

HUMAN CAPITAL DYNAMICS IN INDIAN POWER UTILITIES: LINKING CULTURE, EMPOWERMENT, ENGAGEMENT, AND SATISFACTION

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ABSTRACT:

Purpose: This study considers organizational culture, psychological empowerment, employee engagement, and job satisfaction jointly among clerical and ground-level employees in selected West Bengal power utilities. Instead of approaching these constructs as separate HR indicators, it documents their pairwise interrelationships within a single employee sample.

Design/methodology/approach: A cross-sectional self-report survey of 250 employees from CESC (n = 116), WBSEDCL (n = 104), and DVC (n = 30) was analysed. Organizational culture was measured using OCTAPACE (40 items), psychological empowerment with Spreitzer's 16-item scale, employee engagement with UWES-17, and job satisfaction with the 20-item Minnesota Satisfaction Questionnaire. The analyses included descriptive statistics, Cronbach's alpha estimates, selected exploratory group comparisons, exploratory factor-analytic summaries, and two-tailed Pearson correlations.

Findings: All six correlations in the integrated four-driver matrix were positive and statistically significant, ranging from $r = .169$ to $.393$. The strongest observed association was between job satisfaction and psychological empowerment ($r = .393$, $p < .001$), followed by psychological empowerment and employee engagement ($r = .362$, $p < .001$). The weakest was between psychological empowerment and organizational culture ($r = .169$, $p = .007$). Mean scores were 118.05 (SD = 11.72) for organizational culture, 64.83 (SD = 6.76) for psychological empowerment, 3.74 (SD = .53) for employee engagement per item, and 75.65 (SD = 9.29) for general job satisfaction.

Research limitations/implications: The cross-sectional, self-report design, localized employee segment, unequal organization subsamples, and bivariate analysis rule out causal inference and integrated model testing.

Practical implications: HR leaders may adopt a portfolio-oriented diagnostic approach that monitors culture, empowerment, engagement, and satisfaction together, while remaining attentive to variation across subgroups.

Originality/value: The study provides a bounded, integrated correlation map of four HR drivers in a West Bengal power-utility workforce, rather than a causal or performance-prediction model.

KEYWORDS: organizational culture; psychological empowerment; employee engagement; job satisfaction; Indian power sector; West Bengal; cross-sectional survey

1. INTRODUCTION

People-management conditions are particularly salient in power utilities, where everyday work is shaped by operational schedules, public-facing service obligations, formal procedures, and interdependent technical and administrative roles. Employee experience in these settings, however, cannot be captured by a single indicator. The norms employees share and perceive, their feelings of discretion and competence, the energy they bring to work, and their overall evaluation of their jobs may be related, yet they remain conceptually distinct. Mapping these connections matters both for HR scholarship and for workplace diagnosis.

This article examines four employee-level constructs: organizational culture, psychological empowerment, employee engagement, and job satisfaction. Organizational culture concerns the values, assumptions, and norms through which organizational members interpret and enact organizational life (Denison, 1990; Schein, 2010). Psychological empowerment refers to an individual's experience of meaning, competence, self-determination, and impact at work (Spreitzer, 1995). Employee engagement is commonly understood as a positive, work-related state marked by vigour, dedication, and absorption (Schaufeli et al., 2002). Job satisfaction denotes a positive evaluative or affective response to one's job and job experiences (Locke, 1976). Although each construct has an extensive literature, considering them separately can obscure how they co-occur in employees' accounts of work.

The present study is located in West Bengal, India, and draws on clerical and ground-level employees in three power utilities: CESC, WBSEDCL, and DVC. This is intentionally a bounded setting. The findings describe the sampled workforce and should not be interpreted as estimates for all employees in the Indian power sector, all occupational groups in the participating organizations, or the sector nationally. The contribution is bounded in the same way: the study offers an integrated, descriptive-correlational account of four HR drivers, not a test of a causal pathway or a claim about organizational performance.

The study addresses three questions. First, what levels and internal-consistency estimates are reported for organizational culture, psychological empowerment, employee engagement, and job satisfaction? Second, what selected variations by

gender, age group/career stage, and organization are observed? Third, how are the four drivers interrelated in the all-employee sample? Its central empirical contribution is a six-link Pearson correlation matrix rather than a directional model. This focus retains theoretically meaningful links among workplace perceptions and attitudes without assuming that any one construct is an antecedent, mediator, or outcome of another.

The article first develops a non-directional conceptual framing and six association hypotheses. It then outlines the survey design, measures, and analytic boundaries; reports the descriptive, exploratory, and correlational findings; and considers their theoretical and practical significance alongside the study's limitations.

2. LITERATURE REVIEW AND CONCEPTUAL FRAMING

2.1 The four HR drivers

Organizational culture is frequently understood as the pattern of shared assumptions, values, and practices that informs behaviour and sense-making within organizations (Schein, 2010). Denison (1990) similarly emphasized culture as a meaningful organizational context, rather than a superficial assemblage of symbols. Here, organizational culture is operationalized through OCTAPACE, which encompasses openness, confrontation, trust, authenticity, proaction, autonomy, collaboration, and experimentation. These dimensions highlight aspects of the everyday climate through which employees encounter communication, discretion, working relationships, and responsiveness.

Psychological empowerment is an individual motivational orientation, not a formal delegation practice. The influential framework advanced by Thomas and Velthouse (1990) and operationalized by Spreitzer (1995) identifies four cognitions: meaning, competence, self-determination, and impact. Meaning concerns the fit between work requirements and personal standards; competence concerns perceived capability; self-determination concerns choice in initiating and regulating work; and impact concerns the perceived capacity to influence outcomes. This framing is useful because it situates empowerment in employees' appraisals of their own work roles.

Employee engagement describes a positive, fulfilling work-related state. Schaufeli et al. (2002) distinguish among vigour, dedication, and absorption. Vigour reflects energy and persistence; dedication encompasses significance, enthusiasm, inspiration, pride, and challenge; and absorption refers to concentrated immersion in work. Engagement is therefore related to, but not identical with, job satisfaction. It concerns the quality of an employee's active connection to work, rather than the broader evaluative judgement that a job is satisfying.

Job satisfaction is commonly defined as a pleasurable or positive emotional state arising from an appraisal of one's job or job experiences (Locke, 1976). In the present study, the MSQ distinguishes intrinsic and extrinsic facets, alongside general satisfaction. Intrinsic satisfaction relates to qualities of the work itself, whereas extrinsic satisfaction concerns externally structured aspects of employment. General satisfaction captures the broad evaluative position employees hold toward their jobs.

2.2 An integrated, non-directional correlation framework

The four constructs can be viewed as theoretically connected workplace perceptions and attitudes. Employees who characterize their organizational context as more open, trusting, collaborative, or autonomous may also report more favourable work-related appraisals. Likewise, employees who regard their roles as meaningful and who feel competent, self-directed, and able to make an impact may report greater energy and dedication, as well as more positive job evaluations. Cross-sectional evidence cannot, however, establish whether culture perceptions precede empowerment, whether satisfaction shapes employees' perceptions of culture, or whether these relationships are reciprocal. The conceptual framing adopted here is therefore non-directional.

The integrated framework represents a complete correlation network: no construct is assigned the role of independent variable, mediator, or outcome. This is more than a stylistic choice. It recognizes that workplace culture, psychological appraisals, energetic work involvement, and job evaluation may be mutually implicated in employees' experience, even though their temporal ordering cannot be observed in a single-wave survey.

2.3 Correlational propositions

A culture marked by trust, openness, autonomy, and collaboration may coexist with employees' perceptions that their work is meaningful, self-directed, and consequential. This compatibility motivates the following association hypothesis:

P1. Organizational culture is positively associated with psychological empowerment.

Supportive shared norms and workplace resources are also theoretically compatible with vigour, dedication, and absorption. The job demands-resources perspective, for example, positions resources as relevant to work engagement without requiring every observed relationship in a particular data set to be interpreted causally (Bakker & Demerouti, 2008).

P2. Organizational culture is positively associated with employee engagement.

Employees' appraisals of culture and their broader evaluations of job experiences are also likely to vary together. A perceived cultural context forms part of the environment through which employees make sense of their work.

P3. Organizational culture is positively associated with job satisfaction.

The four cognitions of psychological empowerment are conceptually aligned with engaged involvement in work. Meaning and competence, in particular, speak to the experience of investing oneself in work, whereas self-determination and impact speak to felt agency (Spreitzer, 1995; Thomas & Velthouse, 1990).

P4. Psychological empowerment is positively associated with employee engagement.

Psychological empowerment is also theoretically compatible with positive job appraisal. When employees experience capability, choice, purpose, and perceived impact, these appraisals may coexist with more favourable evaluations of their jobs (Conger & Kanungo, 1988; Spreitzer, 1995).

P5. Psychological empowerment is positively associated with job satisfaction.

Finally, engagement and job satisfaction are distinct but related positive work states. Engagement captures energized involvement in work, while satisfaction captures an evaluation of the job and its features. Their conceptual overlap implies association, not interchangeability (Harter et al., 2002; Taris & Schaufeli, 2015).

P6. Employee engagement is positively associated with job satisfaction.

3. METHOD

3.1 Design and setting

The study employed a quantitative, cross-sectional survey design using primary self-report data. The individual employee was the unit of analysis. The setting comprised selected power utilities operating in West Bengal, India: CESC, WBSEDCL, and DVC. The study is confined to clerical and ground-level employees and does not claim representativeness beyond those included in the sample.

A cross-sectional design is appropriate for describing reported levels and contemporaneous associations, but it cannot establish temporal ordering. Accordingly, the analyses are interpreted as associations among employee-reported constructs at a single point in time. No causal, predictive, mediational, or performance-linked conclusion is advanced.

3.2 Participants

The all-employee sample consisted of 250 respondents: 116 from CESC, 104 from WBSEDCL, and 30 from DVC. Men made up 73.2% of the sample, and women 26.8%. The largest age group was 35–44 years (46.8%), followed by employees aged 45 years and above (35.6%) and those aged 20–34 years (17.6%). The source material uses age-group categories as career-stage labels in some analyses; that terminology is retained solely to describe the reported grouping and should not be read as verified tenure.

Table 1. Sample profile (N = 250)

Characteristic	CESC, n (%)	WBSEDCL, n (%)	DVC, n (%)	Total, n (%)
Organization	116 (46.4)	104 (41.6)	30 (12.0)	250 (100.0)
Male	94 (81.0)	63 (60.6)	26 (86.7)	183 (73.2)
Female	22 (19.0)	41 (39.4)	4 (13.3)	67 (26.8)
Age 20–34 years	12 (10.3)	24 (23.1)	8 (26.7)	44 (17.6)
Age 35–44 years	51 (44.0)	51 (49.0)	15 (50.0)	117 (46.8)
Age 45+ years	53 (45.7)	29 (27.9)	7 (23.3)	89 (35.6)

Note. Column percentages for gender and age are within organization; total percentages are based on $N = 250$. Percentages may not sum to 100 because of rounding.

3.3 Measures

Organizational culture was measured with the 40-item OCTAPACE instrument. Its eight reported dimensions were openness, confrontation, trust, authenticity, proaction, autonomy, collaboration, and experimentation. Internal consistency for the complete measure was $\alpha = .791$.

Psychological empowerment was measured using the 16-item scale developed by Spreitzer (1995), covering meaning, competence, self-determination, and impact. The full-scale internal-consistency estimate was $\alpha = .843$.

Employee engagement was assessed with the 17-item Utrecht Work Engagement Scale (UWES-17; Schaufeli et al., 2002), which covers vigour, dedication, and absorption. The full-scale alpha was .792. Engagement is reported using a per-item mean metric.

Job satisfaction was assessed with the 20-item Minnesota Satisfaction Questionnaire (MSQ), reported in terms of intrinsic, extrinsic, and general satisfaction. The full-scale alpha was .861.

Table 2. Measures and internal consistency

Construct	Instrument	Items	Reported dimensions	Cronbach's α
Organizational culture	OCTAPACE	40	Openness, confrontation, trust, authenticity, proaction, autonomy, collaboration, experimentation	.791
Psychological empowerment	Spreitzer scale	16	Meaning, competence, self-determination, impact	.843
Employee engagement	UWES-17	17	Vigour, dedication, absorption	.792
Job satisfaction	MSQ	20	Intrinsic, extrinsic, general satisfaction	.861

Note. Alpha estimates indicate internal consistency in the present sample; they do not by themselves establish construct validity.

3.4 Analytic strategy and reporting boundaries

Descriptive statistics and Cronbach's alpha values were used to summarize the focal measures. Independent-samples t tests and one-way analyses of variance, using Tukey procedures where reported, were treated as exploratory group-comparison analyses. Exploratory factor analysis (EFA) summaries were included as context-specific information about the reported scale structures, rather than as conclusive measurement validation.

The primary analysis was a two-tailed Pearson product–moment correlation matrix among the four total driver scores in the all-employee sample (N = 250), with $p < .05$ used as the statistical threshold. The matrix estimates bivariate covariation only. It does not adjust for covariates or estimate unique associations, latent variables, temporal precedence, indirect effects, moderation, or organizational clustering. No integrated multiple regression, confirmatory factor analysis, structural equation model, mediation, moderation, or causal analysis was performed or reported.

The study also deliberately excludes organization-level financial comparisons. The available figures are inconsistent across source sections and are not connected to employee-level variables through a prespecified, time-aligned analytic design.

4. RESULTS

4.1 Reliability and descriptive profile

The four full-scale alpha values ranged from .791 to .861 (Table 2). In this sample, these estimates indicate acceptable-to-good internal consistency. They should nevertheless be interpreted cautiously: reliability supports the coherence of item responses, but it does not resolve questions of factor structure, measurement equivalence, or validity across organizations and demographic groups.

Table 3 reports the focal descriptive statistics. Organizational culture had a mean total score of 118.05 (SD = 11.72). Among its dimensions, trust recorded the highest reported mean ($M = 17.20$), followed by experimentation ($M = 15.93$); authenticity ($M = 12.49$) and collaboration ($M = 13.63$) were descriptively lower. Because the dimensions differ in dispersion and potentially in content, these rankings are descriptive rather than diagnostic.

Psychological empowerment had a mean of 64.83 (SD = 6.76). The means of its four dimensions were closely clustered: meaning, 16.20; competence, 16.09; self-determination, 16.28; and impact, 16.26. Employee engagement was reported on a per-item metric, with an overall mean of 3.74 (SD = .53). Dedication ($M = 3.95$) and vigour ($M = 3.90$) were higher than absorption ($M = 3.40$). General job satisfaction averaged 75.65 (SD = 9.29), while intrinsic and extrinsic satisfaction means were 45.33 and 22.05, respectively. The source study classifies the general satisfaction score as high and the two facet scores as average under its reported MSQ interpretation; these classifications should be read in relation to the scoring convention used in that study.

Table 3. Descriptive statistics for focal driver scores

Panel A: focal score	Scale metric	M	SD
Organizational culture	OCTAPACE total	118.05	11.72
Psychological empowerment	Total score	64.83	6.76
Employee engagement	Per-item total mean	3.74	0.53
Job satisfaction	General satisfaction total	75.65	9.29

Panel B: selected dimensions	M	SD where reported
Culture: trust	17.20	2.64
Culture: experimentation	15.93	2.27
Culture: authenticity	12.49	2.01
Culture: collaboration	13.63	2.22
Empowerment: meaning	16.20	1.80
Empowerment: competence	16.09	1.91
Empowerment: self-determination	16.28	1.94
Empowerment: impact	16.26	1.76
Engagement: dedication (per item)	3.95	0.72
Engagement: vigour (per item)	3.90	0.67
Engagement: absorption (per item)	3.40	0.93
Satisfaction: intrinsic	45.33	5.74
Satisfaction: extrinsic	22.05	3.83

Note. Scores across instruments use different metrics and are not intended for numerical comparison with one another.

4.2 Selected exploratory group differences

Table 4 summarizes selected group comparisons, which are intentionally not treated as the study's principal evidence. For organizational culture, gender differences were reported for openness ($p = .031$; women higher) and authenticity, $t(248) = 2.047$, $p = .042$ (men higher). The age-based career-stage analysis reported a difference for trust ($p = .007$), with the senior group exceeding the early-career group by 1.457 points ($p = .007$). Organization comparisons were reported for confrontation, autonomy, collaboration, and experimentation, with a borderline comparison for trust.

Psychological empowerment showed no reported gender differences across its four dimensions. For age-based career stage, meaning, $F = 3.465$, $p = .033$, and competence, $F = 4.839$, $p = .009$, differed; reported Tukey contrasts indicated higher early-career scores than both other groups. Organization differences were reported for meaning, $F = 4.469$, $p = .012$; competence, $F = 4.676$, $p = .010$; and impact, $F = 3.723$, $p = .026$, with DVC higher in the relevant reported contrasts.

For engagement, dedication ($p = .004$, $d = .465$) and total engagement ($p = .010$, $d = .412$) differed by gender, with men scoring higher in the reported results. Organization differences were found for dedication ($p = .030$) and vigour ($p < .001$, $\eta^2 = .086$). For job satisfaction, the clearly reported organization-level result concerned intrinsic satisfaction, $F = 3.341$, $p = .037$; the Tukey comparison indicated DVC > WBSEDCL ($p = .028$). These findings should be interpreted as

exploratory, particularly in light of unequal organization sizes and the source's inconsistent use of age groups as career-stage labels.

Table 4. Selected exploratory group differences

Construct/dimension	Comparison	Reported statistic	Direction where reported
Culture: openness	Gender	$p = .031$	Female > male
Culture: authenticity	Gender	$t(248) = 2.047, p = .042$	Male > female
Culture: trust	Age-based career stage	$p = .007$; senior-early difference = 1.457, $p = .007$	Senior > early
Empowerment: meaning	Age-based career stage	$F = 3.465, p = .033$	Early > mid and senior in reported contrasts
Empowerment: competence	Age-based career stage	$F = 4.839, p = .009$	Early > mid and senior in reported contrasts
Empowerment: meaning	Organization	$F = 4.469, p = .012$	DVC higher in reported contrasts
Empowerment: competence	Organization	$F = 4.676, p = .010$	DVC higher in reported contrasts
Empowerment: impact	Organization	$F = 3.723, p = .026$	DVC > WBSEDCL in reported contrast
Engagement: dedication	Gender	$p = .004, d = .465$	Male > female
Engagement: total	Gender	$p = .010, d = .412$	Male > female
Engagement: dedication	Organization	$p = .030$	Reported difference across organizations
Engagement: vigour	Organization	$p < .001, \eta^2 = .086$	CESC higher in reported contrasts
Satisfaction: intrinsic	Organization	$F = 3.341, p = .037$	DVC > WBSEDCL, $p = .028$

Note. Results are selected, exploratory comparisons reported in the source study; they are not adjusted for multiple testing. Age groups were used as career-stage labels in the source analyses.

4.3 Exploratory factor-analytic context

The EFA results require caution. For OCTAPACE, the KMO value was .779 and Bartlett's test was significant ($p < .001$). Eight interpreted components accounted for 71.76% of variance. The source, however, also described 12 eigenvalues greater than one before retaining eight components on interpretability grounds. The result is therefore informative but exploratory rather than confirmatory.

For psychological empowerment, four components accounted for 86.64% of variance, broadly corresponding to the theorized four dimensions. However, the source noted that the correlation matrix was non-positive-definite and identified weaker or split loadings for PE8, PE12, and PE16. The UWES-17 analysis extracted six components explaining 88.68% of variance, rather than the theoretical three-factor configuration; the reported solution showed only partial correspondence through subsets of vigour, dedication, and absorption items. The MSQ analysis likewise extracted six components, explaining 66.92% of variance, rather than reproducing a three-part structure. Taken together, these findings provide contextual information about measurement behaviour in this sample, not a basis for confirmatory validity claims.

Table 5. Exploratory factor-analysis summary

Measure	Reported summary	Interpretation boundary
OCTAPACE	KMO = .779; Bartlett $p < .001$; 8 interpreted components; 71.76% variance	Source reports 12 eigenvalues > 1 before an interpretability-led eight-component solution
Psychological empowerment	4 components; 86.64% variance	Non-positive-definite matrix; PE8, PE12, and PE16 showed weaker/split loadings
UWES-17	6 components; 88.68% variance	Does not reproduce the theoretical three-factor structure; partial correspondence only
MSQ	6 components; 66.92% variance	Does not reproduce a simple three-part structure

4.4 Primary finding: integrated four-driver correlation model

The principal finding is that every pair of focal HR drivers was positively and statistically significantly correlated in the all-employee sample (Table 6; Figure 1). The correlations ranged from .169 to .393. The largest observed association was between job satisfaction and psychological empowerment, $r = .393, p < .001$. The next largest was between psychological empowerment and employee engagement, $r = .362, p < .001$. Job satisfaction was also positively associated with organizational culture, $r = .325, p < .001$, and with employee engagement, $r = .304, p < .001$. Employee engagement and organizational culture were positively associated, $r = .291, p < .001$. The smallest observed association was between psychological empowerment and organizational culture, $r = .169, p = .007$.

Accordingly, P1 through P6 were supported as positive bivariate associations. The results do not establish that culture produces empowerment, that empowerment produces engagement or satisfaction, or that satisfaction feeds back into cultural perceptions. They also do not estimate shared variance beyond what is implicit in the pairwise coefficients, unique effects after accounting for the other constructs, or a causal ordering among the constructs.

Table 6. Pearson correlation matrix for the integrated four-driver model (N = 250)

Variable	1	2	3	4
1. Organizational culture	—			
2. Psychological empowerment	.169**	—		
3. Employee engagement	.291***	.362***	—	
4. Job satisfaction	.325***	.393***	.304***	—

*Note. Two-tailed Pearson correlations. $p = .007$; $p < .001$. Correlations are associations and do not establish causation.

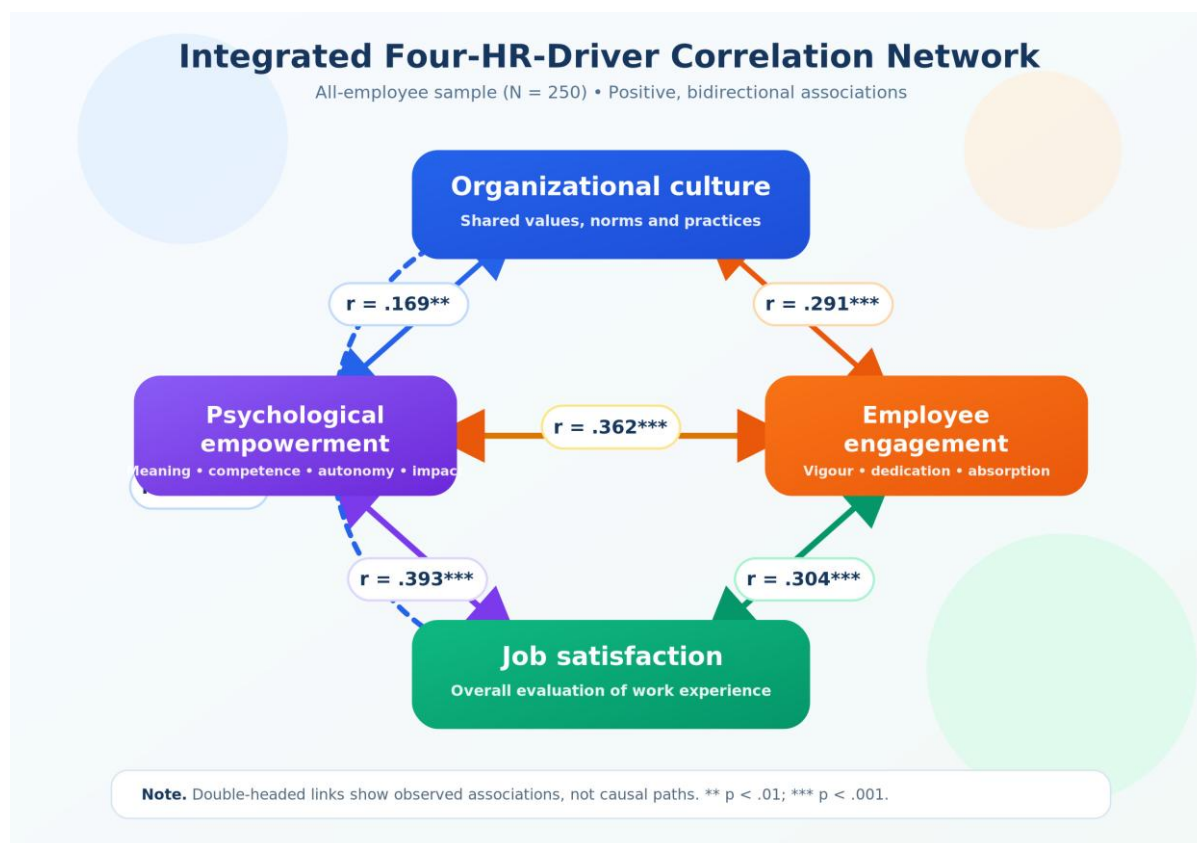


Figure 1. Integrated four-HR-driver correlation network.

*Note. Double-headed links represent observed bivariate associations, not causal paths. $N = 250$. $p < .01$; $p < .001$.

5. DISCUSSION

This study considered four HR drivers simultaneously among clerical and ground-level employees from three West Bengal power utilities. Its principal result is a coherent pattern of positive correlations: organizational culture, psychological empowerment, employee engagement, and job satisfaction all covaried positively. The findings offer an empirical map of related workplace perceptions and attitudes, rather than evidence of a directional pathway.

Within the matrix, the strongest observed association was between job satisfaction and psychological empowerment. This pattern is consistent with the conceptual importance of meaning, competence, self-determination, and impact in employees' work experience (Spreitzer, 1995; Thomas & Velthouse, 1990). An employee who feels capable, purposeful, autonomous, and consequential may also evaluate the job more favourably. The present design cannot determine, however, whether empowerment appraisals precede job satisfaction, whether satisfied employees are more likely to see their roles as empowering, or whether both are shaped by unmeasured work conditions.

Psychological empowerment and employee engagement were also positively associated. This is consistent with the conceptual compatibility of empowerment and energetic, dedicated involvement in work. Even so, the association should not be taken to collapse the two constructs into one. Empowerment concerns motivational cognitions regarding the role, while engagement concerns the quality of active work-related experience. Their positive covariation indicates relatedness in the present workforce, but their conceptual distinction remains important for future measurement and theory testing.

Organizational culture was positively associated with each of the three individual-level drivers, although its association with psychological empowerment was the smallest in the matrix. This may suggest that shared norms and values are related to employees' everyday perceptions and attitudes without being interchangeable with them. The pattern is consistent with culture scholarship that views shared assumptions and practices as an important interpretive context for organizational members (Denison, 1990; Schein, 2010). It does not show, however, that altering culture would necessarily alter any other driver. A cross-sectional correlation cannot resolve competing directions or reciprocal relationships.

The descriptive results provide further context. Dedication and vigour exceeded absorption on the UWES per-item metric, suggesting that employees' reported enthusiasm and energy were greater than their reported immersion in tasks. Trust was descriptively prominent among the culture dimensions. General job satisfaction was classified favourably according to the source study's scoring interpretation. These descriptive patterns may serve as useful prompts for workplace reflection, but they should not be treated as deficits, performance indicators, or intervention targets with known effects.

The measurement evidence also warrants restraint. While all four full-scale alpha values were acceptable to good, the EFA findings did not fully reproduce the expected theoretical structures for UWES-17 and MSQ, and the psychological empowerment analysis included matrix and item-loading concerns. These observations do not invalidate the reported descriptive or correlation results; instead, they underscore the need for stronger future measurement work before fine-grained structural claims are made.

6. IMPLICATIONS

6.1 Theoretical implications

The study's theoretical contribution is modest but useful: it shifts from isolated descriptions of HR constructs to a relational map involving four constructs. The positive matrix supports treating organizational culture, psychological empowerment, employee engagement, and job satisfaction as related but empirically distinguishable domains in the sampled workforce. In particular, the findings caution against theories that assume one simple sequence from culture to empowerment to engagement to satisfaction, or the reverse. Multiple directions remain plausible, and reciprocal processes may be especially relevant.

Future research can extend this map through longitudinal, multilevel, and latent-variable designs. Such work should test temporal ordering only when the design permits it, examine whether correlations remain after shared predictors are accounted for, and assess whether measurement operates equivalently across organizations and employee groups.

6.2 Practical implications

For practitioners, the results support a diagnostic portfolio approach. Rather than relying on a single engagement score or a culture-survey headline, HR teams may monitor organizational culture, psychological empowerment, employee engagement, and job satisfaction together. Such a combined dashboard should serve as a starting point for employee listening and local inquiry, not as a causal scorecard.

The descriptive patterns suggest potentially useful areas for discussion: absorption, authenticity, and collaboration merit attention alongside trust, meaning, autonomy, voice, recognition, and work purpose. Managers can provide opportunities for employees to communicate concerns, exercise appropriate discretion, understand the significance of their work, and receive acknowledgement. These practices are recommended as workplace-quality considerations, not as guaranteed paths to productivity, retention, financial, or organizational-performance gains.

The reported gender, age-group/career-stage, and organization differences likewise point to the value of subgroup-sensitive review. Because the DVC subgroup was small and the organization samples were unequal, comparisons should be explored through carefully designed follow-up work rather than translated into broad organizational judgements.

7. Limitations and Future Research

Several limitations delimit the findings. First, the cross-sectional design precludes causal inference. The study cannot establish temporal precedence, and reverse or reciprocal explanations remain plausible. Second, all focal constructs were measured through self-report in a single survey, which creates the possibility of common-method and perceptual covariance. Future studies could use repeated waves, temporal separation, multiple sources, and appropriate procedural or statistical remedies.

Third, the sample comprises 250 clerical and ground-level employees from three West Bengal utilities. The small DVC subgroup and unequal organization sizes limit generalizability and reduce the precision of comparative interpretations. Future research should use larger, more balanced samples and clearly document sampling procedures. Fourth, the bivariate matrix neither estimates unique associations nor accounts for demographic or organizational clustering, and it cannot support mediation, moderation, regression, CFA, or SEM conclusions.

Finally, the EFA results were exploratory. The UWES-17 and MSQ findings did not reproduce their expected factor counts, while the psychological empowerment EFA reported a non-positive-definite matrix and weaker or split items. Future work should preregister measurement plans, conduct confirmatory factor analysis, assess measurement invariance across organizations, gender groups, and career stages, and examine item functioning. Any future examination of operational or financial outcomes should use transparent, comparable, time-aligned data and a prespecified analytic model.

8. CONCLUSION

Among the surveyed clerical and ground-level employees in three West Bengal power utilities, organizational culture, psychological empowerment, employee engagement, and job satisfaction were all positively interrelated. The six correlations ranged from .169 to .393. Job satisfaction and psychological empowerment constituted the largest observed pairwise association, while organizational culture and psychological empowerment constituted the smallest. The findings therefore support an integrated HR-driver correlation perspective: employees' views of their culture, their sense of empowerment, their engagement, and their job satisfaction coexist in a patterned way.

That contribution is intentionally bounded. The evidence does not show that one driver produces another, identify a causal sequence, or demonstrate improvement in organizational performance. Its value lies in establishing a transparent

descriptive and correlational baseline for more rigorous longitudinal, multilevel, and measurement-focused research in this workforce context.

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