Journal of Informatics Education and Research
ISSN: 1526-4726
Vol 4 Issue 3 (2024)

Comprehending the Adoption of e-HRM: Application of Technology Acceptance Model

[1]Aanyaa Chaudhary
Manipal University JaipurTAPMI School of BusinessJaipur
Rajasthan
India

[2]Sonal Khandelwal*
Amity University RajasthanAmity Business School Jaipur
RajasthanIndia

Abstract
Technology has transformed every aspect of business and Human resource management is not an exception. As HRIS and e-HRM become common in HR ecosystem it becomes pertinent to comprehend and adapt various Human Resource functions empowered by technology and also how human resource professionals perceive the technology and actually use it. This study aims to investigate the acceptance of technology by Human Resource professionals in India. The study is based on Technology Acceptance Model (TAM). Findings of the study advocate that TAM provides a broad model for illuminating human resource professionals' attitudes as well as behavioral intentions of using technology in HR processes. Our research contributes empirically to the emerging literature on using technology for human resource management.

Keywords: *Human Resource Management, Information Technology, e-HRM, TAM Model, Smart PLS, PLS-SEM*

1. Introduction

IT has profoundly affected Human Resource processes and practices [1]. Use of technology like AI in HRM has transformed the way organizations base their decisions [2] as technology enables hidden insights from data that is close to real-time [3]. The suitability of technology in HR process, and most of the current assessments have not overviewed how much these new structures engageassociation to show up at their HR targets of drawing in, spurring, and holding laborers[1].

The purpose of this study is to investigate the attitude of HR professionals on the use of technology. The contributions of this study include testing the theoretical model and assisting organizations in diagnosing the major reasons why technology implementation is not attaining the desired goal in human resource management. The findings of the study might help organizations identify the primary contributors to technology utilization and enable appropriate corrective steps to be done to improve its usage in HRM.

2. Research Background, Theoretical Framework and HypothesisFormation

2.1 Human Resource Management (HRM) and Technology

Information and communication technology (ICT) has impacted management prominently for the last few years of the twentieth [4]. This includes Artificial Intelligence (AI), Big Data, and machine learning tools [5]. The world's digital revolution has resulted in companies to have embraced technology in the delivery of HRM services [6]. Human resource management (HRM) departments utilizing ICTs is becoming a more prevalent phenomenon known asE-HRM [7].

2.2 Theoretical Background

The research has its theoretical base on Technology Acceptance Model (TAM) created by Davis [8]. TAM has its foundation on two theories namely, Theory of Reasoned Action [9] and Theory of planned behavior[10].The Theory of Reasoned Action model depicts human Behavior in common[11]**.**The motive for using TAM in this research was that TAM ,which was revised in 2003, has been validated, applied, and replicated empirically [12]. Intention to utilize the

technology is an intrinsic factor influenced by numerous extrinsic factors [13].

2.3 Research Hypotheses

Perceived ease of use and perceived usefulness are positively associated [14]. "Perceived Usefulness" & "Perceived Ease of Use" impact a person's goal for utilizing a technology [12].It was observed that the perceived usefulness is a crucial factor that impulses people to use the technology in management systems[15]. "Perceived Ease of Use" has a amplifying consequence on attitude to exercise [16].A person's attitude is impacted by technology, along with performance and effort expectancy, and has been included in various IT adoption models [17]. Perceived usefulness creates a positive attitude and reinforces a positive impression of the technology. It had been observed that the perceived usefulness is a significant factor that urges HR professionals to use the technology and creates behavioral intention of using particular technology [15]. "Perceived Ease of Use" and Perceived Usefulness" influence the feelings towards using technology. Furthermore, it is accepted by past analysts that Attitude towards Using affects Behaviour Intention, which is the most important factor of reasoned action theory [18]. Therefore, Behaviour Intention impacts an individual's activities based on the individual expectation among result and attitude [19]. Based on this background, the researchers developed the following hypotheses and test the theoretical model.

H1: "Perceived ease of use" has positive influence on "perceived usefulness"of technology for HR professionals.
H2: "Perceived ease of use" has positive influence on "attitude" towardsusing technology for HR professionals.
H3: "Perceived usefulness" has significant positive influence on "attitude" towards using technology for HR professionals.
H4: "Perceived usefulness" has positive influence on "behavioural intention" to use technology for HR professionals.
H5: "Attitude" to use technology has positive influence on "behaviouralintention" to use technology for HR professionals.
H6: "Behavioural intention" to use has positive influence on the actualusage by HR professionals.

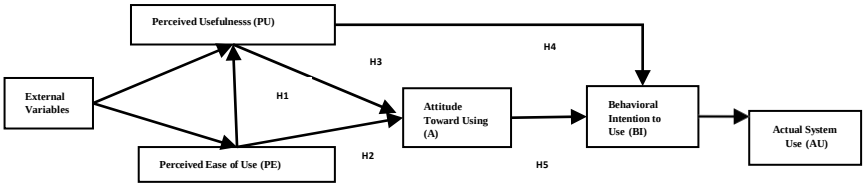

Figure 1: Proposed Structural Model based on Technology Acceptance Model(TAM)

3. Research Methodology

To confirm measurement model and structural model Smart PLS software was used. PLS-SEM was a preferred choice because the sample size was small and PLS-SEM is appropriate when sample size is small with large number of constructs and many items [20, 21].The study was done on HR professionals located in India. Online survey was done by applying non-probability purposive sampling. The questionnaire was designed based on each factor of TAM Model Each sub factor was measured using Likert five-point scale that varies from strongly agree (1) to strongly disagree (5). Out of 150 questionnaires distributed 132 were returned out of which 128 were valid.

As a first step of analysis of model measurement model was assessed followed by structural model assessment in the second step. At the same time reliability and validity of the constructs were assessed Accordingly Hetrotrait-Monotrait (HTMT) ratio was used to analyze correlation and establish discriminant validity which gives mean of correlations of items between constructs compared to their geometric mean of the mean correlations between the items [22].Average variance Extracted (AVE), Cronbach Alpha and composite reliability scores obtained were used in analyzing convergent validity [20], using Smart PLS. The path coefficients of the structural model are estimated and established by testing structural model as path coefficients provided model's predictive ability. R^2 value was also calculated with path

coefficients to assess the structural model.

4. Results and Analysis

The demographic distribution of respondents was found to be as follows: 52.7% respondents i.e., majority were male and about 47.3% respondents were female. 30.9%, of respondents were from the age group 35-45 years and the second group was above the age 45 years with 25.5%; 23.6% of respondents were from the age group 25-35 years and 20% of respondents were from the age group 18- 25 years.

4.1 Analysis of Measurement Model

The measurement of sub-factors was done on Smart PLS-3.0. Validity tests established discriminate along with convergent validity and reliability of the measurement model [23]. According to minimum factor loading of 0.45 should be considered for further analysis [24].Sub-factor loading of more than 0.70 was considered in the study [25]. Thus, sub-factor values less than 0.70 were eliminated in the dimensional model. The acceptable value for composite reliability is 0.7 and the least value of 0.6 for Cronbach Alpha [26].Table1 represents composite reliability along with factor loadings Based on the calculations model can be regarded as reliable. AVE values of the constructs are greater than 0.539 as shown in Table 1.

Table 1: Assessment Results of the measurement model for the constructs

Constructs	Indicator Loadings	Composite Reliability	AVE	Cronbach Alpha
External Variable (EV)				
EV1 EV2 EV3	0.783 0.794 0.838	0.847	0.648	0.729
Perceived Usefulness (PU)				
U2 U3 U4	0.742 0.760 0.698	0.778	0.539	0.601
Perceived Ease of Use (PE)				
E3 E4	0.750 0.857	0.786	0.648	0.603
Attitude Towards Use (A)				
A2 A3 A4	0.764 0.785 0.818	0.832	0.623	0.700
Behavioral Intention (BI)				
BI1 BI2 BI3 BI4	0.765 0.744 0.758 0.750	0.841	0.569	0.748
Actual System Use (ASU)				
AU	1.000	1.00	1.000	1.000

Discriminant Validity is defined as the degree by which particular construct differs from other structural model's constructs [25]. that measure same construct HTMT value of less than 1 establishes discriminant validity [22]. Table 2 displays values of HTMT and establishes discriminant Validity.

Table 2: Discriminant Validity Result (HTMT)

	A	ASU	BI	EV	PE	PU
A						
ASU	0.537					
BI	0.909	0.660				
EV	0.613	0.375	0.739			
PE	0.989	0.613	0.902	0.597		
PU	0.902	0.553	0.696	0.628	.998	

4.2 Structural Model Analysis

Bootstrapping was conducted to describe the consequence level present in the structural model's paths. The study used 5% significance level ($p<0.05$) for conclusion measure statically. The results of structural model are depicted in Table 3.

Table 3: Bootstrap Values , t- values (Using PLS structural Model)

Relationship	Original Sample(O)	Standard Deviation	T Statistics	P Values	Conclusion Supported
PE PU	0.549	0.065	8.495	0.000	Supported
PE ⟶ A	0.504	0.086	5.887	0.000	Supported
PU ⟶ A	0.249	0.082	3.055	0.002	Supported
PU ⟶ BI	0.062	0.079	0.780	0.436	Not Supported
A ⟶ BI	0.704	0.061	11.490	0.000	Supported
BI ⟶ A	0.574	0.070	8.149	0.000	Supported

From above Table 3 we can conclude that all the hypotheses are supported except H4. H1 at $\beta=0.549$ and $p<0.05$, clearly describes that HR professionals' perceived usefulness is enhanced due to perceived ease of use of technology. H2($\beta=0.504$, $p<0.05$) indicates a positive influence of perceived usefulness on attitude to use technology. H3($\beta=0.249$ at $p<0.05$) demonstrating perceived usefulness positively influences attitude to use technology. H4($\beta=0.062$ with $p>0.05$) is not supported thus according to research perceived usefulness does not influence behavioral intention to use technology.H5($\beta=0.704$,$p<0.05$) demonstrates that attitude to use technology by HR professionals positively and directly influences behavioral intention.H5 ($\beta=0.574$,$p<0.05$), displays HR professionals are positively and significantly influenced by behavioral intention to use technology and actual usage of technology. Path coefficient analysis was done to indicate the extent of the relation between independent and dependent variables along with R^2 (Table 4).

Table 4: R^2 Values

	R^2	R^2Adjusted
A	0.474	0.466
ASU	0.329	0.324
BI	0.549	0.542
PE	0.135	0.128
PU	0.434	0.425

Table 5 summarises SRMR and NFI values. In order to avoid the misspecification of the model SRMR value is used as a goodness of fit [22]. SRMR for the present research is found to be 0.087 which makes good fit [27].

Table 5: Model Fit

	Saturated	Estimated
SRMR	0.087	0.113
Chi-Square	292.940	323.153
NFI	0.625	0.586

The Final Path Model is displayed in Figure 2.

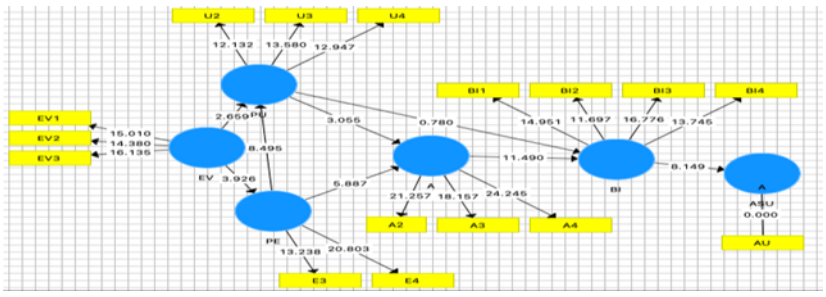

Figure 2: Final Model

5. Managerial Implications, Limitations and Future Research

In the analysis, it was found that the factors like Perceived Ease of Use, Perceived Usefulness and Attitude and Behavior Intention impact the usage of Technology on HR processes. The two predictors of the attitude impacts significantly and positively "Behavioral Intention" to use technology that subsequently results into actual usage and implementation. Technological environment is quintessential in contemporary business including the HR Department, in order to excel, remain competitive and achieve business results. Recent developments in the field of technology [28] make every process of HR from recruitment to selection and on boarding, training, performance appraisal AI and ML based. The study suffers from certain limitations including the HR personals being from different industry, thus leading to challenges in generalization of the study as some industries tend more towards using technology than others. In this paper TAM model has been used for the study, research may be conducted using other theories and models.

6. Conclusion

The study has Technology Acceptance Model as its base. The HR professionals' perspectives towards utilizing technology in HR processes was the focal point of the examination In the analysis part it was found that the factors like Perceived Ease of Use ,Perceived Usefulness, Attitude and Behavior Intention influence the usage of Technology on Human Resource processes. Thus, it can be concluded that technology acceptance cannot be rejected in the times to come where all business processes are getting digitalized and HRM landscape too aligns with it.

References

[1] Stone, D. (2015). The influence of technology on the future of human resource management. *Science Direct*, Pages 216-231.

[2] Aaldering, L. J., & Song, C. H. (2021). Of leaders and laggards-Towards digitalization of the process industries. *Technovation*, *105*, 102211.

[3] Jovanovic, M., Sjödin, D., & Parida, V. (2021). Co-evolution of platform architecture, platform services, and platform governance: Expanding the platform value of industrial digital platforms. *Technovation*, 102218.

[4] Galbraith, J. R. (2014). Organizational design challenges resulting from big data. *Journal of Organization Design*, *3*(1), 2-13.

[5] Haenlein, M., & Kaplan, A. (2019). A brief history of artificial intelligence: On the past, present, and future of artificial intelligence. *California management review*, *61*(4), 5-14.

[6] Rahman, M. H., Mutsuddi, P., Roy, S. K., Al-Amin, M., & Jannat, F. (2020). Performance efficiency evaluation of information and communication technology (ICT) application in human resource management during COVID-19 pandemic: a study on banking industry of Bangladesh. *South Asian Journal of Social Studies and Economics*, *8*(4), 46-56.

[7] Yusliza, M. Y., & Ramayah, T. (2011). Explaining the intention to use electronic HRM among HR professionals: results from a pilot study. *Australian Journal of Basic and Applied Sciences*, *5*(8), 489-497.

[8] Davis, F. (1986). A technology acceptance model for empirically testing new end-user information systems: theory and results.

[9] Ajzen, I., & Fishbein, M. (1980). (1980). Understanding attitudes and predicting social behavior. *Englewood Cliffs, NJ*.

[10] Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In *Action control* (pp. 11-39). Springer, Berlin, Heidelberg.

[11] Rauniar, R. R. (2014). Technology acceptance model (TAM) and social media usage: an empirical study on Facebook. *Journal of Enterprise Information Management*, 6-30.

[12] Venkatesh, V. a. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. 186-204.

[13] Thiruselvi, S., Yusliza, M. Y., Ramayah, T., & Nur Zahitah, O. (2013). Continuance intention usage towards e-HRM. *Proceedings Book of ICEFMO, Handbook on the Economic, Finance and Management Outlooks*, 674-687.

[14] Yang, K. C. (2005). Exploring factors affecting the adoption of mobile commerce in Singapore. *Telematics and informatics*, *22*(3), 257-277.

[15] Ho, S. C., Sun, W. Y., & Wang, Y. M. (2011, August). Investigation of factors influencing the adoption of mobile data services. In *Proceedings of the 13th International Conference on Electronic Commerce* (pp. 1-8).

[16] Park, E., Kim, H., & Ohm, J. Y. (2015). Understanding driver adoption of car navigation systems using the extended technology acceptance model. *Behaviour & Information Technology*, *34*(7), 741-751.

[17] Dwivedi, Y. K., Rana, N. P., Jeyaraj, A., Clement, M., & Williams, M. D. (2019). Re-examining the unified theory of acceptance and use of technology (UTAUT): Towards a revised theoretical model. *Information Systems Frontiers*, *21*(3), 719-734.

[18] Fishbein, M. a. (1975). Belief, Attitude, Intention and Behaviour: An Introduction to Theory and Research.

[19] Liu, C. M.-S. (2005). Beyond concern—a privacy-trust- Behavioural intention model of electronic commerce. 289-304.

[20] Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics.

[21] Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European business review*.

[22] Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science*, *43*(1), 115-135.

[23] Henderson, D., Sheetz, S. D., & Trinkle, B. S. (2012). The determinants of inter-organizational and internal in-house adoption of XBRL: A structural equation model. *International Journal of Accounting Information Systems*, *13*(2), 109-140.

[24] Lee, H. B., & Comrey, A. L. (1979). Distortions in a commonly used factor analytic procedure. *Multivariate Behavioral Research*, *14*(3), 301-321.

[25] Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic management journal*, *20*(2), 195-204.

[26] Gefen, D., Straub, D., & Boudreau, M. C. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the association for information systems*, *4*(1), 7.

[27] Hu, L.T., & Bentler, P. M.(1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation modeling: a multidisciplinary journal*, *6*(1),1- 55.

[28] Sharma, S., Raja, L., Bhatnagar, V., Sharma, D., Bhagirath, S. N., & Poonia, R. C. (2022). Hybrid HOG-SVM encrypted face detection and recognition model. *Journal of Discrete Mathematical Sciences and Cryptography*, 1-14.