Multidisciplinary Output Research For Actual and International Issue (MORFAI Journal) ISSN (e): 2808-6635
Volumes 6 No. 6 (2026)

EMPLOYEE PSYCHOSOCIAL PROFILES: A PERSON-CENTERED ANALYSIS OF WELL-BEING, CITIZENSHIP BEHAVIOR, HAPPINESS, AND EXHAUSTION

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Received:05/09/2026 | **Revised** : 12/09/2026 | **Accepted:** 30/09/2026 | **Published:** 09/11/2026

Abstract

Research on employee well-being, organizational citizenship behavior, happiness at work, and exhaustion often focuses on average relationships among constructs, which can mask heterogeneous employee experiences. This study reports a secondary reanalysis of 150 complete responses from a port-support service company in Surabaya, Indonesia, to identify employee psychosocial profiles. We standardized four construct scores and examined them using K-means solutions from k = 2 to k = 6. Candidate solutions were evaluated with the silhouette, Calinski–Harabasz, Davies–Bouldin, and gap statistics; the selected solution was then assessed for agreement with Ward hierarchical clustering and stability across 500 subsamples. The two-profile solution had the best silhouette and Calinski–Harabasz values and the lowest Davies–Bouldin value, although the gap statistic favored k = 4. For k = 2, the Ward–K-means adjusted Rand index was 0.820, and the mean subsample adjusted Rand index was 0.895. Profile 1 comprised 93 employees (62.0%) with higher well-being, citizenship behavior, and happiness and lower exhaustion; Profile 2 comprised 57 employees (38.0%) with the opposite configuration. Self-reported individual performance, excluded from profile formation, differed substantially between profiles (Hedges' g = 1.93; 95% CI 1.54–2.41). The findings indicate psychosocial segmentation within this sample but require replication across organizations and time.

Keywords: employee profiles; employee well-being; exhaustion; organizational citizenship behavior; person-centered analysis

INTRODUCTION

A single organizational average does not fully capture employees' work experiences. Employee well-being (EWB) reflects employees' evaluations of their lives, workplace experiences, and psychological functioning; these domains may move in the same direction, but they do not necessarily occur at the same level for every individual (Zheng et al., 2015; Wijngaards et al., 2022). Organizational citizenship behavior (OCB), meanwhile, captures contributions beyond formal role requirements. Happiness at work and exhaustion represent different aspects of the work experience: positive functioning and energy depletion.

Variable-centered analyses estimate average relationships but cannot, on their own, show whether employees share similar combinations of work experiences. For example, Valentino et al. (2026) used regression to examine leadership, the work environment, stress, and performance in an Indonesian utility. That study addresses a different question and cannot serve as a direct comparator for the number of psychosocial profiles. Here, we ask whether combinations of EWB, OCB, happiness, and exhaustion form interpretable and reasonably stable groups within this sample.

In port-support services, organization-wide averages may conceal employees reporting less favorable combinations of psychosocial experiences. Shahidi et al. (2021) identified four psychosocial job-exposure profiles among 6,408 Canadian workers, with profile membership associated with mental-health indicators. Unlike that study, which grouped workers by reported stressors, the present analysis considers employee experiences and behaviors together. The comparison supports examining heterogeneity but does not predict how many profiles will emerge. The scores cannot identify the workplace conditions behind any observed profile.

The same respondent-level dataset was used in an earlier publication, so the distinction between the analyses matters. Dewi et al. (2024) examined an aggregate mediation model linking EWB and OCB to individual performance through happiness at work and exhaustion. Here, we do not re-estimate those mediation paths, repeat the PLS-SEM model, or revisit importance–performance priorities. Instead, we use the four psychosocial constructs to form employee profiles and examine individual performance only afterward as an external criterion. The research question and analytical focus therefore differ from those of the previous study.

This study therefore aimed to identify an interpretable, parsimonious, and relatively stable profile solution based on EWB, OCB, happiness at work, and exhaustion. It also examined whether the resulting profiles differed in individual performance, which was excluded from cluster formation. These aims are addressed through three research questions. First, which candidate solution is best supported by the internal validity indices, and how robust is the selected solution to cross-method agreement and resampling stability? Second, how are the resulting profiles configured at the construct and dimension levels? Third, do profiles formed without performance information differ meaningfully in individual performance?

LITERATURE REVIEW

Earlier studies have linked citizenship behavior with positive work experiences, although they examined different measures and populations. In a three-wave study of Chilean workers, OCB and several forms of happiness showed prospective associations in both directions (Unanue et al., 2021). A survey of 498 Indian bank employees found an association between workplace happiness and OCB, but measured happiness through satisfaction, commitment, and engagement rather than the score used here (Singh & Banerji, 2022). Among 321 Chinese hotel employees, different forms of OCB were associated with positive emotion and work-life quality (Wang et al., 2021). Studies of happiness and productivity (Bellet et al., 2023) and kindness and workplace happiness (Curry et al., 2024) address related but different outcomes. Together, these findings motivate examining OCB alongside psychosocial experiences; they do not indicate how many profiles these data contain.

The literature also cautions against treating all citizenship-related activity as necessarily favorable. De Clercq et al. (2021) linked citizenship pressure, which is distinct from voluntary OCB, to fatigue and lower performance. Clinton (2023) observed both higher perceived role performance and greater exhaustion in research on worker self-sacrifice, while Zhang et al. (2023) studied the role of exhaustion in associations between HR systems and helping or voice behavior. These mechanisms were not measured here.

Other studies examine exhaustion in relation to public-sector work arrangements (Giauque et al., 2022), daily work-system experiences (Kilroy et al., 2022), leader-member ambivalence (Han & Sears, 2024), bullying and support (Pauksztat et al., 2022), or pandemic demands and resources (Meyer et al., 2021). Their different exposures and contexts provide interpretation boundaries rather than direct confirmation of these profiles.

Person-centered research offers a closer methodological comparison, although the measures used to define profiles vary. Mäkikangas (2018) identified two job-crafting profiles, whereas Knight et al. (2022) found four work-design profiles among 2,421 Australian not-for-profit employees. El Khawli et al. (2023) reported three work-design profiles across two worker samples. Among 449 Korean nurses, Portoghese et al. (2025) identified five job-demand/resource profiles associated with work well-being. Jang et al. (2024) identified four profiles based on motives for OCB rather than on OCB scores and employee well-being. These studies show that person-centered analysis is established, while profile counts and interpretations depend on the measures, workforce, and method. This reanalysis uses EWB, OCB, happiness, and exhaustion to form profiles, then examines self-reported performance outside the clustering procedure.

METHOD

This manuscript reports a quantitative, cross-sectional secondary analysis of questionnaire responses previously collected from 150 employees of a port-support service company in Surabaya,

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Indonesia. The employee was the unit of analysis, and the documented questionnaire contained 48 five-point Likert-type items. The available materials contained the reported analytical summaries and figures, but not the individual-level records needed for independent recalculation. No responses were generated or reconstructed for this manuscript.

Four constructs formed the profiles. In the source dataset, EWB was represented by eight items covering subjective well-being, workplace well-being, and psychological well-being. OCB was represented by eight items across altruism, conscientiousness, and sportsmanship. Happiness at work comprised nine items representing positive relationships, achievement, work environment, and compensation. Exhaustion comprised eight items covering slow thinking, reduced physical or mental efficiency, and lack of energy. Self-reported individual performance included 15 questionnaire items and was excluded from cluster formation; it was retained as an external criterion. Cronbach's alpha was used to describe internal consistency; those coefficients alone do not establish construct validity or equivalence to an original scale.

We analyzed the four construct scores using a person-centered approach. Before clustering, we standardized each construct to z-scores so differences in dispersion would not dominate Euclidean distance. We estimated K-means solutions for $k = 2$ through $k = 6$, with 100 random initializations for each solution to reduce dependence on starting centroids. Candidate cluster counts were evaluated using the silhouette coefficient, Calinski–Harabasz index, Davies–Bouldin index, and gap statistic. We considered the internal indices jointly, prioritizing parsimony rather than treating any single index as decisive. Cross-method agreement and resampling stability were then used to assess the robustness of the selected solution (Caliński & Harabasz, 1974; Rousseeuw, 1987; Steinley, 2006; Tibshirani et al., 2001).

We assessed the robustness of the selected solution in two ways. First, K-means membership was compared with a Ward hierarchical-clustering solution using the adjusted Rand index (ARI), which measures agreement between partitions beyond chance. Second, stability was evaluated across 500 subsampling iterations. In each iteration, 80% of observations were drawn without replacement, K-means was re-estimated with the selected number of clusters, and the subsample partition was compared with the corresponding full-sample membership using ARI. This procedure assessed whether the selected profile structure depended heavily on particular respondents.

After selecting the profile solution, we calculated means and standard deviations for the four constructs and 13 underlying dimensions to describe each profile. Inferential tests were not used to select the clusters. Individual performance was then compared between profiles as an external criterion using Welch's independent-samples t test, Hedges' g with a 95% bootstrap confidence interval, and a permutation test of the mean difference. Because the design was cross-sectional, this analysis was interpreted as evidence of profile differentiation rather than causal validation; the data do not establish temporal ordering or causal direction.

The source manuscript states that questionnaire responses were confidential and intended for academic purposes. Only aggregate results are reported here, without direct personal identifiers. Recruitment records, original consent forms, secondary-use permissions, and a separate ethics decision were unavailable for inspection. We therefore do not claim retrospective ethics approval or institutional permission that is not documented.

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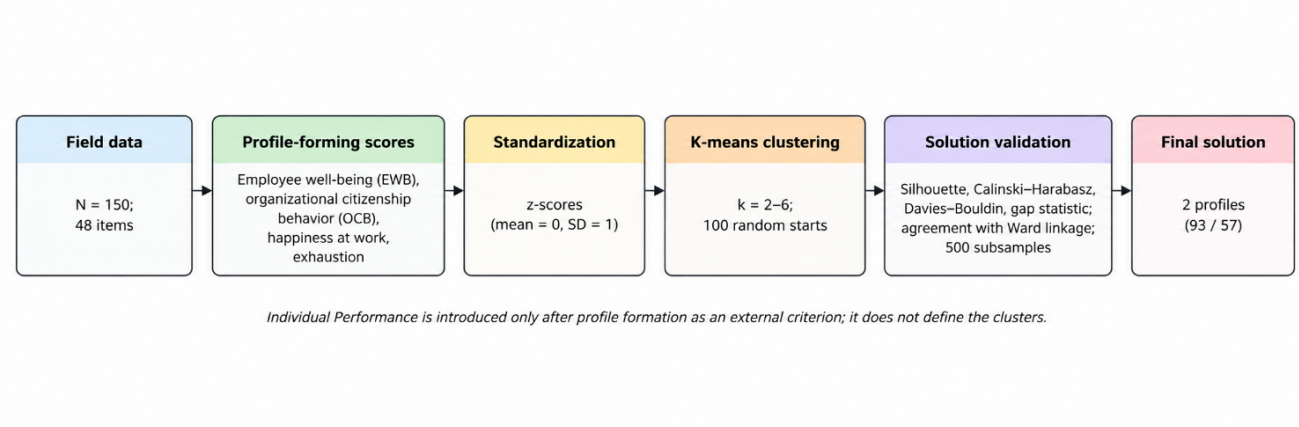


Image 1. Person-centered analytical workflow and external-criterion assessment. Individual Performance was used only after the profiles had been formed—source: Authors' analysis.

RESULTS AND DISCUSSION

Construct characteristics and measurement quality

At the aggregate level, the four profiling constructs showed a generally favorable pattern. Mean scores were 4.050 for EWB, 4.094 for OCB, 4.320 for happiness at work, and 1.781 for exhaustion. Cronbach's alpha ranged from 0.769 for happiness at work to 0.890 for OCB, indicating acceptable-to-high internal consistency of the construct scores used in the analysis. Individual performance, which was not used to form the profiles, had a mean of 4.088. These sample-level averages do not show whether employees shared the same psychosocial configuration.

The variability behind these averages points to a question that aggregate scores cannot answer. EWB and OCB had standard deviations of approximately 0.62–0.63, while exhaustion had a standard deviation of 0.56. These separate statistics do not show which positive psychosocial scores and exhaustion levels coexist within individual employees. Cluster analysis addressed that question by examining whether employees shared similar combinations across the four constructs.

Table 1. Descriptive statistics and construct reliability

Construct	Items	Mean	SD	Cronbach's α	Analytical role
Employee Well-Being	8	4.050	0.616	0.869	Profile-forming
Organizational Citizenship Behavior	8	4.094	0.634	0.890	Profile-forming
Happiness at Work	9	4.320	0.449	0.769	Profile-forming
Exhaustion	8	1.781	0.556	0.845	Profile-forming
Individual Performance	15	4.088	0.560	0.909	External criterion

Note: All construct scores range from 1 to 5. For Exhaustion, higher values indicate a less favorable condition. Source: Authors' analysis of field data.

Selecting the profile solution

Among the candidate solutions, k = 2 performed best on three of the four internal indices. Its silhouette coefficient was 0.413, and its Calinski–Harabasz index was 150.855, both higher than those for k = 3–6, while its Davies–Bouldin index was the lowest at 0.929. The gap statistic peaked at k = 4 (1.000), with k = 3 only slightly lower (0.997) and k = 2 at 0.912.

The indices did not favor the same number of clusters. We selected k = 2 because it performed better on the silhouette, Calinski–Harabasz, and Davies–Bouldin indices and offered a more parsimonious summary. The gap statistic's preference for k = 4 remains a competing signal rather than a result to be set aside.

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Table 2. Evaluation of candidate cluster solutions

k	Cluster sizes	Silhouette	Calinski–Harabasz	Davies–Bouldin	Gap
2	93/57	0.413	150.855	0.929	0.912
3	69/58/23	0.329	125.010	1.102	0.997
4	45/44/40/21	0.258	105.874	1.283	1.000
5	45/44/26/25/10	0.263	94.968	1.266	0.992
6	30/30/29/26/25/10	0.265	87.853	1.256	0.987

Note: Higher values are preferable for the silhouette and Calinski–Harabasz indices, whereas lower values are preferable for Davies–Bouldin. The internal indices did not converge on the same k: silhouette, Calinski–Harabasz, and Davies–Bouldin favored k = 2, whereas the gap statistic favored k = 4. Ward agreement and subsampling stability reported in the text were applied to the selected k = 2 solution as robustness checks—source: Authors' analysis.

The reported k = 2 solution was compared with Ward hierarchical clustering, yielding an ARI of 0.820. Across 500 reported subsampling iterations, the mean ARI was 0.895 and the median was 0.921. These results suggest that the selected partition was relatively stable within this sample.

The original respondent-level matrix and analysis scripts were unavailable for independent reproduction of the ARI and subsampling calculations. The k = 2 solution is therefore presented as a documented descriptive grouping, not evidence that two profiles are uniquely correct or will necessarily recur in other organizations.

Configuration of the two profiles

Profile 1 included 93 respondents (62.0%) and had mean scores of 4.405 for EWB, 4.445 for OCB, 4.569 for happiness at work, and 1.484 for exhaustion. Profile 2 included 57 respondents (38.0%) and showed the opposite configuration: EWB = 3.471, OCB = 3.522, happiness at work = 3.914, and exhaustion = 2.265. Profile separation therefore reflected a consistent pattern across the positive constructs and exhaustion, rather than differences in any single construct.

Table 3. Construct characteristics across the two profiles

Profile	N (%)	EWB Mean (SD)	OCB Mean (SD)	Happiness Mean (SD)	Exhaustion Mean (SD)
Profile 1	93 (62.0%)	4.405 (0.406)	4.445 (0.403)	4.569 (0.258)	1.484 (0.357)
Profile 2	57 (38.0%)	3.471 (0.434)	3.522 (0.516)	3.914 (0.396)	2.265 (0.477)

Note: Profile 1 shows higher EWB, OCB, and Happiness with lower Exhaustion; Profile 2 shows the opposite pattern. Source: Authors' analysis of field data.

Image 2 clarifies the separation: the profiles differed in the levels of the three positively oriented constructs and in the opposite direction for exhaustion. Profile 1 was approximately 0.55 standard deviations above the sample mean on EWB, OCB, and happiness, but about 0.54 standard deviations below the mean on exhaustion. Profile 2 showed the inverse pattern, lying approximately 0.90–0.94 standard deviations below the mean on the positive constructs and 0.87 standard deviations above the mean on exhaustion.

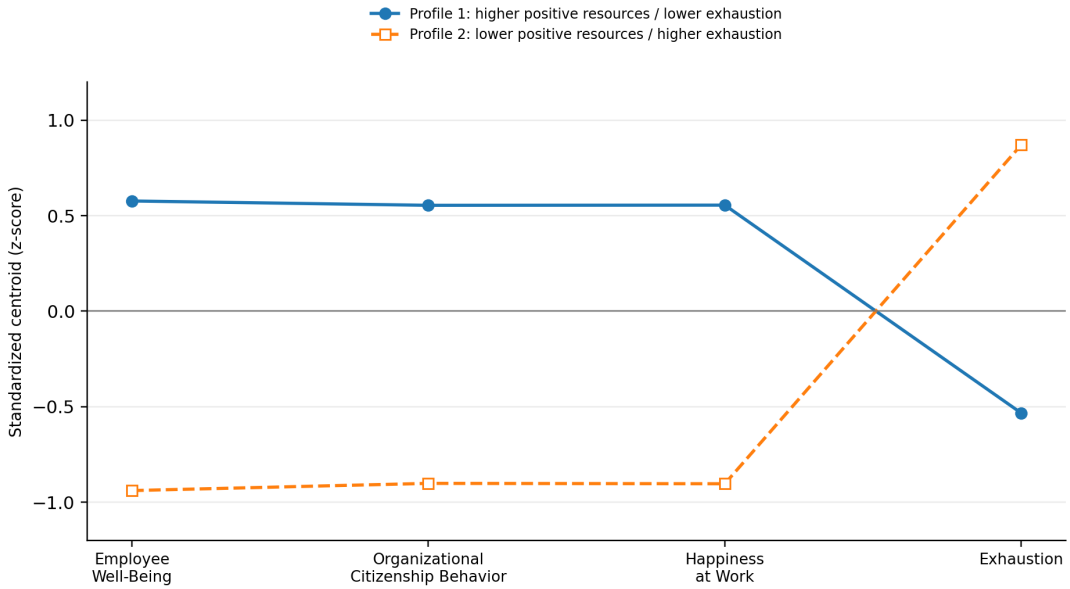


Image 2. Standardized centroids of the two employee profiles. Exhaustion is retained in its original direction; higher values indicate greater exhaustion—source: Authors' analysis.

The groups differed mainly in score levels, not in sharply distinct profile shapes. The crossover in the figure reflects the exhaustion scale, which was not reversed. These groups should not be treated as universal employee 'types'. The figure legend uses 'positive resources' as shorthand for the three positively oriented scores, not as a claim that job resources were measured separately.

The difference in overall levels resembles more- and less-favorable groupings reported in person-centered research, but the constructs are not the same. Knight et al. (2022) identified four profiles from work-design characteristics, while Portoghese et al. (2025) identified five from job demands and resources. Neither study used the four scores examined here. Mäkikangas (2018) found two job-crafting profiles, but that matching count does not validate k = 2 in the present sample. Differences in measures, workforces, and clustering methods limit direct comparison. These profiles describe the respondents in this survey rather than universal employee categories.

Dimension-level pattern

The construct-level separation remained visible across the 13 underlying dimensions, although the magnitude of the differences varied. Within EWB, the largest absolute mean difference was observed for workplace well-being (0.953), followed by psychological well-being (0.931) and subjective well-being (0.921). Within OCB, the differences for conscientiousness (0.964) and altruism (0.954) were larger than those for sportsmanship (0.819). The profile distinction was therefore distributed across several underlying domains rather than being driven by a single indicator family.

Happiness showed a less uniform pattern. Positive relationships and achievement differed by approximately 0.76–0.77 points, compensation by 0.68, and work environment by about 0.49. The smaller difference in work environment indicates that the groups were not equally separated on every aspect of workplace happiness. For exhaustion, the largest gap occurred in lack of energy (0.885), followed by slow thinking (0.776) and reduced physical or mental efficiency (0.719).

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Table 4. Dimension means by profile

Dimension	Profile 1	Profile 2
Subjective Well-Being	4.430	3.509
Workplace Well-Being	4.532	3.579
Psychological Well-Being	4.294	3.363
Altruism	4.371	3.417
Conscientiousness	4.376	3.412
Sportsmanship	4.661	3.842
Positive Relationships	4.677	3.921
Achievement	4.694	3.921
Environment	4.427	3.936
Compensation	4.548	3.868
Slow Thinking	1.505	2.281
Reduced Physical/Mental Efficiency	1.416	2.135
Lack of Energy	1.554	2.439

Note: Lower scores are favorable for all three Exhaustion dimensions. Source: Authors' analysis of field data.

At the dimension level, Profile 2 combined less favorable workplace well-being, conscientiousness, and altruism with greater lack of energy. This identifies domains of difference, not their causes.

Shahidi et al. (2021) grouped workers by reported psychosocial work exposures, whereas the present clusters were based on employee experiences and behaviors. This analysis therefore cannot identify autonomy, work demands, or support as determinants of profile membership. Giauque et al. (2022) examined work arrangements and collaboration in relation to exhaustion and perceived performance among public employees; Kilroy et al. (2022) studied day-level exhaustion in relation to work systems and leadership. Their findings suggest issues worth assessing, but do not establish the mechanisms behind these profiles or the effectiveness of particular interventions in this sample.

External-criterion assessment using Individual Performance

Self-reported individual performance was assessed only after the clusters had been formed. It therefore served as an external criterion rather than contributing to cluster membership. Profile 1 had a mean performance score of 4.389 (SD = 0.397), compared with 3.598 (SD = 0.426) for Profile 2, a mean difference of 0.791. Welch's t-test yielded $t = 11.322$, $p < 0.001$. Hedges' g was 1.93 (95% bootstrap CI 1.54–2.41), and the permutation test also produced $p < 0.001$.

Table 5. Individual Performance as an external criterion

Profile	N	Mean Individual Performance	SD
Profile 1	93	4.389	0.397
Profile 2	57	3.598	0.426

Note: Mean difference = 0.791; Welch's $t = 11.322$; $p < 0.001$; Hedges' $g = 1.93$ (95% bootstrap CI 1.54–2.41); permutation $p < 0.001$. Source: Authors' analysis.

The performance difference helps describe how the profiles differ on a measure excluded from clustering, but it is not independent external validation. Bellet et al. (2023) examined workplace happiness and productivity using different performance evidence, while Salas-Vallina et al. (2021) studied well-being-oriented human resource practices, leadership, and performance in large organizations. These studies provide context, but their measures and effect magnitudes are not directly comparable with the present self-reports.

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In the present analysis, performance and all four profiling scores came from the same cross-sectional questionnaire; common response tendencies and unmeasured employee or job characteristics could contribute to the observed difference. The result therefore indicates an association within this sample, not causal mediation, improved objective productivity, or an effect of profile membership.

The profiles may inform further workplace assessment, but they do not justify prescribing specific interventions. For employees resembling Profile 1, managers could monitor whether favorable reported experiences are sustained and whether signs of overextension emerge. For those resembling Profile 2, the combined pattern warrants assessing work support, recovery, and psychosocial conditions rather than assuming a single motivational problem. No intervention was tested, and the profiles are descriptive groupings rather than fixed employee labels.

Several limitations constrain interpretation. Data came from one organization at one point in time, so neither the profile count nor its prevalence can be generalized without replication. All profile-forming scores and the performance criterion were self-reported, making shared response tendencies possible. K-means favors compact distance-based partitions, while the selected profiles were distinguished mainly by score levels rather than fundamentally different shapes.

The available materials also lacked records needed to inspect recruitment, item adaptation, construct validity, consent, permissions for secondary use, or the original respondent-level matrix and scripts. We could check the arithmetic consistency of reported summaries, but could not independently reproduce the cluster indices, ARI, bootstrap interval, or permutation result. The inability to repeat those calculations does not itself indicate that the reported results are incorrect.

CONCLUSION

The reported secondary analysis of 150 employees identified two relatively stable psychosocial profiles based on Employee Well-Being, Organizational Citizenship Behavior, Happiness at Work, and Exhaustion. The indices did not uniformly favor one number of groups: the silhouette and Calinski–Harabasz indices were highest and the Davies–Bouldin index lowest at $k = 2$, while the gap statistic favored $k = 4$. The analysis retained $k = 2$ for its performance on three indices and its parsimony. The selected partition also showed agreement with Ward hierarchical clustering and stability across 500 subsamples. The larger profile combined higher well-being, citizenship behavior, and happiness with lower exhaustion; the smaller profile showed the reverse.

Self-reported Individual Performance, excluded from clustering, differed substantially between the groups. Because the scores came from the same cross-sectional survey, this difference provides criterion-based differentiation, not independent validation or causal evidence. Favorable aggregate averages did not convey the differences among respondents, illustrating how person-centered analysis can complement variable-centered evidence. These findings remain limited to one organization at one time point, with self-reported measures and profiles that differ mainly in level. Independent computational replication and studies across organizations and time are needed before broader generalization is warranted.

REFERENCES

Bellet, C. S., De Neve, J.-E., & Ward, G. (2023). Does employee happiness have an impact on productivity? Management Science, 70(3), 1656–1679. https://doi.org/10.1287/mnsc.2023.4766

Caliński, T., & Harabasz, J. (1974). A dendrite method for cluster analysis. Communications in Statistics, 3(1), 1–27. https://doi.org/10.1080/03610927408827101

Clinton, M. E. (2023). Pushing yourself to the edge: The relationship of worker self-sacrifice behaviour with perceived role performance, emotional exhaustion, and partner self-sacrifice. Journal of Occupational and Organizational Psychology, 96(4), 947–969. https://doi.org/10.1111/joop.12453

Curry, O. S., San Miguel, C., & Tunç, M. N. (2024). Kindness and happiness at work. Discover Psychology, 4, 167. https://doi.org/10.1007/s44202-024-00276-6

OPEN ACCESS

De Clercq, D., Suhail, A., Azeem, M. U., & Haq, I. U. (2021). Citizenship pressure and job performance: Roles of citizenship fatigue and continuance commitment. Asia Pacific Journal of Human Resources, 59(3), 482–505. https://doi.org/10.1111/1744-7941.12241

Dewi, P. P., Riyadi, S., & Nugroho, R. (2024). Employee well-being, citizenship behavior, and performance: Understanding the mediating effects of workplace happiness and exhaustion. The Seybold Report, 19(6), 528–541. https://doi.org/10.5281/zenodo.12205206

El Khawli, E., Keller, A. C., & Scheibe, S. (2023). Goldilocks work conditions for all ages: Age-conditional effects of work design profiles on well-being. Work, Aging and Retirement, 9(3), 262–279. https://doi.org/10.1093/workar/waac011

Giauque, D., Renard, K., Cornu, F., & Emery, Y. (2022). Engagement, exhaustion, and perceived performance of public employees before and during the COVID-19 crisis. Public Personnel Management, 51(3), 263–290. https://doi.org/10.1177/00910260211073154

Han, Y., & Sears, G. J. (2024). Does leader-member exchange ambivalence hinder employee well-being? Exploring relations with work engagement and emotional exhaustion. Stress and Health, 40(3), e3334. https://doi.org/10.1002/smi.3334

Jang, S., Stephens, A. B., & Smith, R. W. (2024). Identifying different patterns of citizenship motives: A latent profile analysis. Occupational Health Science, 8, 191–210. https://doi.org/10.1007/s41542-023-00166-8

Kilroy, S., Fu, N., Bosak, J., Hayes, R., & Schaufeli, W. B. (2022). Reducing day-level emotional exhaustion: The complementary role of high involvement work systems and engaging leadership. Human Resource Management Journal, 33(4), 846–867. https://doi.org/10.1111/1748-8583.12482

Knight, C., McLarnon, M. J. W., Wenzel, R., & Parker, S. K. (2022). The importance of relational work design characteristics: A person-centred approach. Australian Journal of Management, 47(4), 705–728. https://doi.org/10.1177/03128962211073021

Mäkikangas, A. (2018). Job crafting profiles and work engagement: A person-centered approach. Journal of Vocational Behavior, 106, 101–111. https://doi.org/10.1016/j.jvb.2018.01.001

Meyer, B., Zill, A., Dilba, D., Gerlach, R., & Schumann, S. (2021). Employee psychological well-being during the COVID-19 pandemic in Germany: A longitudinal study of demands, resources, and exhaustion. International Journal of Psychology, 56(4), 532–550. https://doi.org/10.1002/ijop.12743

Pauksztat, B., Salin, D., & Kitada, M. (2022). Bullying behavior and employee well-being: How do different forms of social support buffer against depression, anxiety and exhaustion? International Archives of Occupational and Environmental Health, 95(7), 1633–1644. https://doi.org/10.1007/s00420-022-01844-w

Portoghese, I., Min, A., & Galletta, M. (2025). Latent profiles of job demands and job resources and their association with work wellbeing among nurses in South Korea. Scientific Reports, 15, 16439. https://doi.org/10.1038/s41598-025-01479-0

Rousseeuw, P. J. (1987). Silhouettes: A graphical aid to the interpretation and validation of cluster analysis. Journal of Computational and Applied Mathematics, 20, 53–65. https://doi.org/10.1016/0377-0427(87)90125-7

Salas-Vallina, A., Alegre, J., & López-Cabrales, Á. (2021). The challenge of increasing employees' well-being and performance: How human resource management practices and engaging leadership work together toward reaching this goal. Human Resource Management, 60(3), 333–347. https://doi.org/10.1002/hrm.22021

Shahidi, F. V., Gignac, M. A. M., Oudyk, J., & Smith, P. M. (2021). Assessing the psychosocial work environment in relation to mental health: A comprehensive approach. Annals of Work Exposures and Health, 65(4), 418–431. https://doi.org/10.1093/annweh/wxaa130

Singh, A., & Banerji, R. (2022). Happiness at work, organization citizenship behaviour and workplace diversity: A study on Indian private sector bank employees. Industrial and Commercial Training, 54(3), 460–475. https://doi.org/10.1108/ICT-05-2021-0037

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Steinley, D. (2006). K-means clustering: A half-century synthesis. British Journal of Mathematical and Statistical Psychology, 59(1), 1–34. https://doi.org/10.1348/000711005X48266

Tibshirani, R., Walther, G., & Hastie, T. (2001). Estimating the number of clusters in a data set via the gap statistic. Journal of the Royal Statistical Society: Series B (Statistical Methodology), 63(2), 411–423. https://doi.org/10.1111/1467-9868.00293

Unanue, W., Barros, E., & Gómez, M. (2021). The longitudinal link between organizational citizenship behaviors and three different models of happiness. International Journal of Environmental Research and Public Health, 18(12), 6387. https://doi.org/10.3390/ijerph18126387

Valentino, F., Munajat, & Efrianti, R. (2026). Analisis pengaruh kepemimpinan, lingkungan kerja dan stres kerja terhadap kinerja karyawan PDAM Tirta Raja OKU. Jurnal Ekonomi, Manajemen, dan Bisnis, 4(2), 148–155. https://doi.org/10.70716/emis.v4i2.511

Wang, D., Ma, E., Kim, Y. S., Liu, A., Berbekova, A., & Ma, J. (2021). From good soldiers to happy employees: Exploring the emotional and well-being outcomes of organizational citizenship behavior. Journal of Hospitality and Tourism Management, 49, 570–579. https://doi.org/10.1016/j.jhtm.2021.11.005

Wijngaards, I., King, O. C., Burger, M. J., & van Exel, J. (2022). Worker well-being: What it is, and how it should be measured. Applied Research in Quality of Life, 17, 795–832. https://doi.org/10.1007/s11482-021-09930-w

Zhang, G., Peng, K., & Chen, S. (2023). The double-edged sword effect of high-performance work systems: Investigating when and why high-performance work systems promote versus inhibit employee organizational citizenship behaviors. Asia Pacific Journal of Human Resources, 61(1), 168–195. https://doi.org/10.1111/1744-7941.12326

Zheng, X., Zhu, W., Zhao, H., & Zhang, C. (2015). Employee well-being in organizations: Theoretical model, scale development, and cross-cultural validation. Journal of Organizational Behavior, 36(5), 621–644. https://doi.org/10.1002/job.1990

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