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Mindfulness as a Moderator of the Relationship Between Big Five Personality Traits and Burnout Among Generation Z Employees

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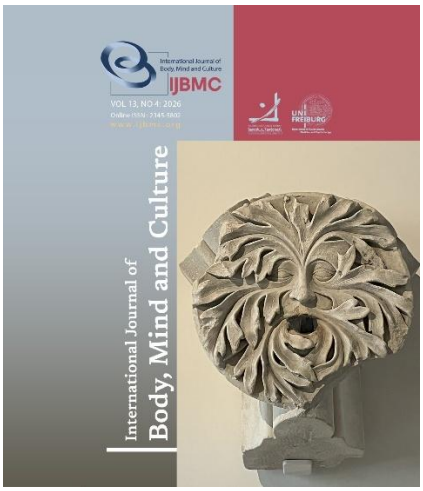

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ABSTRACT

Objective: This study examines the relationship between the Big Five personality traits and burnout among employees at a regional public transportation company and investigates the moderating role of mindfulness as a psychological resource.

Methods and Materials: A quantitative cross-sectional survey design was employed using self-report questionnaires administered to 436 employees. Structural Equation Modeling (SEM-AMOS) was applied to examine the relationships between personality traits and burnout and to test the moderating role of mindfulness. The measurement and structural models demonstrated acceptable fit (e.g., CFI, TLI, and RMSEA within acceptable thresholds).

Findings: The results showed significant associations between personality traits and burnout. Neuroticism was positively correlated with burnout (β= 0.164, p< 0.001), while extraversion (β= -0.258, p< 0.001), agreeableness (β= -0.231, p< 0.001), and conscientiousness (β= -0.177, p< 0.001) were negatively associated with burnout. Mindfulness was found to significantly moderate these relationships. It strengthened the negative relationship between extraversion and burnout (β= -0.286, p < 0.001) and between conscientiousness and burnout (β= -0.200, p = 0.002), while also amplifying the positive relationship between neuroticism and burnout (β= 0.445, p< 0.001).

Conclusion: These findings suggest that the associations between personality traits and burnout are contingent upon individual levels of mindfulness. While mindfulness is generally associated with lower burnout, its effectiveness as a buffer is not universal and varies across personality profiles. Given the cross-sectional design, self-report data, and single-organization sample, these findings should be interpreted as context-specific associations rather than causal effects.

Keywords: Burnout, Big five personality traits, Mindfulness, Generation Z, Employees, Structural equation modeling.

Introduction

Burnout has become a critical occupational concern in high-demand service environments, particularly among frontline employees whose psychological functioning supports service continuity and operational reliability (Kim & Kim, 2021). Workers in public service sectors are frequently required to manage intense time pressure, demanding performance standards, and continuous interaction with service users (Dragano & Lunau, 2020; Yang & Lau, 2019). These chronic stressors may contribute to burnout, which is defined in the International Classification of Diseases (ICD-11) as an occupational phenomenon resulting from unmanaged chronic workplace stress, characterized by emotional exhaustion, psychological distancing, and reduced professional efficacy (Organization, 2024). While organizational factors such as workload and job demands are widely acknowledged as key contributors to burnout, individual differences may also influence how employees perceive and respond to stressful work situations (Kim & Kim, 2021). Meanwhile, optimizing organizational competence and performance is important to focus on because it is oriented toward improving service quality (Octavianne et al., 2025). Therefore, burnout needs to be addressed.

One theoretical perspective that helps explain burnout is the Conservation of Resources (COR) theory. COR theory suggests that stress occurs when individuals experience actual or threatened loss of valued resources such as psychological energy, emotional capacity, and self-efficacy (Hobfoll, 1989). Within this framework, personality traits serve as stable personal resources that shape how individuals interpret and mobilize effort in response to workplace stressors. Previous studies have shown that personality traits are associated with burnout. Meta-analytic evidence indicates that neuroticism is often positively associated with burnout, whereas traits such as extraversion and conscientiousness are often negatively associated with burnout (Rheaume, 2022). However, findings across occupational settings remain inconsistent, suggesting that the relationship between personality traits and burnout may depend on contextual or psychological boundary conditions (Wang et al., 2023). This indicates the need to examine moderating mechanisms that may explain when and for whom personality traits are associated with burnout.

Mindfulness, commonly defined as a non-judgmental awareness of present-moment experiences (Kabat-Zinn, 2003), has received increasing attention as a psychological resource that supports adaptive regulation of attention and emotion under stress (Hülsheger, Alberts, Feinholdt, & Lang, 2013). In this study, mindfulness is conceptualized as a trait-like individual difference, shaped in part by prior organizational mindfulness training completed by all participants, rather than as an experimental intervention. Accordingly, mindfulness is proposed to act as a moderator, potentially influencing the strength of associations between personality traits and burnout within this specific post-training context. From a COR perspective, mindfulness may function as a meta-resource that conditions how individuals utilize their underlying trait-based resources in response to job demands (Fabbro, Fabbro, Capurso, D'Antoni, & Crescentini, 2020; Hobfoll, 1989). While empirical evidence suggests that mindfulness can support adaptive stress regulation, its effects are context-dependent and may vary across individuals and work environments (Wu et al., 2024)

Despite the growing body of research on burnout, several gaps remain in the literature. First, while much research on burnout has focused on healthcare professionals and corporate employees, comparatively fewer studies have examined burnout among frontline workers in public transportation services (Söderlund, 2017). Second, while Generation Z is rapidly entering the workforce with heightened mental health awareness, theoretical explanations for their psychological patterns remain underdeveloped and overly generalized. A critical research gap exists in understanding the heterogeneity within this cohort, specifically how diverse personality profiles interact with psychological resources to mitigate burnout in rigid work environments (Rheaume, 2022). Third, most research treats mindfulness as a direct predictor; less is known about its role as a moderating factor (Kabat-Zinn, 2003; Mesmer-Magnus, Manapragada, Viswesvaran, & Allen, 2017).

Based on these arguments, this study addresses these gaps by examining the relationship between Big Five personality traits and burnout among Generation Z employees in a regional public transportation company, with mindfulness acting as a moderating variable. This approach aims to clarify how mindfulness conditions the associations between personality traits and burnout within a specific organization.

Big Five Personality Traits and Burnout

The Big Five personality framework describes five broad dimensions of personality: neuroticism, extraversion, agreeableness, openness to experience, and conscientiousness (Grigorescu, Cazan, Grigorescu, & Rogozea, 2018). These traits represent relatively stable patterns of emotional, cognitive, and behavioral tendencies that may influence how individuals respond to workplace stressors. Among these traits, neuroticism is often associated with higher emotional reactivity and a tendency to interpret situations as threatening, which may increase vulnerability to burnout (Alarcon, Eschleman, & Bowling, 2009). In contrast, traits such as extraversion, conscientiousness, and agreeableness are frequently associated with positive coping strategies and goal-directed behavior, which may help individuals manage work demands (Kim & Kim, 2021; Mesmer-Magnus et al., 2017). However, findings remain inconsistent across contexts, suggesting that these relationships may depend on additional psychological factors. Based on this reasoning, the following hypotheses are proposed:

H1a: Neuroticism is positively associated with burnout among public transportation service employees.

H1b: Extraversion is negatively associated with burnout among public transportation service employees.

H1c: Agreeableness is negatively associated with burnout among public transportation service employees.

H1d: Conscientiousness is negatively associated with burnout among public transportation service employees.

H1e: Openness to Experience is negatively associated with burnout among public transportation service employees.

The Moderating Role of Mindfulness

Although personality traits play an important role in explaining burnout, responses to work-related stress are also shaped by individuals' intrapersonal regulatory capacity. Mindfulness, defined as a non-reactive awareness of present-moment experiences (Kabat-Zinn, 2003), is conceptualized in this study as a trait-like moderator influenced by prior organizational mindfulness training. It may modulate the impact of personality traits on burnout, clarifying for whom and under what conditions dispositional traits are associated with occupational stress outcomes. By promoting adaptive regulation of attention and emotion, mindfulness enables individuals to recognize and manage negative thoughts and feelings more effectively, thereby reducing reactivity to external stressors.

While this study focuses on mindfulness as a psychological resource within a specific cohort, we acknowledge the inherent heterogeneity among individuals and caution against over-generalizing these patterns, as factors beyond generational identity likely influence how mindfulness is practiced and experienced. Empirical evidence indicates that the effectiveness of mindfulness is not universal; its benefits vary depending on personality profiles and work contexts (Mesmer-Magnus et al., 2017).

From a Conservation of Resources (COR) perspective, mindfulness can be conceptualized as a meta-resource that regulates the mobilization of trait-based resources (Hobfoll, 1989). Among individuals high in neuroticism, mindfulness is expected to modulate the positive association between neuroticism and burnout by reducing emotional reactivity and negative cognitive appraisal. In contrast, for protective traits such as conscientiousness and extraversion, mindfulness may enhance adaptive effects through improved attentional focus, goal focus, and the quality of interpersonal interactions (Fabbro et al., 2020). Accordingly, mindfulness is positioned as a moderator that clarifies how personality traits relate to burnout risk, particularly in transportation service occupations requiring high levels of emotional regulation (see Figure 1).

It is also noted that all participants in this study had previously received mindfulness training, which serves as an important contextual factor in their reported mindfulness levels. Building upon the Conservation of Resources (COR) theory, mindfulness is conceptualized as a regulatory resource that conditions the impact of dispositional traits on psychological outcomes. Accordingly, the following moderation effects are proposed:

H2a: Mindfulness weakens the positive association between Neuroticism and burnout among public transportation service employees.

H2b: Mindfulness strengthens the negative association between Extraversion and burnout among public transportation service employees.

H2c: Mindfulness strengthens the negative association between Agreeableness and burnout among public transportation service employees.

H2d: Mindfulness strengthens the negative association between Openness to Experience and burnout among public transportation service employees.

H2e: Mindfulness strengthens the negative association between Conscientiousness and burnout among public transportation service employees.

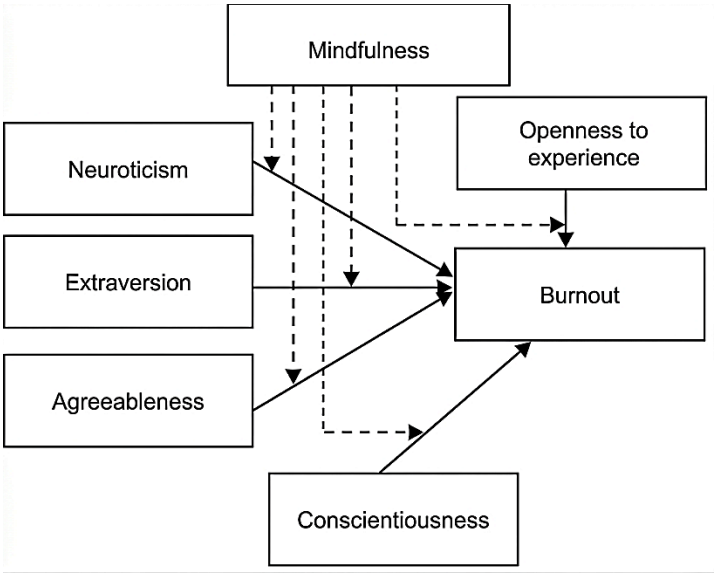

Figure 1

Theoretical Model of the Big Five Personality and Burnout, Moderated by Mindfulness

Methods and Materials

Study Design

Study Design and Participant Sampling Techniques

This study employed a quantitative cross-sectional design to examine the associations between the Big Five personality traits and burnout, with mindfulness conceptualized as a moderator among Generation Z employees in the public transportation sector. Given the cross-sectional nature of the data, the analysis focuses on statistical associations rather than causal relationships (Hair, Black, Babin, & Anderson, 2019).

Data were collected via an anonymous online questionnaire between November 2024 and February 2025. A total population sampling approach was employed within a regional public transportation company, Trans Jatim, whereby all 436 eligible employees were invited to participate and completed the survey, resulting in a 100% response rate. Data collection was conducted during a routine development session organized by the organization; participation was non-evaluative and not monitored or linked to attendance or performance.

To ensure voluntariness and minimize potential institutional pressure, the survey was administered independently by the research team (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Anonymity was guaranteed, email tracking was disabled, and no identifying information was collected. Participants were explicitly informed that their responses would not be accessible to management and would be used solely for research purposes. Participants were also informed that they could decline to participate or withdraw at any time without any consequences.

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The sample consisted of employees aged 18–27 years and was predominantly male, reflecting the organization's workforce composition. The largest occupational group was bus attendants (59%), followed by administrative and cleaning staff, with most participants reporting 2–3 years of work experience.

Given that the study employs a total population sampling approach within a single entity rather than a broader occupational demographic, the findings are context-specific. They should be interpreted without undue extrapolation to external organizational settings. Preliminary statistical analyses indicated that demographic variables (gender, tenure, and job role) had no significant influence on burnout levels ($p > .05$). Therefore, they were not included as control variables in the structural model to maintain parsimony.

All participants had previously attended routine organizational development sessions that included mindfulness content. These sessions were considered part of a shared organizational context rather than a standardized professional intervention, and mindfulness was conceptualized as an innate, trait-like individual difference. Therefore, this study primarily examined individual variability in mindfulness within this organizational setting. While prior exposure may have influenced both the level and variability of mindfulness, this was not a significant methodological issue because the program was part of routine organizational development and not implemented as a structured or closely supervised professional intervention.

Instrument

Burnout was measured using the 12-item Burnout Assessment Tool (Kabat-Zinn)(Kabat-Zinn, 2003; Schaufeli & De Witte, 2023). In this study, burnout was modeled as a single latent construct to capture overall burnout severity rather than its subdimensions.

Personality traits were assessed using the IPIP-BFM-25 (Akhtar & Azwar, 2018). Although it is brief, this instrument has been widely used in large-scale survey research. It maintains an adequate balance between construct representation and respondent burden, particularly in complex SEM models involving multiple latent variables.

Mindfulness was measured using the 20-item short form of the Five-Facet Mindfulness Questionnaire (SF-FFMQ), Baer, Smith, Hopkins, Krietemeyer, & Toney (2006), and later refined by Meng, Mao, & Li (2020). For this study, mindfulness was modeled as a unidimensional latent construct representing overall mindful awareness to maintain model parsimony and align with the moderation framework (Hair et al., 2019). All constructs were measured using self-report Likert-type scales, which may introduce common method bias.

Control of Common Method Bias

Because all variables were collected via self-report measures, both procedural and statistical remedies were implemented to mitigate the risk of common method bias (Podsakoff et al., 2003). Procedurally, anonymity and confidentiality were ensured, and respondents were informed that there were no right or wrong answers.

Harman's single-factor test was used as an initial diagnostic; however, given its limitations as a sole indicator, the results were interpreted with caution (Podsakoff et al., 2003). Variance inflation factor (VIF) values were also examined as a supplementary indicator of collinearity, and all values were below the recommended threshold of 3.0. Additionally, reverse-coded items were included in selected scales as a procedural remedy.

Data Analysis Techniques and Procedures

Data analysis was conducted using covariance-based structural equation modeling (CB-SEM) with AMOS version 28. The analysis followed a two-step approach consisting of (1) evaluation of the measurement model and (2) testing of the structural model. Prior to analysis, the dataset was screened for missing values and incomplete responses, and only fully completed questionnaires were retained. Assumptions for maximum likelihood estimation, including normality and multicollinearity, were assessed and found to be satisfied (Hair et al., 2019).

Confirmatory factor analysis (CFA) was conducted to assess construct reliability and validity. Factor loadings ≥ 0.50 were considered acceptable, and ≥ 0.70 indicated strong reliability. Convergent validity was evaluated using Average Variance Extracted (AVE ≥ 0.50), while internal consistency was assessed using Composite Reliability and Cronbach's alpha (≥ 0.70) (Hair et al., 2019). Discriminant validity was evaluated using the Fornell–Larcker criterion and the Heterotrait–Monotrait ratio (HTMT < 0.85).

Model fit was evaluated using multiple goodness-of-fit indices, including the Comparative Fit Index (CFI ≥ 0.90), Tucker–Lewis Index (TLI ≥ 0.90), Root Mean

Square Error of Approximation (RMSEA ≤ 0.08), and Standardized Root Mean Square Residual (SRMR ≤ 0.08) (Hair et al., 2019).

Structural Model and Moderation Analysis

Structural equation modeling was used to test the relationships between personality traits and burnout, as well as the moderating role of mindfulness. Moderation was examined using a latent interaction approach. Indicators of the independent variables and the moderator were mean-centered to generate product indicators representing the interaction terms, and the model was estimated using maximum likelihood in AMOS (Marsh, Wen, & Hau, 2004).

Bootstrapping with 5,000 resamples was applied, and both p-values and 95% confidence intervals were used to assess the significance of direct and interaction effects. A supplementary multi-group analysis based on a median split of mindfulness scores was conducted as an exploratory robustness check. However, due to the absence of formal measurement invariance testing, these results are interpreted with caution.

Control variables were not included in the final structural model because preliminary analyses indicated no significant associations with burnout ($p > .05$), and their exclusion was intended to maintain model parsimony, consistent with recommendations to avoid including theoretically or empirically unsupported controls (Becker et al., 2016).

To assess potential common method bias, Harman's single-factor test was conducted as an initial diagnostic. The unrotated factor solution indicated that no single factor accounted for the majority of the variance, with the largest factor explaining only 38%, below the commonly referenced 50% threshold. However, this test is widely recognized as limited and is therefore interpreted with caution.

In addition, a full collinearity assessment was performed by examining the variance inflation factor (VIF) values. All VIF values were below 3.0, suggesting that multicollinearity was not a major concern. Nevertheless, this assessment is interpreted with caution due to its limited applicability within covariance-based SEM frameworks.

Furthermore, procedural remedies such as anonymous data collection, voluntary participation, and the use of reverse-coded items in selected scales were implemented to minimize potential bias. Despite these efforts, common method bias cannot be entirely ruled out and should be considered when interpreting the findings.

Measurement Model Assessment

The measurement model was evaluated using confirmatory factor analysis (CFA) to assess indicator reliability, internal consistency, convergent validity, and discriminant validity.

Ethical Considerations

Ethical approval was obtained from the Ethics Committee of Universitas Airlangga (Approval No. 4228/B/UN3.SPS/I/PT.01.05/2024). All participants provided informed consent, and the study adhered to the principles of the Declaration of Helsinki.

Findings and Results

Indicator Reliability and Convergent Validity

Indicator reliability was assessed using standardized factor loadings. As shown in Table 1, all indicators exceeded the recommended threshold of 0.70, indicating satisfactory reliability. Internal consistency reliability was supported, with Cronbach's alpha and composite reliability (Fabbro et al.) values exceeding 0.70 for all constructs. Convergent validity was also established, as all constructs achieved average variance extracted (AVE) values greater than 0.50.

No items were removed during the CFA process, and no post hoc model modifications (e.g., correlated residuals) were introduced, as the initial measurement model demonstrated an acceptable fit and satisfactory psychometric properties.

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Table 1

Confirmatory Factor Analysis Results

Construct	Indicator	Loading (λ)	Cronbach's α	CR	AVE
Neuroticism (BFN)	BFN1	0.78	0.83	0.88	0.57
	BFN2	0.81			
	BFN3	0.76			
	BFN4	0.80			
	BFN5	0.75			
Extraversion (BFE)	BFE1	0.79	0.85	0.89	0.58
	BFE2	0.82			
	BFE3	0.77			
	BFE4	0.80			
	BFE5	0.75			
Agreeableness (BFA)	BFA1	0.76	0.84	0.87	0.55
	BFA2	0.79			
	BFA3	0.77			
	BFA4	0.74			
	BFA5	0.73			
Conscientiousness (BFC)	BFC1	0.78	0.86	0.88	0.57
	BFC2	0.80			
	BFC3	0.75			
	BFC4	0.79			
	BFC5	0.76			
Openness (BFO)	BFO1	0.72	0.81	0.85	0.51
	BFO2	0.74			
	BFO3	0.70			
	BFO4	0.71			
	BFO5	0.73			
Burnout (BO)	BO1	0.74	0.91	0.92	0.56
	BO2	0.76			
	BO3	0.78			
	BO4	0.81			
	BO5	0.79			
	BO6	0.77			
	BO7	0.82			
	BO8	0.80			
	BO9	0.75			
	BO10	0.73			
	BO11	0.78			
	BO12	0.76			
Mindfulness (MF)	MF1	0.71	0.93	0.94	0.53
	MF2	0.72			
	MF3	0.73			
	MF4	0.74			
	MF5	0.72			
	MF6	0.71			
	MF7	0.73			
	MF8	0.74			
	MF9	0.72			
	MF10	0.73			
	MF11	0.71			
	MF12	0.72			
	MF13	0.73			
	MF14	0.74			
	MF15	0.72			
	MF16	0.73			
	MF17	0.71			
	MF18	0.72			
	MF19	0.73			
	MF20	0.74			

Note: Loadings ≥ 0.70; CR ≥ 0.70; AVE ≥ 0.50.

Discriminant Validity

Discriminant validity was first assessed using the Fornell–Larcker criterion. The square root of the AVE for each construct exceeded its correlations with other constructs, indicating satisfactory discriminant validity.

To provide a more stringent assessment, the heterotrait–monotrait ratio (HTMT) was also examined. All HTMT values were well below the conservative threshold of 0.85, providing strong evidence of discriminant validity among the constructs.

Table 2

Discriminant Validity (Fornell–Larcker Criterion)

Construct	BFN	BFE	BFA	BFC	BFO	BO	MF
Neuroticism	**0.755**						
Extraversion	-0.31	**0.762**					
Agreeableness	-0.28	0.45	**0.742**				
Conscientiousness	-0.34	0.41	0.39	**0.755**			
Openness	-0.12	0.33	0.30	0.29	**0.714**		
Burnout	0.46	-0.39	-0.41	-0.36	-0.18	**0.748**	
Mindfulness	-0.42	0.38	0.36	0.40	0.27	-0.44	**0.728**

Note: Diagonal values represent the square root of AVE.

Table 3

HTMT (Heterotrait-Monotrait Ratio)

Construct	BFN	BFE	BFA	BFC	BFO	BO	MF
Neuroticism	—						
Extraversion	0.43	—					
Agreeableness	0.40	0.57	—				
Conscientiousness	0.48	0.52	0.50	—			
Openness	0.22	0.45	0.42	0.40	—		
Burnout	0.60	0.54	0.51	0.48	0.30	—	
Mindfulness	0.62	0.53	0.50	0.55	0.38	0.63	—

Structural Model Assessment

After establishing the adequacy of the measurement model, the structural model was evaluated using covariance-based structural equation modeling (Ghaleb, Ghaith, & Akour) with maximum likelihood estimation in AMOS.

Model fit was assessed using several goodness-of-fit indices. As presented in Table 4, all fit indices met the recommended thresholds, indicating that the proposed structural model provides a good fit to the observed data.

Table 4

Structural Model Fit Indices

Fit Index	Recommended Threshold	Model Value
χ^2/df	< 3.00	2.14
CFI	> 0.90	0.957
TLI	> 0.90	0.949
RMSEA	< 0.08	0.045
SRMR	< 0.08	0.042

These results indicate that the structural model adequately represents the relationships among the constructs in the study.

Direct Effects

The direct relationships between the Big Five personality traits, mindfulness, and burnout were examined using standardized path coefficients. The results are presented in Table 5.

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Table 5

Direct Effects of Personality Traits and Mindfulness on Burnout

Path	β	SE	CR	p	95% CI
Burnout ← Neuroticism	0.164	0.037	4.496	<0.001	[0.091, 0.237]
Burnout ← Extraversion	-0.258	0.042	-6.209	<0.001	[-0.341, -0.175]
Burnout ← Agreeableness	-0.231	0.039	-5.933	<0.001	[-0.308, -0.154]
Burnout ← Conscientiousness	-0.177	0.039	-4.515	<0.001	[-0.254, -0.100]
Burnout ← Openness	-0.042	0.037	-1.121	0.262	[-0.115, 0.031]
Burnout ← Mindfulness	-0.294	0.039	-7.583	<0.001	[-0.371, -0.217]

The results indicate that neuroticism is positively associated with burnout. In contrast, extraversion, agreeableness, and conscientiousness are negatively associated with burnout. Mindfulness is also negatively associated with burnout. Openness was not significantly associated with burnout ($p > .05$), suggesting that its relationship may be context-dependent and should therefore be interpreted with caution.

Moderation Effects

To examine the moderating role of mindfulness, latent interaction terms were estimated (Table 6).

Table 6

Moderation Effects

Interaction	β	SE	CR	p	95% CI
Neuroticism × Mindfulness	0.445	0.065	6.837	<0.001	[0.318, 0.572]
Extraversion × Mindfulness	-0.286	0.074	-3.846	<0.001	[-0.431, -0.141]
Agreeableness × Mindfulness	0.043	0.062	0.696	0.486	[-0.079, 0.165]
Openness × Mindfulness	-0.007	0.069	-0.106	0.916	[-0.142, 0.128]
Conscientiousness × Mindfulness	-0.200	0.065	-3.077	0.002	[-0.327, -0.073]

The interaction between neuroticism and mindfulness was positive and statistically significant ($\beta = 0.445$, $p < .001$, 95% CI [0.318, 0.572]), indicating that the association between neuroticism and burnout varies across levels of mindfulness. Similarly, the interactions between extraversion and mindfulness ($\beta = -0.286$, $p < .001$, 95% CI [-0.431, -0.141]) and conscientiousness and mindfulness ($\beta = -0.200$, $p = .002$, 95% CI [-0.327, -0.073]) were statistically significant.

In contrast, the interaction effects for agreeableness and openness were not statistically significant. These findings are interpreted only as statistical interaction patterns. The study did not directly measure underlying psychological mechanisms (e.g., emotional awareness or regulation processes); therefore, no causal or process-based conclusions can be drawn.

The moderation model demonstrated improved explanatory power compared to the baseline model. The inclusion of interaction terms increased the explained variance in burnout from 32.4% to 37.9%, representing a modest but meaningful incremental contribution ($\Delta R^2 = 5.5\%$).

Furthermore, the moderation model demonstrated better explanatory power than the baseline structural model without interaction terms. Collectively, the results support a selective moderation pattern, consistent with a contingent resource-based perspective. Simple slope plots were generated at low (−1 SD) and high (+1 SD) levels of mindfulness to facilitate interpretation of the interaction effects.

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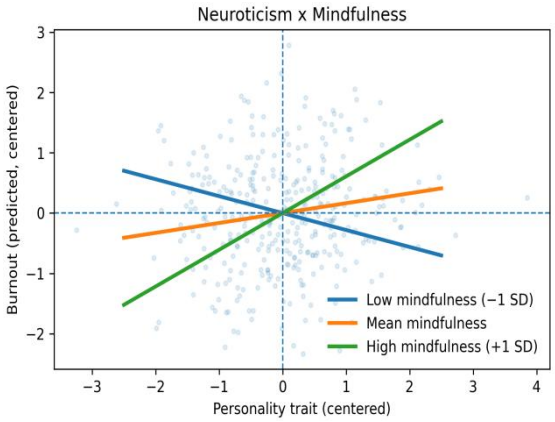

Figure 2

Interaction effect of neuroticism and mindfulness on burnout

Note: *The plot illustrates the conditional effect of mindfulness on the relationship between neuroticism and burnout at mean ± 1 SD. The slope of neuroticism in relation to burnout varies with the level of mindfulness.*

As illustrated in Figure 2, the association between neuroticism and burnout varies across levels of mindfulness. At low levels of mindfulness, the relationship appears relatively weak; however, at high levels of mindfulness, increases in neuroticism are associated with a steeper increase in burnout. This pattern is consistent with the significant positive interaction effect observed in the latent SEM model.

Overall, these findings indicate that the strength of the association between neuroticism and burnout varies with mindfulness level. These results are interpreted as statistical interaction patterns, as the underlying processes were not directly assessed in this study.

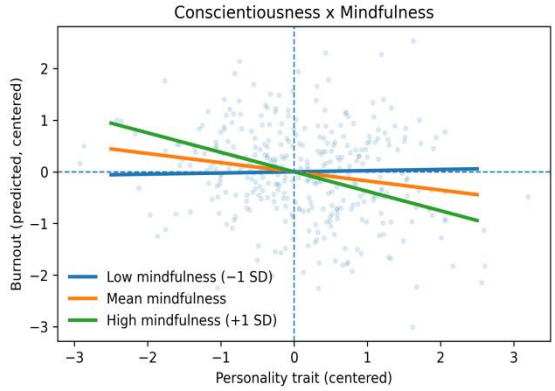

Figure 3

Interaction effect of conscientiousness and mindfulness on burnout

Note: *The plot illustrates the conditional effect of mindfulness on the relationship between conscientiousness and burnout at the mean ± 1 SD. The slope of conscientiousness in burnout varies with the level of mindfulness.*

As illustrated in Figure 3, conscientiousness is negatively associated with burnout, and this negative association becomes stronger at higher levels of mindfulness. At low levels of mindfulness, the slope appears relatively shallow; in contrast, at high levels of mindfulness, the negative association is more pronounced.

Overall, this pattern indicates that the strength of the relationship between conscientiousness and burnout varies with mindfulness level. These findings are interpreted as statistical interaction patterns, as the underlying processes were not directly assessed in this study.

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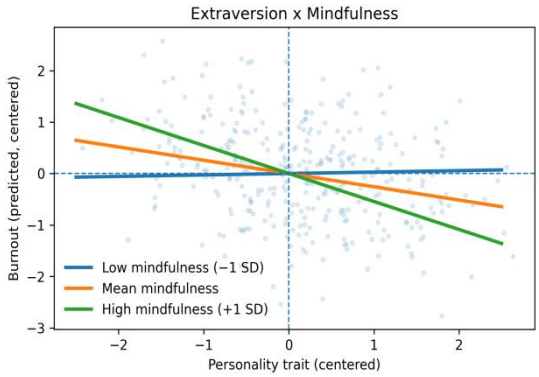

Figure 4

Interaction effect of extraversion and mindfulness on burnout

Note: *The plot illustrates the conditional effect of mindfulness on the relationship between extraversion and burnout at mean ± 1 SD. The slope of extraversion relative to burnout varies with mindfulness level.*

As illustrated in Figure 4, extraversion is negatively associated with burnout, and this negative association becomes more pronounced at higher levels of mindfulness. The interaction plot shows a steeper negative slope at high levels of mindfulness compared to low levels. Overall, this pattern indicates that the strength of the relationship between extraversion and burnout varies with mindfulness level. These findings are interpreted as statistical interaction patterns, as the underlying processes were not directly assessed in this study.

To provide an additional exploratory assessment of the moderation pattern, a supplementary multi-group SEM analysis was conducted by estimating the structural model separately for low- and high-mindfulness groups. The results showed generally consistent directional patterns; however, personality–burnout associations appeared somewhat stronger in the low-mindfulness group compared to the high-mindfulness group.

Table 7

Multi-Group SEM Results (Low vs High Mindfulness)

Path	Low Mindfulness (β)	High Mindfulness (β)	Δβ	Interpretation
Burnout ← Neuroticism	0.210***	0.145***	-0.065	Stronger in low mindfulness
Burnout ← Extraversion	-0.310***	-0.220***	0.090	Stronger in low mindfulness
Burnout ← Agreeableness	-0.260***	-0.205***	0.055	Slight difference
Burnout ← Conscientiousness	-0.220***	-0.150**	0.070	Stronger in low mindfulness
Burnout ← Openness	-0.050	-0.030	0.020	Not significant
Burnout ← Mindfulness	-0.180***	-0.320***	-0.140	Stronger in high mindfulness

Note: **p < .05, **p < .01, ***p < .001*
Δβ = difference between standardized coefficients across groups

A supplementary multi-group analysis was conducted by dividing the sample into low- and high-mindfulness groups using a median split. The results indicate some variation in the magnitude of associations across groups. In general, personality–burnout relationships appear somewhat stronger in the low-mindfulness group compared to the high-mindfulness group.

This pattern appears to differ from the latent interaction results, which suggest that the strength of these associations varies with mindfulness. Such differences may reflect the distinct analytical approaches used, as the multi-group analysis relies on a median-split categorization. In contrast, the latent interaction model treats mindfulness as a continuous moderator. Therefore, the multi-group findings should be interpreted with caution and considered exploratory, given the known limitations of median-split procedures and the absence of formal measurement invariance testing.

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Discussion and Conclusion

This study examined the associations between Big Five personality traits and burnout, with mindfulness modeled as a moderating variable. The findings indicate that Neuroticism is positively associated with burnout, whereas Extraversion, Agreeableness, and Conscientiousness are significantly negatively associated. These findings are interpreted as statistical relationships rather than evidence of causal or functional effects. These results suggest that individuals characterized by higher emotional instability tend to report higher levels of burnout. In contrast, those with more socially oriented, cooperative, and self-regulated tendencies tend to report lower burnout levels. In contrast, Openness to Experience did not show a significant association with burnout, suggesting that an exploratory orientation may not be strongly related to burnout in this specific occupational context.

The findings are broadly consistent with prior literature that positions personality traits as dispositional correlates of burnout (Alarcon et al., 2009; Hülsheger et al., 2013; Kabat-Zinn, 2003). Personality traits were measured using the Indonesian adaptation of the IPIP-BFM-25 (Akhtar & Azwar, 2018), which supports the relevance of dispositional factors in understanding burnout-related outcomes. From the perspective of Conservation of Resources theory (Hobfoll, 1989), burnout may be loosely interpreted through a conceptual lens as being conceptually related to what may be perceived as resource depletion under sustained work demands. However, resource loss, gain, and investment were not directly measured in this study; therefore, COR is not empirically tested but used only as a theoretical framing.

The moderation analyses indicate that the strength of the association between certain personality traits and burnout varies across levels of mindfulness. In particular, the positive association between Neuroticism and burnout appears stronger at higher levels of mindfulness. This interaction should be interpreted cautiously as an empirical pattern rather than as evidence of a substantive amplifying effect. One possible interpretation is that heightened awareness of internal experiences may increase the salience of negative affective states (Alarcon et al., 2009; Hülsheger et al., 2013; Kabat-Zinn, 2003). However, this explanation remains speculative and is not directly tested in the present study.

Importantly, alternative explanations should also be considered. This pattern may reflect methodological artifacts, including common method variance, heightened introspective reporting, or response tendencies associated with mindfulness measurement (Mesmer-Magnus et al., 2017), rather than a substantive psychological interaction. In addition, the use of self-report measures collected from a single source may introduce shared method variance or inflate observed associations, for example through mood-congruent reporting, transient affective states influencing responses, and common measurement context effects. These alternative explanations cannot be fully disentangled within the current design.

As an additional consideration, all participants had prior exposure to an organizational development program that included mindfulness. Evidence suggests that mindfulness interventions may influence personality-related tendencies and self-perceptions (Fabbro et al., 2020). This shared training exposure may have conditioned responses, reduced variability, or altered the underlying meaning of the mindfulness construct, making it difficult to disentangle dispositional differences from training-related effects. It may also introduce a form of sample-specific bias that limits comparability with untrained populations.

Taken together, these considerations suggest that the interaction between Neuroticism and mindfulness should be viewed as a pattern requiring replication across different samples, measurement approaches, and research designs (Hobfoll, 2001; Lyngdoh, Chefor, Hochstein, Britton, & Amyx, 2021).

A different pattern was observed for Extraversion and Conscientiousness, where their negative associations with burnout appeared somewhat stronger at higher levels of mindfulness. This pattern may reflect that individuals with these characteristics tend to report lower burnout, particularly when they also report higher mindfulness. However, the present study does not directly examine the psychological mechanisms underlying this pattern, and therefore the interpretation

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remains tentative and descriptive rather than explanatory.

In contrast, mindfulness did not significantly moderate the relationships between Agreeableness or Openness and burnout. These null findings should be interpreted cautiously, as they may reflect context-specific dynamics or measurement limitations rather than the absence of meaningful relationships. Explanations based on unmeasured constructs should be avoided, and therefore no strong inference is made regarding underlying mechanisms.

It is also important to consider the possibility of reverse or reciprocal relationships. For example, individuals experiencing higher levels of burnout may report lower perceived functioning in areas related to mindfulness or personality-adjacent characteristics, particularly under self-report conditions where affective states may influence subjective evaluations. Given the cross-sectional design, the directionality of these associations cannot be established.

The practical implications of these findings should be interpreted conservatively. Although mindfulness-based approaches are widely discussed in organizational and clinical contexts (Kabat-Zinn, 2003; Schroth, 2019; Stuart-Edwards, MacDonald, & Ansari, 2023), the present study does not provide causal or intervention-based evidence of their effectiveness. Accordingly, any practical implications should be understood as tentative and conceptual rather than prescriptive.

Several limitations should be acknowledged. First, the cross-sectional design and reliance on self-report measures limit the ability to draw causal conclusions, and the observed relationships should therefore be interpreted as statistical associations. Second, the study was conducted within a single organizational context, which may limit the generalizability of the findings. Third, the use of a single-source, self-report design increases the risk of common method bias, which cannot be fully ruled out despite procedural remedies. Fourth, prior mindfulness training represents an important contextual factor that may influence both the measurement and interpretation of mindfulness in this study.

Future research would benefit from longitudinal or experimental designs that allow examination of potential causal pathways between personality traits, mindfulness, and burnout. In addition, incorporating multi-source data, objective indicators, or direct measures of psychological processes (e.g., emotional regulation) may help clarify underlying mechanisms, reduce potential bias, and improve construct validity (Bakker & De Vries, 2021; Maslach & Leiter, 2017).

Furthermore, mindfulness is negatively associated with burnout; however, this association should be interpreted cautiously and not as evidence of a universally beneficial effect. Mindfulness was found to moderate the relationships between specific personality traits and burnout; however, these effects should be interpreted as conditional and context-bound statistical interactions rather than definitive functional mechanisms. Specifically, mindfulness is associated with a stronger positive relationship between Neuroticism and burnout, while also being associated with stronger negative relationships for Extraversion and Conscientiousness. These patterns may also reflect measurement-related artifacts or reporting tendencies rather than stable interaction effects. These interaction patterns should be interpreted as provisional and requiring replication across different samples and research designs, and should not be interpreted as evidence of a detrimental or harmful effect of mindfulness.

Overall, these findings do not establish mindfulness as inherently beneficial or harmful, but rather suggest that its associations with burnout may vary depending on individual differences and contextual factors. Accordingly, the role of mindfulness should be interpreted cautiously, and conclusions regarding its function as a psychological resource remain tentative within the limitations of the present cross-sectional, self-report design, including potential influences of self-report bias and common measurement context, and the directionality of these associations cannot be established, as well as prior mindfulness training exposure which may have influenced the meaning and variability of the construct.

Theoretical Implications

By integrating Big Five personality traits, mindfulness, and burnout in high-pressure service settings, this study offers a context-specific and conceptually oriented application of the Conservation of Resources (COR) framework as a conceptual lens (Hobfoll, 1989). The findings suggest that the associations between personality traits and burnout may

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vary across levels of mindfulness, indicating potential interaction patterns among dispositional characteristics.

However, these interpretations should be understood as conceptual rather than evidentiary, as resource loss, gain, and investment were not directly measured in the present study. Accordingly, the study does not demonstrate that mindfulness functions as a definitive psychological resource, but instead suggests that its relationship with burnout may differ depending on individual characteristics.

The observed pattern, in which Neuroticism is positively associated with burnout and other traits show negative associations, should be interpreted as differential statistical associations rather than as evidence of vulnerability or protective mechanisms. Similarly, the non-significant role of Openness should not be interpreted as reflecting structural job constraints, but rather as a context-bound finding within the present sample.

Furthermore, the finding that mindfulness is associated with variations in these relationships does not establish that mindfulness amplifies or attenuates resource processes, but instead indicates a pattern that may reflect perceptual, measurement, or context-related influences, including the shared prior mindfulness training context of the sample.

Taken together, the study supports a tentative and descriptive account of how dispositional characteristics may relate to burnout within a specific organizational context, while highlighting the need for longitudinal and experimental research to examine underlying mechanisms more directly. Accordingly, the findings should not be interpreted as evidence of a dynamic resource interdependence model, but rather as context-bound statistical associations.

Practical Implications

The findings of this study offer tentative and context-bound implications for future organizational assessment and research, rather than actionable recommendations for practice. Given the cross-sectional design, single-source data, and absence of predictive validation, the results should not be used to inform personnel decision-making such as employee selection, placement, or screening, particularly given the absence of predictive validation and the ethical sensitivity of such applications.

While personality traits and mindfulness were found to be associated with burnout, these relationships should be interpreted as descriptive rather than prescriptive, and do not justify the implementation of personality-based hiring or assignment strategies.

Similarly, although mindfulness is associated with variations in burnout across individuals, the present study does not evaluate mindfulness interventions, their effectiveness, or potential adverse effects. Therefore, the findings should not be interpreted as evidence that mindfulness programs should be selectively applied or withheld for specific employee groups.

In addition, recommendations regarding individualized burnout management or tailored intervention strategies exceed what can be supported by cross-sectional association data, and should be approached with caution.

Instead, the present findings may serve as a foundation for future research, particularly in examining how individual differences relate to employee well-being across contexts. Any applied recommendations for intervention design, organizational policy, or employee development require confirmation through longitudinal or experimental research designs.

Finally, the results highlight the importance of considering contextual and individual variability in burnout research, but should be interpreted as exploratory and not as a basis for definitive organizational practices or policy decisions. Accordingly, these findings should not be used as a basis for organizational policy or decision-making.

Limitations and Future Research Suggestions

Research Limitations

This study has several limitations. First, it was conducted within a single organization using a total population approach, which may limit generalizability. This design may also reflect organization-specific characteristics rather than broader workforce patterns.

Second, the 100% response rate is uncommon and may be influenced by data collection conditions, although voluntariness and anonymity were emphasized, and may reflect response context effects that cannot be fully disentangled. Third, all participants had prior mindfulness training, which may confound the measurement of mindfulness and complicate its interpretation as a stable trait-like construct, potentially affecting the validity of the construct in this sample.

Fourth, the use of single-source self-report data increases the risk of common method bias and inflated

associations. Fifth, the absence of control variables limits the ability to account for alternative explanations. Sixth, although the study draws on the COR framework, it does not include direct measures of resource processes or work conditions. Finally, the cross-sectional design prevents causal interpretation. Overall, the findings should be understood as context-bound and method-dependent associations.

Suggestions for Future Research

Future research should address these limitations. Multi-organization studies are needed to assess generalizability. Studies comparing trained and untrained samples may clarify the role of prior mindfulness exposure. Longitudinal or experimental designs are required to examine causal relationships. The use of multi-source data and improved data collection procedures may reduce reporting bias. Including control variables and direct measures of theoretical constructs would strengthen future models, and help address the methodological limitations identified in the present study.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Ethical considerations in this study were that participation was entirely optional.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

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