





Impact of human resource practice on work engagement and turnover intention in information technology companies

**Authors:**

Harshal A. Salunkhe¹ 
 Deshana Jain² 
 Punamkumar Hinge³ 
 Mohit Boralkar² 

Affiliations:

¹School of Business, Dr. Vishwanath Karad Maharashtra Institute of Technology, World Peace University, Pune, India

²School of Business and Management, Christ University, Bangalore, India

³Faculty of Business Management and Commerce, JSPM University, Pune, India

Corresponding author:

Harshal Salunkhe,
 harshal.salunkhe@gmail.com

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Orientation: The information technology (IT) sector, a global economic driver, faces high employee turnover because of low work engagement. This study examines the relationship between human resource management (HRM) practices and their impact on work engagement and turnover intention (TI) in IT companies.

Research purpose: The primary purpose of this research article is to investigate how HRM practices influence employee work engagement and TI in the IT sector.

Motivation for the study: This study is motivated by the need to address this critical issue by exploring the role of HRM practices in shaping employee engagement and TI.

Research approach/design and method: The research data came from 10 IT organisations in Pune IT parks. Non-probability convenience sampling was used to collect data. Data were analysed using Structural Equation Modelling (SEM), Statistical Package for Social Science (SPSS) and Moment Structure Analysis to evaluate the hypotheses.

Main findings: The study found that HRM practices such as effective communication (EC), training satisfaction (TS), performance appraisal satisfaction (PAS), pay satisfaction (PS) and opportunities for development (OFD) positively influence work engagement among IT employees. Addressing these HRM practices can enhance employee retention and engagement in the IT sector.

Practical/managerial implications: Implementing these strategies can lead to a more committed and productive workforce, improving overall organisational performance and retention.

Contribution/value-add: This research offers actionable recommendations for IT companies to improve employee retention and engagement, filling a gap in existing literature by focussing exclusively on the unique challenges and dynamics of the IT industry.

Keywords: structural equation modelling; turnover intention; training satisfaction; performance appraisal satisfaction; work engagement.

Introduction

In recent years, the information technology (IT) sector has emerged as a dominant global industry (Noopur & Burman, 2021). India is anticipated to lead the world with its IT and Information Technology-enabled Services (ITeS) sector in the next 5 years (by 2025), with annual revenue expected to reach around \$300–350 billion (Patro, 2024). The Indian IT sector is dynamic and rapidly growing in income and international scope. Despite this growth, the Indian IT sector faces a persistent challenge: high employee turnover. Voluntary turnover rates in the ITeS and IT sectors were recorded at 15.1% and 14.6%, respectively, in 2018 (Statista 2018).

Employee turnover, defined as the percentage of employees who leave or intend to leave their organisation, is often linked to low levels of work engagement (Memon et al., 2021). Work engagement, a central focus of this study, is influenced by various human resource management (HRM) practices such as performance appraisal satisfaction (PAS), effective communication (EC), pay satisfaction (PS), training satisfaction (TS) and opportunities for development (OFD) (Shuck, Twyford, Reio, & Shuck, 2014). The primary result of low work engagement is increased turnover intention (TI). The absence of robust work engagement strategies is a significant driver of TI (Nel & Linde, 2018). The study specifically aims to analyse the relationship between HRM practices and TI, explore the mediating role of work engagement and identify the key causes of high voluntary

turnover rates. By examining these dynamics, the research provides valuable insights to enhance employee retention and engagement, addressing a critical challenge faced by IT companies.

Objectives of the study

1. Dissect the relationship between HRM practices and TI, both directly and indirectly, through work engagement.
2. Examine how work engagement mediates the relationship between HRM practices and employee TI.
3. Analyse the reasons behind the high voluntary turnover rates in the ITeS and IT industries, considering the need for skilled employees and the focus on skill development over other job benefits.

By focussing specifically on HRM practices within the IT industry, this study distinguishes itself from previous research and contributes to existing literature.

Literature review

Haridas et al. (2022) enunciated that work engagement was a fundamental intervening variable with the Job Demand-Resource (JD-R) theory (Bakker et al., 2023). The JD-R Theory is a substitute for existing frameworks of employee well-being. It provides a convenient way to summarise and examine research findings on the antecedents of work engagement, with a focus on human resource practices (Park et al., 2019). Based on JD-R Theory, this research discusses the potential relationship between employees' intention to leave their current position and their satisfaction with human resources practices.

The JD-R model (Bakker et al., 2023) has been used extensively to give academic backing to research on predicting job burnout, how employees stick around, how engaged they are, how well they do, how often they leave, and across all kinds of jobs (Memon et al., 2016). It has been confirmed that the JD-R model has become a theoretical construct because of its practicality and extensive use in the scientific literature (Bakker & Demerouti, 2007). The performance feedback invigorates personal growth and development, and dwindles job demands (Schaufeli & Taris, 2014). The JD-R theory is considered the 'gold standard in examining the associations between work characteristics and worker well-being in general (and burnout and engagement in particular)' (Taris et al., 2017). According to JD-R theory, employees are motivated to manage their workloads by financial incentives like extensive job resources, which increases work engagement (Memon et al., 2021).

Effective communication and work engagement

Communication is paramount for the management of human resources in an organisation. Managers devote over 75% of their working hours to any kind of communication mode (Hassard & Morris, 2021). Improving workplace communication can create meaningful, genuine

employee engagement and strong working relationships that strengthen the company's foundation. However, sometimes, businesses confuse information dissemination with communication (Atkins, 2023). In reality, genuine employee communication is two-way. It involves personal interactions, sharing the bigger picture and feedback. Engaged employees are more productive, loyal, less prone to errors and produce better work – all of which positively impact customer satisfaction (Atkins, 2023). Despite these insights, there remains a gap in understanding the specific strategies and tools that effectively bridge the gap between information dissemination and genuine communication. Additionally, linking these findings to the current study requires exploring how different communication methods influence employee engagement and productivity in various organisational contexts. A thorough analysis and synthesis of existing literature are therefore needed to identify best practices and potential areas for further research.

Training satisfaction

Training is the meticulous revolution of information, experience and abilities an employee needs to successfully carry out a specific profession (Ajayi et al., 2024). Training satisfaction is more effectively achieved through planned and formal training activities, rather than incidental and informal ones (König et al., 2022). Previous research has indicated that the effectiveness of employee outcomes, including user satisfaction, commitment to the organisation, job satisfaction and burnout, is contingent upon employee satisfaction with on-site training (Huang & Su, 2016). Effective training plays a pivotal role in equipping employees with the necessary skills and confidence to fully undertake their responsibilities, enhancing both their preparedness and overall job performance (Noe et al., 2022). Employee satisfaction and engagement can lead to additional behaviours in the workplace (Alfes et al., 2013a). Satisfied employees can generate high levels of motivation, engage in additional behaviours and work together as a team to provide the highest level of service to society (Rahman et al., 2021). There is a lack of detail on how TS and its impact on employee outcomes are measured. The current study could address this by proposing or utilising specific metrics and evaluation methods to quantify training effectiveness and its correlation with employee performance.

Performance appraisal satisfaction (performance management)

Performance appraisal is the process of assessing an employee's performance against an organisation's objectives and standards (Cooke, Cooper, Bartram, Wang, & Mei, 2016). The foremost issue is the employee's reaction towards the performance appraisal system. The findings suggest that employees' satisfaction with the person conducting their appraisal and with their previous performance evaluations impacts how satisfied they are with the feedback they receive (Alfes et al., 2013b). This satisfaction with feedback is, in turn,

positively associated with job satisfaction and organisational commitment, while it is negatively associated with intentions to leave the organisation (Ismail & Gali, 2016). The performance appraisal system evaluates the individual's organisational performance appraisal system with satisfaction, which cites the intensity of the employees to discern the performance ratings (Memon et al., 2020). The performance appraisal cycle with dissatisfaction can affect pessimistic attitudes and perceptiveness, leading to increased voluntary turnover (Memon et al., 2021). It systematically analyses each employee's performance using various methods, such as 360-degree feedback, performance management by objectives (Van De Voorde, Veld, & Van Veldhoven, 2016). Performance appraisal involves review intervals, helpful feedback, rating scales and evaluation processes that help define performance objectives and challenge areas (Kaur, 2023). Despite the existing research on performance appraisal systems, there needs to be greater focus on the long-term impact of PAS on employee retention and overall organisational performance (Baldwin, Boomer, & Rubin, 2013). Additionally, the linkage between specific appraisal methods (such as 360-degree feedback) and employee satisfaction still needs to be explored.

Salary satisfaction (remuneration)

Salary satisfaction (remuneration), a key concept in the Lawler model (1971), is the difference between an employee's actual and expected income. This model underscores the importance of two factors in determining PS:

1. Actual income received by an employee (i)
2. Income expected to be received by an employee (ii)

When factor (i) is equal to factor (ii), the employee feels satisfied; when factor (ii) is more than factor (i), the employee feels dissatisfied, and when factor (i) is more significant than factor (ii), the employee will feel guiltiness, discomfort and a sense of unfairness. Pay satisfaction remains a critical factor in enhancing work engagement, as it motivates employees to perform better and remain committed to their roles (Olafsen et al., 2024). Salary satisfaction uniquely increases employee engagement in that it increases employee engagement in the organisation in a way that maximises the effect of employee appreciation on employee engagement (Mensema et al., 2021). Most studies (including those by Olafsen et al., 2024) provide a generalised view of salary satisfaction. Future research could explore how this relationship varies across industries, job roles, and cultural contexts. More exploration of how salary satisfaction (remuneration) affects employee engagement needs to be done over time. Longitudinal studies could provide deeper insights into the sustainability of PS's impact on work engagement.

Opportunities for development

Evidence shows that acquiring knowledge and enriching the provided services were necessary for software development to make offshore locations viable. Relocating

or outsourcing only simple coding tasks to India or Central and Eastern European countries could have been more sustainable. Particularly in India, companies faced the problem of high personnel turnover because skilled and ambitious IT workers judged their jobs according to the learning and advancement opportunities they provided (Meil & Salzman, 2017). Opportunities for development are considered a job resource because they help accelerate employees' personal development. (Shantz et al., 2016). Career growth is good for knowledge workers' engagement with the organisation (Sypniewska, Baran, & Klos, 2023). It helps them reach their career goals and develop their skills in a way that makes them more likely to stay on the job. However, how much of this is really because of reward systems? Knowledge workers might see the growth they experience from taking assessments as a sign that the organisation trusts them (Ahteela & Vanhala, 2018), which could make them more likely to view these assessments positively rather than blame them for any issues (Jia-jun & Hua-ming, 2022).

Work engagement

'Work engagement is a multidimensional construct (Siyari, 2018). Eldor (2016) defined employee engagement as the employment and expression of people's whole selves (physical, cognitive and emotional) in their work roles. We use the notion of work engagement, defined as a positive, fulfilling, job-related state of mind characterised by three dimensions: dedication, absorption and vigour (Joo & Lee, 2017). A high level of work engagement reduces voluntary turnover (Diko & Saxena, 2023). Work engagement leads to personally fulfilling work-related experiences, good health and a state of mind positively correlated with progressive work efforts (Memon et al., 2021). Despite these observations, literature gaps persist. Only some studies have examined how corporate cultures and leadership styles affect work engagement (J., 2014). More longitudinal research is needed to understand how work engagement affects people and businesses over time. Work engagement and technical improvements, especially in remote work and digital transformation, need further study. To apply these findings to the current study, we must investigate how work engagement influences organisational performance and employee well-being. A deeper review and integration of current studies can help organisations create engagement tactics. This involves assessing how leadership, culture, job design and support systems create an engaging workplace.

Hypothesis formation

The primary aim of this survey is to examine the impact of human resource practices on employee job engagement and their intention to remain with the organisation. The following hypotheses have been formulated for further analysis:

- H1:** Effective communication has positive influence on work engagement.
- H2:** Training satisfaction has positive influence on work engagement.
- H3:** The PAS has positive influence on work engagement.
- H4:** Salary satisfaction (remuneration) has positive influence on work engagement.
- H5:** Opportunities for development have positive influence on work engagement.
- H6:** Work engagement has a negative influence on TI.

The conceptual proposed research model of TI is shown in Figure 1.

As shown in Figure 1, only five of the most commonly used human resource practices (EC, TS, PAS, salary satisfaction (remuneration) and OFD) are studied because these practices directly impact on employees engagement in work which results into TI of an employee. There is, however, scope to study recruitment, selection and employee relation practices. The findings of this study may differ from the current ones. The study did not demonstrate a positive relationship between satisfaction with performance appraisals and TI (Ndayiziveyi, Coetzee, & Schreuder, 2018). Thus, there is scope for further research on this subject. One of the significant challenges in the IT industry is the unpredictable demand for technical expertise. The study is conducted to assess the human resources practices in IT companies. The study helps to know the preferences and problems of the employees. Employee work engagement is essential to increase productivity. If work engagement rises, it will increase employee commitment, and furthermore, it will increase productivity.

Materials and methods

Sampling and data collection

The study is based on the IT sector of India, which has been estimated to grow twofold by the end of 2025. In 2020, the IT industry contributed 8% of India's gross domestic product (GDP) ("India: Employment in IT-BPM Industry 2020," 2020). Software exports by the associated IT businesses to the Software Technology Park of India (STPI) were reported to have reached ₹ 1.2 lakh crore in the first quarter of financial year (FY) 2022 (IBEF, 2022).

This study has been conducted in the major IT hub in Pune. The total population (employee headcount for the IT sector in Pune) was approximately 8 lakh (Phadnis, 2023). A questionnaire was addressed to a sample of 410 employees from 10 selected companies, which represents a significant portion of the employee count in Pune's IT hub (80% of employees). These companies were chosen based on their size, diversity and industry influence. Non-probability convenience sampling was used to collect data. The questionnaire was then given to employees of these selected companies. It was significant to explain the drive and intention of the research study to the employees; therefore,

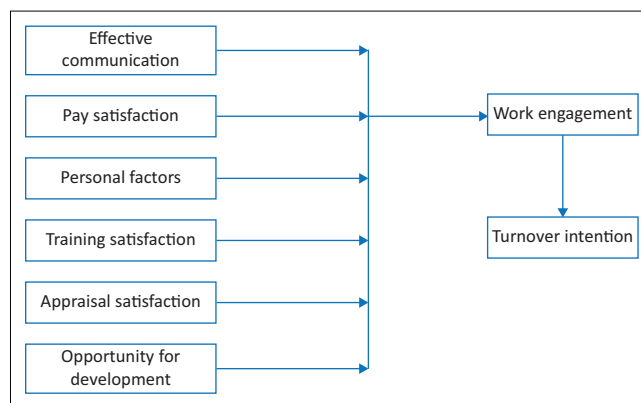


FIGURE 1: Conceptual proposed research model.

questionnaire filling was done in one sitting so that respondents would know the objectives of the research and its intention. The information gathered was utilised to investigate how HRM practices affect workplace engagement and why TI is rising, particularly among IT industry employees.

Measures

Human resource management practices were measured with the help of an 8-item scale that assesses an employee's perception regarding seven high-performance attributes: TS, TI, work engagement, EC, PAS, pay happiness and development opportunities. A 5-item scale was adopted to measure TI. The TI is the extent to which the employees decide to leave their present job. An example statement would be, 'I am debating switching to a different company from my present one'. The instrument's build reliability is 0.86 (Jung & Yoon, 2013). The 17-item Utrecht Work Engagement Scale (UWES), which is a good determinant of work engagement and has excellent psychometric qualities, was condensed into a 9-item scale to measure work engagement (Schaufeli et al., 2006). Utrecht's work engagement scale measures strength, commitment and subsumption as three aspects of work engagement. A good example is, 'When I woke up this morning, I felt like I wanted to go to work'. The reliability value was 0.90 (Elder et al., 2016).

A 4-item scale was adopted to measure TS. Training satisfaction refers to 'how employees feel about the facet of the job TS they receive' (Schmidt, 2007). A sample item consists of 'Overall, I am satisfied with the amount of training I receive on the job'. The scale's reliability is 0.89 (Schmidt, 2007).

The 8-item scale gauges general satisfaction with employee performance appraisals. Understanding the criteria used to assess my performance is an example item. This instrument's build reliability is 0.71 (Miller, 2001). The salary satisfaction questionnaire's 6-item sub-scale was modified to measure salary satisfaction (Heneman & Schwab, 1985). Salary satisfaction is the 'overall positive or negative effect that employees have towards their pay' (Miceli & Lane, 1991).

A good example is, I am content with my existing pay as an example item. The salary satisfaction questionnaire's composite reliability was reported to be 0.90 (Khokhar & Ziaur-Rehman, 2014).

Effective communication is measured on a scale of seven. An EC questionnaire was used to evaluate internal communication with employee satisfaction. A sample item includes 'Communication between senior management and staff is effective' (Tkalac Verčič et al., 2021). Opportunities for development were measured on a scale of 5 (Mulani, 2024). Opportunities for development signify 'allowing the employees to learn new skills; doing work they may not have done before'. A sample item includes 'There are opportunities for me to progress in my job' (Mulani, 2024).

Results

Demographics analysis

The demographic analysis of the dataset provides a comprehensive overview of the participants' characteristics across various categories, which is essential for understanding the population being studied in this research. According to Table 1, the sample consists of 410 individuals, with a near-equal gender distribution, comprising 50.7% males and 49.3% females, reflecting a balanced gender representation. Age distribution indicates that the majority of the respondents are young adults, with 39.5% aged between 20 and 30 years, followed by 23.2% in the 31–40 years range. Only 8.3% of the participants are over 50 years, suggesting a predominantly younger workforce.

Employment status reveals that 50.5% of the participants hold permanent positions, while 24.6% are interns and 24.1% are on contract, highlighting a significant portion of non-permanent employees, which could influence job stability and career progression in the studied population. Educational qualifications are split between undergraduates (46.1%) and postgraduates (53.2%), indicating a highly educated group with a slight majority holding advanced degrees.

Job classification shows diversity in roles, with Software Developers (19.5%) and Web Developers (18.5%) making up a significant portion of the sample, followed by Data Scientists (14.1%) and IT Managers (13.7%). The experience level of participants varies, with 32.4% having 1–2 years of experience, while a smaller segment (16.3%) has over 10 years, indicating a mix of both early-career professionals and seasoned experts.

These demographic insights are crucial for contextualising the findings of the research, as they provide a snapshot of the population's composition, which can influence various outcomes, including attitudes, behaviours and career trajectories within the technology sector. Understanding these demographics enables a more nuanced interpretation

TABLE 1: Demographics analysis ($N = 410$).

Sl no.	Classification	Category	Frequency	%
1	Gender	Male	208	50.7
		Female	202	49.3
2	Age (years)	Less than 20	72	17.6
		20–30	162	39.5
		31–40	95	23.2
		41–50	47	11.5
		More than 50	34	8.3
3	Employment status	Permanent	207	50.5
		Contract	99	24.1
		Intern	101	24.6
4	Qualifications	Undergraduate	189	46.1
		Post graduate	218	53.2
5	Job classification	Info security analyst	45	11.0
		Software developer	80	19.5
		Web developer	76	18.5
		Data scientist	58	14.1
		IT manager	56	13.7
		Database administrator	43	10.5
		Telecommunication	45	11.0
6	Experience (years)	Others	7	1.7
		1–2	133	32.4
		3–4	89	21.7
		5–6	64	15.5
		7–8	30	7.3
		9–10	26	6.3
	More than 10	67	16.3	

Sl no., serial number.

of the data, ensuring that the results are appropriately tailored to the specific characteristics of the sample.

Psychometric analysis

The psychometric analysis of a measure refers to how well it correlates with other measures of the same construct. According to Table 2, the indicators' outer loading and average variance extracted (AVE) can be used to evaluate it. More significant outside loading indicates that the hand accurately represents the construct. Generally, the indicator's outer loading should exceed 0.708, or 50% (0.50) AVE. Despite this, low-loading indicators (0.4–0.7) can persist if other indicators have 0.5 AVE or above.

The results of psychometric analysis specify that all the indicators have satisfactory analysis. The psychometric analysis of the model was supported by the AVE scores for vigour (0.528), dedication (0.508), AB (0.507), TI (0.639), TS (0.511), PAS (0.050), salary satisfaction (0.518), OFD (0.576) and EC (0.509).

Discriminant analysis

The level of discrimination between a construct and other constructs, or the experience criteria, is known as discriminant analysis. The discriminant analysis looks at how well the correlations between different traits match the correlations within each trait. If the Kaiser-Meyer-Olkin (KMO) score is higher than 0.5 and Barlett's test has a significance value lower than 0.05, that means there's a lot of correlation in the

TABLE 2: Psychometric properties of measures.

Constructs	Items	Mean	SD	Factor Loadings	Cronbach's Alpha	AVE	CR
Vigour	VD1	0.72	2.62	1.15	0.53	0.77	0.77
	VD2	0.73	2.62	1.01	-	-	-
	VD3	0.73	2.87	0.97	-	-	-
Dedication	DD1	0.64	2.92	1.10	0.51	0.75	0.83
	DD2	0.82	2.82	1.12	-	-	-
	DD3	0.67	2.88	1.17	-	-	-
Absorption	AB1	0.72	2.60	1.10	0.51	0.75	0.73
	AB2	0.82	2.70	1.01	-	-	-
	AB3	0.57	2.83	1.01	-	-	-
Turnover intention (TI)	TI1	0.73	2.50	1.16	0.64	0.89	0.90
	TI2	0.86	2.59	1.07	-	-	-
	TI3	0.81	2.59	1.06	-	-	-
	TI4	0.84	2.62	1.12	-	-	-
	TI5	0.75	2.63	1.17	-	-	-
Training satisfaction (TS)	TS1	0.74	2.85	1.14	0.51	0.81	0.85
	TS2	0.72	2.86	1.12	-	-	-
	TS3	0.69	2.92	1.12	-	-	-
	TS4	0.70	2.92	1.19	-	-	-
Performance appraisal satisfaction (PAS)	PAS1	0.73	2.72	1.24	0.50	0.88	0.92
	PAS2	0.74	2.89	1.15	-	-	-
	PAS3	0.71	2.88	1.12	-	-	-
	PAS4	0.70	2.99	1.11	-	-	-
	PAS5	0.72	2.91	1.19	-	-	-
	PAS6	0.65	2.93	1.18	-	-	-
	PAS7	0.71	2.94	1.16	-	-	-
	PAS8	0.69	2.92	1.19	-	-	-
Pay satisfaction (PS)	PS1	0.69	2.76	1.10	0.52	0.87	0.92
	PS2	0.74	2.81	1.11	-	-	-
	PS3	0.75	2.69	1.12	-	-	-
	PS4	0.73	2.63	1.18	-	-	-
	PS5	0.72	2.71	1.09	-	-	-
	PS6	0.68	2.71	1.10	-	-	-
Opportunity for development (OFD)	OFD1	0.75	2.75	1.24	0.58	0.80	0.86
	OFD2	0.80	2.79	1.12	-	-	-
	OFD3	0.73	2.92	1.06	-	-	-
Effective communication (EC)	EC1	0.72	2.67	1.27	0.51	0.76	0.88
	EC2	0.70	2.70	1.14	-	-	-
	EC3	0.72	2.65	1.21	-	-	-

SD, standard deviation; AVE, average variance extracted; CR, composite reliability.

data. If the value is between 0 and 1, KMO returns that value. The KMO number should be between 0.8 and 1, according to the rule of thumb for interpreting statistics, to suggest that the sampling was suitable. The sample may not be appropriate, and corrective action should be taken if the KMO value is less than 0.6.

As shown in Table 3, all the KMO values for the data are higher than 0.5: VG (0.700), DD (0.722), AB (0.588), TI (0.821), TS (0.770), PAS (0.910), PS (0.891), OFD (0.721) and EC (0.722). These values indicate a strong correlation in the data. To effectively attain the discriminant validity criteria, the construct AVE's square root must be greater than each structure in the model. Vigour, DD, AB, TI, TS, PAS, Salary Satisfaction, OFD and EC all exhibit strong discriminant validity. The non-diagonal values represent the squared correlations of cross constructs, while the diagonal values in parentheses indicate the square roots of the Average Variance Extracted (AVE) for the individual

constructs. The observed correlations among all constructs suggest that the convergent validity of these constructs is acceptable.

Confirmatory factor analysis

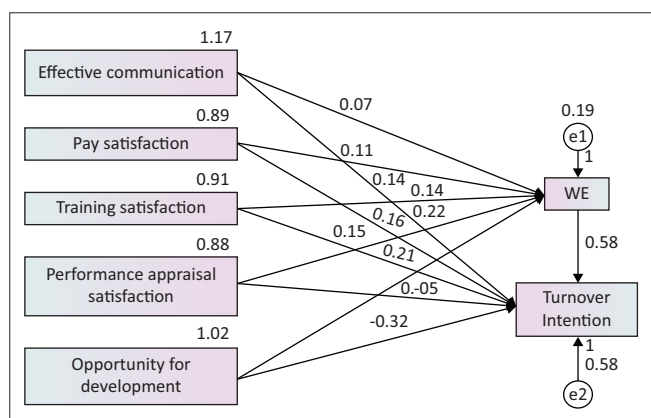
The purpose of this study is to assess the higher-order construct. When the model showed an essential correlation between the independent variables, which means that these two independent factors contribute to deciding the route of independent variables, all the dimensions of work engagement were initially examined for collinearity problems.

The covariance analysis aims to make the respondents' responses and the range of responses easier to understand. The computed covariance of the scale has a maximum value of around 5, meaning that using data for correlation analysis is not advised. However, when the covariance is approximately 0, correlation research is recommended.

TABLE 3: Discriminant validity.

Constructs	KMO	VG	DD	AB	TI	TS	PAS	PS	OFD	EC
VG	0.700	0.73	-	-	-	-	-	-	-	-
DD	0.722	0.638	0.71	-	-	-	-	-	-	-
AB	0.588	0.615	0.637	0.71	-	-	-	-	-	-
TI	0.821	0.440	0.337	0.591	0.80	-	-	-	-	-
TS	0.770	0.569	0.655	0.642	0.430	0.72	-	-	-	-
PAS	0.910	0.597	0.701	0.670	0.408	0.780	0.71	-	-	-
PS	0.891	0.517	0.617	0.657	0.475	0.690	0.713	0.72	-	-
OFD	0.721	0.595	0.677	0.609	0.272	0.696	0.722	0.616	0.76	-
EC	0.722	0.514	0.591	0.649	0.452	0.637	0.698	0.810	0.640	0.71

VG, vigour; TI, turnover intention; TS, training satisfaction; PAS, performance appraisal satisfaction; PS, pay satisfaction; OFD, opportunity for development; EC, effective communication; DD, Dedication; AB, absorption; KMO, Kaiser-Meyer-Olkin.



Note: e = 0.19 which is close to zero, showing that the data fits the model accurately. WE, work engagement.

FIGURE 2: Structural equation modelling.

TABLE 4: Structural equation model results.

Attributes	Estimate	SE	CR	p	Label
WE <--- EC	0.07	0.02	3.42	***	-
WE <--- PS	0.11	0.02	4.85	***	-
WE <--- TS	0.14	0.02	6.23	***	-
WE <--- PAS	0.22	0.02	9.41	***	-
WE <--- OFD	0.20	0.02	9.47	***	-
TI <--- PAS	-0.05	0.04	-1.11	0.267	Supported
TI <--- OFD	-0.32	0.04	-7.80	***	-
TI <--- TS	0.15	0.04	3.59	***	-
TI <--- PS	0.16	0.04	3.89	***	-
TI <--- EC	0.14	0.03	3.95	***	-
TI <--- WE	0.58	0.08	6.8	***	-

EC, effective communication; PS, pay satisfaction; TS, training satisfaction; PAS, performance appraisal satisfaction; OFD, opportunity for development; WE, work engagement; SE, standard error; CR, composite reliability.

Structural equation analysis

According to Figure 2, the structural equation analysis claims to test the research hypotheses using analysis of moment structures (AMOS), and then the overall model is justifiable. The paths' coefficients are as follows: 0.069, 0.112, 0.143, 0.219, 0.205, -0.049, -0.321, 0.148, 0.159, 0.139, 0.579. The coefficients of H1, H2, H3, H4, H5, H7, H8, H9, H10 and H11 paths are 0.069, 0.112, 0.143, 0.219, 0.205, -0.321, 0.148, 0.159, 0.139 and 0.579, and are significant. The coefficient of the H6 path is -0.049, which is not significant. The residuary of the covariance is centred near 0 or small. Therefore, the model demonstrates the result that assists H1, H2, H3, H4, H5, H7, H8, H9, H10, H11 and do not assist H3.

According to Table 4 the coefficients of H1, H2, H3, H4, H5, H7, H8, H9, H10 and H11 paths are 0.069, 0.112, 0.143, 0.219, 0.205, -0.321, 0.148, 0.159, 0.139 and 0.579, and are significant. The coefficient of the H6 path is -0.049, which is not substantial. Work engagement has a negative impact on TI. There is no clear link between satisfaction with performance appraisals and TI.

Ethical considerations

All procedures performed in this study involving human participants were conducted ethically according to the ethical standards of the Christ University, India and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study. The research involving the use of human data/samples was approved by the University Research Ethics Committee of Christ University, India (Approval No CU/2023/04/1054). Informed consent for the use of their data/samples was obtained from all participants.

Discussion

Outline of the results

The study's findings confirm the significant impact of HRM practices on work engagement and TI among IT employees.

Hypothesis H1, which posits that EC positively influences work engagement, was supported, with a path coefficient of 0.069 ($p < 0.001$), underscoring the importance of open, two-way communication in fostering employee engagement. Hypothesis H2, suggesting that TS enhances work engagement, was also supported with a path coefficient of 0.143 ($p < 0.001$), indicating that well-structured training programmes can significantly boost employee preparedness and engagement. H2 shows that when employees are happy with their training, their work engagement is dramatically impacted. Training is an important tool for improving the work engagement of employees. For example, if you give your employees the proper training, they will be better able to handle the job. Therefore, if your employees think they can do their job and what is expected of them, their engagement level will increase (Diko & Saxena, 2023). Therefore, it is logical to conclude that training improves work engagement. The analysis further validated H3, which predicted a positive relationship between PAS and work engagement, with a path coefficient of 0.219 ($p < 0.001$). This highlights the critical role

of fair and transparent performance evaluations in maintaining high levels of employee engagement. The findings of this study emphasise the significance of general performance assessment and performance assessment satisfaction (Ismail & Gali, 2016) in achieving desired work behaviour outcomes and exceptionally high work engagement levels.

Hypothesis 4, which examined the link between salary satisfaction (remuneration) and work engagement, was supported with a path coefficient of 0.112 ($p < 0.001$), emphasising the need for competitive and performance-based compensation structures. The pay package, ideally tied to performance rather than seniority, should be clearly communicated to all employees (Singhal, D., & Salunkhe, H., 2024). A performance-based compensation plan not only facilitates the recruitment and retention of top talent, but also increases the likelihood of retaining experienced and high-performing employees (Aguinis et al., 2009). Salary satisfaction significantly impacts employee engagement in IT companies, underlining the importance of fair compensation in employee motivation.

Similarly, H5, asserting that OFD positively affects work engagement, was confirmed with a path coefficient of 0.205 ($p < 0.001$), pointing to the importance of career growth opportunities in retaining skilled IT professionals. Career growth increases organisational engagement among knowledge workers. Job engagement is enhanced through career goal advancement and the development of career abilities within the context of career growth. Career growth increases affective commitment (Boon & Kalshoven, 2014) Affective commitment increases work engagement (Jia-jun & Hua-ming, 2022). In addition, this study's results align with previous studies' findings, highlighting the high opportunity for development (OFD) and the increase in employees' work engagement in the IT companies in India. Lastly, H6, which proposed that work engagement negatively influences TI, was supported with a significant negative path coefficient of -0.321 ($p < 0.001$), demonstrating that higher levels of work engagement are associated with lower TIs. This means that having a high level of work engagement makes it less likely that employees will leave. This finding aligns with the fact that work engagement aspects (i.e. intensity, commitment and absorption) correlate significantly with turnover intent (Takawira et al., 2014). These findings suggest that by enhancing HRM practices, IT companies can effectively improve employee engagement and reduce turnover rates, thereby fostering a more committed and productive workforce.

Theoretical implications

Different studies have been conducted to analyse the other variables influencing an employee's work engagement and job-leaving intention. Still, they have yet to focus on a particular sector. An employee working in a construction company would give more importance to pay than opportunities for self-development because there is not much scope for development with time; on the other hand, in an analytics firm, where with time employers look for more

skilled employees, employees would give more preference to OFD and training. The five most commonly used human resource practices are EC, TS, PAS, salary satisfaction, and OFD. The overall study is conducted for the same purpose. It has been studied on a case-by-case basis to determine which of these human resource practices should be focussed on to improve employee engagement and reduce the TI of IT employees. This research also proves the magnitude of work engagement as an arbitrator between human resources practices and TI.

Managerial implications

The study provides several critical managerial implications for IT companies aiming to enhance employee engagement and reduce turnover rates. Firstly, EC should be prioritised as it significantly boosts work engagement. Managers must ensure open, two-way communication channels where employees feel heard and valued. Training programmes must be robust and satisfying, equipping employees with the necessary skills and fostering a sense of preparedness and competence, thereby increasing engagement. Performance appraisal systems should be perceived as fair; although the study found no direct link to TI, appraisal satisfaction still positively influences work engagement. Therefore, managers should focus on transparent and constructive performance reviews.

Secondly, pay satisfaction is another key area; aligning compensation with performance and clearly communicating the pay-performance relationship can enhance engagement. Providing OFD is crucial, as career growth prospects significantly bolster work engagement. It is the managers' responsibility to create pathways for skill advancement and career progression, empowering them to shape their team's future. By addressing these HRM practices, IT companies can foster a more committed and productive workforce, ultimately enhancing overall organisational performance and retention.

Limitations and recommendations

The first limitation of this study lies in the limited range of variables considered. Future research should explore additional mediating and moderating factors to gain deeper insights. Data collection was confined to general IT employees, without distinguishing between specific departments or categorising companies by turnover. Incorporating company turnover as a categorising factor would enhance the applicability of the findings. Additionally, future data collection should account for factors such as experience, job title and salary to provide more detailed insights. Expanding the range of variables and factors in future studies is essential for a more comprehensive understanding of the effectiveness of these techniques and practices.

Conclusion

The study's primary goals were identifying the relationship between human resource practices, work involvement and TIs, and evaluating work engagement as a 'middleman' between

human resource practices and TIs. The study further aimed to recognise the reasons for inflated voluntary turnover rates. It is observed that work engagement and TI are momentarily impacted by human resources practices, principally TS and OFD.

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Competing interests

The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

Authors' contributions

D.J. and H.A.S. contributed to conceptualisation and literature review, compiling the data, article preparation and editing the references. P.H. wrote the methodology and M.B. analysed the data. H.A.S prepared the article and edited the text.

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Data availability

The data that support the findings of this study is available from the corresponding author, H.A.S., upon reasonable request.

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