Blend the demand: Micro-breaks as a pathway to work engagement

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Abstract

This study examines the role of micro-breaks as a mediator between perceived job demand and work engagement. Additionally, it explores the moderating effect of micro-break climate to investigate whether a supportive work culture enhances or hinders employees' ability to take effective breaks. Using a quantitative approach, survey data is collected from 228 startup employees across various roles. Structural equation modeling (SEM) is employed to analyze the relationships among perceived job demand, micro-breaks, micro-break climate, and work engagement. The findings indicate that high perceived job demand negatively affects work engagement. Additionally, perceived job demand can affect employees to take micro-breaks, while a positive micro-break climate could mitigate this effect by fostering a supportive environment for break-taking. Furthermore, a high micro-break climate strengthens the positive impact of micro-breaks on work engagement. This study extends the conservation of resources (COR) theory by demonstrating how micro-breaks serve as a recovery mechanism in high-demand work settings. It also highlights micro-break climate as boundary condition and contextual resource that shapes the effectiveness of micro-breaks. Organizations should cultivate a positive micro-break climate by encouraging short breaks without stigma. Such environment can help employees maintain engagement even under high job demands. Since this study is cross-sectional, future research should employ longitudinal designs to better understand the long-term effects of micro-breaks. Additionally, future studies could explore how these findings generalize to other industries with different job demands and workplace cultures.

Introduction

Modern work environments often place significant demands on employees, requiring them to sustain prolonged effort and manage high workloads. For employees in startups, these demands can be particularly intense due to fast-paced operations, resource constraints, and the need for continuous innovation (Battistelli et al., 2019). While job demands can drive performance and motivation to some extent, excessive or prolonged exposure without sufficient recovery can lead to exhaustion and disengagement (Bakker & Demerouti, 2018). Work engagement, which refers to a positive, fulfilling work-related state characterized by vigor, dedication, and absorption (Bakker et al., 2008), is critical for sustaining employee performance. However, when employees experience sustained resource depletion due to high job demands, maintaining engagement becomes increasingly difficult (Wu et al., 2023).

One strategy that has gained attention for mitigating the negative effects of job demands is micro-breaks, which is brief, informal breaks taken throughout the workday (Kim et al., 2017).

Grounded in conservation of resources (COR) theory (Hobfoll, 1989), micro-breaks provide employees with an opportunity to momentarily detach from work, preserve energy, and restore depleted resources (Bennett et al., 2020; Kim et al., 2022). Prior studies have linked micro-breaks to reduced fatigue (Mainsbridge et al., 2020), enhanced mood (Bosch & Sonnentag, 2019), and even improved performance in certain tasks (Albulescu et al., 2025). For startup employees, who often face high job strain and unpredictable workloads, micro-breaks could play a crucial role in sustaining energy levels and engagement throughout the workday. However, despite their potential benefits, the relationship between micro-breaks and work engagement remains underexplored, particularly in high-demand work settings.

Existing literature highlights the importance of recovery in maintaining employee well-being and engagement (Sonnentag et al., 2022; Sonnentag et al., 2023). However, much of the research on recovery has focused on post-work recovery (e.g., sleep, leisure activities), with less attention given to recovery within the workday itself (Bennett et al., 2020; Hall et al., 2024). Additionally, while some studies suggest that micro-breaks can help alleviate resource depletion (Radwan et al., 2022), there is limited understanding of when and how employees engage in these breaks, especially in environments where taking breaks may be perceived as unproductive. This gap in knowledge is particularly relevant in startups, where employees may feel pressure to continuously perform, making it unclear whether micro-breaks effectively translate into higher engagement in these settings.

To address these gaps, this study examines the role of micro-breaks in the relationship between job demands and work engagement, with a specific focus on the moderating effect of micro-break climate. Micro-break climate reflects the extent to which an organization's culture supports or discourages short recovery breaks (Phan & Beck, 2023). While previous research has established the benefits of micro-breaks for employee well-being and engagement (Vieten et al., 2023; Walker et al., 2023), studies have largely overlooked the contextual factors that determine whether employees can effectively engage in these breaks (Niu, 2016; Virtanen et al., 2021). Limited attention has been given to how workplace norms shape break-taking behavior and, consequently, work engagement.

By considering micro-break climate as a moderating factor, this study contributes to a more nuanced understanding of how recovery processes function in demanding work environments, particularly in dynamic and high-pressure settings such as startups. Given the intense workloads and fast-paced nature of startup environments, employees often struggle to balance high job demands with effective recovery strategies. This study aims to explore whether micro-breaks serve as a viable resource to sustain work engagement under high job demands and how organizational support for such breaks influences their effectiveness. The present study contributes to extending existing literature on job demands and recovery, as well as providing practical insights for organizations, especially startups, on fostering a work culture that optimizes employee well-being and performance.

Literature Review and Hypotheses Development

Conservation of Resources (COR) Theory

The conservation of resources (COR) theory, introduced by Hobfoll (1989), provides a fundamental framework for understanding how individuals manage stress and maintain well-being in resource-demanding environments. COR theory posits that individuals strive to acquire, retain, and protect resources because resource loss is psychologically distressing (Hobfoll et al., 2018). When employees face high job demands, they risk depleting their resources, leading to strain and reduced work engagement (Demerouti & Bakker, 2023).

In the workplace, recovery processes play a crucial role in replenishing lost resources and mitigating the negative effects of job demands. Micro-breaks, as short, voluntary pauses in work, can serve as a resource-protection mechanism, allowing employees to momentarily recover and regain energy (Yang & Zhang, 2025). From a COR perspective, engaging in micro-breaks helps prevent further resource depletion and supports sustained work engagement throughout the workday (Dianita et al., 2024). By integrating COR theory, this study explains how job demands influence work engagement and how micro-breaks serve as a resource-recovery strategy. Moreover,

this study extends COR theory by examining micro-break climate as a contextual factor that shapes the extent to which employees can leverage micro-breaks for resource replenishment.
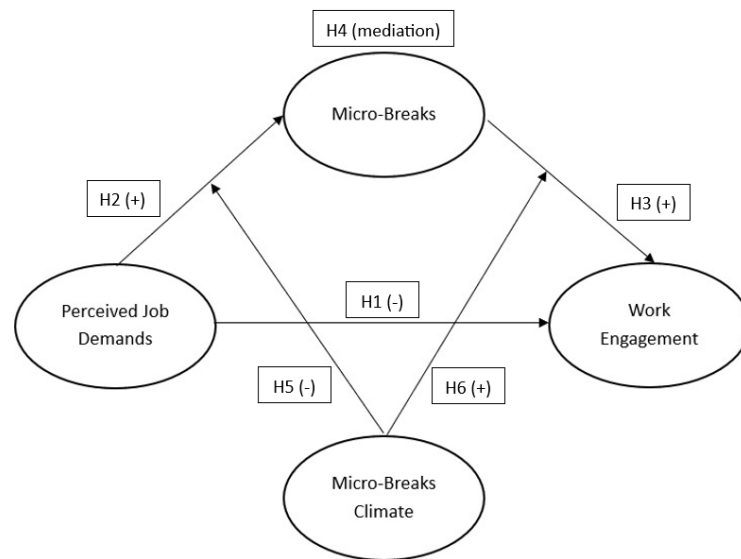
Figure 1. Conceptual Framework
Source: Authors own work, 2025

Hypothesis Development

Work engagement, defined as a positive, fulfilling state of work-related well-being characterized by vigor, dedication, and absorption (Bakker et al., 2008), is essential for employee motivation and productivity. However, high job demands such as excessive workload, time pressure, and cognitive strain, can deplete employees' psychological and physical resources, leading to lower engagement levels over time (Skaalvik, 2023).

From the perspective of COR theory (Hobfoll, 1989; 2018), individuals strive to acquire, maintain, and protect their resources. When job demands surpass available resources, employees experience resource depletion, which hinders their ability to stay engaged (Demerouti et al., 2001). Prolonged exposure to high job demands can trigger a health impairment process, where employees prioritize resource conservation over investment in their work (Tummers & Bakker, 2021). This results in lower vigor, reduced dedication, and decreased absorption in tasks (Schaufeli et al., 2009).

Moreover, studies indicate that excessive job demands contribute to chronic exhaustion, reducing employees' motivation to fully engage in their tasks (Bakker et al., 2023). In demanding work environments such as startups, where employees often face high uncertainty, tight deadlines, and multitasking pressures, the negative impact of job demands on engagement may be even more pronounced (Nie et al., 2021; Kooskora & Vilumets, 2020). Thus, based on COR theory and existing empirical evidence, this study proposes:
H_1: Perceived job demand is negatively related to work engagement.

Employees facing high job demands often experience heightened fatigue, cognitive strain, and stress (Bakker & Demerouti, 2017; Sonnentag, 2012). According to the COR theory, individuals seek to protect and replenish their resources when they perceive a threat of depletion (Hobfoll, 1989). Micro-breaks, defined as short, voluntary breaks lasting less than 10 minutes (Dianita et al., 2024; Radwan et al., 2022) provide an immediate strategy for employees to manage high demands by momentarily stepping away from work tasks and conserving energy (Vieten et al., 2023). It works through brief pauses spent stretching, taking a walk, or engaging in casual social interactions (Walker et al., 2023).

Empirical evidence supports this perspective, showing that employees who experience greater job demands tend to take micro-breaks more frequently as a means of self-regulation (Kim et al., 2022; Harju et al., 2021). Additionally, the need-based nature of micro-breaks suggests that employees are more likely to engage in them when they feel physically or mentally drained,

reinforcing the idea that job demands can drive break-taking behavior (Hunter & Wu, 2016; Bosch & Sonnentag, 2019). Thus, rather than suppressing micro-breaks, high job demands may actively encourage employees to take these short recovery breaks in order to maintain functioning throughout the workday. Therefore, we propose:

H2: Perceived job demand is positively related to micro-breaks.

Work engagement, characterized by vigor, dedication, and absorption (Bakker et al., 2008), reflects an employee's ability to invest energy and enthusiasm into their tasks. Given that job demands continuously drain employees' cognitive and physical resources, maintaining high work engagement requires effective resource recovery strategies (Lee et al., 2024). Micro-breaks serve as a crucial mechanism for restoring energy and preventing exhaustion, which, in turn, enhances engagement (Kim et al., 2022). According to COR theory (Hobfoll, 1989; Hobfoll et al., 2018), employees must replenish their resources to maintain well-being and performance. This allows individuals to regain momentary energy, leading to improved focus, motivation, and work performance (Zhu et al., 2023). Research suggests that engaging in micro-breaks, such as stretching, stepping outside, or engaging in casual conversations, boosts positive affect and reduces fatigue, both of which are crucial for sustaining work engagement (Bennett et al., 2020; Yang & Zhang, 2025).

Empirical findings further support this link. A meta-analysis by Albulescu et al. (2022) found that micro-breaks significantly increase vigor, one of the core dimensions of work engagement. Similarly, Radwan et al. (2022) demonstrated that employees who took frequent micro-breaks exhibited higher work engagement throughout the day and lower end-of-day fatigue. In dynamic work settings, such as startups, where employees navigate high-pressure environments with unpredictable demands, micro-breaks can play an even more significant role in maintaining engagement (Liu et al., 2021; Lyubykh et al., 2022; Wang et al., 2022). By offering a brief mental reset, micro-breaks help sustain cognitive and emotional energy levels, allowing employees to stay fully immersed in their work. Based on this evidence, we propose:

H3: Micro-breaks is positively related to work engagement.

The relationship between job demands and work engagement is complex, as high job demands can deplete resources (Demerouti & Bakker, 2023), yet employees may employ adaptive strategies to sustain engagement. One such strategy is micro-breaks, which serve as an immediate recovery mechanism (Kim et al., 2022). Based on COR theory (Hobfoll, 1989; Hobfoll et al., 2018), when employees face high job demands, their energy levels deplete, triggering the need for resource recovery. Micro-breaks help replenish these lost resources, allowing employees to sustain engagement despite job demands. Without such recovery, prolonged exposure to high job demands leads to chronic exhaustion and reduced work engagement (Kinnunen & Feldt, 2013; Steed et al., 2021).

Empirical studies support this indirect relationship. Kim et al. (2022) found that employees experiencing higher fatigue due to poor resource recovery at home were more likely to take more frequent micro-breaks at work, which subsequently boosted their work engagement. Similarly, Albulescu et al. (2022) emphasized that micro-breaks mediate the effects of work strain on positive work outcomes, highlighting their role in sustaining engagement despite job demands. In startup environments, where employees frequently operate under intense workloads and tight deadlines, the ability to take micro-breaks may be particularly crucial for maintaining engagement (Nie et al., 2021; Kim et al., 2022). By momentarily detaching from demanding tasks, employees regain cognitive and emotional resources, making it easier to remain fully immersed and committed to their work. Therefore, we hypothesize:

H4: Micro-breaks mediate the relationship between perceived job demand and work engagement.

While micro-breaks serve as an important recovery strategy, employees' ability to take them is shaped not only by their personal needs but also by the organizational climate. Micro-break climate refers to the extent to which the work environment, policies, and social norms encourage or discourage short recovery breaks (Phan & Beck, 2023). In high-demand situations, employees may feel the need to recover frequently, prompting more break-taking behavior (Li et al., 2023). However,

in organizations with a strong micro-break climate, employees may already take breaks consistently regardless of job demand levels because the environment supports such recovery practices. This reduces the marginal increase in break-taking that would otherwise result from higher job demands (Li et al., 2023; Mazzetti et al., 2023). Conversely, in a weak micro-break climate, employees are less likely to take breaks unless their job demands are high enough to force them to do so.

Drawing on conservation of resources theory (Hobfoll, 1989; Hobfoll et al., 2018), a supportive climate reduces the perceived threat of resource loss, thereby lessening the urgency to take additional breaks during high-demand periods (Canboy et al., 2023; Koroglu & Ozmen, 2022). As a result, the direct positive link between job demands and micro-breaks becomes weaker in supportive climates.

H_5:   Micro-break climate moderates the relationship between perceived job demand and micro-breaks, such that the positive effect of perceived job demand on micro-breaks is weaker when micro-break climate is high.

While taking micro-breaks can help employees sustain engagement, the effectiveness of these breaks depends on whether the work environment supports their recovery function (Zhang et al., 2022). In a strong micro-break climate, employees are likely to experience higher-quality breaks, as they can take them without guilt or concern for negative judgment. This enhances their ability to fully detach from work stressors, leading to more effective resource recovery and, consequently, higher work engagement (Kim et al., 2022; Saks, 2022). Conversely, in a weak micro-break climate, employees may still take breaks, but they might feel rushed, anxious, or guilty, reducing the psychological benefits of the recovery process (Niu, 2016; Phan & Beck, 2023).

The COR framework suggests that when employees operate in an unsupportive climate, they may hesitate to engage in recovery behaviors or experience diminished recovery gains, as their resources remain under threat (Hobfoll et al., 2018). Studies in workplace recovery indicate that supportive environments enhance the restorative effects of breaks, while unsupportive climates can even neutralize or reverse these benefits (Mainsbridge et al., 2020; Canboy et al., 2023). Therefore, we hypothesize:

H_6:   Micro-break climate moderates the relationship between micro-breaks and work engagement, such that the positive effect of micro-breaks on work engagement is higher when micro-break climate is high.

Research Methods

This study employs a quantitative, cross-sectional research design to examine the relationships between perceived job demands, micro-breaks, micro-break climate, and work engagement. This study employed a non-probability sampling method, as the target population consisted of startup employees working in creative roles in West Java and DKI Jakarta. A purposive sampling technique was used to ensure that respondents met the inclusion criteria, namely being employed in cognitively demanding creative positions (e.g., UX/UI designers, copywriters, product developers) that are relevant to micro-break research.

This approach is appropriate because the characteristics of interest are specific and not evenly distributed across the general employee population. By focusing on participants who are most likely to experience high job demands and require micro-breaks, the sampling strategy improves the relevance of the findings. While non-probability purposive sampling limits broad generalizability, the sample size of 228 respondents is adequate for PLS-SEM analysis, which prioritizes statistical power and model estimation over random representativeness (Hair et al., 2019).

Data were collected through an online questionnaire distributed via social media platforms (e.g., LinkedIn, Instagram), startup community forums, and coworking space groups. Participants were provided with an overview of the study's purpose and assured that their responses would remain confidential.

All constructs were measured using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). The questionnaire included the following validated scales:

- Perceived Job Demands (5 items from Albulescu et al., 2025; Spector & Jex, 1998): Adapted from the Quantitative Workload Inventory (QWI), measuring employees' perceived workload (e.g., "My job often leaves me with little time to get things done").
- Micro-Breaks (9 items from Kim et al., 2018): Assesses engagement in short recovery activities across four categories: relaxation, social interaction, nutrition intake, and cognitive activities.
- Micro-Break Climate (8 items from Phan & Beck, 2023): Measures workplace norms and support for micro-breaks across four dimensions: coworker norms (e.g., "I often see my coworkers take micro-breaks in the workplace"), supervisor norms, management support, and work-break autonomy.
- Work Engagement (9 items from Schaufeli et al., 2006): Assesses three dimensions of engagement—vigor, dedication, and absorption.

To minimize potential common method bias (CMB) in data collection, several procedural remedies were applied. Respondents were assured of anonymity and confidentiality, and the questionnaire was designed to reduce evaluation apprehension by emphasizing that there were no right or wrong answers. Items were carefully ordered to separate predictors and outcomes, thereby reducing priming or consistency effects. In addition, a statistical post-hoc test was conducted using the full collinearity approach (Kock, 2015). The variance inflation factor (VIF) values for all constructs were well below the conservative threshold of 3.3, ranging from 1.320 to 2.656. These results confirm the absence of significant multicollinearity and indicate that common method bias is unlikely to threaten the validity of the findings.

Data were analyzed using SmartPLS 4, which applies partial least squares structural equation modeling (PLS-SEM) to examine both direct and indirect relationships among the variables. This method is suitable given the exploratory nature of the study and its ability to handle complex mediation and moderation effects.

Results and Discussion

Respondents' Characteristics

Table 1. Respondent Profile

Respondents	Total	Percentage (%)
Gender		
Male	137	60%
Female	91	40%
Age		
< 25 years old	42	18%
25 – 30 years old	94	41%
31 – 39 years old	68	30%
≥ 40 years old	24	16%
Working Time		
< 1 year	35	15%
1 – 3 years	78	34%
4 – 7 years	72	32%
> 7 years	43	19%
Job Role		
Copywriter	78	34%
UI/UX Designer	65	29%
Product Developer	55	24%
Creative Lead	30	13%

Source: Data processing, 2025

The respondent distribution (Table 1) in this study shows a higher proportion of male participants (60%) compared to female participants (40%). In terms of age, the majority of respondents fall within the 25–30 age group (41%), followed by the 31–39 age group (30%), suggesting that the workforce is dominated by individuals in their prime working years with

substantial professional experience. Regarding work experience, the largest proportion of respondents have 1–3 years of experience (34%), followed by those with 4–7 years of experience (32%), indicating that most respondents have gained significant experience within their companies. In terms of job roles, copywriters make up the largest group (34%), followed by UI/UX designers (29%) and product developers (24%), while creative leads represent a smaller proportion (13%). This distribution reflects the inclusion of various job levels and age groups, allowing for a more comprehensive analysis of workplace dynamics and the implications of micro-breaks and work engagement in a corporate setting.

Outer Model Evaluation

The results of the validity and reliability tests in Table 2 show that all constructs in this research meet good standards. Convergent validity is met with factor loadings > 0.70 and AVE > 0.50, which indicates that the indicators are able to explain the latent variables adequately (Hair et al., 2019). Construct reliability is also excellent, with Cronbach's alpha (α) ranging between 0.858–0.925 and composite reliability (CR) above 0.897, ensuring high internal consistency (Hair et al., 2019). This finding implies that the research instruments is reliable to measure the relationship between perceived job demand, micro-breaks, micro-break climate, and work engagement. With strong validity and reliability, the results of this research can be used to design organizational policies to increase employee engagement through effective management of job demands and micro-breaks.

Table 2. Results of Convergent Validity and Reliability Test

Variables	Items	Standardization factor load	Cronbach's α	CR	AVE
Micro Breaks	MB1	0.722	0.903	0.919	0.561
	MB2	0.725			
	MB3	0.786			
	MB4	0.758			
	MB5	0.790			
	MB6	0.789			
	MB7	0.789			
	MB8	0.814			
	MB9	0.745			
Micro Breaks Climate	MBC1	0.759	0.925	0.939	0.657
	MBC2	0.764			
	MBC3	0.737			
	MBC4	0.838			
	MBC5	0.863			
	MBC6	0.825			
	MBC7	0.838			
	MBC8	0.851			
Perceived Job Demands	PJD1	0.872	0.858	0.897	0.637
	PJD2	0.763			
	PJD3	0.831			
	PJD4	0.760			
	PJD5	0.758			
Work Engagement	WE1	0.717	0.909	0.925	0.578
	WE2	0.744			
	WE3	0.797			
	WE4	0.811			
	WE5	0.799			
	WE6	0.787			
	WE7	0.757			
	WE8	0.795			
	WE9	0.728			

Source: Data processing, 2025

The results of the discriminant validity test (Table 3) using the Fornell-Larcker criteria show that each construct has a square root AVE (diagonal value) that is greater than the correlation between

constructs (off-diagonal value). This indicates that each variable is stronger in explaining its own indicators compared to other variables, so that discriminant validity is met (Sarstedt et al., 2014).

Specifically, micro-breaks (0.749), micro-break climate (0.811), perceived job demands (0.798), and work engagement (0.760) have higher square root AVE values of the correlation between variables, which indicates that the concepts in this study have clear boundaries with each other. In addition, the heterotrait-monotrait (HTMT) ratio results also support this finding, where all correlation values between constructs are below the conservative threshold of 0.85 (ranging from 0.443 to 0.829). This indicates that each construct is empirically distinct and there is no multicollinearity issue among them, further reinforcing the discriminant validity of the measurement model (Sarstedt et al., 2014). Good discriminant validity ensures that each variable is measured uniquely without any redundancy of concepts, so that the analysis results can be interpreted more accurately. This strengthens the reliability of the model in testing the relationship between perceived job demands, micro-breaks, micro-break climate, and work engagement. Thus, organizations can be more confident in designing micro-breaks-based interventions to increase employee engagement without worrying about overlapping concepts in measurement.

Table 3. Results of Discriminant Validity

| | Fornell-Larcker Criterion | | | | HTMT Ratio | | | |
	MB	MBC	PJD	WE	MB	MBC	PJD	WE
MB	0.749							
MBC	0.422	0.811			0.446			
PJD	0.576	0.448	0.798		0.829	0.504		
WE	0.414	0.616	0.502	0.760	0.443	0.656	0.559	

Source: Data processing, 2025
Note. MB=micro-breaks, MBC=micro-breaks climate, PJD=perceived job demands, WE=work engagement.

Explanatory power criteria

The explanatory power analysis shows that the model has substantial predictive capability, with micro-breaks (MB) explaining 62.0% of its variance ($R^2 = 0.620$) and work engagement (WE) explaining 47.4% ($R^2 = 0.474$), indicating that the predictors in the model account for a considerable proportion of variance in these constructs (Sarstedt et al., 2014). The f-square effect size results further reveal that micro-break climate (MBC) and perceived job demands (PJD) have large effects on MB ($f^2 = 1.410$ and 1.082 respectively), while MB exerts a very large influence on WE ($f^2 = 1.561$). In addition, MBC demonstrates a medium effect ($f^2 = 0.279$) and PJD a small effect ($f^2 = 0.074$) on WE (Hair et al., 2019). These findings underscore the pivotal role of MB as a mediating mechanism through which both MBC and PJD substantially enhance employee engagement, while also highlighting that organizational climate factors exert stronger impacts compared to perceived demands in shaping engagement levels.

Table 4. R-Square Test Result

	R Square	R Square Adjusted
Micro Breaks	0.620	0.615
Work Engagement	0.474	0.465

Source: Data processing, 2025

Table 5. f-Square Test Result

	Micro Breaks	Micro Breaks Climate	Perceived Job Demands	Work Engagement
Micro Breaks				1.561
Micro Breaks Climate	1.410			0.279
Perceived Job Demands	1.082			0.074
Work Engagement				

Source: Data processing, 2025

Predictive relevance criteria

The predictive relevance (Q^2) assessment further confirms the robustness of the model, with micro-breaks (MB) achieving a Q^2 value of 0.323 and work engagement (WE) a Q^2 value of 0.259, both exceeding the threshold of 0, which indicates that the model possesses meaningful predictive capability for these constructs (Hair et al., 2019). In contrast, micro-break climate (MBC) and perceived job demands (PJD) show Q^2 values of zero, suggesting that these variables function solely as predictors rather than endogenous constructs in the model. The positive Q^2 values for MB and WE demonstrate that the model not only explains variance but also has the ability to accurately predict the observed data, thereby strengthening the credibility of the findings and ensuring that the relationships among micro-breaks, job demands, and engagement are not merely statistical artifacts but hold substantive predictive value in practical settings.

Table 6. Predictive Relevance (Q^2)

	SSO	SSE	Q^2 (=1-SSE/SSO)
Micro-Breaks	2052.000	1388.418	0.323
Micro-Breaks Climate	1824.000	1824.000	
Perceived Job Demands	1140.000	1140.000	
Work Engagement	2052.000	1520.598	0.259

Source: Data processing, 2025

Structural Model Evaluation

The multicollinearity assessment using the variance inflation factor (VIF) shows that all predictor variables in the model have VIF values well below the conservative threshold of 3.3 (Hair et al., 2019), with micro-break climate (MBC) ranging from 1.320 to 1.349, perceived job demands (PJD) from 1.504 to 2.643, and micro-breaks (MB) at 2.656. These results indicate that there is no serious collinearity issue among the predictors, meaning each variable contributes unique explanatory power without excessive overlap in variance. The absence of common method bias reinforces the integrity of the measurement model, ensuring that the relationships identified between micro-breaks, job demands, micro-break climate, and work engagement are not artificially inflated by shared measurement artifacts.

Table 7. Multicollinearity & Common Method Bias

	Micro-Breaks	Micro-Breaks Climate	Perceived Job Demands	Work Engagement
Micro-Breaks				2.656
Micro-Breaks Climate	1.320			1.349
Perceived Job Demands	1.504			2.643
Work Engagement				

Source: Data processing, 2025

Hypothesis test results (Table 8) show that all hypotheses in this study are supported statistically. H1 (PJD → WE) has a significant negative coefficient (-0.320, $p < 0.01$), confirming that the higher the perceived job demand, the lower the work engagement. H2 (PJD → MB) shows a very strong positive relationship (0.786, $p < 0.001$), meaning that individuals with high job demands take micro-breaks more often. H3 (MB → WE) has a significant positive effect (0.323, $p < 0.01$), indicating that micro-breaks contribute to increasing work engagement. H4 (PJD → MB → WE) shows a significant mediation effect (0.318, $p < 0.001$), confirming that micro-breaks are an important pathway connecting job demands with work engagement.

Two moderation effects were also found significant. H5 (PJD × MBC → MB) shows that micro-break climate weakens the relationship between PJD and MB (-0.198, $p < 0.01$), which means that in an environment with a climate that supports micro-breaks, the effect of job demand on the frequency of micro-breaks becomes weaker. H6 (MB × MBC → WE) has a positive effect (0.194, $p < 0.01$), which means that when the micro-break climate is high, the positive effect of

micro-breaks on work engagement is stronger.

Table 8. Structural Equation Modeling Results

	Hypothesis	Original Sample	Standard Deviation	T-Statistics	P-Value	Hypothesis
H1	PJD → WE	-0.320	0.096	-3.330	0.001	Supported
H2	PJD → MB	0.786	0.048	16.236	0.000	Supported
H3	MB → WE	0.323	0.099	3.266	0.000	Supported
H4	PJD → MB → WE	0.318	0.078	4.054	0.000	Supported
H5	PJD x MBC → MB	-0.198	0.074	-2.687	0.007	Supported
H6	MB x MBC → MB	0.194	0.066	2.926	0.004	Supported

Source: Data processing, 2025
Note. MB=micro-breaks, MBC=micro-breaks climate, PJD=perceived job demands, WE=work engagement.

The interaction graph in Figure 2 shows that micro-break climate (MBC) moderates the relationship between perceived job demands (PJD) and micro-breaks (MB). All lines have a positive slope, indicating that the higher the PJD, the more often the individual takes micro-breaks. However, this effect is weaker in environments with high MBC (green line) compared to low MBC (blue line), meaning that when organizations support micro-breaks, employees do not feel the need to increase the frequency of breaks despite high work pressure. In contrast, in environments with low MBC, individuals rely more on micro-breaks to cope with job demands. These findings highlight that creating a work culture that supports micro-breaks can help employees better manage work stress without having to take too frequent breaks.
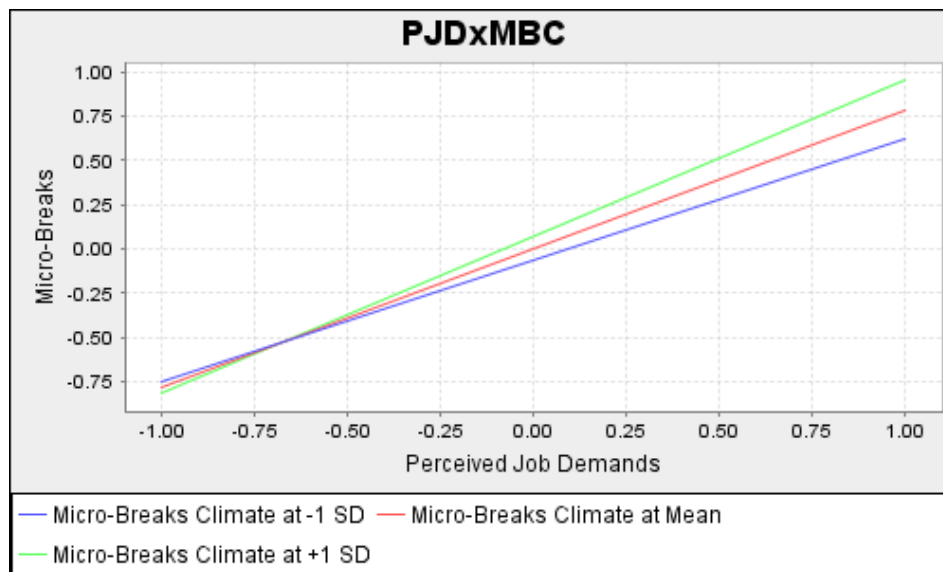

Figure 2. Interaction of Perceived Job Demands with Micro Breaks Climate towards Micro Breaks
Source: Statistical Output

Furthermore, in the interaction graph shown in Figure 3, micro-break climate (MBC) moderates the relationship between micro-breaks (MB) and work engagement (WE). In a high MBC environment (green line), the more often individuals take micro-breaks, the higher their work engagement, indicating that micro-breaks serve as an effective recovery strategy. In contrast, in low MBC (blue line), this relationship is actually negative, where more micro-breaks are associated with decreased work engagement, possibly because individuals feel guilty or uncomfortable taking breaks. In the average MBC condition (red line), this relationship is almost neutral. These results confirm that micro-breaks are only effective in increasing work engagement if they are supported by a positive organizational culture towards short breaks.
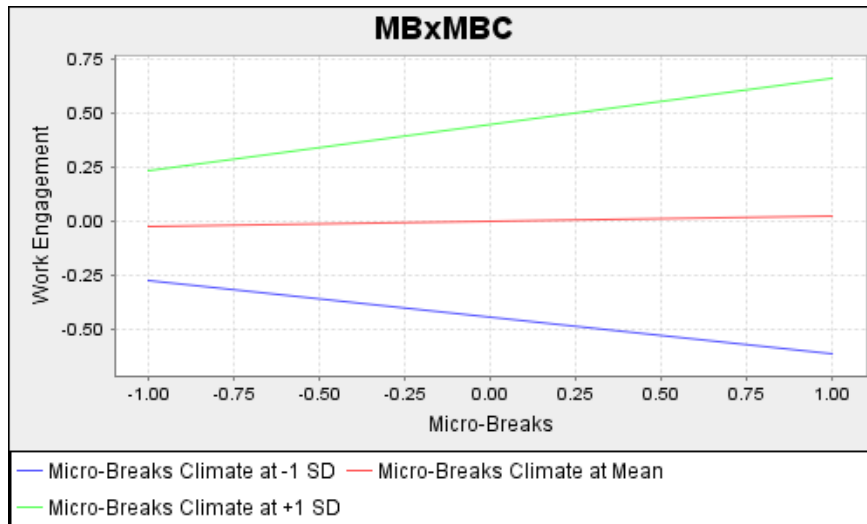
Figure 3. Interaction of Micro Breaks with Micro Breaks Climate towards Work Engagement
Source: Statistical Output
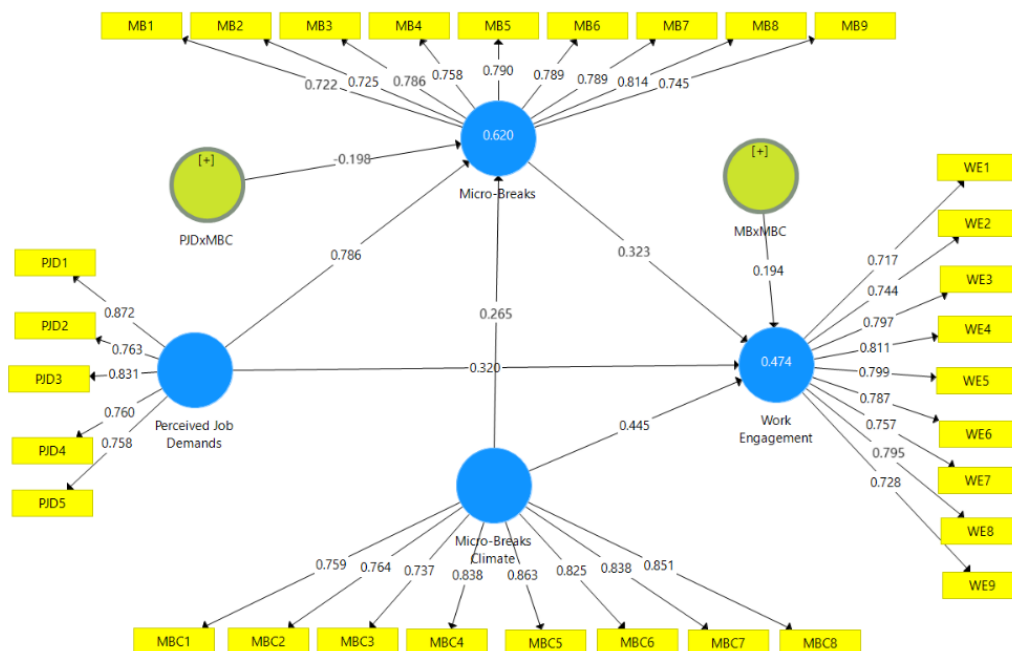
Figure 4. Output of Structural Model Evaluation
Source: SmartPLS Statistical Output

This study provides empirical evidence on the role of micro-breaks as a recovery mechanism in high-demand work environments, particularly in startup settings where employees often face intense workloads. Grounded in the conservation of resources (COR) theory (Hobfoll, 1989), our findings suggest that employees engage in micro-breaks as a strategy to conserve and replenish their psychological resources when confronted with high job demands. This directly illustrates the COR principle that individuals actively invest in resource-protective behaviors to offset potential losses, thereby sustaining engagement even in resource-draining contexts. By identifying micro-breaks as such a protective behavior, this study expands the operationalization of COR theory beyond traditional coping strategies (e.g., rest breaks or vacations) toward immediate, self-regulated recovery actions embedded in daily work routines.

The results confirm that perceived job demands have a significant negative impact on work engagement (H1), supporting previous research indicating that excessive job demands can lead to resource depletion, reducing employees' energy and commitment to their work (Nie et al., 2021; Kooskora & Vilumets, 2020; Bakker et al., 2023). However, we found that perceived job demands

positively influences micro-breaks (H2), suggesting that employees engage in short breaks as a coping strategy when facing intense workloads. From a COR lens, this highlights how employees respond to potential resource loss (high demands) by proactively mobilizing resource-gain strategies (micro-breaks). This finding extends earlier research on micro-breaks as a self-regulation mechanism (Hunter & Wu, 2016; Bosch & Sonnentag, 2019), reinforcing the idea that employees use these brief pauses to restore their cognitive and emotional resources in response to high work demands.

The positive relationship between micro-breaks and work engagement (H3) further supports the resource-restorative function of micro-breaks (Liu et al., 2021; Lyubykh et al., 2022; Wang et al., 2022). Employees who take frequent micro-breaks exhibit higher work engagement, likely because these short breaks help sustain focus, motivation, and energy levels. This contributes to COR theory by empirically showing that resource gain (from micro-breaks) directly offsets resource depletion (from job demands), thus reinforcing the dynamic interplay of loss and gain spirals proposed by Hobfoll (1989).

This study also sheds light on the mediating role of micro-breaks (H4) in the relationship between perceived job demands and work engagement. The significant mediation effect suggests that employees facing high job demands tend to take more micro-breaks, which in turn helps them maintain their engagement at work. This finding is consistent with prior research highlighting the resource-replenishing role of micro-breaks (Nie et al., 2021; Kim et al., 2022; Albulescu et al., 2022) reinforcing the conservation of resources (COR) theory (Hobfoll, 1989). Specifically, employees engage in micro-breaks as a proactive strategy to prevent resource depletion, allowing them to sustain their engagement despite demanding work conditions.

The results further demonstrate the moderating effect of micro-break climate (MBC) on two key relationships. First, MBC weakens the positive relationship between perceived job demands and micro-breaks (H5), indicating that in workplaces where micro-breaks are widely accepted and encouraged, employees take fewer reactive micro-breaks in response to job demands. This finding aligns with previous studies on workplace norms and recovery behaviors, which suggest that when recovery opportunities are institutionalized within an organization, employees may not feel the same urgency to self-initiate breaks (Phan & Beck, 2023).

Second, MBC strengthens the positive relationship between micro-breaks and work engagement (H6). In organizations with a supportive micro-break culture, employees who take more micro-breaks report higher levels of work engagement. However, in workplaces with a low micro-break climate, the relationship between micro-breaks and work engagement becomes negative, suggesting that employees may experience guilt or social pressure when taking breaks, ultimately reducing the effectiveness of micro-breaks as a recovery strategy. This finding is particularly relevant in fast-paced industries such as startups, where workplace culture plays a critical role in shaping employee behaviors (Niu, 2016; Phan & Beck, 2023).

Conclusion and Implication

This study contributes to the literature on job demands, micro-breaks, and work engagement by highlighting the critical role of micro-breaks as a resource-preserving mechanism within the framework of conservation of resources (COR) theory (Hobfoll, 1989). The findings extend previous research by demonstrating that micro-breaks serve as an effective coping strategy for managing high job demands, thereby sustaining employee engagement. Furthermore, this study underscores the importance of micro-break climate as a contextual factor that shapes the effectiveness of micro-breaks in the workplace. While past research has largely focused on structured break times (e.g., lunch or rest breaks), this study provides empirical support for micro-breaks as an immediate, self-regulated recovery strategy that employees use to replenish their cognitive and emotional resources.

From a practical perspective, organizations, particularly startups and creative industries, should consider fostering a supportive micro-break climate. It can be done by normalizing short breaks to ensure employees do not feel guilty or hesitant about taking short recovery moments, or by integrating micro-break-friendly policies into workplace culture, such as providing designated

spaces for relaxation or incorporating flexible work structures that allow employees to take breaks when needed.

Despite these contributions, this study is not without limitations. First, the use of a cross-sectional design restricts the ability to draw causal inferences between job demands, micro-breaks, micro-break climate, and work engagement. Longitudinal or experimental studies could provide stronger evidence for the directionality of these relationships. Second, the reliance on self-reported measures raises the potential for response bias, even though efforts were made to address common method bias. Future studies could benefit from incorporating multi-source data, such as supervisor assessments or objective performance indicators, to triangulate findings. Third, the sample was limited to startup employees in creative industries within West Java and DKI Jakarta, which may constrain the generalizability of results. Expanding the scope to other industries, cultural contexts, or remote/hybrid work settings could offer valuable insights into the broader applicability of micro-break dynamics. Finally, further research could explore boundary conditions such as personality traits, leadership styles, or organizational structures that may influence the effectiveness of micro-breaks in sustaining employee engagement.

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