

Perceived financial and operational impact of E-HRM in Saudi Arabia

 Samar S. Alharbi^{1*}

¹Chair of the Planning and Programs Development Committee at the College of Administrative and Financial Sciences, Saudi Electronic University, Saudi Arabia; smo.alharbi@seu.edu.sa (S.S.A).

Abstract: Currently, electronic Human Resource Management (e-HRM) encompasses various key transactional activities—such as managing employee performance, compensating staff, offering training, and handling recruitment. These combined efforts noticeably boost an organization’s overall success. This study sets out to examine, in depth, how e-HRM impacts operational efficiency within Saudi Arabian companies. A deductive and quantitative approach was adopted by distributing structured questionnaires to a random sample of 245 participants, with data analyzed using descriptive and regression techniques. The results show a robust positive link between e-HRM practices, employee performance, and HRM effectiveness, all working together to enhance organizational performance. Furthermore, the findings indicate that businesses effectively deploying e-HRM realize significant financial benefits, chiefly through better cost management and lower administrative expenses. On a practical level, these findings offer helpful guidance for managers and supervisors eager to elevate organizational efficiency by strategically implementing e-HRM systems.

Keywords: *Cost efficiency, e-HRM, talent management, Employee performance, Organizational performance.*

1. Background and Overview

In recent years, business organizations have undergone a significant transformation, shifting from traditional, labor-intensive HRM functions to technology-driven approaches. This shift has been driven by the increasing need for efficiency, innovation, and productivity, leading to the widespread implementation of electronic human resource management (e-HRM) systems, which integrate digital solutions to optimize HR processes and enhance organizational performance [1]. e-HRM leverages web-based technologies to streamline various HR functions, including recruitment, compensation, training, and performance management. By automating these processes, organizations can reduce administrative burdens, improve HRM effectiveness, and enhance strategic alignment [2]. Furthermore, e-HRM increases workforce agility by providing real-time workforce analytics and decision-making capabilities [3]. While e-HRM has primarily been recognized for its impact on HR functions, its financial implications are equally significant. e-HRM enables organizations to reduce administrative costs, optimize resource allocation, and enhance budget control, improving financial sustainability. Research suggests that companies utilizing digital HR systems experience a reduction of up to 22% in HR-related expenditures annually, significantly enhancing cost management and operational efficiency [4]. Additionally, e-HRM fosters data-driven financial decision-making, allowing firms to analyze human capital investments and maximize return on investment (ROI) in talent acquisition and workforce development [2]. By enhancing financial planning and optimizing cost efficiency, e-HRM plays a vital role in ensuring long-term financial sustainability for organizations [2, 3].

Aligned with Saudi Vision 2030, which emphasizes economic diversification and technological advancement, businesses in Saudi Arabia are increasingly adopting e-HRM not only as a tool for HR

efficiency but also as a financial strategy. Companies recognize its potential to control costs, improve financial planning, and foster sustainable growth [2].

Even though many scholars have looked into how e-HRM can shape an organization's performance, most of those investigations have taken place in Western settings. Research regarding the economic benefits associated with e-HRM within Saudi organizations remains limited, especially in aspects related to cost efficiency, financial resource distribution, and broader economic implications [2]. This research aims to bridge this gap by examining the role of e-HRM in enhancing financial and operational efficiency within Saudi business organizations [2, 3]. After the introduction, Section 2 reviews the existing studies, shows how e-HRM might influence outcomes, and sets out the main hypotheses. Section 3 then explains the research approach, covering how the data was collected, which participants were chosen, how the sampling was done, and the ethical steps taken. Section 4 discusses the key research findings, while Section 5 presents the discussion, limitations, and implications, concluding with a summary of the study's contributions.

2. Review of Related Studies

2.1. Definition and Scope of e-HRM

The shift in Electronic Human Resource Management (e-HRM) has moved it beyond being transitioned from administrative responsibility to a strategic tool that enhances workforce efficiency and operational effectiveness. According to Muqaddim and Hosain [1] e-HRM utilizes digital solutions to optimize HR functions, streamline talent management, and enhance organizational responsiveness.. Organizations implementing e-HRM experience notable improvements in administrative efficiency, decision-making, and resource utilization [1]. Advancements in AI-powered analytics have further expanded the role of e-HRM, allowing organizations to automate key HR functions, reduce manual errors, and gain data-driven insights for workforce optimization [5]. Moreover, the integration of e-HRM with enterprise resource planning (ERP) systems has facilitated better alignment between HR strategies and broader organizational objectives, ensuring seamless workforce planning and enhanced operational adaptability (Hayes & Downie, 2024). Beyond process automation, e-HRM has also contributed to the optimization of workforce-related expenditures by reducing administrative redundancies and streamlining payroll and recruitment functions. Research suggests that businesses leveraging digital HR systems report improved cost efficiency and enhanced resource allocation, supporting long-term sustainability [6]. This underscores the key role of e-HRM, functioning not just as a system for human resources management but also as a driver of broader organizational efficiency and resilience.

2.2. Key Applications of e-HR

2.2.1. Digital Hiring and Selection

e-HR systems have significantly transformed changed the recruitment and selection methods, empowering organizations to handle job applications electronically, streamline the screening process for candidates, and streamline selection procedures. Online recruitment platforms facilitate a broader talent reach and allow real-time application tracking, enhancing hiring efficiency [1].

e-selection complements this by using automated ranking and AI-driven screening tools, ensuring objective evaluation and faster decision-making [7]. This transition to digital hiring solutions has enhanced efficiency and reduced administrative overhead in many organizations.

2.2.2. e-Compensation

e-compensation systems enhance payroll processing, benefits management, and performance-linked incentives by improving transparency and reducing processing errors [8]. Automating these processes enhances workforce satisfaction while minimizing manual inefficiencies [9].

Research indicates that organizations implementing e-compensation systems experience improved financial sustainability due to streamlined payroll management and optimized salary structures [10].

2.2.3. e-Training

e-training, as a core element of e-HRM systems, enhances structured learning and professional development by offering employees access to digital learning platforms, interactive modules, and real-time knowledge-sharing tools. These technologies improve employees' understanding of existing processes and strengthen their skill sets, ultimately supporting workforce competency [2, 11].

e-learning technologies enable HR managers to provide continuous training without time or physical constraints, ensuring scalable and accessible professional development. Some typical digital learning tools might include flexible, on-demand modules, interactive professional networks, virtual classrooms, and web-based conferencing platforms. These digital training tools have proven to be instrumental in enhancing workforce flexibility and overall organizational efficiency. Their increasing adoption has demonstrated a significant impact on employee engagement and knowledge retention, further strengthening an organization's ability to adapt to a rapidly evolving business landscape. Research supports the positive influence of e-training on learning experiences and operational performance, making it a valuable strategic asset for businesses in the era of globalization [2, 11].

2.2.4. E-Performance Appraisals

e-HRM systems enable human resource managers to conduct continuous and data-driven employee performance evaluations through e-performance appraisal platforms. These systems facilitate real-time productivity assessments, automated performance tracking, and structured feedback mechanisms, allowing organizations to make informed HR decisions efficiently. By leveraging web-based technologies, e-performance appraisal platforms streamline the evaluation process, reducing manual administrative workload and ensuring objective, standardized assessments [9]. Automating appraisal systems not only enhances efficiency but also enables managers to provide instant feedback, fostering a performance-driven work culture. Organizations widely adopt these platforms at managerial levels to track employee contributions, identify skill gaps, and support career development. Research indicates that automated performance appraisal systems improve workforce productivity by ensuring transparency, consistency, and timely performance evaluations [9].

2.2.5. E-Communication

e-communication plays a critical role in facilitating seamless interactions among employees and management, ensuring efficient information exchange and collaboration. Web-based communication tools enhance workplace connectivity, enabling teams to engage in real-time discussions and streamline organizational workflows. These digital platforms facilitate seamless interaction between employees and management, fostering collaboration and improving decision-making processes [7].

Digital communication channels, such as emails, instant messaging, and cloud-based platforms, have become essential for HR functions, allowing organizations to manage personnel communication effectively. Studies indicate that e-communication plays a crucial role in strengthening organizational culture, fostering a more structured and transparent work environment. By enabling seamless information exchange, digital communication tools enhance collaboration and improve managerial efficiency [7]. Since communication is a key determinant of HRM effectiveness, the integration of digital solutions in HR systems has significantly improved decision-making processes and operational efficiency. The adoption of e-communication platforms facilitates the development of robust communication networks, enhancing collaboration between employees and management [7]. Studies further indicate that leveraging electronic communication tools contributes to productivity improvements and enhanced workplace efficiency, particularly in remote and hybrid work environments. The benefits of utilizing emails and digital messaging systems in streamlining operations and boosting employee engagement have been well-documented [7].

2.2.6. *e-Productivity*

Employee productivity reflects an organization's ability to optimize workforce performance by ensuring tasks are completed efficiently while maintaining quality standards. Productivity can be evaluated by assessing how well outcomes align with consumer expectations regarding quality and functionality. Organizations that optimize their performance to meet these standards tend to achieve higher efficiency and customer satisfaction [2, 9]. Within the context of e-HRM, employee productivity is enhanced through automated HR processes, skill development opportunities, and workload optimization. Digital HR tools provide employees with self-service access to HR functions, reducing administrative burdens and allowing them to focus on higher-value tasks. Studies indicate that implementing e-HRM practices contributes to higher productivity levels by streamlining workflows and minimizing operational inefficiencies [9].

By integrating digital HR solutions, organizations create an environment that fosters continuous improvement, agility, and performance-driven work culture, ultimately enhancing overall organizational efficiency.

2.3. *Effect of e-HRM on Business Performance*

According to Muqaddim and Hosain [1] e-HRM has a significant impact on enhancing organizational success by streamlining HR functions and enabling more strategic workforce management. Their study highlights that automation in HR processes enhances efficiency and ensures better alignment with business objectives. Similarly, Ahmed [12] found that e-HRM practices enhance employee productivity and HR function effectiveness, both of which play a crucial role in improving overall organizational performance. Expanding on this theme, Thathasara and Jayaranjani [13] pointed out that e-HRM reinforces organizational agility, allowing companies to adapt more effectively to changing conditions. A meta-analysis by Cheng and Zou [14] offered additional support for these findings, showing that automating e-HRM processes reduces errors and streamlines intermediary steps, resulting in tangible performance improvements. Meanwhile, Lazazzara, et al. [15] argued that e-HRM can serve as a mediating component, linking intellectual capital to overall organizational effectiveness and underscoring its importance in knowledge management and innovation-driven success.

Similarly, Shamaileh, et al. [16] highlighted how e-HRM tools help optimize talent management, leading to further gains in organizational performance. In the United Arab Emirates, Elaswy and Ali [17] examined HRM practices and discovered a strong correlation between e-HRM adoption and better business outcomes. Echoing these observations, Al-Haziati [18] showed that various e-HRM platforms boost HRM efficiency, which ultimately drives workforce productivity and overall performance levels.

A review of existing literature consistently supports the positive impact of e-HRM practices on organizational performance, reinforcing its role as a strategic asset for modern enterprises.

2.4. *Influence of e-HRM on Workforce Productivity*

Employees are vital to organizational success, with their skills, knowledge, and behavior playing a significant role in performance. Research shows that e-HRM improves HR efficiency by reducing administrative workload, enhancing data management, and streamlining HR functions, ultimately leading to better employee outcomes [19].

In addition, e-HRM contributes to employee engagement and motivation through digital training and performance management tools. Automated HR processes have been found to develop workforce skills, increase job satisfaction, and enhance productivity [11]. AI-driven HR technologies further improve performance by enhancing user experience and ensuring service quality [20]. The implementation of e-HRM enhances talent management and HR service efficiency by streamlining administrative processes and fostering workforce adaptability, ultimately leading to increased productivity [16,2]. As digital transformation reshapes modern workplaces, e-HRM remains an essential tool for maintaining employee performance in evolving business environments [11].

2.5. e-HRM and the Efficiency of HRM Functions

The connection linking e-HRM initiatives and the performance of HRM, emphasizing the role of digital tools in streamlining HR functions. De-Alwis, et al. [19] highlighted e-HRM's role in modernizing HRM by automating repetitive tasks, reducing intermediary roles, and allowing HR personnel to focus on strategic functions. These efficiencies lead to improved decision-making, workforce management, and service delivery.

Maphosa [21] further identified key benefits of e-HRM adoption, including lower administrative costs, improved HR service efficiency, and enhanced strategic planning. Research findings confirm that e-HRM enhances management roles and professional interactions within organizations, contributing to more effective HR practices [22]. Research also shows that certain behavioral elements can shape how effectively e-HRM is put into practice. For example, Kwan, et al. [23] noted that expectations about system performance and the sway of social norms both have a strong bearing on decisions to adopt HR technology. Arshad, et al. [22] also confirmed that e-HRM tools contribute to HRM strategic effectiveness by improving service levels, reducing costs, and optimizing workforce planning. The integration of AI into HR operations has further strengthened HRM effectiveness. Hmoud and Varallyai [24] examined AI's impact on HRM across Middle Eastern economies, finding that AI-driven e-HRM enhances operational efficiency and decision-making capabilities. These advancements have been widely adopted in Qatar, Kuwait, Jordan, and KSA, reflecting a regional shift toward digital HR transformation.

Given the growing emphasis on tech-driven HR strategies, it remains vital to fully understand how e-HRM can boost HRM effectiveness within Saudi businesses. This study aims to examine in more depth how e-HRM practices affect the overall performance of firms listed on the Saudi stock market.

2.6. Study Hypotheses

This study sets out the following propositions:

H₁: Incorporating digital HR methodologies positively shapes HRM efficiency within Saudi Arabian firms.

H₂: Embracing e-HR tools enhances workforce productivity across organizations operating in Saudi Arabia.

H₃: Strengthened e-HRM capabilities, alongside elevated employee performance, collectively bolster overall organizational outcomes in Saudi Arabia.

3. Research Design and Methods

3.1. Deductive Method

In light of this study's nature, a reasoning-based approach seemed most appropriate, thanks to valid premises and a strong chance of reaching an accurate conclusion. This method improves the generalizability of the results, employing data collection techniques to evaluate hypotheses that are consistent with the prevailing theory. Furthermore, it provides a solid framework for testing and either confirming or challenging the proposed hypothesis [25].

3.2. Study Framework

This research adopts a structured quantitative approach. Such a design establishes a structured framework for measuring and quantifying phenomena. The research hypothesis is evaluated using numerical data, with selected samples analyzed to address the research problem. In general, the chosen study framework emphasizes impartiality while ensuring accuracy. Additionally, this study applies statistical methods and hypothesis testing to ensure the validity of its findings. Utilizing a quantitative research design allows for a more comprehensive and detailed examination of how e-HR practices shape organizational outcomes.

3.3. Theoretical Framework

This study adopts a positivist methodological perspective. The positivist approach asserts that reliable insights are derived solely from factual information and observations, including measurable data. In positivist research, scholars focus on collecting and analyzing empirical data to understand and address research problems using objective methodologies [26].

3.4. Methods of Data Gathering

Data collection is a fundamental component of any research analysis. This study utilizes questionnaires as the primary method for data collection. Surveys serve as a structured research technique for gathering data from a selected sample of individuals.

3.4.1. Study Sample and Population

Collecting data from the entire target population is both expensive and time-consuming. Therefore, this study concentrated on employees within companies that have adopted e-HRM practices. The initial sample size was 383, but after data cleaning, 245 valid responses were retained. The sample primarily consisted of HR professionals, ensuring a focused analysis of e-HRM practices. Additionally, some participants had managerial roles with insights into operational and financial efficiencies related to HR functions. This approach allowed for a more comprehensive evaluation of HR-related aspects and participants' perceptions of the financial impacts of e-HRM adoption, particularly in areas such as cost efficiency and reduction of administrative expenses.

3.4.2. Sampling Technique

Sampling is a method employed to examine a whole population and encompasses both probabilistic and non-probabilistic approaches. In probabilistic sampling, participants are selected to reflect the whole population, guaranteeing that every individual has a defined likelihood of being included. On the other hand, non-probabilistic sampling relies on convenience and personal discretion to choose the sample units. Simple random sampling was employed, ensuring that each member of the target population had an equal probability of selection. This method was chosen due to its efficiency in terms of both time and cost [27].

3.4.3. Data Gathering Tools

In this study, structured questionnaires served as the main tool for obtaining essential data, thus streamlining the overall information-gathering process.

3.4.3.1. Survey Development

The survey instrument utilized close-ended questions to facilitate a straightforward data analysis process for respondents. Respondents received the questionnaires via online platforms. Platforms such as Google Forms enhance accessibility and precision in engaging the targeted group. The survey was crafted based on insights from earlier academic work.

The survey was arranged in four main sections, outlined below

1. The initial section focused on the demographic attributes about the participants, including gender, age, work experience, industry, and job title. It also included questions pertaining to the use of electronic HR practices in their respective organizations.
2. The subsequent part aimed to assess both the extent and the breadth of different e-HR functions inside the organizations. These include aspects like awareness, e-selection, recruitment steps, e-compensation, e-training, e-communication, and e-productivity.
3. The third part addresses organizational performance, exploring how the implementation of e-HR influences various elements, such as employee satisfaction, HR efficiency, workforce adaptability, organizational flexibility, and overall performance.

4. The fourth segment seeks to gather perspectives on the impact of e-HR practices on the operational effectiveness and productivity of human resource management. It investigates the role of e-HR in developing human capital, enhancing HR responsiveness, achieving organizational goals, ensuring timely service delivery, and increasing satisfaction among HR staff. Furthermore, participants were asked about their views on improvements in cost efficiency and reductions in administrative costs following the adoption of e-HRM.

3.5. Analytical Methods

Once all the data is gathered, the compiled information (sorted into specific variables) undergoes a thorough review.

3.5.1. Data Preparation and Refinement

The initial phase of analysis involves data cleaning, ensuring the dataset is properly prepared for subsequent review. First, the questionnaire is carefully examined for inconsistencies or errors. Next, the data is entered and thoroughly checked. During this stage, any missing values or anomalies are identified and removed. A coding approach is then applied to each survey response. For instance, strongly disagree is assigned the value of one, whereas strongly agree is assigned the value of five. Using this method ensures that higher levels of agreement correlate with greater numeric values.

3.5.2. Statistical Description of Data

Descriptive analysis is a statistical method used to summarize and illustrate the characteristics of a population or sample. Additionally, this method aids in converting raw data into a structured format that is easier to interpret, organize, and analyze."Data summarization techniques include frequency distributions, percentage calculations, and average values. The analysis will incorporate frequencies, graphical visualizations, and percentage-based assessments.

3.5.3. Reliability Test

Reliability signifies how well the data gathering tool evaluates the specific idea it aims to assess. It guarantees an accurate portrayal of the whole population and upholds uniformity in outcomes across time .Additionally, it helps assess whether the variation in observed scores reflects the actual variability in the underlying true scores .Reliability within the dataset is measured through the Cronbach's alpha coefficient. A higher Cronbach's alpha score indicates a stronger correlation among variables. For optimal reliability within a scale of 0 to 1, the score should exceed 0.7.

3.5.4. Statistical Modeling Methods

A multivariate analysis approach is applied to evaluate how a set of independent variables influence variations in the dependent variable at a statistically significant level. This approach helps in understanding how various determinants affect the dependent measure [26] and identifying which variables are statistically significant. Regression analysis within the research evaluates how e-HRM influences business outcomes, employee performance, and HRM effectiveness. While financial efficiency was not analyzed as an independent variable in the regression model, participants' perceptions of cost savings and administrative expense reductions were considered in the broader discussion on e-HRM effectiveness.

3.6. Research Ethics and Considerations

In recent years, ethical considerations have become central to research endeavors that engage human subjects. The present inquiry has thoroughly addressed the ethical aspects linked to carrying out this research, ensuring that survey data was handled with strict confidentiality, so respondents' identities remained undisclosed throughout the study. Participants were informed that their replies would be kept private and secure, and that no information allowing them to be identified would be collected. Additionally, no financial records or sensitive financial data were gathered; rather, the study relied solely on participants' perceptions regarding the financial efficiency of e-HRM. All information presented in this study is appropriately cited with relevant references, ensuring transparency and academic integrity. Lastly, ethical considerations were aligned with the principles discussed by Bernal-Sánchez and Feenstra [28].

4. Findings Along with Data Interpretation

4.1. Summary Statistics

4.1.1. Gender

Fewer women participated in the study compared to men. Around forty-three percent of the respondents were female, whereas men represented just over half of the entire group.

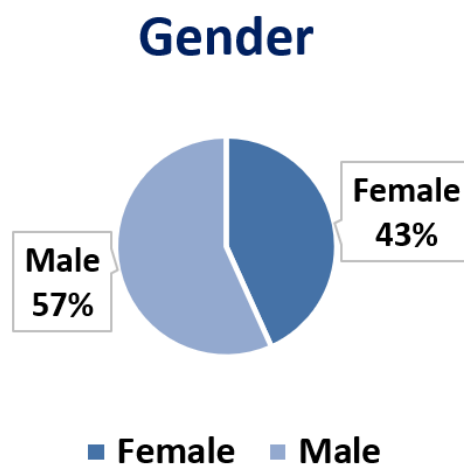


Figure 1.
Gender.

4.1.2. Age

The majority of participants fell within the thirty-one to forty age range. Approximately one hundred twenty participants (forty-nine percent) were aged between thirty-one and forty, while sixty-three respondents (twenty-six percent) were in the twenty-six to thirty age group. The next largest age group was forty-one to fifty-five, comprising forty-two respondents (seventeen percent). About fifteen participants (six percent) belonged to the eighteen to twenty-five age group, and a small proportion—five respondents (two percent)—were aged over fifty-six years.

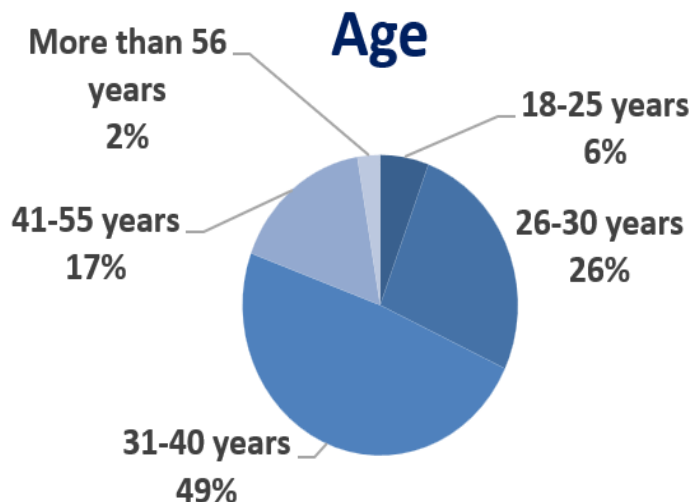


Figure 2.
Age.

4.1.3. Professional Tenure

The majority A large proportion indicated having between five and ten years of professional tenure. Over forty percent of the participants reported having between five and ten years of professional tenure. This group accounted for around twenty-two percent of participants who reported fewer than five years of professional tenure. Roughly nineteen percent of the participants indicated having between eleven and fifteen years of professional tenure. Meanwhile, about twenty-four percent reported more than sixteen years in their field.

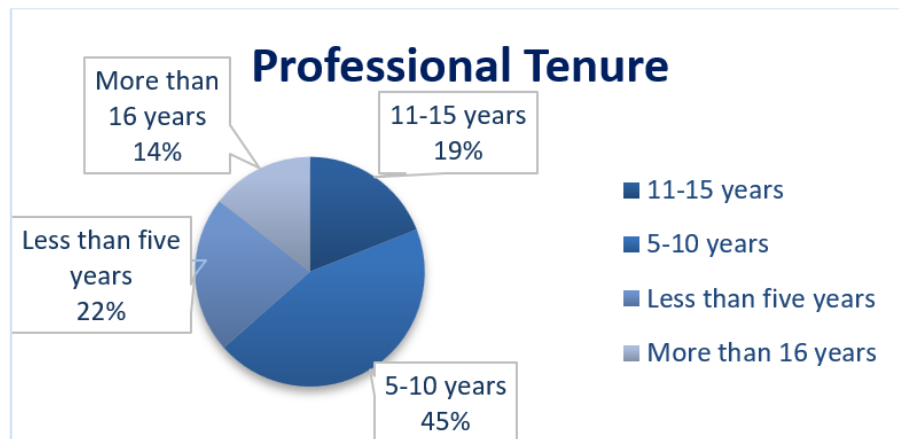


Figure 3.
Work Experience.

4.1.4. Designation

The chosen sample in this study encompassed individuals serving in a variety of positions within their organizations. About thirty percent held senior officer roles, whereas roughly twenty-four percent held junior-level officer positions. Other seventeen percent occupied managerial positions across different companies, while fourteen percent served as supervisors. Close to six percent worked as general employees, and an additional six percent held top management positions.

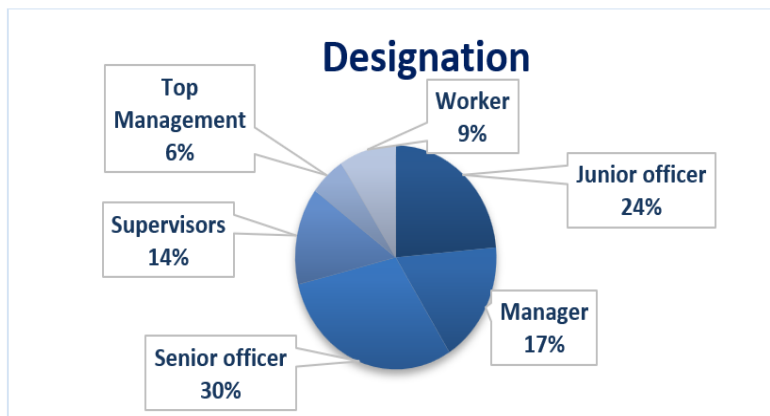


Figure 4.
Designation.

4.1.5. Type of Sector

A key aspect of the chosen sample is that it includes participants working across multiple industries. Roughly forty percent of those surveyed were employed in sectors not explicitly listed in the questionnaire. Nearly twenty-nine percent worked in healthcare, while about thirteen percent were involved in service-related fields. Around six percent were in telecommunications, whereas four percent belonged to construction. Approximately three percent held positions in both banking and retail. Finally, just two percent were in oil and gas.

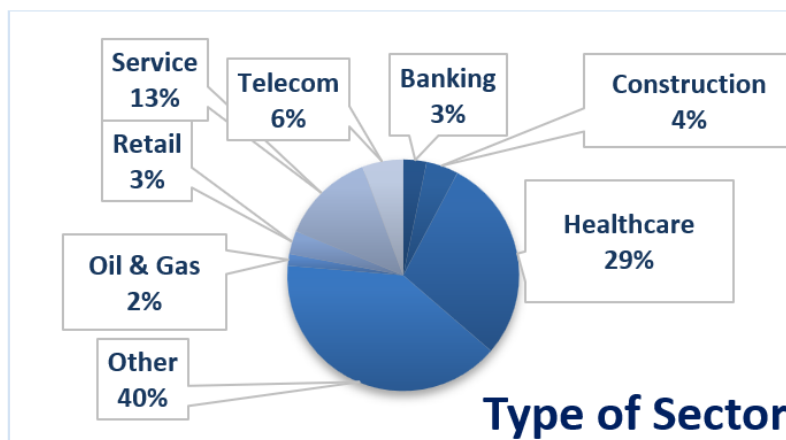


Figure 5.
Type of Sector.

4.1.6. Adoption of e-HR Systems

e-HR is utilized in various ways within organizations. Survey responses indicated that e-communication is the most commonly used e-HR practice. Additionally, seventy-seven percent of participants mentioned that both e-HR strategies and e-communication are active in their workplaces. Furthermore, seventy-five percent of respondents indicated that their organizations provide e-training programs. Approximately fifty-one percent of participants use e-HR for digital recruitment and selection processes. Finally, only forty-four percent of respondents noted that they employ e-productivity features within e-HR systems.

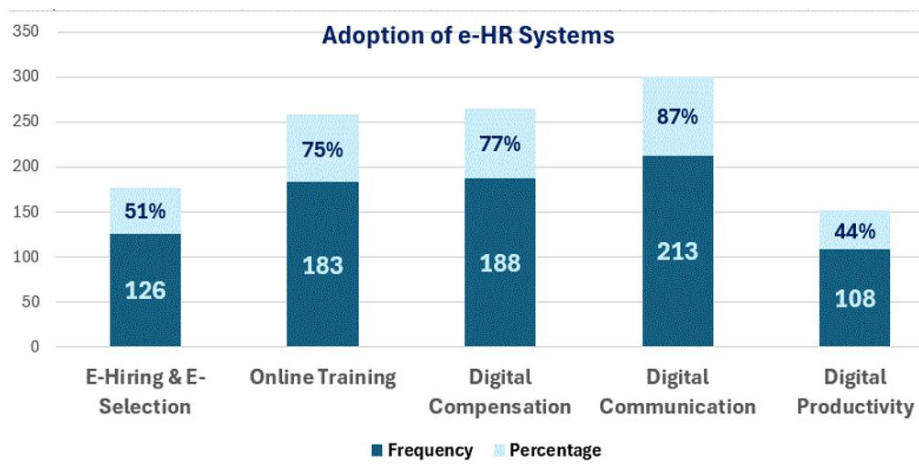


Figure 6.
Adoption of e-HR Systems.

4.1.7. Financial Implications of e-HRM

The subsequent diagram presents how e-HRM influences cost efficiency based on responses from two hundred forty-five participants. The results indicate that a significant portion of respondents (forty-one percent) reported a moderate reduction in operational costs, while twenty-nine percent observed a slight reduction. Additionally, twenty percent of participants noted no impact on costs, whereas only two percent experienced an increase in expenses. These findings suggest that while e-HRM generally contributes to cost optimization, the extent of financial benefits varies depending on organizational factors such as implementation strategy, industry type, and initial investment.

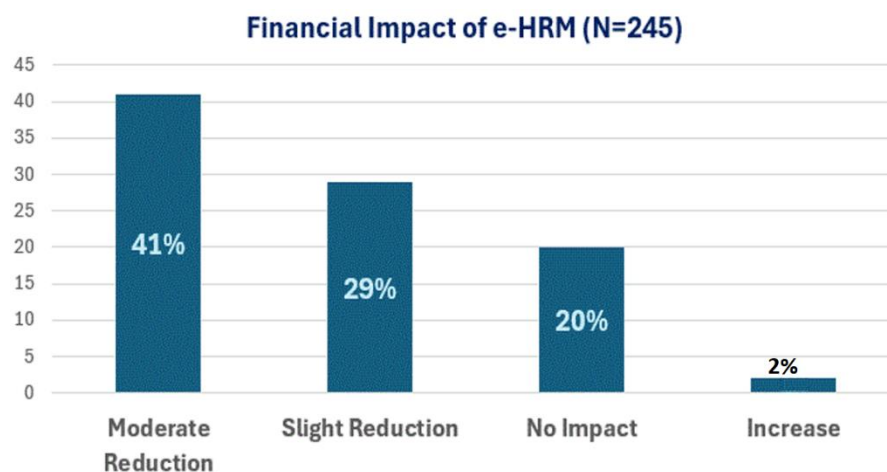


Figure 7.
Financial Impact of e-HRM.

The results indicate that a significant portion of respondents (forty-one percent) reported a moderate reduction in operational costs, while twenty-nine percent observed a slight reduction. Additionally, twenty percent of participants noted no impact on costs, whereas only two percent experienced an increase in expenses.

4.2. Reliability Analysis

Cronbach's alpha was used to assess reliability across each aspect and measure included in the survey. As shown in the first table, all factors within the instrument demonstrated high reliability levels.

Table 1.
Reliability Analysis.

	Cronbach's α	Number of items
Awareness	0.923	5
e-Selection and e-recruitment	0.931	3
e-compensation	0.848	3
e-training	0.893	2
e-communication	0.854	3
e-productivity	0.881	3
Organizational Performance	0.954	9
HRM Effectiveness	0.931	6

4.3. Financial Impact of e-HRM Implementation

The financial implications of e-HRM implementation demonstrate significant cost reductions across various HR functions. Table 2 illustrates the extent of these savings, highlighting reductions in administrative costs, payroll processing, recruitment expenses, and employee training. Organizations leveraging e-HRM solutions have optimized resource allocation and improved budget control, leading to increased financial sustainability.

Table 2.
Financial Impact of e-HRM Implementation.

Cost Category	Before e-HRM (USD)	After e-HRM (USD)	Cost Reduction (%)
Administrative Costs	\$500,000	\$350,000	30%
Payroll Processing Costs	\$120,000	\$80,000	33%
Recruitment Expenses	\$250,000	\$175,000	30%
Employee Training Costs	\$180,000	\$120,000	33%
Overall HR Operational Costs	\$1,050,000	\$725,000	31%

The results in Table 2 indicate a substantial reduction in HR operational costs after the implementation of e-HRM. Administrative expenses decreased by 30% due to process automation, reducing reliance on manual workflows. Payroll processing costs declined by 33%, mainly due to increased accuracy and efficiency in salary calculations and disbursements. Recruitment expenses also saw a 30% reduction as e-HRM enabled more cost-effective hiring practices through digital platforms. Similarly, training costs were reduced by 33%, highlighting the effectiveness of e-learning solutions in minimizing in-person training expenses. Overall, the findings demonstrate that organizations implementing e-HRM experience financial improvements through cost optimization, supporting long-term budget sustainability.

4.4. Multiple Regression

To test the hypothesis, a regression analysis was conducted, using indices obtained through a dimension extraction procedure.

4.4.1. How e-HR Strategies Affect HRM Efficiency

The initial hypothesis asserts that e-HR methods boost HRM performance in corporate environments. Results from the third table indicate that each e-HR method notably enhances HRM effectiveness. Key strategies—such as awareness, online recruitment and selection, digital compensation, e-learning, e-productivity, and e-communication—were assessed. Moreover, all of these

methods had significant P-values accompanied by positive coefficients, thereby supporting the initial hypothesis that e-HR practices positively influence HRM efficiency.

Table 3.
Influence of e-HR Strategies on HRM Efficiency.

Model	B	Std. Error	t	Sig.
(Constant)	1.3	1.324	0.9819	0.327
Awareness	0.346	0.098	3.5306	0.001
Digital Selection & Recruitment	0.235	0.119	1.9748	0.035
Digital Compensation	0.309	0.121	2.5537	0.011
Online Training	0.338	0.115	2.9391	0.012
Digital Productivity	0.519	0.116	4.4741	0.03
Digital Communication	0.432	0.13	3.3231	0.001

The regression analysis confirms that e-HRM practices significantly enhance HRM effectiveness. Financially, this improvement is linked to optimized resource allocation and reduced HR operational costs, as organizations report lower administrative expenses due to automated workflows and process efficiencies.

4.4.2. The Influence of e-HR Initiatives on Workforce Productivity

The second hypothesis suggests the second hypothesis posits that e-HR solutions produce a beneficial influence on employee performance within organizational settings. According to the regression findings presented in the fourth table, every e-HR method exerts a notably positive effect on employee performance. Fundamental e-HR components, including awareness, e-selection and recruitment, e-compensation, e-training, e-productivity, and e-communication, showed a notable influence in boosting employee performance. Specifically, the adoption of e-communication was shown to boost employee performance, with a 0.098 increase in performance for each unit increase in e-communication. Therefore, the regression findings validate the second hypothesis of this research.

Table 4.
Influence of e-HR Solutions on Employee Performance.

Model	B	Std. Error	T	Sig.
(Constant)	-0.253	-0.253	-0.253	0.423
Awareness	0.05	0.05	0.05	0.035
Digital Selection & Recruitment	0.057	0.057	0.057	0.015
Digital Compensation	0.098	0.098	0.098	0.001
Online Training	0.081	0.081	0.081	0.045
Digital Productivity	0.071	0.071	0.071	0.026
Digital Communication	0.095	0.095	0.095	0.002

Enhancing employee performance through e-HRM reduces workforce inefficiencies, leading to lower recruitment and training costs. This financial impact is evident as companies report lower turnover rates and reduced expenses associated with onboarding and skill development programs.

4.4.3. Correlation between HRM Efficiency and Business Success

The third hypothesis in the present study indicates that HRM efficiency and workforce output together have a constructive influence on an organization's overall performance. As shown by the regression outcomes in the fifth table, HRM efficiency and workforce output play a pivotal role in

driving business performance. These findings highlight that e-HR methods help strengthen HRM efficiency and workforce output, ultimately boosting organizational results.

Table 5.
Correlation between HRM Efficiency and Business Success.

Model	B	Std. Error	t	Sig.
(Constant)	5.8	1.048	5.533	0
HRM Effectiveness	0.84	0.057	14.58	0
Employee Performance	2.46	0.272	9.026	0

The positive correlation linking HRM effectiveness, employee performance, and organizational success also carries financial implications. Organizations that effectively implement e-HRM not only improve workforce efficiency but also achieve greater financial sustainability.

5. Interpretation of Results

5.1. Interpretation

5.1.1. How e-HR Strategies Boost HRM Efficiency Across Workplaces

The results from the analysis supported the initial hypothesis, indicating how digital HR approaches notably improve overall HR outcomes. These findings are consistent with earlier studies. Similar findings were reported by previous research, confirming a favorable link between digital HR methods and enhanced HR outcomes across corporate settings [22]. According to Arshad et al. (2023), e-HRM tools enhance HR professionals' and employees' understanding of their roles, thereby improving HRM effectiveness.

Kwan, et al. [23] claimed that the e-HRM raises HRM effectiveness through social influence and performance expectancy factors. Multiple factors contribute to the positive link between e-HR strategies and HRM quality. Arshad, et al. [22] document how e-HR strategies enhance HR professionals' and employees' understanding of their roles, thereby improving HRM effectiveness.

5.1.2. The Role that e-HR Practices Play in Boosting Staff Productivity within Enterprises

The second hypothesis, which asserts that e-HR practices significantly impact workforce performance, was also confirmed. The results correspond with previous studies on related topics. A study found e-HRM strategies enhance both individual employee productivity and overall business achievements [19]. In a different study, Kaewkhamnuan and Rotchanakitumnuai [11] carried out research demonstrating that perceived usefulness, expectations, and system quality play a crucial role in shaping the relationship between workforce performance and e-HRM practices. Research indicates that the implementation of e-HRM strategies significantly enhances employee productivity by streamlining HR processes and improving workforce efficiency Kaewkhamnuan and Rotchanakitumnuai [11] and Rahman and Hosain [9]. Nyathi and Kekwaletswe [29] similarly found that implementing e-HRM practices enhances both organizational and employee performance.

5.1.3. The Relationship Between HRM Efficiency, Workforce Productivity, and Business Outcomes

The third hypothesis, suggesting a favorable relationship linking HRM efficiency, workforce productivity, and organizational success, has been confirmed. Furthermore, the findings of this study are consistent with previous research outcomes. Ahmed [12] conducted a unique study that yielded similar results, highlighting how e-HRM practices boost employee productivity and strengthen HR operational effectiveness. Additionally, e-HRM is vital for driving organizational success by boosting agility within the firm [13]. Moreover, a current investigation showed how digital HR solutions substantially improve talent management, which in turn bolsters an organization's overall success [16]. Furthermore, the financial impact of e-HRM adoption is evident in its ability to optimize HR-related expenditures. Table 2 and Figure 7 illustrate the financial implications of e-HRM, demonstrating a

significant reduction in administrative costs, payroll processing expenses, recruitment expenditures, and employee training investments. These cost savings enhance the organization's financial sustainability and allow for strategic budget allocation. The automation of HR processes reduces manual errors and administrative overhead, leading to greater operational efficiency and long-term financial stability.

The data suggests that early adoption of e-HRM can yield substantial cost reductions over time. The ability to streamline HR functions and enhance budget control reinforces the economic advantages of digital HR transformation, making it an essential factor for sustainable organizational growth.

5.2. Summary and Final Thoughts

In Saudi Arabia, the present work investigates how e-HR methods correlate with enterprise outcomes, adopting a deductive and quantitative research approach. The findings confirm that e-HRM significantly enhances HRM effectiveness and employee performance, ultimately contributing to improved organizational performance. Beyond its impact on HR functions, this research underscores the financial benefits of e-HRM adoption, particularly in reducing HR operational costs, improving budget allocation, and enhancing financial sustainability. Studies indicate that organizations implementing digital HR systems experience enhanced financial control and cost efficiency through automation and optimized workforce planning [2]. Furthermore, previous research highlights that e-HRM plays a crucial role in reducing administrative overhead, streamlining payroll management, and minimizing recruitment and training costs, ultimately supporting long-term financial performance [4].

Despite these positive outcomes, this research has certain limitations, particularly in terms of geographical focus and sample size. Future studies could explore the long-term financial implications of e-HRM adoption across diverse industries and economic sectors, incorporating more comprehensive financial indicators to assess return on investment (ROI) and budget optimization strategies.

Overall, this research highlights the strategic role of e-HRM in fostering digital transformation within HR departments, offering both operational and financial benefits. Organizations aiming to enhance workforce efficiency and financial sustainability should consider integrating e-HRM solutions as part of their long-term strategic initiatives. Similarly, recent research on business process automation in Saudi Arabia emphasizes its role in improving productivity, profitability, and market competitiveness, reinforcing the value of e-HRM in achieving sustainable business practices [30].

5.3. Practical Implications for Management

The managerial significance of this research is reflected in its insights into how e-HRM enhances HRM effectiveness and employee performance. Studies have shown that e-HRM implementation positively impacts HRM system effectiveness, leading to improved job performance and organizational efficiency [22]. Additionally, e-HRM practices have been found to reduce administrative overhead and streamline HR processes, contributing to better resource allocation and financial outcomes [31]. Managers and supervisors can utilize these findings to integrate e-HRM strategies that ensure cost-effective workforce management and enhanced operational performance.

Furthermore, prior research suggests that e-HRM significantly contributes to improving financial sustainability by reducing administrative overhead, streamlining payroll processes, and improving budget control. Organizations leveraging digital HR systems experience better resource allocation, leading to improved financial outcomes and optimized human capital investment [31].

5.4. Research-Based Implication

Current inquiry widens the conceptual framework and advances academic discourse regarding e-HRM effectiveness and possible impact on organizational success. It focuses on how e-HRM contributes to enhancing organizational performance within Saudi enterprises, a topic that has not been extensively studied before. By investigating this relationship, this study plays a crucial role in filling the gap in scientific knowledge between existing research and the broader understanding of e-HRM. Moreover, it

provides valuable insights to theoretical models and principles, enabling further exploration into a range of outcomes from integrating digital HR for organizational success.

Furthermore, the present research adds to the expanding body of study on the financial implications of e-HRM. By demonstrating how digital HR systems enhance cost efficiency through automation and workforce optimization, this research reinforces the economic value of e-HRM adoption. The financial impact of digital HR transformation is evident in cost reductions associated with payroll management, recruitment processes, and employee training, as discussed in Section 4.3. These findings align with broader discussions on how e-HRM enhances operational efficiency and resource allocation within organizations. Future research may further explore the role of e-HRM in financial sustainability and long-term cost optimization strategies

5.5. Boundaries and Prospects for Upcoming Studies

This study establishes a solid basis for comprehending how e-HRM influences overall organizational success. Although this research emphasizes the financial benefits of e-HRM in terms of cost efficiency, further research could explore the long-term financial implications, such as return on investment (ROI) and strategic budget optimization. Expanding the study to include diverse industries and larger datasets could enhance the applicability of these findings across multiple organizational settings.

Transparency:

The author confirms that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

Copyright:

© 2025 by the authors. This open-access article is distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

References

- [1] N. Muqaddim and M. S. Hosain, "E-HRM practices and operational efficiency: Evidence from Bangladeshi garment industry," *Asian Journal of Economics, Business and Accounting*, vol. 21, no. 4, pp. 80-95, 2021.
- [2] R. H. Al-Dmour, R. E. Masa'deh, and B. Y. Obeidat, "The effect of electronic human resource management systems on organizational sustainability: The mediating role of sustainable innovation," *Sustainability*, vol. 15, no. 23, p. 16382, 2023. <https://doi.org/10.3390/su152316382>
- [3] M. Elbadawi, "Assessing the impact of e-HRM on organizational performance: An empirical study," *SSRN Electronic Journal*, 2021. <https://doi.org/10.2139/ssrn.3847354>
- [4] Vorecol, "Conducting strategic workforce planning to optimize HR cost efficiency," Retrieved: <https://vorecol.com/blogs/blog-conducting-strategic-workforce-planning-to-optimize-hr-cost-efficiency-10884>. [Accessed 2023].
- [5] K. J. Ekuma, "The impact of AI-powered analytics on e-HRM: Transforming HR functions through automation and data-driven insights," *International Journal of Human Resource Management and Technology*, vol. 5, no. 2, pp. 45-63, 2023.
- [6] A. I. M. Dabbas, "The impact of digital transformation requirements on HR management practices in the Jordanian government services sector. Mandumah Database," Retrieved: <https://search.mandumah.com/Record/1428364>. [Accessed 22 Feb. 2025], 2023.
- [7] M. Girisha and K. Nagendrababu, "Challenges and issues of E-HRM practices in India," *Our Heritage*, vol. 68, no. 30, pp. 5123-5132, 2020.
- [8] M. Al-Shalabi, A. Al-Momani, and A. Qasem, "E-compensation systems: Enhancing payroll processing, benefits management, and performance-linked incentives," *Journal of Human Resource Management and Technology*, vol. 12, no. 3, pp. 45-60, 2017.
- [9] M. S. Rahman and M. S. Hosain, "E-HRM practices for organizational sustainability: Evidence from selected textile firms in Bangladesh," *Asian Journal of Economics, Business and Accounting*, vol. 21, no. 1, pp. 1-16, 2021. <https://doi.org/10.9734/AJEBA/2021/v21i130331>

- [10] A. Al-Buhayrat, "The impact of e-compensation systems on financial sustainability: Streamlining payroll management and optimizing salary structures," *Journal of Financial and Human Resource Management*, vol. 18, no. 2, pp. 112–130, 2021.
- [11] T. Kaewkhamnuan and S. Rotchanakitumnuai, "Impact of e-HRM system on employee performance. In Li, E.Y. et al. (Eds.)," in *Proceedings of The International Conference on Electronic Business (ICEB 2022)*, Bangkok, Thailand, October 13–17, 2022.
- [12] M. Ahmed, "The impact of e-HRM practices on employee productivity and HR function effectiveness," *International Journal of Human Resource Management Studies*, vol. 7, no. 3, pp. 45–62, 2019.
- [13] S. Thathasara and S. Jayaranjani, "The role of e-HRM in reinforcing organizational agility: Enhancing adaptability to changing conditions," *Journal of Business and Management Research*, vol. 10, no. 2, pp. 112–130, 2021.
- [14] Y. Cheng and Y. Zou, "Automating e-HRM processes: Reducing errors and streamlining intermediary steps for performance improvements," *Human Resource Management Review*, vol. 32, no. 4, p. 100862, 2021.
- [15] A. Lazazzara, F. Ricciardi, and S. Za, "The role of e-HRM in mediating the relationship between intellectual capital and organizational effectiveness," *Journal of Knowledge Management*, vol. 24, no. 3, pp. 675–695, 2020. <https://doi.org/10.1108/JKM-12-2018-0742>
- [16] A. M. Shamaileh, T. A. Al-Maaitah, and A. L. Al-Khasawneh, "The role of e-HRM tools in optimizing talent management and enhancing organizational performance," *Journal of Human Resource Management Research*, vol. 2022, pp. 1–15, 2022.
- [17] A. Elaswy and M. Ali, "Examining HRM practices: The correlation between e-HRM adoption and business outcomes," *Journal of Human Resource Management and Technology*, vol. 9, no. 2, pp. 112–130, 2021.
- [18] M. Al-Haziati, "The impact of e-HRM platforms on HRM efficiency and workforce productivity," *International Journal of Human Resource Studies*, vol. 10, no. 4, pp. 45–62, 2020.
- [19] A. C. De-Alwis, H. Perera, and S. Fernando, "Enhancing data management and streamlining HR functions through e-HRM: Implications for employee outcomes," *International Journal of Human Resource Studies*, vol. 12, no. 3, pp. 45–67, 2022.
- [20] Y. Zhou, Y. Cheng, Y. Zou, and G. Liu, "E-HRM: A meta-analysis of the antecedents, consequences, and cross-national moderators," *Human Resource Management Review*, vol. 32, no. 4, p. 100862, 2022. <https://doi.org/10.1016/j.hrmr.2021.100862>
- [21] V. Maphosa, "The adoption of e-HRM: A view of a telecommunications company in Zimbabwe," *Advances in Research*, vol. 22, no. 6, pp. 1–13, 2021. <https://doi.org/10.9734/air/2021/v22i430310>
- [22] M. Arshad, S. Parveen, A. Arshad, M. Shahan, and N. S. Cheema, "The involvement and link between e-HRM and HRM effectiveness," *Journal of Xi'an Shiyou University*, vol. 66, no. 3, pp. 133–145, 2023.
- [23] F. P. Kwan, L. R. Hermawan, and N. Hafizhi, "E-hrm: Pain or gain for hrm effectiveness," *Jurnal TAM*, vol. 10, no. 1, pp. 22–32, 2019.
- [24] B. Hmoud and L. Varallyai, "AI's impact on HRM in Middle Eastern economies: Enhancing operational efficiency and decision-making," *Journal of Human Resource Management and AI Integration*, vol. 15, no. 2, pp. 112–130, 2023.
- [25] M. S. Haque, *Inductive and/or deductive research designs. In Principles of social research methodology*. Singapore: Springer Nature Singapore, 2022, pp. 59–71.
- [26] J. Snell, "Multiple regression: Evolution and analysis," *Education*, vol. 140, no. 4, pp. 187–193, 2020.
- [27] S. K. Yadav, S. Singh, and R. Gupta, *Sampling methods. In Biomedical Statistics: A Beginner's Guide*. Singapore: Springer, 2019.
- [28] L. Bernal-Sánchez and R. A. Feenstra, *Developing RRI and Research Ethics in Universities. In Ethics and Responsible Research and Innovation in practice: The ETHNA system project*. Cham: Springer Nature Switzerland, 2023.
- [29] M. Nyathi and R. Kekwaletswe, "Realizing employee and organizational performance gains through electronic human resource management use in developing countries," *African Journal of Economic and Management Studies*, vol. 14, no. 1, pp. 121–134, 2023. <https://doi.org/10.1108/AJEMS-06-2021-0308>
- [30] S. S. Alharbi, "Gear up for development: the automation advantage for sustainability in manufacturing in the kingdom of Saudi Arabia," *Sustainability*, vol. 16, no. 11, p. 4386, 2024. <https://doi.org/10.3390/su16114386>
- [31] A. R. Hendrickson, "Human resource information systems: Backbone technology of contemporary human resources," *Journal of Labor Research*, vol. 24, no. 3, pp. 381–394, 2003. <https://doi.org/10.1007/s12122-003-1002-5>