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A Study On Analyzing Impact Of Digital Hrm On Employee Engagement

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ABSTRACT
The world has gone digital a long time back and its inhabitants are coming to terms with its fast-evolving nature. The current fast paced times are making the organizations stand at the pedestal to a massively incorporate sophisticated Human Resource Management (HRM) practices in place which will help in automating and augmenting the efficiency of the employees. Thus, this study was undertaken with sole purpose to analyse the impact of Digital HRM on Employee Engagement. Statistical method applied in this research is Structural Equation Modelling. The findings of this analysis showed that there is a significant impact of Digital Communication & Collaboration, Digital Job Support & Self-Service, Digital Learning & Development, and Digital Performance Management on Employee Engagement. The research can benefit society by illustrating how Digital HRM can generate happier, more engaged and future-ready employees, which in turn generates superior workplace cultures and long-term economic prosperity
Keywords: Digital HRM, Employee Engagement, Structural Equation Model

INTRODUCTION:

Rapid technological advancements have improved an organization's digital performance, its influence on society, and its workflow. All levels of organisations are impacted by the digital revolution. Additionally, it puts pressure on businesses and their staff to adjust to the world's fast changes and the rise of digital technology. According to Goldstein (2015) and Kontić & Vidicki (2018), digitalisation has become a term in the business world and is something that organisations need to embrace in order to stay relevant. The term "digital human resource management" (HRM) describes the use of technology and digital applications to manage HR tasks including hiring, training, performance reviews, and employee engagement. In organisations, it boosts productivity, encourages data-driven decision-making, and enhances the general work experience for employees.

Therefore, digital HRM practices are more than just technological fixes; they are also strategic instruments that may significantly boost an organization's performance. "Big data analytics, digital training, digital performance management, and digital interaction spaces," among other sophisticated digital HRM tools, eventually have a significant impact on employee motivation and overall business performance (Urbancová and Vnoučková 2015; Vetráková and Smerek 2019; Wojčák et al. 2018). To fully realise their potential, however, the production of these solutions need an integrated approach that includes organisational and administrative adjustments in addition to technological advancements. These days, academic study focusses on employee engagement, looking at a variety of factors that influence the phenomena. The study by Susanto et al. (2023) emphasises the significance of "motivation, job satisfaction, and leadership" as factors that influence employee engagement (EE), which in turn leads to increased productivity and performance in businesses. The link between these factors and how they affect work performance are the focus of the study. Additionally, Pincus (2022) offers a more complex model of engagement that takes into account the psychological requirements of workers, such autonomy and acknowledgement. According to the paradigm, engagement is correlated with people's innate motivations, and an organization's ability to meet these requirements is what determines its longevity. According to González and García (2021), inventive workers are also engaged workers, which increases the organization's adaptability to changing circumstances. Furthermore, according to Eliyana et al. (2019), organisational culture and work environment are crucial factors in determining EE. It has also been found that an effective working environment, as well as appropriate leadership styles, highly increases job satisfaction as well as employee performance. Altogether, these studies verify that EE comes as an outcome due to personal variables and is an overarching process where "motivation, organizational architecture, and leadership interlink, all these being highly critical for an organization's long-term success."

The primary objective of this study is to analyze the impact of Digital Human Resource Management (DHRM) practices on organizational performance and employee engagement within the framework of enhanced digitalization. The development of technologies like "big data analytics, digital training, digital performance management, and self-service HR systems" has led to firms redefining their approach to managing and engaging people. Earlier research (Huselid, 2018; Burnett & Lisk, 2021; Al-kharabsheh et al., 2022) has highlighted that such practices increase the motivation levels of employees, promote engagement, and eventually enhance performance results. Taking cue from this, the current

study examines important elements of DHRM i.e., "Digital Communication & Collaboration, Digital Job Support & Self-Service, Digital Learning & Development, and Digital Performance Management" and their contributions to employee experiences.

Research Question:

RQ1: 1. Does Digital HRM influences Employee Engagement?

RQ2: Which Digital HRM dimensions contribute most significantly to employee engagement?

While numerous studies have investigated the influence of digitalization on HRM, few studies have addressed how certain Digital HRM practices digital communication, job support, learning, and performance management interdependently affect employee engagement and organizational performance. Current research tends to emphasize motivation and job satisfaction but remains without combined empirical data proving these digital practices directly impact engagement outcomes. This research plugs that hole by offering a targeted analysis of Digital HRM as a strategic catalyst for engagement and performance.

Review of Literature

It is commonly anticipated that the digitalization of the workplace adds to enhanced involvement through higher productivity, easier interaction with colleagues and managers, more autonomy for workers, and flexible work arrangements (Stofberg et al. 2021; Okkonen et al. 2019). A research on Generation Y workers in Malaysia attests to the fact that young employees are more engaged and satisfied if they are exposed to digital tools that enhance communication and collaboration. This is key in talent retention and minimizing turnover because "young employees demand a contemporary work environment" where they can enjoy flexibility and efficiency (Shahruddin and Daud 2018). Bolli and Pusterla (2022) indicate that digitalization has a more positive effect on women, older workers, and non-executive staff. The positive influence on JS by way of easier interaction with supervisors and peers is stronger among non-executive staff compared to executives.

Employee engagement has been defined differently by scholars across time.

William A. Kahn, who is considered the pioneer of the concept, defined employee engagement as the *"harnessing of organization members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances"* (Kahn, 1990, p. 694).

Schaufeli and Bakker (2004) conceptualized work engagement as *"a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption"* (Schaufeli & Bakker, 2004, p. 295).

Kahn (1990) viewed it as the harnessing of employees' physical, cognitive, and emotional energies during role performance. Later, Schaufeli and Bakker (2004) described it as a positive and fulfilling work-related state of mind reflected in vigor, dedication, and absorption.

Stofberg et al. (2021) found that workplace digitalization and an innovative culture significantly influence employee engagement (EE). Employees' digital literacy moderates the relationship between workplace digitalization and EE. Similarly, the results of the study by Chan et al. indicate that "employees' digital skills significantly increase their engagement in a digitally innovative workplace" (Chan et al. 2021). Offering training and skill building guarantees employees are more equipped with technological changes, resulting in increased satisfaction, motivation (Cetindamar et al. 2021; Nikou et al. 2022) and EE (Cetindamar Kozanoglu and Abedin 2021). Research by McKinsey & Company indicates that people-focused effort has the effect of enhancing collaboration and innovation, thus enhancing employee engagement and company performance as a whole (Bachmann et al. 2021). Managers who effectively communicate with employees and provide them with explanations of the causes, implications, and roles of employees in digitalization activities reduce their stress and resistance towards the initiative (Blštáková et al. 2020).

Digital platforms' importance in the last few years has significantly risen, especially the role they play in facilitating complex HRM processes. Tools like Microsoft Teams, Slack, and Trello play a critical role in managing feedback in real time (Lechermeier et al. 2020). In addition to this, Chalutz Ben-Gal (2019) in her work "Strategic HR Analytics: Shaping the Future of Human Resources" discusses how reports made possible through computer-based analytical tools influence HR decision-making. Additionally, online training and development tools, including Zoom and Google Meet, facilitate managers and trainers to effectively train employees at a distance, allowing them flexibility and access to training content in real-time (Hongsuchon et al. 2022).

On the basis of the above literature the following hypotheses has been framed:

Hypotheses:

Ha_1: Digital Communication & Collaboration has a significant positive impact on Employee Engagement.

Ha_2: Digital Job Support & Self-Service has a significant positive impact on Organization Performance.

Ha_3: Digital Learning & Development has a significant positive impact on Employee Engagement.

Ha_4: Digital Performance Management has a significant positive impact on Employee Engagement.

Research Methodology:

Table No: 1 Materials and Methods

Particulars	Details
Research Method	Structural Equation Modeling (SEM)
Sample Size	200 Employees
Sample Size Justification	A priori analysis using Daniel Soper's calculator recommended a minimum of 150
Effect Size	0.3
Statistical Power Level	0.9
Probability Level (α)	0.05
Variables	23 Observable Variables and 5 Latent Variables
Sampling Method	Non-random purposive sampling
Data Sources	Primary and secondary sources
Analytical Tool	SMART PLS (Partial Least Squares for SEM)

Data Analysis and Interpretation

Table No: 2 Reliability and validity

Construct	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Digital Communication & Collaboration	0.884	0.883	0.605
Digital Job Support & Self-Service	0.875	0.874	0.585
Digital Learning & Development	0.888	0.886	0.610
Digital Performance Management	0.902	0.902	0.648
Employee Engagement	0.787	0.788	0.555

The constructs demonstrate strong internal consistency and reliability. "Cronbach's alpha" values range from 0.787 to 0.902, all exceeding the commonly accepted threshold of 0.70, indicating satisfactory internal reliability as per Hair et al. (2010). "Composite reliability" ranging between 0.788 and 0.902, confirming construct and "Average Variance Extracted (AVE)" values surpass the 0.50 criterion, ranging from 0.555 to 0.648, which confirms adequate convergent validity.

Table No: 3 Discriminant validity

Construct	Digital Communication & Collaboration	Digital Job Support & Self-Service	Digital Learning & Development	Digital Performance Management	Employee Engagement
Digital Communication & Collaboration (DCC)	0.778				
Digital Job Support & Self-Service	0.771	0.765			
Digital Learning & Development	0.729	0.724	0.781		
Digital Performance Management	0.734	0.738	0.773	0.805	
Employee Engagement	0.771	0.730	0.757	0.792	0.745

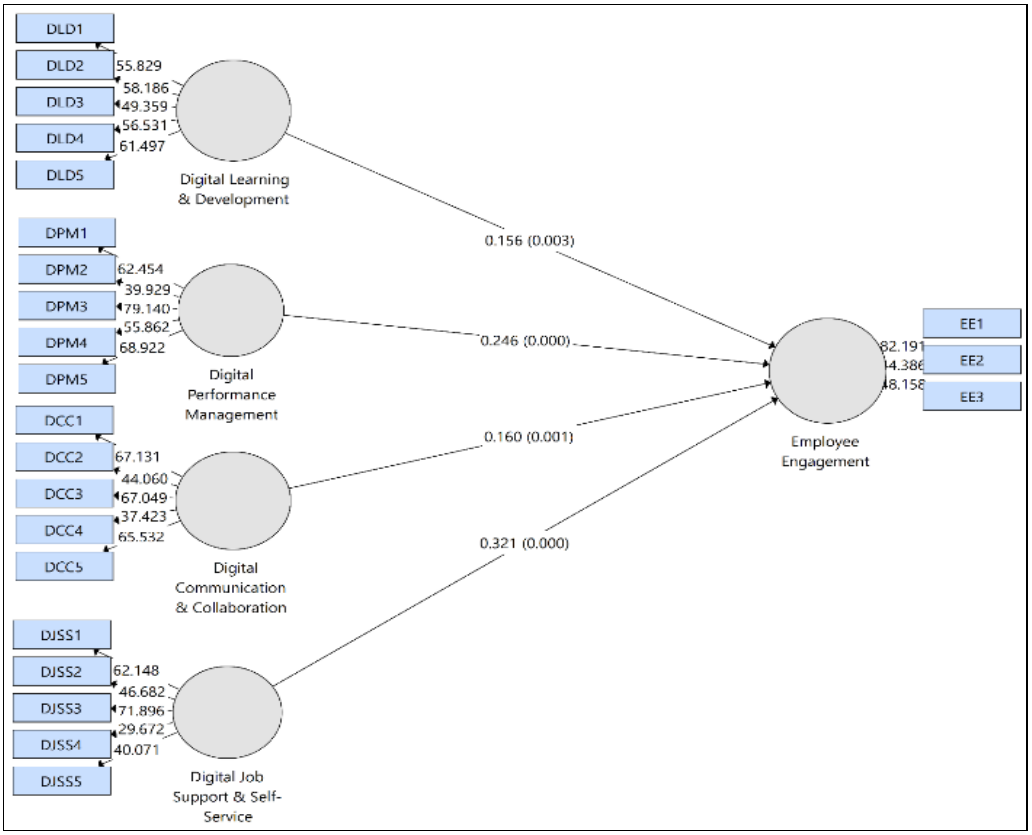
The Fornell-Larcker criterion assessment shows that the square roots of the "Average Variance Extracted (AVE)" for all constructs **Digital Communication & Collaboration (0.778), Digital Job Support & Self-Service (0.765), Digital Learning & Development (0.781), Digital Performance Management (0.805) and Employee Engagement (0.745)** exceed their respective correlations with other constructs. This shows that each concept shares more variation with its individual markers than compared to other factors in the model, indicating appropriate "discriminant validity."

Table No: 4 Collinearity statistics (VIF)

	VIF
DCC1	2.315
DCC2	1.983
DCC3	2.403
DCC4	1.966
DCC5	2.516
DJSS1	2.274
DJSS2	2.128
DJSS3	2.383
DJSS4	1.828
DJSS5	2.058
DLD1	2.081
DLD2	2.312
DLD3	2.160
DLD4	2.601
DLD5	2.622
DPM1	2.408
DPM2	2.101
DPM3	2.757
DPM4	2.490
DPM5	3.032
EE1	1.910
EE2	1.613
EE3	1.575

"Variance Inflation Factor (VIF) values for all indicators range between 1.575 and 3.032, well below the critical threshold of 5, indicating no significant multicollinearity issues among the variables." This confirms the absence of problematic multicollinearity among the latent construct indicators, ensuring stable and reliable parameter estimates within the SEM framework.

Figure No: 1 SEM model



The model in the picture depicts the structural connection between different digital factors and employee involvement. Four factors—Digital Learning & Development, Digital Performance Management, Digital Communication & Collaboration, and Digital Job Support & Self-Service—are plotted as predictors of Employee Engagement

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Table No: 5 Hypothesis testing

Path	Beta Coefficient	T-statistics	P-Value
Digital Communication & Collaboration → Employee Engagement	0.160	3.407	0.001
Digital Job Support & Self-Service → Employee Engagement	0.321	6.245	0.000
Digital Learning & Development → Employee Engagement	0.156	2.999	0.003
Digital Performance Management → Employee Engagement	0.246	4.633	0.000

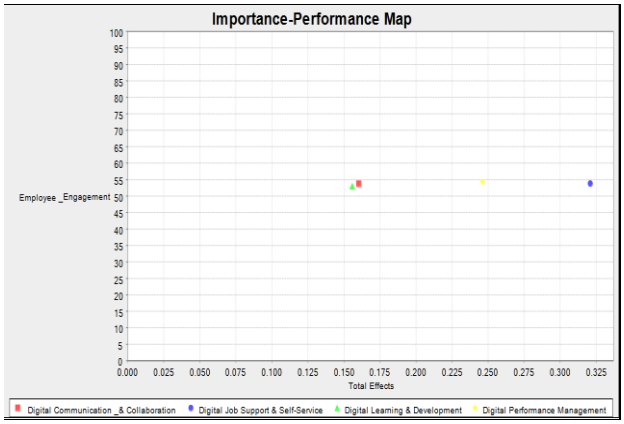
P (value) < level of significance 5% thus H_0 is rejected and H_1 is accepted in all the cases indicating significance impact of Digital Communication & Collaboration, Digital Job Support & Self-Service, Digital Learning & Development, and Digital Performance Management on Employee Engagement.

Table No: 6 Model Explanatory and Predictive Power

Measure	Value
R-squared (R^2)	77%
Q-squared (Q^2)	53.6%

"The model demonstrates strong explanatory power, with an R-squared value of 0.749, indicating that approximately 77% of the variance in impact of Digital HRM on Employee Engagement is explained by the predictors. Additionally, the Q-squared value of 53.6% reflects substantial predictive relevance, showing that the model has good predictive power and is capable of accurately estimating endogenous construct values in out-of-sample contexts.

Figure No: 2 IPMA model



The Importance–Performance Map demonstrates relative importance (total effects) and performance of various digital factors in impacting Employee Engagement. From the variables, Digital Job Support & Self-Service (blue dot) exhibits maximum importance (approximately 0.32) with moderate performance and is a key driver for boosting employee engagement. Digital Performance Management (yellow dot) also exhibits relatively high importance (0.24) but slightly less performance, indicating that gains in this function could bring significant returns in terms of engagement. By contrast, Digital Learning & Development (green triangle) and Digital Communication & Collaboration (red square) exhibit comparatively lower importance (0.15–0.16) and performance, meaning they are ancillary but less impactful factors.

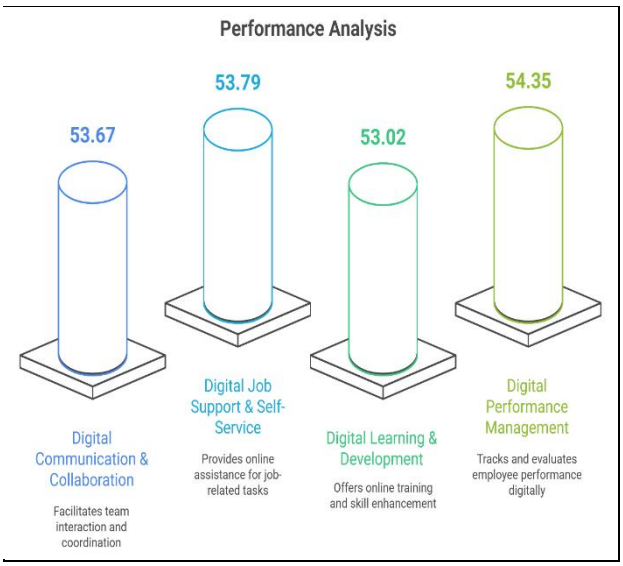
Overall, the map indicates that organizations need to emphasize building Digital Job Support & Self-Service and Digital Performance Management, as these are the most potent areas for driving worker involvement, while sustaining consistent enhancements in learning and communication programs.

Table No: 7 Performance Indicator

Construct	Performance
Digital Communication & Collaboration (DCC)	53.67%
Digital Job Support & Self-Service	53.79%
Digital Learning & Development	53.02%
Digital Performance Management	54.35%

The performance indicators reveal that all four digital constructs—Digital Communication & Collaboration, Digital Job Support & Self-Service, Digital Learning & Development, and Digital Performance Management—are performing at a moderate level, with scores ranging between 53% and 54%. Among them, Digital Performance Management (54.35%) shows the highest performance, indicating that organizations are comparatively stronger in implementing systems that track and manage employee performance. Digital Job Support & Self-Service (53.79%) and Digital Communication & Collaboration (53.67%) also indicate relatively even performance, indicating consistent but improvable practices within these domains. Conversely, Digital Learning & Development (53.02%) has the lowest score, indicating that a greater focus on training and continuous learning opportunities is necessary to fully involve employees. In general, the findings suggest that though performance on all constructs is fairly consistent, specific increases in Digital Learning & Development and Communication & Collaboration would yield additional gains in overall employee engagement and organizational results.

Figure No: 3 Performance Analysis



CONCLUSION

The findings of this study strongly establish that Digital HRM plays an important role in facilitating employee engagement by utilizing practices such as Digital Communication & Collaboration, Digital Job Support & Self-Service, Digital Learning & Development, and Digital Performance Management. The findings establish that each one of these digital practices is strongly and positively correlated with employees' relationship to work, interaction with management, and contribution to organizational goals. This emphasizes that Digital HRM is not only technology but about creating an ecosystem that inspires, facilitates, and empowers employees. To reinforce these outcomes, organizations will have to make it a priority to undertake comprehensive digital HRM strategies. Generally, organizations that execute practices strategically, coupled with an enabling culture and leadership, can ensure enhanced employee engagement and organizational performance in the digital era.

SUGGESTIONS

Organizations need to develop digital collaboration and communication tools to create open, interactive, and connected workplaces.

More focus should be given to online learning and development platforms to facilitate improved continuous skill development and career development opportunities for workers.

Business organizations should strengthen digital performance management platforms by incorporating real-time feedback and rewarding, as this enhances the employees' morale and commitment.

Increasing digital workplace support and self-service portals will provide workers with autonomy, reduce administrative delay, and increase efficiency.

Management needs to implement a holistic digital HRM approach that synchronizes technology with enabling leadership and sound organizational culture in order to leverage maximum employee engagement

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