



# +HR Challenges in Managing Gig Workers in the IT Sector: An Empirical Investigation of Employee Engagement, Compensation, and Job Satisfaction

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**Abstract** – The rapid expansion of the gig economy has fundamentally transformed workforce dynamics in the Information Technology (IT) sector, creating new opportunities alongside complex human resource (HR) management challenges. This study examines the key HR challenges associated with managing gig workers in the IT sector, with specific focus on the roles of employee engagement and compensation & benefits as determinants of job satisfaction. Employing a quantitative research design, primary data were collected from 107 IT gig workers engaged in software development, web design, data analysis, and testing roles through a structured, validated 30-item questionnaire based on a five-point Likert scale. Data were analysed using descriptive statistics, Cronbach's Alpha reliability testing, Pearson correlation, multiple linear regression, independent-samples t-tests, and one-way ANOVA. Findings reveal that all three constructs—employee engagement ( $M = 3.687$ ), compensation & benefits ( $M = 3.820$ ), and job satisfaction ( $M = 3.782$ )—exceed the neutral midpoint significantly ( $p < 0.001$ ), yet fall below the agreement threshold, indicating unresolved structural challenges. Multiple regression analysis demonstrates that employee engagement ( $\beta = 0.516$ ) and compensation & benefits ( $\beta = 0.382$ ) together explain 62.1% of the variance in job satisfaction ( $R^2 = 0.621$ ). Gender-based analysis reveals significantly higher satisfaction among female gig workers ( $M = 3.952$ ) compared to males ( $M = 3.530$ ;  $p = 0.005$ ). Satisfaction levels are consistent across work type and experience level, suggesting systemic rather than role-specific HR deficiencies. The study advances the application of the Job Demands-Resources (JD-R) Model and Self-Determination Theory to non-standard employment contexts, and offers actionable recommendations for HR professionals managing contingent IT workforces.

**Keywords:** gig economy; HR challenges; IT sector; employee engagement; compensation and benefits; job satisfaction

## I. INTRODUCTION

The nature of employment has undergone a fundamental transformation driven by technological advancements, globalisation, and the growing demand for flexible work arrangements. Central to this transformation is the emergence of the gig economy a labour market characterised by short-term, project-based, or freelance engagements in lieu of traditional full-time employment. Within the Information Technology (IT) sector, this trend has gained exceptional momentum, given the industry's inherent reliance on digital platforms, specialised skills, and project-oriented workflows. Organisations increasingly engage gig workers independent contractors, freelancers, and temporary professionals to achieve scalability, reduce operational costs, and access a global talent pool through platforms such as Upwork, Fiverr, and Freelancer.

Despite these strategic advantages, the integration of gig workers into organisational frameworks introduces significant HR management challenges. Traditional HR practices are designed predominantly for permanent employees, encompassing long-term engagement strategies, structured career development, formal performance appraisal systems, and statutory benefit provisions. These frameworks are fundamentally ill-suited to the contingent, often remote, and contractually fluid nature of gig work. Consequently, HR professionals in the

IT sector face a structural mismatch in managing gig workers effectively, with critical deficiencies emerging in communication, performance management, employee engagement, compensation equity, and legal compliance.

In the Indian IT context, where gig adoption is accelerating rapidly with NASSCOM reporting a marked increase in platform-based engagements the need for empirical research on gig workforce HR challenges is particularly pressing. While extant literature acknowledges these challenges conceptually, quantitative empirical investigation into their magnitude and interrelationships remains limited, particularly within the Indian IT sector. This study addresses this lacuna by examining, through a quantitative lens, how employee engagement and compensation & benefits jointly determine job satisfaction among IT gig workers thereby providing a foundation for evidence-based HR policy reform.

## II. RESEARCH OBJECTIVES

The primary objective of this study is to examine the HR challenges associated with managing gig workers in the IT sector, with particular focus on how selected HR practices influence job satisfaction. Specific objectives are as follows:

1. To analyse the impact of employee engagement on job satisfaction among IT gig workers.



2. To examine the effect of compensation and benefits on job satisfaction among IT gig workers.
3. To assess the overall level of job satisfaction among gig workers in the IT sector.
4. To explore the combined effect of employee engagement and compensation & benefits on job satisfaction and to identify demographic moderators of this relationship.

### III. THEORETICAL FRAMEWORK

This study is anchored in two complementary theoretical frameworks: the Job Demands-Resources (JD-R) Model (Bakker & Demerouti, 2007) and Self-Determination Theory (SDT) (Deci & Ryan, 1985).

The JD-R Model posits that job resources including psychological and structural supports buffer the adverse effects of job demand and enhance work engagement and well-being. Applied to the gig context, inadequate organisational support, unclear feedback mechanisms, and absence of HR infrastructure constitute significant job demands, while engagement-fostering practices and equitable compensation represent critical job resources. This model predicts that gig workers with access to stronger job resources will report higher satisfaction, even in the absence of formal employment security.

Self-Determination Theory (SDT) posits that human motivation is sustained by three psychological needs: autonomy, competence, and relatedness. Gig work inherently satisfies autonomy; however, it frequently fails to meet the needs for competence recognition through equitable skill-based compensation and relatedness through organisational belonging and inclusion. This study examines whether the absence of relatedness and competence satisfaction structurally undermines the autonomy advantage of gig work, thereby limiting engagement and satisfaction.

Together, these frameworks predict that HR challenges in gig work are not merely incidental but structurally embedded, and that addressing engagement and compensation deficits are the most consequential levers for improving gig worker satisfaction and organisational outcomes.

### IV. LITERATURE REVIEW

#### 4.1 Employee Engagement in Gig Work

Employee engagement characterised by emotional involvement, enthusiasm, and commitment to work is substantially more complex to sustain in gig employment settings. Ashford, Caza, and Reid (2018) demonstrate that gig workers prioritise task completion over organisational involvement owing to the absence of stable employment relationships and career progression pathways, resulting in attenuated engagement. Petriglieri, Ashford, and

Wrzesniewski (2019) further document psychological challenges related to identity and belongingness, arguing that gig workers often struggle to find meaning in transient roles, which negatively impacts satisfaction. Kuhn (2016) presents a balanced account, noting that while gig work offers autonomy and flexibility, it simultaneously reduces organisational commitment, creating difficulties for HR professionals attempting to foster deep engagement. Duggan et al. (2020) highlight the role of algorithmic management in shaping gig worker experiences, noting that platform-mediated oversight further distances workers from human HR support.

#### 4.2 Compensation and Benefits

Compensation and benefits are pivotal determinants of gig worker satisfaction and motivation. Ashford et al. (2018) identify income instability as a primary challenge, with unpredictable earnings generating financial stress and reduced satisfaction. De Stefano (2016) critically examines the 'just-in-time workforce' model, wherein the classification of gig workers as independent contractors systematically excludes them from statutory labour protections including health insurance, paid leave, and retirement provisions creating significant disparities relative to permanent employees. Kuhn (2016) identifies pay inequity as a further concern, noting that gig workers frequently receive lower remuneration than full-time employees for equivalent work. Wood et al. (2019) frame gig work as presenting a paradox: workers enjoy flexibility and autonomy while simultaneously experiencing insecurity and inadequate compensation. The literature collectively suggests that transparent, skill-indexed compensation frameworks are essential for sustaining gig worker motivation and satisfaction.

#### 4.3 Job Satisfaction and the Gig Economy

Job satisfaction—broadly defined as the extent to which individuals hold a positive affective orientation toward their work (Locke, 1976; Spector, 1997) is a multidimensional construct of particular complexity in gig settings. Judge et al. (2001) establish job satisfaction as a critical indicator of employee well-being, performance, and reduced turnover intention. In the gig economy, satisfaction is shaped by distinctive factors including autonomy, flexibility, and independence (Wood et al., 2019); however, challenges such as job insecurity, limited benefits, and weak organisational ties exert countervailing negative effects. The extant literature underscores that the quality of HR practices specifically engagement mechanisms and compensation equity are critical mediators of gig worker satisfaction, yet empirical quantitative studies in the Indian IT context remain limited.



## V. RESEARCH METHODOLOGY

### 5.1 Research Design and Data Collection

This study adopts a quantitative, cross-sectional research design. Primary data were collected through a structured questionnaire administered via Google Forms over a defined collection period. The questionnaire comprised 30 items 10 per construct (Employee Engagement, Compensation & Benefits, Job Satisfaction) measured on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree), supplemented by six demographic items. The instrument was subject to a pilot study prior to full-scale administration, with refinements made based on respondent feedback to improve clarity and reduce ambiguity. Respondents were assured of anonymity and voluntary participation in accordance with research ethics protocols.

### 5.2 Sample and Sampling Technique

The target population comprised gig workers engaged in IT-related roles (software development, web design, data analysis, and testing/QA) on digital gig platforms in India. Given the dispersed and unregistered nature of this population, convenience sampling was employed. A total of 108 responses were received; 107 were complete and retained for analysis following the exclusion of one incomplete response. This sample size was considered appropriate for the multivariate statistical techniques employed.

### 5.3 Variables of the Study

The study operationalises two independent variables and one dependent variable. Employee Engagement (EE) captures the emotional involvement, dedication, and commitment of gig workers toward their work. Compensation & Benefits (CB) measures the perceived fairness, adequacy, timeliness, and motivational adequacy of remuneration. Job Satisfaction (JS) serves as the dependent variable, reflecting the overall affective appraisal of the gig work experience. The IT sector is treated as a contextual variable that shapes the nature of gig employment arrangements.

### 5.4 Analytical Techniques

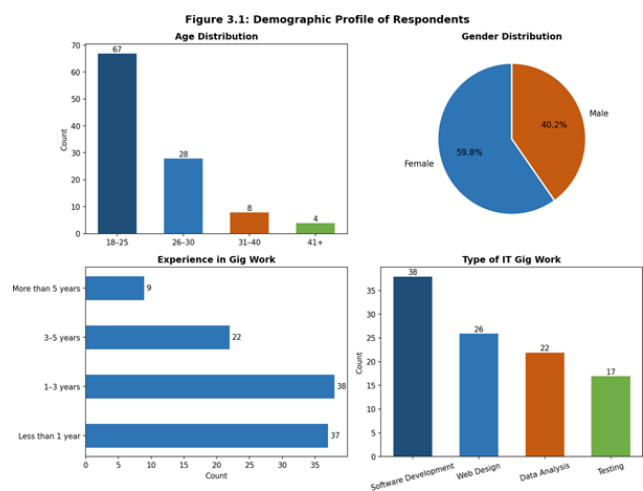
Data were analysed using Python-based statistical tools (pandas, numpy, scipy, seaborn, matplotlib). The analytical sequence comprised: (1) reliability analysis using Cronbach's Alpha;

(2) descriptive statistics; (3) Pearson product-moment correlation analysis; (4) multiple linear regression (Enter method); (5) one-sample t-tests to compare construct means against the neutral midpoint ( $\mu_0 = 3.0$ ); (6) independent-samples t-test for gender-based differences; and (7) one-way ANOVA for differences across gig work type and experience level.

## VI. DATA ANALYSIS AND RESULTS

### 6.1 Demographic Profile

The sample (n = 107) was predominantly young, with 62.6% falling in the 18–25 age bracket and 26.2% aged 26–30. Female respondents constituted 59.8% and males 40.2%. In terms of gig work type, software development was most prevalent (35.5%), followed by web design (24.3%), data analysis (20.6%), and testing/QA (15.9%). Platforms most commonly used were Freelancer (39.3%), Upwork (30.8%), and Fiverr (28.0%). A majority of respondents (70.1%) had fewer than three years of gig experience, indicating a relatively nascent workforce.



### 6.2 Reliability Analysis

Internal consistency of each scale was assessed via Cronbach's Alpha (Table 1). All coefficients exceeded the 0.80 threshold, confirming good reliability of the measurement instrument (Nunnally, 1978).

Table 1: Reliability Statistics — Cronbach's Alpha

Construct	No. of Items	Cronbach's Alpha ( $\alpha$ )	Interpretation
Employee Engagement	10	0.857	Good
Compensation & Benefits	10	0.888	Good
Job Satisfaction	10	0.884	Good

### 6.3 Descriptive Statistics and One-Sample t-Tests

Table 2 presents the descriptive statistics and one-sample t-test results for all three constructs, tested against the neutral midpoint of 3.0.

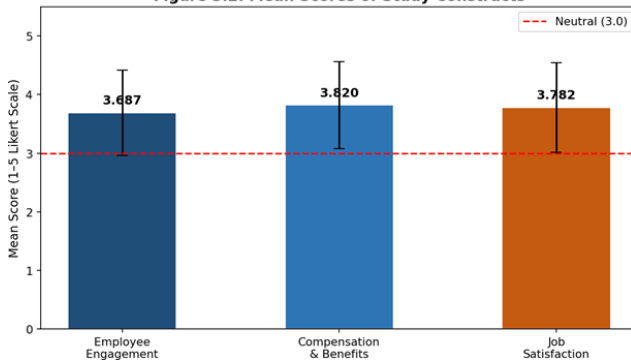


Table 2: Descriptive Statistics and One-Sample t-Test Results (n = 107, Test Value = 3.0)

Construct	Mean	SD	t-value	p-value	Decision
Employee Engagement	3.687	0.727	9.770	< 0.001	Supported (H1a)
Compensation & Benefits	3.820	0.739	11.467	< 0.001	Supported (H1b)
Job Satisfaction	3.782	0.764	10.598	< 0.001	Supported (H1c)

All three constructs recorded mean scores significantly above the neutral midpoint ( $p < 0.001$ ). Compensation & Benefits yielded the highest mean ( $M = 3.820$ ) and t-value (11.467), while Employee Engagement recorded the lowest mean ( $M = 3.687$ ). Notably, all means fall below the agreement threshold of 4.0, indicating that while gig workers maintain a positive orientation, meaningful challenges persist.

Figure 3.2: Mean Scores of Study Constructs



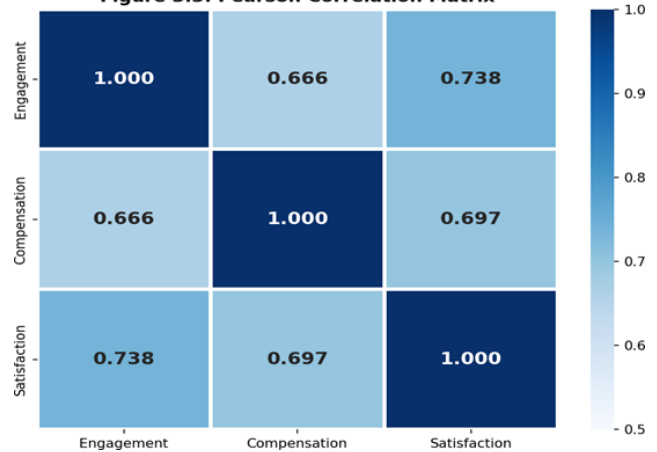
#### 6.4 Correlation Analysis

Pearson's product-moment correlation analysis (Table 3) reveals strong, statistically significant positive relationships among all three constructs ( $p < 0.001$ ). Employee Engagement shares the strongest correlation with Job Satisfaction ( $r = 0.738$ ), followed by Compensation & Benefits ( $r = 0.697$ ). The correlation between Engagement and Compensation ( $r = 0.666$ ) indicates that perceived compensation adequacy is also associated with higher engagement levels.

Table 3: Pearson Correlation Matrix (n = 107)

Construct	Employee Engagement	Compensation & Benefits	Job Satisfaction
Employee Engagement	1.000	0.666***	0.738***
Compensation & Benefits	0.666***	1.000	0.697***
Job Satisfaction	0.738***	0.697***	1.000

Figure 3.3: Pearson Correlation Matrix



#### 6.5 Multiple Regression Analysis

A multiple linear regression model with Job Satisfaction as the dependent variable and Employee Engagement and Compensation & Benefits as simultaneous predictors (Enter method) was estimated. The results are presented in Table 4.

Table 4: Multiple Regression Results — Predictors of Job Satisfaction

Variable	B Coefficient	Standardised $\beta$	p-value	Interpretation
(Intercept)	0.420	—	< 0.001	Baseline
Employee Engagement	0.516	0.490	< 0.001	Dominant predictor
Compensation & Benefits	0.382	0.370	< 0.001	Significant predictor
Model Fit: $R^2 = 0.621$ ; Adjusted $R^2 = 0.613$ ; F-value significant at $p < 0.001$				

The regression model explains 62.1% of the variance in Job Satisfaction ( $R^2 = 0.621$ ; Adjusted  $R^2 = 0.613$ ), representing a strong model fit. Employee Engagement emerged as the dominant predictor ( $\beta = 0.516$ ), indicating that a one-unit increase in engagement is associated with a 0.516-unit increase in satisfaction, controlling for compensation. Compensation & Benefits ( $\beta = 0.382$ ) is also a significant and substantial predictor. These results confirm Hypotheses H2 and H3.

#### 6.6 Gender Differences in Job Satisfaction

An independent-samples t-test examined gender-based differences in Job Satisfaction (Table 5). Female gig workers reported significantly higher satisfaction ( $M = 3.952$ ,  $SD = 0.697$ ) than males ( $M = 3.530$ ,  $SD = 0.804$ ),  $t(105) = -2.894$ ,  $p = 0.005$ . The mean difference ( $\Delta =$



0.422) is practically meaningful, supporting Hypothesis H4.

Table 5: Independent-Samples t-Test — Job Satisfaction by Gender

Group	n	Mean	SD	t-value	p-value
Male	43	3.530	0.804	-2.894	0.005
Female	64	3.952	0.697	-2.894	0.005

### 6.7 ANOVA: Satisfaction across Work Type and Experience Level

One-way ANOVA tests (Tables 6 and 7) revealed no statistically significant differences in Job Satisfaction across gig work type ( $F = 1.959, p = 0.107$ ) or experience level ( $F = 0.548, p = 0.651$ ), supporting Hypotheses H5 and H6 respectively.

Table 6: One-Way ANOVA — Job Satisfaction across Gig Work Type

Gig Work Type	n	Mean	F-value	p-value
Software Development	38	3.626	1.959	0.107 (n.s.)
Web Design	26	3.996		
Data Analysis	22	3.809		

Gig Work Type	n	Mean	F-value	p-value
Testing / QA	17	3.959		

Table 7: One-Way ANOVA — Job Satisfaction across Experience Levels

Experience Level	Mean	F-value	p-value
Less than 1 year	3.692	0.548	0.651 (n.s.)
1–3 years	3.818		
3–5 years	3.932		
More than 5 years	3.889		

## VII. DISCUSSION

The findings of this study provide robust empirical support for the theoretical assertion that gig workers, despite operating outside conventional employment frameworks, are subject to the same fundamental psychological dynamics governing work satisfaction as permanent employees. The confirmation of the JD-R Model's applicability to gig contexts is a significant theoretical contribution: psychological resources primarily engagement function as central determinants of well-being in non-standard employment arrangements, extending the model's predictive scope beyond traditional settings.

The dominance of Employee Engagement as a satisfaction predictor ( $\beta = 0.516, r = 0.738$ ) is theoretically coherent with the JD-R framework, which posits that psychological resources buffer demands and enhance well-being. The finding suggests that gig workers, notwithstanding the absence of formal organisational membership, remain susceptible to the positive effects of engagement-promoting practices. This challenges the prevailing assumption that transient work relationships preclude meaningful engagement. Practical implications are significant: organisations that invest in structural engagement mechanisms including virtual onboarding, digital recognition programmes, and project-based community platforms are likely to realise substantial returns in gig worker satisfaction and, by extension, in output quality and platform loyalty.

The role of Compensation & Benefits ( $\beta = 0.382$ ) in predicting satisfaction, while secondary to engagement, is substantively important. Item-level analysis reveals that payment timeliness ( $M = 3.402$ ) and skill-wage alignment ( $M = 3.421$ ) are the most deficient sub-dimensions across the entire study instrument a finding consistent with De Stefano's (2016) characterisation of gig workers as systematically excluded from structured compensation frameworks. These specific pain points call for targeted intervention: automated milestone-based payment systems, transparent skill-indexed pay scales, and platform-level SLA-backed payment timelines.

The gender-based satisfaction differential with female gig workers reporting significantly higher satisfaction than males is a counterintuitive finding relative to the global gig economy literature, which often reports gender-based disadvantages for women on platform-mediated work. In the Indian IT context, this result may reflect the comparatively greater flexibility and autonomy that gig work provides to women facing structural barriers in formal employment markets. This finding warrants further qualitative investigation using an intersectional lens.

The consistency of satisfaction across work type and experience level is a substantively important finding that challenges earlier conceptual arguments attributing gig work HR challenges primarily to role inexperience or specific work categories. The absence of significant ANOVA differences indicates that structural HR deficits are systemic and pervasive across all IT gig roles, regardless of professional tenure a finding that necessitates sector-wide policy interventions rather than targeted, role-specific adjustments.



## VIII. HYPOTHESIS TESTING SUMMARY

Table 8: Summary of Hypothesis Testing Results

Hypothesis	Statement	Test	Result	Decision
H1a	Engagement significantly above neutral	One-sample t-test	$t = 9.77, p < .001$	Supported
H1b	Compensation significantly above neutral	One-sample t-test	$t = 11.47, p < .001$	Supported
H1c	Satisfaction significantly above neutral	One-sample t-test	$t = 10.60, p < .001$	Supported
H2	Engagement positively predicts Satisfaction	Pearson $r$ + Regression	$r = .738, \beta = .516$	Supported
H3	Compensation positively predicts Satisfaction	Pearson $r$ + Regression	$r = .697, \beta = .382$	Supported
H4	Gender differences in Satisfaction	Independent t-test	$t = -2.894, p = .005$	Supported
H5	No significant difference across gig work type	One-Way ANOVA	$F = 1.96, p = .107$	Supported
H6	No significant difference across experience levels	One-Way ANOVA	$F = 0.55, p = .651$	Supported

## IX. CONCLUSION

This study investigated the HR challenges associated with managing gig workers in the IT sector through a quantitative empirical lens, examining the interplay of employee engagement, compensation & benefits, and job satisfaction among 107 IT gig workers. The findings confirm that while IT gig workers maintain a moderately positive orientation toward their work, structural HR challenges particularly regarding payment equity, skill recognition, and sustained engagement remain significant and systemic across all demographic and professional subgroups.

Employee Engagement emerged as the dominant determinant of satisfaction, reinforcing the centrality of psychological connectedness even in transient work arrangements. The regression model, accounting for over 62% of the variance in satisfaction, provides a robust empirical basis for prioritising engagement as the cornerstone of gig HR strategy. The gender-based satisfaction differential calls for more nuanced and inclusive HR frameworks that acknowledge differential experiences of male and female gig workers in the Indian IT context.

From a theoretical standpoint, the study validates the applicability of the JD-R Model to gig employment contexts and reveals the limitations of SDT's autonomy advantage when relatedness and competence recognition are absent. From a managerial standpoint, the evidence points to the urgent need for a reimagined HR model for the gig economy one that transcends the limitations of traditional employment frameworks and develops purpose-built, flexible, and inclusive practices for managing a workforce that is both strategically valuable and structurally vulnerable.

Future research should employ longitudinal designs to capture the causal dynamics of the engagement-satisfaction relationship, incorporate mediating variables such as platform governance quality and perceived algorithmic

fairness, and extend the investigation across multiple national contexts to enable cross-cultural comparative analysis.

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