological issue still being debated is who should provide information about E-HRM, with repeated calls for multiple informants about the presence of practices (Ruël et al., 2014). In most studies, HR managers were respondents and information providers about E-HRM and SP. Academics were the respondents in this study. Academics have the necessary knowledge and experience with the content of E-HRM practices and how they are implemented. However, reliable informants are scarce, and it is more prudent to seek information from employees directly affected by the practices. In future studies, it would be beneficial to examine E-HRM-SP from the perspective or perception of all employees. Scholars have emphasized the importance of keeping employees at the forefront of this investigation (Al-Hmouze, 2016; Iqbal, Ahmad, Raziq, et al., 2019).

## 7. CONCLUSION

Jordan's public universities are among the most important contributors to the national economy. Higher education development has become a necessity rather than a choice due to the changing conditions explained by the world. Whereas the current standard has become service quality, E-HRM is the most critical asset for any university and is a vital source of competitive advantage. Managing human resources is much more difficult than any other resource, and universities require a strong and efficient E-HRM system for their LP and enhancing SP. However, in Jordanian universities, several critical problems related to E-HRM and OA had decreased university performance in this industry.

As a result, this research focuses on improving public universities' competitiveness in providing sustainable, high-quality services and achieving superior revenues with motivated, highly skilled employees by investing in E-HRM to enhance their role in fluffing high performance. LP and OA may leverage the HRM role. The E-HRM-SP model was developed in this study by examining the relationships in Jordanian public universities to improve SP.

Overall, the current study discovered evidence to support the relationship between E-HRM and SP; the same result was found between E-HRM and LP. As a result, fully mediating the E-HRM-SP relationship indicates and supports LP. The research also supports the role of OA as a moderator in the relationship between E-HRM and SP in Jordanian public universities.

## REFERENCES

- Al-Harazneh, Y. M., & Sila, I. (2021). The impact of E-HRM usage on HRM effectiveness: highlighting the roles of top management support, HR professionals, and line managers. *Journal of Global Information Management (JGIM)*, 29(2), 118-147. doi: <https://doi.org/10.4018/JGIM.2021030107>
- Al-Hmouze, L. H. (2016). The impact of electronic human resource management (E-HRM) application on organizational performance. *Middle East University*. Retrieved from [https://meu.edu.jo/libraryTheses/587368f7b4a99\\_1.pdf](https://meu.edu.jo/libraryTheses/587368f7b4a99_1.pdf)

- Al-husseini, S., & Elbeltagi, I. (2018). Evaluating the effect of transformational leadership on knowledge sharing using structural equation modelling: the case of Iraqi higher education. *International Journal of Leadership in Education*, 21(4), 506-517. doi: <https://doi.org/10.1080/13603124.2016.1142119>
- Al-kasasbeh, A. M., Halim, M., & 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. Retrieved from <https://www.researchgate.net/profile/Masa-Halim-Masa-Halim/publication/316698025>
- Al-Saidi, M., & Ala'a, H. (2020). The Effect of E-HRM on the Human Resources Flexibility in the Organization Analytical research of the opinions of a sample of Iraqi university staff. *Solid State Technology*, 63(6), 3395-3415. Retrieved from <http://solidstatetechnology.us/index.php/JSST/article/view/3468>
- Alfawaire, F., & Atan, T. (2021). The Effect of Strategic Human Resource and Knowledge Management on Sustainable Competitive Advantages at Jordanian Universities: The Mediating Role of Organizational Innovation. *Sustainability*, 13(15), 8445. doi: <https://doi.org/10.3390/su13158445>
- 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. Retrieved from <https://www.researchgate.net/profile/Dina-Alkhodary-3/publication/352401903>
- Alrawashdeh, N. M. A. (2021). Electronic Human Resource Management Practices, Information Technology Capability and Organisational Performance: A Review Paper Toward Conceptual Framework. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, 12(13), 874-884. Retrieved from <https://www.turcomat.org/index.php/turkbilmat/article/view/8542>
- Anwar, N., Nik Mahmood, N. H., Yusliza, M. Y., Ramayah, T., Noor Faedah, J., & Khalid, W. (2020). Green Human Resource Management for organisational citizenship behaviour towards the environment and environmental performance on a university campus. *Journal of Cleaner Production*, 256, 120401. doi: <https://doi.org/10.1016/j.jclepro.2020.120401>
- Arocena, R., & Sutz, J. (2021). Universities and social innovation for global sustainable development as seen from the south. *Technological Forecasting and Social Change*, 162, 120399. doi: <https://doi.org/10.1016/j.techfore.2020.120399>
- Bag, S., Dhamija, P., Pretorius, J. H. C., Chowdhury, A. H., & Giannakis, M. (2022). Sustainable electronic human resource management systems and firm performance: an empirical study. *International Journal of Manpower*, 43(1), 32-51. doi: <https://doi.org/10.1108/IJM-02-2021-0099>
- Baltaru, R.-D. (2019). Do non-academic professionals enhance universities' performance? Reputation vs. organisation. *Studies in Higher Education*, 44(7), 1183-1196. doi: <https://doi.org/10.1080/03075079.2017.1421156>

- Bhattacharyya, D. (2021). *Impact of e-HRM on Transactional Functions of HRM: An empirical study on FMCG manufacturing companies located in West Bengal*. Vidyasagar University, Midnapore, West Bengal, India, Retrieved from <http://inet.vidyasagar.ac.in:8080/jspui/handle/123456789/6277>
- Bril, A., Kalinina, O., Valebnikova, O., Valebnikova, N., Camastral, M., Shustov, D., & Ostrovskaya, N. (2021). Improving Personnel Management by Organizational Projects: Implications for Open Innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(2), 105. doi: <https://doi.org/10.3390/joitmc7020105>
- Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, 24(2), 97-140. doi: <https://doi.org/10.1080/10888691.2018.1537791>
- El Idrissi, F. E. H., Benabdelhadi, A., & Kabaili, H. (2021). Adoption and impact of electronic Human Resource Management: A systematic literature review. *Technium Soc. Sci. J.*, 21, 594. Retrieved from <https://heinonline.org/HOL/LandingPage?handle=hein.journals/techssj21&div=55&id=&page=>
- Ferraris, A., Belyaeva, Z., & Bresciani, S. (2020). The role of universities in the Smart City innovation: Multistakeholder integration and engagement perspectives. *Journal of Business Research*, 119, 163-171. doi: <https://doi.org/10.1016/j.jbusres.2018.12.010>
- Flick, U. (2018). *Doing triangulation and mixed methods* (Vol. 8): Sage.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2-24. doi: <https://doi.org/10.1108/EBR-11-2018-0203>
- Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). *A primer on partial least squares structural equation modeling (PLS-SEM)*: Sage publications.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115-135. doi: <https://doi.org/10.1007/s11747-014-0403-8>
- Herlina, M., Lasmy, L., Sudrajat, D., Syahchari, D., Saroso, H., & Zanten, E. (2021). Ambidexterity and agility in achieving dry port effectiveness in the greater Jakarta. *Uncertain Supply Chain Management*, 9(2), 247-254. doi: <http://dx.doi.org/10.5267/j.uscm.2021.3.008>
- Hoq, M. Z. (2021). A comprehensive review of contemporary issues of electronic human resource management (E-HRM). *Global Journal of Economics and Business*, 11(2), 278-296. doi: <https://doi.org/10.31559/GJEB2021.11.2.9>
- Igbojekwe, P. A., Ugo-Okoro, C. P., & Agbonye, C. O. (2015). Performance evaluation of academic staff in universities and colleges in Nigeria: The missing criteria.

- International Journal of Education and Research*, 3(3), 627-640. Retrieved from <http://www.ijern.com/journal/2015/March-2015/53.pdf>
- Inuwa, M., Mashi, M. S., & Salisu, I. M. (2017). Job attitude and employee performance: An empirical study of non-academic staff of Bauchi State University Gadau Nigeria. *International Journal of Business and Management Future*, 1(1), 1-13. doi: <https://doi.org/10.46281/ijbmf.v1i1.109>
- Iqbal, N., Ahmad, M., & Allen, M. M. C. (2019). Unveiling the relationship between e-HRM, impersonal trust and employee productivity. *Management Research Review*, 42(7), 879-899. doi: <https://doi.org/10.1108/MRR-02-2018-0094>
- Iqbal, N., Ahmad, M., M.C. Allen, M., & Raziq, M. M. (2018). Does e-HRM improve labour productivity? A study of commercial bank workplaces in Pakistan. *Employee Relations*, 40(2), 281-297. doi: <https://doi.org/10.1108/ER-01-2017-0018>
- Iqbal, N., Ahmad, M., Raziq, M. M., & Borini, F. M. (2019). Linking e-hrm practices and organizational outcomes: empirical analysis of line manager's perception. *Revista Brasileira de Gestão de Negócios*, 21, 48-69. doi: <https://doi.org/10.7819/rbgn.v21i1.3964>
- jadav, K. (2021). Adoption and Implications.1(1), 6-14. . *International Journal of Management, Public Policy and Research*, , 1(1), 6-14.
- Jameel, A. S., & Ahmad, A. R. (2020). Factors impacting research productivity of academic staff at the Iraqi higher education system. *International Business Education Journal*, 13(1), 108-126. Retrieved from <https://ssrn.com/abstract=3614806>
- Kaur, C. (2021). Changing pattern of E HRM in corporate world after globalization. *IOSR Journal of Business and Management*, 23(4), 23-30. Retrieved from <https://d1wqtxts1xzle7.cloudfront.net/66750240/C2304092330-with-cover-page-v2.pdf?>
- Khakivatan, N., Abbasian, H., Navehebrahim, A., & Arasteh, H. R. (2021). Study The Agility of Human Resources in the education. *Journal of School Administration*, 9(1), 97-71.
- L'Écuyer, F., & Raymond, L. (2020). Enabling the HR function of industrial SMEs through the strategic alignment of e-HRM: a configurational analysis. *Journal of Small Business & Entrepreneurship*, 1-33. doi: <https://doi.org/10.1080/08276331.2020.1802095>
- Larsson, J., & Larsson, L. (2020). Integration, Application and Importance of Collaboration in Sustainable Project Management. *Sustainability*, 12(2), 585. doi: <https://doi.org/10.3390/su12020585>
- Lazazzara, A., Torre, E. D., & Nacamulli, R. C. (2020). Understanding the relationship between intellectual capital and organizational performance: The role of e-HRM and performance pay Exploring Digital Ecosystems. *Springer.*, 151-164.
- Makiela, Z., Stuss, M. M., & Borowiecki, R. (2021). Sustainability, Technology and Innovation 4.0: . *Routledge New York, NY, USA*.

- Malik, M., Sarwar, S., & Orr, S. (2021). Agile practices and performance: Examining the role of psychological empowerment. *International Journal of Project Management*, 39(1), 10-20. doi: <https://doi.org/10.1016/j.ijproman.2020.09.002>
- Marhraoui, M. A., Idrissi, M. A. J., & El Manouar, A. (2022). Critical Success Factors for Organizational Agility: Q-Study and the Place of IT. In *Achieving Organizational Agility, Intelligence, and Resilience Through Information Systems* (pp. 269-298): IGI Global.
- McDonnell-Naughton, M., & Păunescu, C. (2022). Facets of social innovation in higher education. *Social Innovation in Higher Education*, 9. Retrieved from <https://library.oapen.org/bitstream/handle/20.500.12657/52419/978-3-030-84044-0.pdf?sequence=1#page=19>
- Meijerink, J., & Bondarouk, T. (2021). The duality of algorithmic management: Toward a research agenda on HRM algorithms, autonomy and value creation. *Human Resource Management Review*, 100876. doi: <https://doi.org/10.1016/j.hrmr.2021.100876>
- Menon, S., & Suresh, M. (2020). Organizational agility assessment for higher education institution. *Journal of Research on the Lepidoptera*, 51(1), 561-573. doi: <https://doi.org/10.36872/LEPI/V51I1/301050>
- Miceli, A., Hagen, B., Riccardi, M. P., Sotti, F., & Settembre-Blundo, D. (2021). Thriving, Not Just Surviving in Changing Times: How Sustainability, Agility and Digitalization Intertwine with Organizational Resilience. *Sustainability*, 13(4), 2052. doi: <https://doi.org/10.3390/su13042052>
- Mohammed, K. N., Alnoori, A. A. H., & Jasim, A. I. (2020). Developing the Knowledge Workers Model for Core Competencies Management in Iraqi Higher Education Institutions. *Journal of Reviews on Global Economics*, 9, 181-190. doi: <https://doi.org/10.6000/1929-7092.2020.09.17>
- Mugerwa, E. (2020). HRM to E-HRM: Change in Human Resource Management; effect to social sustainability. In.
- Muqaddim, N., & Hosain, M. S. (2021). E-HRM practices and operational efficiency: Evidence from Bangladeshi garment industry. *Asian Journal of Economics, Business and Accounting*, 21(4), 80-95. Retrieved from <https://www.researchgate.net/profile/Md-Hosain-4/publication/350589381>
- Myllymäki, D. (2021). Beyond the ‘e-’ in e-HRM: integrating a sociomaterial perspective. *The International Journal of Human Resource Management*, 32(12), 2563-2591. doi: <https://doi.org/10.1080/09585192.2021.1913624>
- Nedumaran, G., & Rani, C. (2021). A study on impact of E-HRM activities in the companies growth. *ZENITH Int. J. Multidiscip. Res*, 11, 18-28. Retrieved from <https://www.researchgate.net/profile/Rani-Chittiveli/publication/351023447>
- Ni, G., Xu, H., Cui, Q., Qiao, Y., Zhang, Z., Li, H., & Hickey, P. J. (2021). Influence Mechanism of Organizational Flexibility on Enterprise Competitiveness: The Mediating Role of Organizational Innovation. *Sustainability*, 13(1), 176. doi: <https://doi.org/10.3390/su13010176>

- Nurlina, N., Jubair, S., Muhammad, A., Aryansi, Q. C., & Aryati, A. (2020). Influence of e-HRM and Human Resources Service Quality on Employee Performance. *The Journal of Asian Finance, Economics and Business*, 7(10), 391-399. doi: <https://doi.org/10.13106/jafeb.2020.vol7.no10.391>
- Nurshabrina, N., & Adrianti, R. (2020). The effect of E-human resource management (E-HRM) on cost efficiency and productivity of employees in the company. *International Research Journal of Advanced Engineering and Science*, 5(1), 212-215. Retrieved from <http://irjaes.com/wp-content/uploads/2020/10/IRJAES-V5N1P208Y20.pdf>
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879-891. doi: <https://doi.org/10.3758/BRM.40.3.879>
- Rahman, M. S., & Hosain, M. S. (2021). E-HRM Practices for Organizational Sustainability: Evidence from Selected Textile Firms in Bangladesh. *Asian Journal of Economics, Business and Accounting*, 1, 16. doi: <https://doi.org/10.9734/AJEBA/2021/v21i130335>
- rahnjen Wijayadne, D. (2021). Increased Employee Productivity with The Application of e-HRM. *Review of Management and Entrepreneurship*, 5(2), 151-164. doi: <https://doi.org/10.37715/rme.v5i2.2320>
- Rathee, R., & Bhuntel, M. R. (2022). Innovative E-HRM Practices In It Organizations. *Ymer*, 21(1), 605-621. Retrieved from [https://web.archive.org/web/20220204145031id\\_/http://ymerdigital.com/uploads/YMER210192.pdf](https://web.archive.org/web/20220204145031id_/http://ymerdigital.com/uploads/YMER210192.pdf)
- Ruël, H., & Bondarouk, T. (2014). e-HRM Research and Practice: Facing the Challenges Ahead. In F. J. Martínez-López (Ed.), *Handbook of Strategic e-Business Management* (pp. 633-653). Berlin, Heidelberg: Springer Berlin Heidelberg.
- Sáez de Cámara, E., Fernández, I., & Castillo-Eguskita, N. (2021). A Holistic Approach to Integrate and Evaluate Sustainable Development in Higher Education. The Case Study of the University of the Basque Country. *Sustainability*, 13(1), 392. doi: <https://doi.org/10.3390/su13010392>
- Sahota, M., & Sahota, A. T. (2021). *Leading Beyond Change: A Practical Guide to Evolving Business Agility*: Berrett-Koehler Publishers.
- Saxena, N., & Khandelwal, A. R. (2022). Effectiveness of E-HRM Tools Using the Functionalities of Artificial Intelligence During Remote Working in Lockdown Period. In *Impact of Artificial Intelligence on Organizational Transformation* (pp. 387-397).
- Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*: john wiley & sons.
- Shah, N., Chalu, H., & Michael, F. (2020). Effect of E-HRM on HR efficiency in private commercial Banks of Tanzania. *Orsea Journal*, 10(1). Retrieved from <http://196.44.162.39/index.php/orsea/article/view/3699>

- Shah, N., Michael, F., & Chalu, H. (2020). The Influence of Electronic Human Resource Management Use and Organizational Success: A global conceptualization. *Global Journal of Management and Business Studies*, 10(1), 9-28. Retrieved from [https://www.ripublication.com/gjmbs18/gjmbsv10n1\\_02.pdf](https://www.ripublication.com/gjmbs18/gjmbsv10n1_02.pdf)
- Shah, T. R. (2022). Can big data analytics help organisations achieve sustainable competitive advantage? A developmental enquiry. *Technology in Society*, 68, 101801. doi: <https://doi.org/10.1016/j.techsoc.2021.101801>
- Shamout, M., Elayan, M., Rawashdeh, A., Kurdi, B., & Alshurideh, M. (2022). E-HRM practices and sustainable competitive advantage from HR practitioner's perspective: A mediated moderation analysis. *International Journal of Data and Network Science*, 6(1), 165-178. doi: <http://dx.doi.org/10.5267/j.ijdns.2021.9.011>
- Škudienė, V., Vezeliene, G., Stangej, O., Škudienė, V., Li-Ying, J., & Bernhard, F. (2020). Innovation Management  
Innovation Management: Perspectives from Strategy, Product, Process and Human Resources Research. In *Chapter 9: Transforming human resource management: innovative e-HRM value creation for multinational companies*: Edward Elgar Publishing.
- Talukdar, A., & Ganguly, A. (2022). A dark side of e-HRM: mediating role of HR service delivery and HR socialization on HR effectiveness. *International Journal of Manpower*, 43(1), 116-147. doi: <https://doi.org/10.1108/IJM-01-2021-0038>
- Thathsara, A., & Sutha, J. (2021). Investigating the influence of e-hrm practices on organizational performance: The mediating role of organizational agility (with special reference to financial institution). *International Journal of Engineering and Management Research (IJEMR)*, 11(1), 1-8. doi: <http://dx.doi.org/10.31033/ijemr.11.1.1>
- Vieira Nunes, T., Viviani Garcia, E., Espuny, M., Homem de Mello Santos, V., Isaksson, R., & José de Oliveira, O. (2021). Where to Go with Corporate Sustainability? Opening Paths for Sustainable Businesses through the Collaboration between Universities, Governments, and Organizations. *Sustainability*, 13(3), 1429. doi: <https://doi.org/10.3390/su13031429>
- Waheed, A., Xiaoming, M., Waheed, S., Ahmad, N., & Tian-tian, S. (2020). E-HRM implementation, adoption and its predictors: a case of small and medium enterprises of Pakistan. *International Journal of Information Technology and Management*, 19(2-3), 162-180. Retrieved from <https://www.researchgate.net/profile/Abdul-Waheed-27/publication/340420344>
- Wenz, M., & Yu, W.-C. (2010). Term-Time Employment and the Academic Performance of Undergraduates. *Journal of Education Finance*, 35(4), 358-373. Retrieved from <https://www.jstor.org/stable/40704398>
- Wolf, A. (2019). *Essentials of scientific method*: Routledge.

Zhou, Y., Cheng, Y., Zou, Y., & Liu, G. (2021). e-HRM: A meta-analysis of the antecedents, consequences, and cross-national moderators. *Human Resource Management Review*, 100862. doi: <https://doi.org/10.1016/j.hrmr.2021.100862>