




ORIGINAL

The Impact of Technological Advancements on Human Resource Management Practices: Adapting to the Digital Era

El impacto de los avances tecnológicos en las prácticas de gestión de recursos humanos: Adaptación a la era digital

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ABSTRACT

Introduction: in today's digital era, the process of digitalization has increasingly become a significant factor for organizations striving to enhance productivity, efficiency, and competitiveness. The adoption of technologies such as Artificial Intelligence (AI), automation, and cloud platforms has revolutionized various business operations, especially in Human Resource Management (HRM). These technologies have been pivotal in transforming HR practices by improving data management, enhancing staff training, and streamlining communication processes. This research aims to examine the role and impact of digital technologies on HRM practices, with a focus on making these processes more efficient and faster in the digital age.

Method: a mixed-methods approach was adopted for this research. Qualitative data was collected through a review of journals and articles accessed via Google Scholar, which provided insights into the broader trends of digital technology use in HRM. For quantitative data, a survey was conducted using Google Forms, targeting 200 HR managers across different industries, including retail, automobile, and others. The survey consisted of 10 close-ended questions to capture the extent to which digital technologies impact HRM practices. The qualitative data was analyzed using thematic analysis, identifying recurring themes and patterns in the responses, while the quantitative data was processed through statistical analysis using the SPSS tool.

Results: the study revealed that digital technologies play a vital role in transforming HRM practices in various industries. These technologies streamline key HR functions such as recruitment and talent acquisition, enabling faster and more informed decision-making. Additionally, they contribute significantly to automating training and development processes, as well as performance management. Overall, digital technologies have become essential for improving the efficiency, effectiveness, and strategic capabilities of HRM.

Conclusions: this research underscores the critical role that digital technologies play in enhancing HRM practices across diverse industries. By automating and streamlining HR functions, these technologies enable HR managers to make more informed decisions, reduce operational costs, and improve overall business performance. Organizations should continue to embrace digital transformation to remain competitive and meet the evolving demands of the workforce. The findings offer valuable insights into the significant benefits of digital technologies for HRM and provide a foundation for further exploration into the integration of such technologies within organizations.

Keywords: Digital Technologies; Human Resource Management; Digital Era; Technological Advancement; Artificial Intelligence; Machine Learning; Cloud Platform; Block Chain; Employee Management; Performance Management; Training and Development; Recruitment.

RESUMEN

Introducción: en la era digital actual, el proceso de digitalización se ha convertido cada vez más en un factor importante para las organizaciones que se esfuerzan por mejorar la productividad, la eficiencia y la competitividad. La adopción de tecnologías como la Inteligencia Artificial (IA), la automatización y las plataformas en la nube ha revolucionado diversas operaciones empresariales, especialmente en la Gestión de Recursos Humanos (GRH). Estas tecnologías han sido fundamentales para transformar las prácticas de RRHH mejorando la gestión de datos, mejorando la formación del personal y agilizando los procesos de comunicación. El objetivo de esta investigación es examinar el papel y el impacto de las tecnologías digitales en las prácticas de gestión de los recursos humanos, centrándose en hacer que estos procesos sean más eficientes y rápidos en la era digital.

Método: para esta investigación se adoptó un enfoque de métodos mixtos. Los datos cualitativos se recopilaban mediante una revisión de revistas y artículos a los que se accedió a través de Google Scholar, que proporcionaron información sobre las tendencias más generales del uso de la tecnología digital en la gestión de recursos humanos. En cuanto a los datos cuantitativos, se llevó a cabo una encuesta mediante Google Forms, dirigida a 200 directores de RRHH de diferentes sectores, como el comercio minorista, la automoción y otros. La encuesta constaba de 10 preguntas cerradas para captar hasta qué punto las tecnologías digitales afectan a las prácticas de gestión de recursos humanos. Los datos cualitativos se analizaron mediante análisis temático, identificando temas y patrones recurrentes en las respuestas, mientras que los datos cuantitativos se procesaron mediante análisis estadístico con la herramienta SPSS.

Resultados: el estudio reveló que las tecnologías digitales desempeñan un papel vital en la transformación de las prácticas de GRH en diversos sectores. Estas tecnologías agilizan funciones clave de RRHH como la contratación y la adquisición de talento, permitiendo una toma de decisiones más rápida e informada. Además, contribuyen significativamente a automatizar los procesos de formación y desarrollo, así como la gestión del rendimiento. En general, las tecnologías digitales se han convertido en esenciales para mejorar la eficiencia, la eficacia y las capacidades estratégicas de la gestión de recursos humanos.

Conclusiones: esta investigación subraya el papel fundamental que desempeñan las tecnologías digitales en la mejora de las prácticas de gestión de recursos humanos en diversos sectores. Al automatizar y agilizar las funciones de RRHH, estas tecnologías permiten a los responsables de RRHH tomar decisiones más informadas, reducir los costes operativos y mejorar el rendimiento general del negocio. Las organizaciones deben seguir adoptando la transformación digital para seguir siendo competitivas y satisfacer las demandas cambiantes de los trabajadores. Los resultados ofrecen una valiosa perspectiva de los importantes beneficios de las tecnologías digitales para la gestión de los recursos humanos y sientan las bases para seguir explorando la integración de dichas tecnologías en las organizaciones.

Palabras clave: Tecnologías Digitales; Gestión de Recursos Humanos; Era Digital; Avances Tecnológicos; Inteligencia Artificial; Aprendizaje Automático; Plataforma en la Nube; Cadena de Bloques; Gestión de Empleados; Gestión del Rendimiento; Formación y Desarrollo; Contratación.

INTRODUCTION

Human resource management (HRM)" is denoted as the process of coordinating, organizing, and even managing employees for the achievement of organisational goals. In the previous human resource practices, the HRM in the industrial context faced issues related to talent acquisition, building top-performing teams, recruiting top talent, and even making strategic decisions (Zhang and Chen, 2023). This problem is going to be addressed here by evaluating how technological advancement fosters the practices of HRM in the digital industrial context. The integration of the technologies in HR management acted as the key to streamlining the process and even boosting productivity by leveraging several digital tools and software. For example, the utilisation of data-driven insights leads to enhancing workforce productivity, predicting future talents, and even identifying skill gaps (Bhat and Sheikh, 2024). Moreover, digital tools provide a personalised employee experience that fosters greater retention and job satisfaction to flourish organisational productivity.

The digital advancement in HRM is the turning point for achieving faster organisational success by creating a talent pool in the organisation. For example, the use of Artificial Intelligence (AI) is essential to digitalise the HRM because it has the potential to foster record keeping along with automating the tasks related to

communication with the candidates and conducting training sessions (Nawaz et al., 2024; Al-Mashhadani et al., 2022). Moreover, AI even automates repetitive type of tasks such as answering common questions from the staff at the time of onboarding. Moreover, the use of AI even handles hiring, recruitment, training and development, performance appraisal, reducing the workload within the workplace along enriching the workplace efficiency. However, cloud-based HR solutions implement AI to streamline processes like initial candidate assessment, resume screening, and even interview scheduling (Sanjeev and Natrajan, 2022). The use of automation not only leads to enhancing HR operations but also fosters the strategic aspects of talent management. Focusing on this context, this research aims to execute the role of digital technologies in HRM practices to adapt to the changes in the digital era.

Literature Review

Based on the topic, the first 100 articles are selected, among them 12 articles and 2 websites (n=14) are selected to gain insights from the previous research about the impact of technological advancements on human resources “management practices” in terms of adapting to the “digital era”.

The role of HRM in organisational success

“Human Resource Management (HRM)” is widely regarded as a critical factor in achieving organizational success (Wang, Zhou and Zheng, 2022). According to Lu et al. (2023), effective HRM practices mainly contribute to building a workforce which is not only skilled and motivated but also aligned with the “organization’s strategic goals”. HRM serves as the backbone for “enhancing employee satisfaction”, fostering innovation and even driving overall productivity (Asmini, Halim and Andi Adawiah, 2023). One of the core “functions of HRM” is strategic recruitment and selection which mainly ensures that the organization attracts and retains the right talent.

In contrast, Gilch and Sieweke (2020) stated that one of the core functions of HRM is strategic recruitment and selection, which mainly ensures that the organization attracts and even retains the right talent. Choosing the candidates who mainly align with an organization’s vision and even culture significantly improves the presentation consequences. “Training and development programs” are equally crucial as they allow employees to “acquire new skills” and adapt to changing business environments ultimately enhancing organizational quickness (Dachner et al., 2021).

Finding the role of technological advancement in HRM practices

Technical progressions have significantly transformed “human resources management (HRM)” practices and allowing organizations in terms of managing their workforce more professionally and advantageously (Nicolás-Agustín, Jiménez-Jiménez and Maeso-Fernandez, 2021). According to Kambur and Yildirim (2022), incorporation of the digital tools and platforms has redefined “traditional HRM” functions such as recruitment, training, “performance management” and even “employee engagement”, thereby enhancing overall organizational performance. These types of technologies like “Human Resource Information Systems” (HRIS) reduce recruitment time and even improve the accuracy of candidate matching leading to better hiring pronouncements.

In contrast, Dražeta (2024) stated that one of the most significant impacts of technology is in recruitment and even the selection developments. Digital platforms such as the “applicant tracking system (ATS)” and even the “artificial intelligence-powered tools”, streamline the hiring process by “Automating Resume Screening” as well as identifying suitable candidates. For example, the UK retail industry focuses on implementing ATS, Cloud-based HR solutions to hire unique talents (Business-reporter.co.uk, 2022).

Elaboration of the technologies used by the HRM in an industrial context

The execution of technological tools like ATS, Cloud-based HR solutions HRIS and even platforms by “human resource management (HRM)” in industrial contexts has revolutionized the workforce management processes and even enabled organizations to achieve greater efficiency. According to Ali et al. (2023), the industrial sector is mainly known for its complexity and even the diverse workforce has particularly benefited from the advanced HR technologies. Streamline operations mainly enhance decision-making and even improve the employee experience.

In contrast, Chavan et al. (2024) stated that one of the most commonly executed technologies in the case of the HRM is the “Applicant Tracking System (ATS)”. In different industries such as manufacturing, telecommunication, and retail, where high-volume recruitment is common. The ATS mainly automates job postings and even resume screenings and even candidate shortlisting.

The impact of digital technologies in fostering HRM practices in the digital era

Digital technologies related to systems like Cloud-based HR solutions, HRIS, and ATS mainly reshaped human resources management (HRM) practices and even fostered efficiency as well as innovation and even adaptability in organizations navigating the challenges of the digital era. According to Sun and Jung (2024), businesses strive

to remain competitive, and the incorporation of digital tools into the HRM has become important for optimizing operations and even enhancing the employee experiences and mainly aligning with the workforce capabilities. For example, Tesco Plc mainly focuses on digital innovation, which is the cornerstone for the transformation of the company and has even been implemented in the HRM practices (Alkhazali, 2018; Al-Momani, 2024).

In contrast, Kaizer et al. (2020) stated that “training and development” practices have undergone a significant transformation through the “e-learning platforms” that come under the HRIS. Virtual reality and even augmented reality, these types of technologies offer personalized, immersive and even flexible learning experiences, which enhance employee skills development and retention (LinkedIn, 2024; Momani, 2023).

Literature Gap

The existing studies mainly highlight the transformative impact of digital technologies on HRM practices; the limited research mainly explores the long-term implications for workforce adaptability and even the strategic alignment in the case of diverse industries. There is a lack of focus on identifying the challenges such as employee resistance, digital skill gaps and even privacy concerns. Added investigation is needed to understand the ways organizations can balance technological integration with the “human-centric HRM approaches”.

Research Objective

- To execute the role of human resource management in organisational success.
- To find out the role of technological advancement in HRM practices.
- To execute the technologies used by HRM in an industrial context.
- To highlight the impact of digital technologies in fostering HRM practices in the digital era.

Research Question

- What is the concept of “human resource management”?
- What is the role of technological advancement in the smooth conduction of HRM practices?
- Which technologies are used in HRM in several industries?
- How do digital technologies foster HRM practices in the rapid growth of the digital era?

METHOD

This study mainly focuses on analysing the “impact of technological advancements” on the case of “human resource management (HRM)” practices particularly in adapting to the digital era and even the ways organizations adapt to the digital era. The research adopts a pragmatic philosophy, blending both the quantitative and even the qualitative methods to provide a balanced understanding of the research problem. This approach mainly recognizes the value of the numerical data to address the trends and even the qualitative insights to explore the deeper perspectives. A deductive approach is mainly used to test the established theories as well as the concepts and even focus on the role of technology in the case of transforming HRM practices. A combination of the surveys and even the thematic analysis is mainly employed as the primary research strategy. This study mainly follows a cross-sectional time horizon and even captures the current insights from HR professionals across industries which mainly include telecommunications, retail and others. This design is well-suited for understanding the contemporary trends in HRM-influenced technological advancements such as “cloud-based platforms, advanced algorithms, machine learning” and others. For the primary data collection, the structured surveys were mainly distributed to 200 HR managers from diverse industries. The participants were randomly selected through professional platforms like LinkedIn to ensure a varied and even representative sample. The surveys comprised ten cloud-ended questions and with the help of Google Forms even focused on key themes such as the integration of digital tools in recruitment, employee training, evaluation of performance as well as workforce engagement. This method mainly provided measurable data in terms of analysing the extent and even impact of the technological changes on HRM.

Below figure 1 mainly provides the methods used in this study and both of the data collection methods used such as qualitative and quantitative methods.

Based on figure 1, the secondary data collected from the 12 articles and even 2 websites and even the thematic analysis will be conducted using the insights from the secondary data. This analysis mainly highlighted the recurring themes such as the adaptation of artificial intelligence in the HR processes and even the challenges associated with digital transformation and innovative strategies for leveraging technology to enhance HR functions.

Below figure 2 provides the use of secondary sources like 12 journal articles and 2 websites for the thematic analysis.

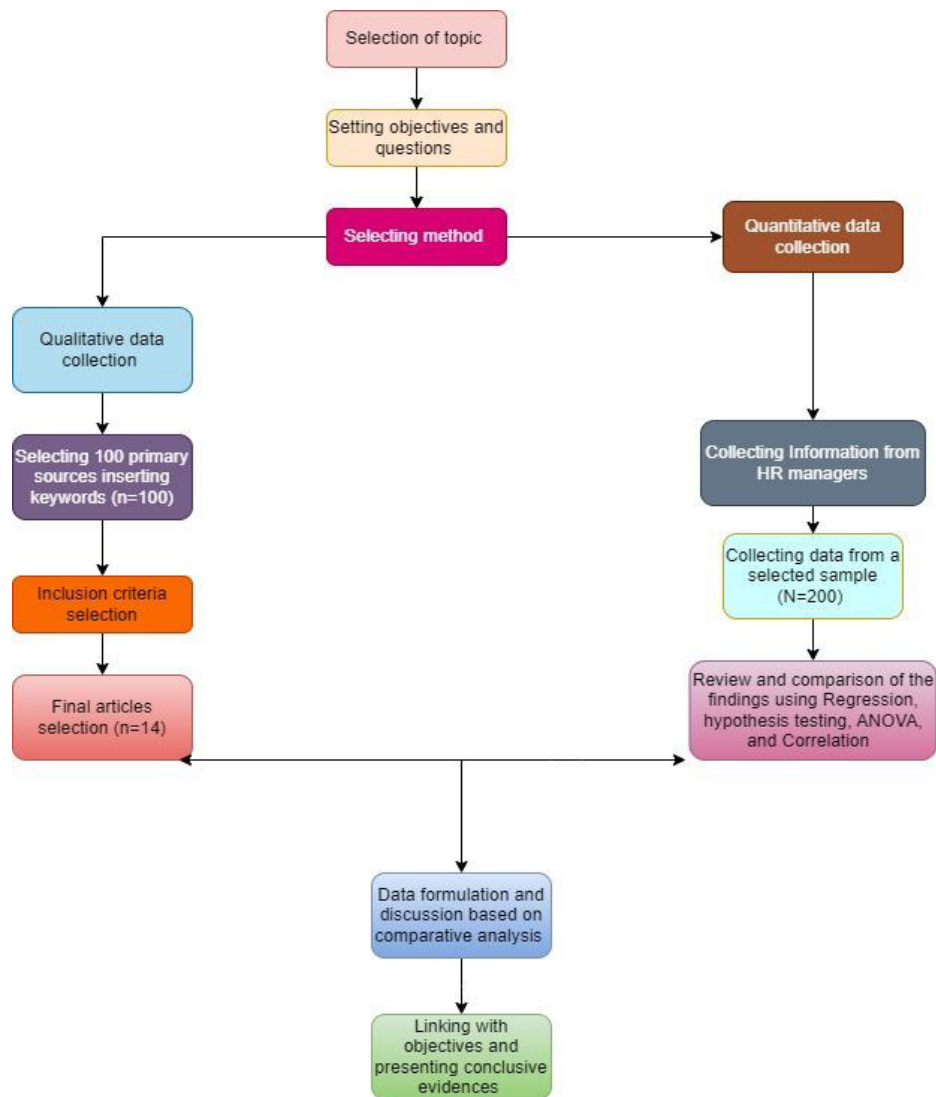


Figure 1. Data accumulation processes, Source: Self-made

SECONDARY SOURCES

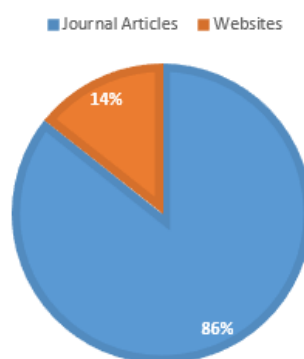


Figure 2. Distribution of secondary sources

From figure 2, it is identified that the selection of the secondary sources helps in executing the mixed data analysis method with the support of the collected information from the survey session. A “mixed-method approach” ensures a robust analysis of the data. The quantitative survey results were statistically analysed to identify the trends and even correlations while the qualitative thematic analysis provided nuanced insights into the ways technology influences the HRM practices across the industries. By combining these types of methods, the research achieves a holistic understanding of the relationship between technological advancements and even HRM practices as well as offers practical insights for organizations aiming to optimize their HR functions in the digital age.

Figure 3 mainly represents the process followed in this research and even provides both the data collection methods.

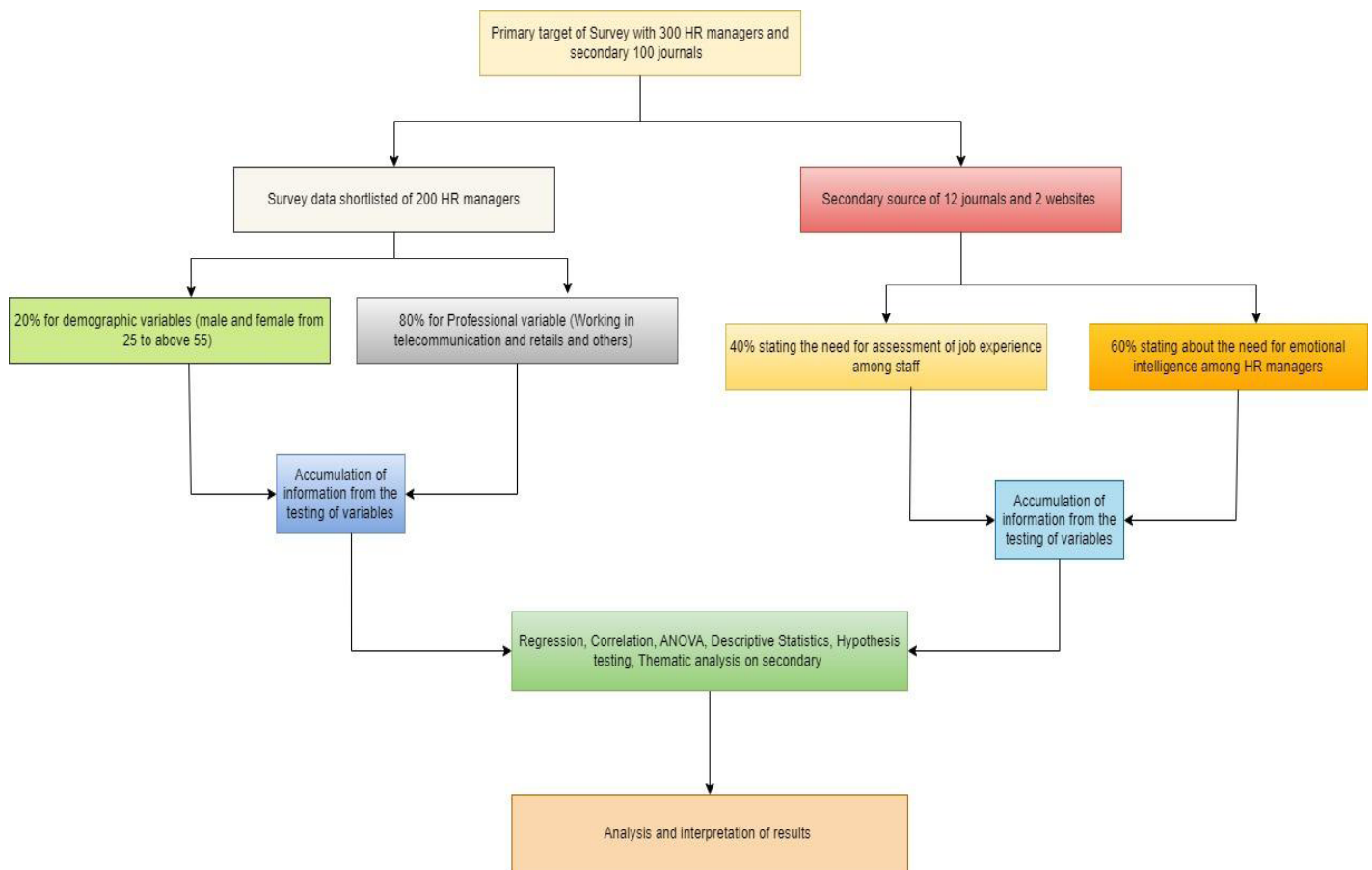


Figure 3. Data collection and analysis method, Source: Self-made

Based on figure 3, the shortlisting of the 14 articles and 200 responses collected as an HRM manager belongs to different industries. In his study, both the primary and even the secondary data are collected for a better understanding of the topic. The secondary sources are mainly collected from ScienceDirect, MDPI, Google Scholar and others.

Table 1. Selection of HR managers during primary data collection			
Demographic variables	Categories	Number of Respondents	Total
Gender	Male	150	200
	Female	50	
Age	25-35	25	200
	36-45	59	
	46-55	88	
	Above 55	28	
Other Categories	HR managers from different retail organisations, telecommunication and others (n=200)	200	200

For the statistical data collection, the structured surveys were mainly distributed to 200 HR managers from diverse industries. The participants were randomly selected through professional platforms like LinkedIn to ensure a varied and even representative sample. The surveys comprised ten cloud-ended questions with the help of Google Forms and even focused on key themes such as the integration of digital tools in recruitment, employee training, evaluation of performance as well as workforce engagement.

Table 1 mainly provides the inclusion of HR managers from different industries such as telecommunication,

retail and others.

From table 1 it is found that 150 male and 50 female participants stated their opinions in terms of the impact of technological advancements on the case of human resource management (HRM) practices particularly in adapting to the digital era and even the ways organizations adapting to the digital era.

Hypothesis

- Null hypothesis: Technological advancement makes faster and more efficient HRM practices in the digital era.
- Alternative hypothesis: Technological advancement does not make faster and more efficient HRM practices in the digital era.

RESULT AND DISCUSSION

Statistical Analysis

This statistical analysis mainly represents the results of descriptive statistics, ANOVA testing, regression testing, correlation testing, and hypothesis testing performed through the SPSS tool.

Descriptive Statistic

The descriptive statistic represents here in an understandable and meaningful manner and even allows for a more simplified interpretation of the data set within the questions.

Question 1. What is your age?

Table 2 executes the age factor of all of the respondents.

Table 2. Age factor					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25-35 years	25	12,5	12,5	12,5
	36-45 years	59	29,5	29,5	42,0
	46-55 years	88	44,0	44,0	86,0
	Above 55 years	28	14,0	14,0	100,0
	Total	200	100,0	100,0	

Table 2 shows that more than 44 % of respondents are from the age group of 46-55 years old and 29,5 % are from the age group of 36-45 years old. Due to that reason, it can be stated that most of the respondents are from the senior level of people who have a better idea about the changes going on in the world.

Question 2. What is your gender?

Table 3 represents the gender factor.

Table 3. Gender factor					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	150	75,0	75,0	75,0
	Female	50	25,0	25,0	100,0
	Total	200	100,0	100,0	

Table 3 shows that more than 75 % are male and even 26 % are female which states that most of the HR managers in the global industries are male.

Question 3. What is your working experience?

Table 4 represents the working experience of the respondents.

Table 4 shows that more than 48 % of the people have more than 11-15 years of experience and more than

26,5 % of the respondents have more than 15 years of experience. It states that the data was collected from experienced HR managers from several industries.

Table 4. Working experience of the respondent's					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-5 years	18	9,0	9,0	9,0
	6-10 years	33	16,5	16,5	25,5
	11-15 years	96	48,0	48,0	73,5
	Above 15 years	53	26,5	26,5	100,0
	Total	200	100,0	100,0	

Question 4. In which industry are you associated with?

Table 5 executes another demographic factor like the operating industry of the respondents.

Table 5. Industry in which the respondent associated with					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Retail	20	10,0	10,0	10,0
	Banking	20	10,0	10,0	20,0
	Automobile	39	19,5	19,5	39,5
	Manufacturing	61	30,5	30,5	70,0
	Telecommunication	38	19,0	19,0	89,0
	Others	22	11,0	11,0	100,0
	Total	200	100,0	100,0	

Table 5 represents that more than 30 % are from retail, more than 19,5 % from automobile, 10 % from banking, 19 % from telecommunication, 11 % from others, and 10 % from retail. Due to that reason, it is found that the data have been collected from the HR of several industries.

Question 5. Do you use technological advancement in your practices?

Table 6 ensures that the respondents use technological advancements in their practices.

Table 6. Do the respondents use technological advancement in their practices					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	196	98,0	98,0	98,0
	No	4	2,0	2,0	100,0
	Total	200	100,0	100,0	

Table 6 shows that more than 98 % of the HR managers have used technological advancement in their practices, which represents that technological advancement is too high in HRM practices.

Question 6. In which area do you use digital technologies?

Table 7 states in which areas, the respondents use the digital technologies.

Table 7 mainly shows that HRM uses digital technologies 27,5 % in performance management, 18,5 % in employee management, 28 % in each of the areas of HR practices, 12 % in training and development, 8 % within the onboarding, and even 6 % in the recruitment. That represents those digital technologies that have been used in each of the areas of the HRM practices.

Table 7. Area of application of the digital technologies					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Recruitment	12	6,0	6,0	6,0
	Onboarding	16	8,0	8,0	14,0
	Training and development	24	12,0	12,0	26,0
	Performance management	55	27,5	27,5	53,5
	Employee engagement	37	18,5	18,5	72,0
	All of the above	56	28,0	28,0	100,0
	Total	200	100,0	100,0	

Question 7. Which technology are you using in your daily workplace operations?

Table 8 highlights the types of technologies used in the daily workplace operations of the HRM.

Table 8. Technologies used in daily workplace operations of HRM					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Artificial intelligence	9	4,5	4,5	4,5
	Machine learning	16	8,0	8,0	12,5
	Blockchain technology	27	13,5	13,5	26,0
	Cloud-based platform	30	15,0	15,0	41,0
	Advanced algorithms	38	19,0	19,0	60,0
	Automation software	21	10,5	10,5	70,5
	All of the above	59	29,5	29,5	100,0
	Total	200	100,0	100,0	

Table 8, it is identified that several technologies have been used in HRM practices, which include artificial intelligence, machine learning, blockchain technology, cloud-based platforms, advanced algorithms, and even automation software as more than 29,5 % of the respondents agreed with all of the above options.

Question 8. What kind of benefits do you obtain by using those technologies?

Table 9 mainly represents the benefits obtained by the use of digital technologies in HRM practices.

Table 9. Benefits obtain by using digital technologies					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Storing and managing employee data	9	4,5	4,5	4,5
	Fostering the recruitment process	21	10,5	10,5	15,0
	Increase training and development opportunities	35	17,5	17,5	32,5
	Helps in making an informed decision	38	19,0	19,0	51,5
	Improve the efficiency and productivity among employee	30	15,0	15,0	66,5
	All of the above	67	33,5	33,5	100,0
	Total	200	100,0	100,0	

Table 9, it is represented that the use of digital technologies provides several benefits in HRM practices as 34 % of the respondents were provided respondents with all of the above options. The benefits include managing and storing the data of the employees, fostering the process of recruitment, helping in making informed decisions, increasing the training and development opportunities, along improving productivity and efficiency.

Question 9. What is the impact of technological use on HRM practices?

Table 10 illustrates the impact of technological use within HRM practices.

Table 10. Impact of digital technologies in HRM practices					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Enhancing the workforce productivity	9	4,5	4,5	4,5
	Identifying the skill gaps	12	6,0	6,0	10,5
	Predicting the talent for the future	22	11,0	11,0	21,5
	Fostering staff retention	32	16,0	16,0	37,5
	Providing personalised employee experience	31	15,5	15,5	53,0
	Automating the recruitment and onboarding	23	11,5	11,5	64,5
	All of the above	71	35,5	35,5	100,0
	Total	200	100,0	100,0	

From table 10, it is identified that the impact of the technological use within the HRM practices includes enhancing the productivity of the workforce, identifying the skill gaps, fostering the retention of the staff, predicting the talent for the future, providing the personalised experience to the employees, and some others. This is because 35,5 % of the respondents provide all of the above options.

Question 10. Are you satisfied with using digital technology to make faster your daily work in this digital era?

Table 11 represents the satisfaction level of the HR managers in the context of using digital technology to make faster their daily work.

Table 11. Satisfaction of the HR for using the digital technologies					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	190	95,0	95,0	95,0
	No	10	5,0	5,0	100,0
	Total	200	100,0	100,0	

From table 11, it is identified that 95 % of the respondents have stated that they are satisfied with the utilisation of digital technologies in fostering their daily activities in the rapid digitalisation era.

ANOVA Testing

The ANOVA testing mainly determines here the differences between the research results from unrelated samples. Table 12 mainly represents the result of the ANOVA testing in this research.

Are you satisfied with using digital technology to make faster your daily work in this digital era?

Table 12. Result of ANOVA testing					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3,684	1	3,684	125,400	0,000
Within Groups	5,816	198	.029		
Total	9,500	199			

From the result of the ANOVA testing in table 12, it is identified that the sig value is 0,000 which is lower than 0,05, which states that differences between the unrelated samples are not so high that ensure the accuracy of the data collection.

Correlation testing

Table 13 mainly represents the correlation between the quantitative variables in this research.

Table 13. Result of correlation testing					
Correlations					
		6. In which area do you use digital technologies?	7. Which technology are you using in your daily workplace operations?	8. What kind of benefits do you obtain by using those technologies?	9. What is the impact of technological use on HRM practices?
6. In which area do you use digital technologies?	Pearson Correlation	1	0,756**	0,622**	0,599**
	Sig. (2-tailed)		0,000	0,000	0,000
	N	200	200	200	200
7. Which technology are you using in your daily workplace operations?	Pearson Correlation	0,756**	1	0,774**	0,781**
	Sig. (2-tailed)	0,000		0,000	0,000
	N	200	200	200	200
8. What kind of benefits do you obtain by using those technologies?	Pearson Correlation	0,622**	0,774**	1	0,878**
	Sig. (2-tailed)	0,000	0,000		0,000
	N	200	200	200	200
9. What is the impact of technological use on HRM practices?	Pearson Correlation	0,599**	0,781**	0,878**	1
	Sig. (2-tailed)	0,000	0,000	0,000	
	N	200	200	200	200
**Correlation is significant at the 0,01 level (2-tailed)					

As per the correlation obtained in table 13, it is identified that the sig value between the use of the digital technologies and even the benefits obtained from using the digital technologies is 0,000 which is lower than 0,001 at the 95 % significance level. Thus, it is found that the quantitative variables are highly correlated with each other stating that digital technologies foster HRM practices.

Regression testing

Table 14 depicts, the regression testing explores the relationship between the variables in the research.

Table 14. Result of Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,206 ^a	0,042	0,028	0,215
a. Predictors: (Constant), 9. What is the impact of technological use on HRM practices?, 7. Which technology are you using in your daily workplace operations?, 8. What kind of benefits do you obtain by using those technologies?				

From table 14 of the model summary, it is identified that the value of R-square is 0,42 that is ranging between 0-1, which states that the data collection is moderately good fit for this research.

Table 15 showcased the result of the co-efficient testing.

From the co-efficient test in table 15, it is identified that the sig value is 0,01 in case satisfaction of the HRM in using digital technology and use of the digital technology in daily operation that is lower than 0,05 that stated that here is presented a strong relationship among the variables.

Table 15. Result of co-efficient testing

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0 % Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1,016	0,047		21,641	0,000	0,923	1,109
	7. Which technology are you using in your daily workplace operations?	-0,035	0,014	-0,295	-2,521	0,013	-0,062	-0,008
	8. What kind of benefits do you obtain by using those technologies?	0,007	0,022	0,047	0,309	0,757	-0,036	0,049
	9. What is the impact of technological use on HRM practices?	0,034	0,018	0,290	1,872	0,063	-0,002	0,071

A. Dependent Variable: 10. Are you satisfied with using digital technology to make faster your daily work in this digital era?

Hypothesis Testing

Table 16 represents the hypothesis testing for supporting the aim of the research.

Table 16. Result of hypothesis testing

	t	df	Test Value = 9			
			Sig. (2-tailed)	Mean Difference	95 % Confidence Interval of the Difference	
					Lower	Upper
9. What is the impact of technological use on HRM practices?	-30,006	199	0,000	-3,915	-4,17	-3,66
10. Are you satisfied with using digital technology to make faster your daily work in this digital era?	-514,573	199	0,000	-7,950	-7,98	-7,92

The result of hypothesis testing in table 16, shows that the sig value is approximately 0,000 which is lower than 0,005. This states that the alternative hypothesis has been accepted and the null hypothesis has been rejected. This represents that with the help of digital technologies, the HRM can make faster their daily work.

Thematic Analysis

In this study, thematic analysis is conducted in terms of analysing the secondary data and even gaining insights from these.

Theme 1: HRM's role in organizational success

From the secondary data, it is found that effective HRM practices mainly contribute to building a workforce, which is not only skilled and motivated but also “aligned with the organization’s” strategic goals. One of the core “functions of HRM” is strategic recruitment and selection, which mainly ensures that the organization attracts and retains the right talent.

Theme 2: Technological Advancements in HRM

The insights from the secondary provide that the integration of digital tools and platforms has redefined traditional HRM functions such as recruitment, training, “performance management” and even “employee engagement”, thereby enhancing overall organizational performance. Digital platforms such as the “applicant tracking system (ATS)” and even the “artificial intelligence-powered tools”, “streamline the hiring process” by “automating resume screening” as well as identifying suitable candidates.

Theme 3: Technologies in Industrial HRM

From the secondary data, it is found that the industrial sector is mainly known for its complexity and even the diverse workforce has particularly benefited from the advanced HR technologies. In different industries such as manufacturing, telecommunication, and retail, where high-volume recruitment is common. The ATS mainly automates job postings and even resume screenings and even candidate shortlisting.

Theme 4: Digital Technologies in the HRM digital era

The insights from the secondary provide that businesses strive to remain competitive, and the incorporation of digital tools into the HRM has become important for optimizing operations and even enhancing the employee experiences and mainly aligning with the workforce capabilities. Virtual reality and even augmented reality, these types of technologies offer personalized, immersive and even flexible learning experiences.

DISCUSSION

From the thematic analysis, it is identified that HRM plays an effective role in motivating employees and managing them to meet the strategic goals in the organisation helps in meeting the first objective effectively. In contrast, both from the statistical and thematic analysis, it is identified that digital technologies foster the hiring and recruitment process, automating the candidate selection and employee management that helps in meeting the second objective positively. The thematic and statistical analysis both executes that “applicant tracking system (ATS)”, machine learning, AI, cloud computing, and some others have been used in the HRM practices in the industrial context that helps in meeting the third objective positively. Both from the statistical and thematic analysis, it is identified that digital technologies provide a personalised experience to the employees, improve innovation, and even foster HR efficiencies that lead to making the HRM practices faster in the digital era which meets the fourth objective positively.

CONCLUSIONS

It is concluded that digital tools like AI, automation, and even some others help the HRM to enhance the training and development process, employee management process, offering personalised experiences to the employee, shortlisting, and some others. It is even concluded that the use of digital platforms enhances performance management in HRM practices and positively fosters organisational development in this digital era.

Future study

It is even recommended that future studies of this research need to use primary qualitative research like the interview. It is even recommended that future study needs to focus on evaluating the information about the use of digital technologies by HR managers in their daily activities.

BIBLIOGRAPHIC REFERENCES

1. Al-Momani, M. N. Al-Refai, S. Abuowaida, M. Arabiat, N. Alshdaifat, and M. N. A. Rahman (2024) “The effect of technological context on smart home adoption in Jordan,” *Indonesian Journal of Electrical Engineering and Computer Science*, vol. 33, no. 2, pp. 1186-1195, , doi: 10.11591/ijeecs.v33.i2.pp1186-1195. [71].
2. Ali, O., Krsteska, K., Said, D.S. and Momin, M. (2023). Advanced technologies enabled human resources functions: Benefits, challenges, and functionalities: A systematic review. *Cogent Business & Management*, [online] 10(2). doi: <https://doi.org/10.1080/23311975.2023.2216430>.
3. Ahmad, A. Y. B., Verma, N., Sarhan, N., Awwad, E. M., Arora, A., & Nyangaresi, V. O. (2024). An IoT and blockchain-based secure and transparent supply chain management framework in smart cities using optimal queue model. *IEEE Access*.
4. Ahmad, A. Y., Jain, V., Verma, C., Chauhan, A., Singh, A., Gupta, A., & Pramanik, S. (2024). CSR Objectives and Public Institute Management in the Republic of Slovenia. In *Ethical Quandaries in Business Practices: Exploring Morality and Social Responsibility* (pp. 183-202). IGI Global.
5. Alkhazali, Z. A. F. (2018). The Effects of Human Resource Management Practices and Knowledge Management Strategies on Otganizational Performance Among Jordanian Banks Total Quality Management as a Moderator (Doctoral dissertation, School of Business Innovation and Technopreneurship, Universiti Malaysia Perlis).
6. Alkhazali, Zeyad, Ayman Abu-Rumman, Naser Khmour, and Khaleel Al-Daoud (2020). “Empowerment, HRM practices and organizational performance: a case study of Jordanian commercial banks.” *Entrepreneurship and Sustainability Issues* 7, no. 4 (2020): 2991.
7. Alkhazali, Zeyad, Issam Aldabbagh, and Ayman Abu-Rumman (2019).”TQM potential moderating role to the relationship between HRM practices, KM strategies and organizational performance: the case of Jordanian banks.” *Academy of Strategic Management Journal* 18, no. 3 -1-16.

8. Al-Mashhadani, M., & Shujaa, M. (2022). IoT security using AES encryption technology based ESP32 platform. *Int. Arab J. Inf. Technol.*, 19(2), 214-223.
9. Alibraheem, M., Siam, I., Al-Daoud, K., Alkhazaali, A., Freihat, B., Ahmad, A., ... & Zoubi, M. (2024). The moderating role of internal control system on the relationship between service quality of accounting information system and customer satisfaction: a study of some selected customers from commercial banks in Jordan. *Uncertain Supply Chain Management*, 12(1), 567-572.
10. Almasarweh, M., Jawasreh, Z., AlGhasawneh, Y., Matalka, M., Alshuaibi, M., Kalbouneh, N., & Zoubi, M. (2023). The impacts of task technology fit, transparency, and supply chain agility on the blockchain adoption by SMEs in Jordan. *International Journal of Data and Network Science*, 7(3), 1303-1310.
11. Alzoubi, S., & Zoubi, M. (2023). Exploring the relationship between robot employees' perceptions and robot-induced unemployment under COVID-19 in the Jordanian hospitality sector. *International Journal of Data and Network Science*, 7(4), 1563-1572.
12. Bhat, A. and Sheikh, A. (2024). Impact of Digitization on Human Resources: Challenges and Opportunities. *Journal of Production Operations Management and Economics*, 4(42), pp.1-7. doi: <https://doi.org/10.55529/jpome.42.1.7>.
13. Business-reporter.co.uk (2022). The future of retail hiring rests on the labour applicant tracking system. [online] Business Reporter. Available at: <https://www.business-reporter.co.uk/management/the-future-of-retail-hiring-rests-on-the-labour-applicant-tracking-system> [Accessed 27 Dec. 2024].
14. Chavan, P.R., Chandurkar, Y., Tidake, A., Lavankar, G., Gaikwad, S. and Chavan, R. (2024). Enhancing recruitment efficiency: An advanced Applicant Tracking System (ATS). *Industrial Management Advances*, [online] 2(1), pp.6373-6373. doi: <https://doi.org/10.59429/ima.v2i1.6373>.
15. Dachner, A.M., Ellingson, J.E., Noe, R.A. and Saxton, B.M. (2021). The future of employee development. *Human Resource Management Review*, 31(2), p.100732. doi: <https://doi.org/10.1016/j.hrmr.2019.100732>.
16. Dražeta, L. (2024). Applicant Tracking System: A Powerful Recruiters' Tool. *Sinteza 2024 - International Scientific Conference on Information Technology, Computer Science, and Data Science*, [online] 12(2), pp.240-245. doi: <https://doi.org/10.15308/Sinteza-2024-240-245>.
17. Gilch, P.M. and Sieweke, J. (2020). Recruiting digital talent: The strategic role of recruitment in organisations' digital transformation. *German Journal of Human Resource Management: Zeitschrift für Personalforschung*, [online] 35(1), pp.53-82. doi: <https://doi.org/10.1177/2397002220952734>.
18. Jaswal, S., & Malhotra, M. (2022). AFTM-agent based fault tolerance manager in cloud environment. *Int. Arab J. Inf. Technol.*, 19(3), 396-402.
19. Kaizer, B.M., Sanches da Silva, C.E., Zerbini, T. and Paiva, A.P. (2020). E-learning training in work corporations: a review on instructional planning. *European Journal of Training and Development*, 44(8/9), pp.761-781. doi: <https://doi.org/10.1108/ejtd-03-2020-0042>.
20. Kambur, E. and Yildirim, T. (2022). From traditional to smart human resources management. *International Journal of Manpower*, 44(3). doi: <https://doi.org/10.1108/ijm-10-2021-0622>.
21. LinkedIn (2024). Analyzing Tesco's Adaption strategies in the Digital Era. [online] [www.linkedin.com](https://www.linkedin.com/pulse/analyzing-tescos-adaption-strategies-digital-gy35f). Available at: <https://www.linkedin.com/pulse/analyzing-tescos-adaption-strategies-digital-gy35f>.
22. Khasawneh, M. S., Aladwan, K. S., Ababneh, S. F., Al-Makhadmah, I. M., & Alzoubi, M. I. (2023). Factors Influencing the Decision of Tourist Businesses to Adopt Digital Marketing. *Geo Journal of Tourism and Geosites*, 47(2), 415-423.
23. Lu, Y., Zhang, M.M., Yang, M.M. and Wang, Y. (2023). Sustainable human resource management practices, employee resilience, and employee outcomes: Toward common good values. *Human Resource Management*, [online] 62(3). Available at: <https://onlinelibrary.wiley.com/doi/full/10.1002/hrm.22153>.

24. Lutfi, Abdalwali, Hamza Alqudah, Khaleel Ibrahim Al-Daoud, Nidal Zaqeeba, Mahmaod Alrawad, and Mohammed Amin Almaiah. (2024). "Technology factors and ERP system efficiency in the Jordanian industrial firms: does company size matter?." *Humanities and Social Sciences Communications* 11, no. 1 1-13.

25. M. Arabiat, S. Abuowaida, A. Al-Momani, N. Alshdaifat, and H. Y. Chan (2024). "Depth estimation method based on residual networks and Se-Net model," *Journal of Theoretical and Applied Information Technology*, vol. 102, no. 3, pp. 866-871,

26. Matalaka, M., Badir, R., Ahmad, A., Al-Said, K., Nassar, H., Alzoubi, S., & Alzoubi, M. (2024). The adoption of ChatGPT marks the beginning of a new era in educational platforms. *International Journal of Data and Network Science*, 8(3), 1941-1946.

27. Matalaka, M., & Zoubi, M. (2023). The influence of soft and hard quality management practices on quality improvement and performance in UAE higher education. *International Journal of Data and Network Science*, 7(3), 1311-1320.

28. Momani, H. R., Mat Som, A. P., Al Qassem, A., Muhammad Salim, M. A., & Eppang, B. M. (2023). THE EFFECTS OF SEASONALITY ON MICE TOURISM DEMAND IN JORDAN. *PLANNING MALAYSIA*, 21(30). <https://doi.org/10.21837/pm.v21i30.1412>

29. Nawaz, N., Arunachalam, H., Pathi, B.K. and Gajenderan, V. (2024). The Adoption of Artificial Intelligence in Human Resources Management Practices. *International Journal of Information Management Data Insights*, [online] 4(1), p.100208. doi: <https://doi.org/10.1016/j.jjime.2023.100208>.

30. Nicolás-Agustín, Á. Jiménez-Jiménez, D. and Maeso-Fernandez, F. (2021). The role of human resource practices in the implementation of digital transformation. *International Journal of Manpower*, [online] 43(2). doi: <https://doi.org/10.1108/ijm-03-2021-0176>.

31. None Asmini, Halim, A. and Andi Adawiah (2023). Improving Financial Efficiency through Integrated Human Resource Management and the Mediating Role of Leadership and Organizational Culture in Organizational Performance. *Atestasi*, 6(2), pp.546-569. doi: <https://doi.org/10.57178/atestasi.v6i2.712>.

32. Sanjeev, R. and Natrajan, N.S. (2020). An Empirical Research on the Role of Cloud-Based HRIS & HRM Functions in Organizational Performance. *Asset Analytics*, pp.21-35. doi: https://doi.org/10.1007/978-981-15-3643-4_3.

33. Sun, Y. and Jung, H. (2024). Machine Learning (ML) Modeling, IoT, and Optimizing Organizational Operations through Integrated Strategies: The Role of Technology and Human Resource Management. *Sustainability*, [online] 16(16), pp.6751-6751. doi: <https://doi.org/10.3390/su16166751>.

34. Wang, L., Zhou, Y. and Zheng, G. (2022). Linking Digital HRM Practices with HRM Effectiveness: The Moderate Role of HRM Capability Maturity from the Adaptive Structuration Perspective. *Sustainability*, [online] 14(2), p.1003. Available at: <https://www.mdpi.com/2071-1050/14/2/1003>.

35. Zhang, J. and Chen, Z. (2023). Exploring Human Resource Management Digital Transformation in the Digital Age. *Journal of the Knowledge Economy*, [online] 15(1). Available at: <https://link.springer.com/article/10.1007/s13132-023-01214-y>.

36. Zoubi, M., ALfaris, Y., Fraihat, B., Otoum, A., Nawasreh, M., & ALfandi, A. (2023). An extension of the diffusion of innovation theory for business intelligence adoption: A maturity perspective on project management. *Uncertain Supply Chain Management*, 11(2), 465-472.

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