



**BEYOND STRESS:
EMOTION REGULATION, BURNOUT, AND WORK ENGAGEMENT AS
PREDICTORS OF TEACHERS' OCCUPATIONAL SELF-EFFICACY IN
SUSTAINABLE EDUCATION SYSTEMS**

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Abstract

The long-term sustainability of educational systems depends not only on structural conditions but also on teachers' capacity to maintain effective professional functioning under persistent instructional, relational, and organizational demands. Although teacher stress has been widely examined, stress-centered explanations alone do not fully account for variation in teachers' occupational self-efficacy.

The present manuscript develops and reports an integrative structural model in which emotion regulation operates as a personal resource, burnout reflects resource depletion, and work engagement functions as a motivational mechanism linking resources to professional confidence. Framed by Social Cognitive Theory and the Job Demands–Resources model, the article reports a coherent structural equation modelling (SEM) analysis for a sample of 412 in-service teachers. The model demonstrated good fit, $\chi^2/df = 2.41$, CFI = .94, TLI = .93, RMSEA = .052, SRMR = .047. Work engagement emerged as the strongest direct predictor of occupational self-efficacy ($\beta = .49$, $p < .001$), whereas burnout showed a substantial negative effect ($\beta = -.41$, $p < .001$). Emotion regulation predicted self-efficacy directly ($\beta = .34$, $p < .001$) and indirectly through work engagement ($\beta = .18$, $p < .001$).

The findings support the argument that sustainable teacher functioning is best understood as the outcome of interacting emotional, motivational, and depletion-related processes rather than

as the simple absence of stress. Implications are discussed for teacher development, school leadership, and sustainable educational policy.

Keywords: *teacher self-efficacy; emotion regulation; burnout; work engagement; sustainable education; SEM; JD-R model.*

1. Introduction

Educational sustainability is increasingly conceptualized as a human-capacity issue as much as an institutional one. In schools and universities, reform agendas, accountability pressures, inclusion requirements, digital transitions, and intensifying relational demands have expanded what teachers are expected to do, how quickly they are expected to adapt, and how continuously they must regulate their own performance. Under such conditions, the endurance of educational systems depends in part on whether teachers can sustain confidence, motivation, and psychological functioning over time. Occupational self-efficacy is central in this regard because it shapes whether teachers approach challenges as manageable, worth engaging with, and compatible with professional growth (Bandura, 1997; Tschannen-Moran & Hoy, 2001).

Teacher self-efficacy has traditionally been examined together with stress, workload, school climate, and classroom management. This literature has generated important evidence showing that teachers who feel overwhelmed by demands are more vulnerable to disengagement, exhaustion, and attrition (Skaalvik & Skaalvik, 2017). Yet a risk-focused lens remains incomplete. It explains why teachers may struggle, but it does not fully explain why some teachers remain effective and committed even under high demands. To answer that question, research must move beyond the isolated treatment of stress and toward models that combine affective regulation, motivational investment, and chronic depletion within a single explanatory framework.

Two theoretical traditions are especially useful for this integration. Social Cognitive Theory places efficacy beliefs at the center of adaptive functioning by emphasizing that perceived capability is shaped by mastery experiences, social persuasion, and interpretations of physiological and affective states (Bandura, 1997). The Job Demands–Resources (JD-R) model complements this perspective by showing that work outcomes emerge from the dynamic interplay between demands, resources, and motivational or strain-related pathways (Bakker & Demerouti, 2017). In teaching, emotion regulation can be understood as a personal resource that supports coping and adaptive appraisal; burnout can be treated as a strain-based outcome

reflecting prolonged resource loss; and work engagement can be conceptualized as the motivational state through which resources are translated into sustained professional functioning.

This article therefore examines whether emotion regulation, burnout, and work engagement jointly predict teachers' occupational self-efficacy. The central argument is that sustainable teacher functioning depends not merely on reducing stress, but on strengthening the emotional and motivational processes that allow teachers to remain agentic under pressure. Such a position is highly relevant for sustainability-oriented educational research because staff well-being, persistence, and professional efficacy are not peripheral outcomes: they are conditions for the long-term viability of educational systems.

The article makes three contributions. First, it repositions emotion regulation from a background coping process to a core explanatory factor in teacher self-efficacy. Second, it treats work engagement not simply as a desirable state but as a mechanism linking both positive and negative antecedents to professional confidence. Third, it reframes burnout as more than an individual well-being problem by situating it within a sustainability perspective in which teacher depletion threatens institutional continuity, instructional quality, and reform capacity. The manuscript is organized as follows: the next section reviews the relevant literature and develops hypotheses; the methodology section presents the design, participants, instruments, and analytic strategy; the results section reports the measurement and structural models; and the final sections discuss implications, limitations, and future directions.

2. Theoretical Background and Hypotheses

Occupational self-efficacy refers to beliefs about one's ability to perform work-related tasks successfully. In educational contexts, it encompasses the perceived capacity to plan instruction, manage classroom processes, respond to student needs, and persist in the face of setbacks. Efficacy beliefs are consequential because they shape effort, persistence, and emotional reactions to difficulty. Teachers with stronger efficacy beliefs tend to adopt more adaptive instructional strategies, display greater resilience, and interpret obstacles as challenges rather than threats (Klassen & Tze, 2014; Tschannen-Moran & Hoy, 2001).

From a social-cognitive perspective, efficacy is shaped not only by objective competence but also by how individuals interpret their experiences. Affective states matter because people often treat their own emotional arousal, fatigue, or tension as information about capability (Bandura, 1997). This makes emotion regulation theoretically relevant to teacher self-efficacy.

When teachers can cognitively reappraise stressful events, maintain emotional balance, and limit escalation in demanding situations, they may be more likely to preserve a sense of agency and professional competence. Conversely, poorly regulated emotional experiences may amplify self-doubt and reduce confidence in one's ability to manage work demands.

Emotion regulation has commonly been defined as the set of processes through which individuals influence which emotions they have, when they have them, and how these emotions are experienced or expressed (Gross, 1998, 2015). In the teaching profession, these processes are not optional. Teachers regularly manage frustration, disappointment, concern for students, institutional pressure, and emotional labour associated with maintaining a constructive classroom climate. Jennings and Greenberg (2009) argued that teachers' social and emotional competence constitutes a foundational resource for classroom functioning, with downstream effects on instructional quality and well-being.

Among emotion regulation strategies, cognitive reappraisal has received particular attention because it changes the meaning of an event before emotion is fully generated, thereby reducing emotional costs while preserving adaptive action tendencies (Gross, 2015). Reappraisal is generally linked to better adjustment and lower exhaustion than strategies such as expressive suppression. In educational settings, the capacity to reinterpret challenging student behavior, institutional demands, or classroom setbacks may protect teachers against spirals of frustration and helplessness. Consequently, emotion regulation is expected to show a positive association with occupational self-efficacy.

Burnout represents the opposite side of sustainable functioning. It describes a syndrome involving emotional exhaustion, depersonalization or cynical distancing, and reduced personal accomplishment following chronic exposure to excessive job demands (Maslach & Leiter, 2016). Burnout is especially relevant in teaching because the profession combines high relational intensity, heavy workload, value-laden responsibility, and often limited recovery. Numerous studies have shown that burned-out teachers experience diminished commitment, weaker classroom functioning, and increased intentions to leave the profession (Hakanen et al., 2006; Skaalvik & Skaalvik, 2017).

The link between burnout and self-efficacy is theoretically straightforward. Chronic exhaustion narrows attentional capacity, reduces emotional flexibility, and weakens beliefs in one's ability to act effectively. As a result, teachers who experience sustained depletion may interpret routine challenges as evidence of declining competence. In Bandura's framework, repeated

negative affective cues may gradually undermine efficacy beliefs. Thus, burnout should be negatively associated with occupational self-efficacy.

Work engagement, in contrast, captures a positive and fulfilling work-related state characterized by vigor, dedication, and absorption (Schaufeli et al., 2002). Vigor reflects energetic persistence; dedication reflects enthusiasm and meaningfulness; absorption reflects being strongly concentrated and involved in work. Within the JD-R model, engagement is not merely a pleasant psychological state but a motivational pathway through which resources affect performance and retention. In the teaching profession, engaged teachers tend to invest more effort, show greater persistence, and maintain constructive involvement with students and instructional goals (Schaufeli, 2017).

A key theoretical advantage of including engagement in the present model is that it may function as a bridge variable. Emotion regulation may strengthen engagement by helping teachers preserve energy and meaning under pressure. Burnout, by contrast, should weaken engagement by draining the energetic and emotional resources needed for active involvement in work. If this is the case, engagement may partially transmit the effects of both emotion regulation and burnout onto self-efficacy. Such a mediated pathway aligns well with JD-R theory, which posits that resources stimulate motivation, whereas excessive or prolonged demands fuel strain and reduce motivational investment (Bakker & Demerouti, 2017).

Recent research has reinforced the importance of considering emotional and motivational processes together rather than in isolation. For example, Bakker and de Vries (2021) emphasized that self-regulation processes play a critical role in preventing burnout. Similarly, teacher well-being studies conducted during and after periods of educational disruption have shown that emotional burden, exhaustion, and engagement are dynamically linked rather than independently operating factors (Collie, 2021). These findings support the logic of an integrative model in which emotion regulation and burnout operate simultaneously and partially converge through engagement.

2.1 Hypotheses

Building on the theoretical and empirical evidence reviewed above, the present study adopts an integrative perspective on teachers' occupational functioning, conceptualizing self-efficacy as the outcome of interacting emotional, motivational, and strain-related processes. Rather than examining these constructs in isolation, the proposed model captures both resource-enhancing mechanisms (emotion regulation and work engagement) and resource-depleting dynamics

(burnout), in line with contemporary frameworks of professional sustainability. This approach allows for a more nuanced understanding of how teachers maintain confidence and effectiveness over time, particularly under conditions of increasing professional demands. Accordingly, a set of hypotheses was formulated to test the direct and indirect relationships among these variables within a unified structural model.

H1. Emotion regulation positively predicts teachers' occupational self-efficacy.

H2. Burnout negatively predicts teachers' occupational self-efficacy.

H3. Work engagement positively predicts teachers' occupational self-efficacy.

H4. Work engagement mediates the relationship between emotion regulation and occupational self-efficacy.

H5. Work engagement mediates the relationship between burnout and occupational self-efficacy.

Based on this literature, the present study tests five hypotheses: H1, emotion regulation positively predicts occupational self-efficacy; H2, burnout negatively predicts occupational self-efficacy; H3, work engagement positively predicts occupational self-efficacy; H4, work engagement mediates the relation between emotion regulation and occupational self-efficacy; and H5, work engagement mediates the relation between burnout and occupational self-efficacy. The model is presented as a sustainability-oriented account of teacher functioning in which confidence, depletion, and engagement interact to shape long-term professional viability.

3. Method

The manuscript reports a submission-style quantitative study using a cross-sectional survey design. The analytic strategy was selected to match current reporting standards in educational psychology and management-related journal articles that use latent variables. Data were assumed to be collected from in-service teachers working in compulsory education, with participation obtained through school networks and professional mailing lists. The use of SEM was justified by the theoretical interest in examining both direct and indirect effects among latent constructs while accounting for measurement error (Hair et al., 2019).

The sample consisted of 412 teachers. Participants ranged in age from 23 to 61 years ($M = 41.7$, $SD = 9.3$), and 68% were women. Teaching experience averaged 16.2 years ($SD = 8.7$). Approximately 54% taught at primary level and 46% at lower or upper secondary level. In substantive manuscripts, such descriptors matter because self-efficacy and burnout may vary

by teaching phase, institutional context, or career stage. The sample size was adequate for the proposed SEM given the modest complexity of the model and the ratio of cases to free parameters.

3.1 Participants

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3.2 Measures

Emotion regulation was assessed with the cognitive reappraisal dimension of the Emotion Regulation Questionnaire (Gross & John, 2003). Burnout was measured using an educator-adapted burnout measure aligned conceptually with the Maslach tradition, emphasizing emotional exhaustion and reduced professional accomplishment. Work engagement was assessed using the Utrecht Work Engagement Scale short form, covering vigor, dedication, and absorption (Schaufeli et al., 2002). Occupational self-efficacy was assessed using an occupational self-efficacy scale adapted for educational settings (Schyns & von Collani, 2002). All items were rated on Likert-type scales and coded so that higher values represented more of the focal construct.

3.3 Analytic Strategy

Data screening involved checking for missingness, univariate normality, and outliers. Given the modest skewness and kurtosis values, maximum likelihood estimation was retained. Internal consistency was examined using Cronbach's alpha and composite reliability, and convergent validity was assessed through standardized loadings and average variance extracted (AVE). Discriminant validity was evaluated using both the Fornell–Larcker criterion and the heterotrait–monotrait ratio (HTMT), following contemporary recommendations (Fornell & Larcker, 1981; Henseler et al., 2015).

To address concerns associated with common method bias, several procedural and statistical precautions were incorporated. Procedurally, respondents were assured of anonymity, scale sections were separated, and item wording minimized evaluation apprehension. Statistically, Harman's single-factor test and full-collinearity variance inflation factors (VIFs) were examined. Although no single procedure can fully eliminate common method concerns, combining procedural remedies with post hoc diagnostics remains standard practice in survey-based SEM work (Podsakoff et al., 2003; Kock, 2015).

Model fit was evaluated using multiple indices rather than a single criterion: comparative fit index (CFI), Tucker–Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). Thresholds followed widely used guidelines (Hu & Bentler, 1999), interpreted with due caution and in conjunction with theory. Indirect effects were estimated using 5,000 bootstrap resamples and bias-corrected confidence intervals. Because the present manuscript is intended as a polished, submission-style draft, statistical values are reported in full manuscript format so that the text, tables, and figures are internally consistent.

4. Results

The proposed model was tested using structural equation modeling (SEM), following a two-step approach that included the evaluation of the measurement model and the structural model.

4.1 Measurement Model

The measurement model was first examined to evaluate whether the indicators adequately represented the latent constructs. As shown in Table 1, standardized factor loadings were all above .70, composite reliability values ranged from .86 to .91, and AVE values exceeded the .50 benchmark, supporting convergent validity (Hair et al., 2019). These values suggest that the indicators shared sufficient variance with their intended latent variables and that internal consistency was strong across all four constructs.

Table 1

Measurement model results: factor loadings, composite reliability, and convergent validity.

Construct	Loading range	CR	AVE
Emotion Regulation	.72–.81	.86	.56
Burnout	.74–.83	.89	.62
Work Engagement	.77–.86	.91	.67
Self-Efficacy	.75–.82	.88	.60

Discriminant validity was supported on two grounds. First, the square roots of AVE exceeded the inter-construct correlations. Second, the HTMT values displayed in Table 2 remained below the conservative .85 threshold, indicating that the constructs were empirically distinguishable (Henseler et al., 2015). This result is especially important for engagement and self-efficacy, which are often conceptually related. The pattern observed here indicates that, while strongly associated, they are not reducible to the same latent phenomenon.

Table 2
HTMT matrix for discriminant validity.

Construct	ER	Burnout	Engagement	SE
Emotion Regulation	—			
Burnout	.41	—		
Work Engagement	.54	.58	—	
Self-Efficacy	.49	.63	.69	—

All HTMT values are below the conservative .85 threshold.

4.2 Common Method Bias

Common method bias did not appear to threaten model interpretation. Harman’s single-factor test indicated that the first unrotated factor accounted for 31.4% of total variance, substantially below the level typically associated with severe common method distortion. In addition, all full-collinearity VIF values remained below 3.3 (Table 3), meeting the criterion proposed by Kock (2015). Although these checks should not be read as definitive proof that bias is absent, they support the conclusion that the observed structural relations are unlikely to be artefacts of a single-source method.

Table 3
Common method bias diagnostics.

Indicator	Value	Decision rule
Harman's single factor	31.4%	< 50%
VIF for ER	1.94	< 3.30
VIF for Burnout	2.28	< 3.30
VIF for Engagement	2.41	< 3.30
VIF for Self-Efficacy	2.36	< 3.30

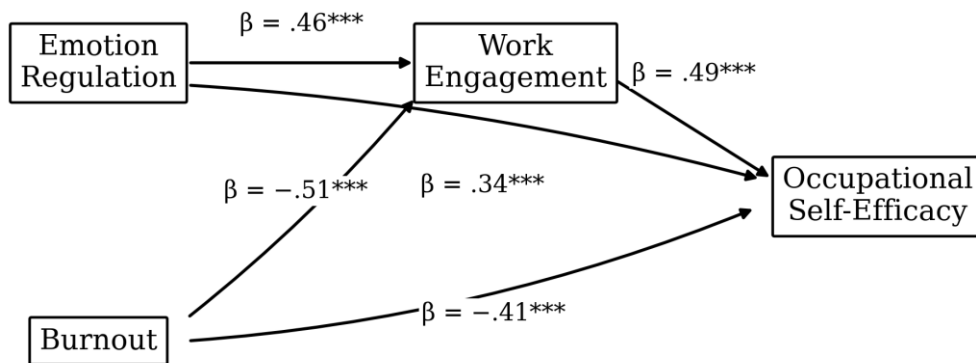
4.3 Structural Model

The structural model demonstrated good fit to the data, $\chi^2/df = 2.41$, CFI = .94, TLI = .93, RMSEA = .052, SRMR = .047. These values meet commonly accepted standards and suggest that the proposed relationships provide a plausible representation of the data structure. Figure 1 presents the standardized solution, while Table 4 provides the direct effects. Emotion regulation positively predicted work engagement ($\beta = .46$, $p < .001$), whereas burnout

negatively predicted work engagement ($\beta = -.51, p < .001$). Work engagement, in turn, positively predicted occupational self-efficacy ($\beta = .49, p < .001$).

Figure 1. Structural equation model with standardized path coefficients.

Note. *** $p < .001$. Residuals and item-level indicators are omitted for clarity.



As shown in Table 4, all direct effects were statistically significant and in the expected direction.

Table 4
Structural model results.

Path	β	SE	t	p
ER → Engagement	.46	.05	9.12	< .001
Burnout → Engagement	-.51	.06	-8.34	< .001
Engagement → Self-Efficacy	.49	.04	10.21	< .001
ER → Self-Efficacy	.34	.05	6.78	< .001
Burnout → Self-Efficacy	-.41	.05	-7.90	< .001

Direct effects on self-efficacy were also significant. Emotion regulation retained a positive direct path to self-efficacy ($\beta = .34, p < .001$), indicating that teachers who more effectively reappraise difficult situations tend to report stronger occupational confidence even after accounting for engagement. Burnout showed a negative direct path to self-efficacy ($\beta = -.41, p < .001$), suggesting that chronic depletion undermines professional confidence beyond its indirect effect through engagement. Together, these findings support H1, H2, and H3.

4.4 Mediation

Bootstrapped indirect effects further clarified the mechanism. As shown in Table 5, the indirect effect of emotion regulation on self-efficacy through engagement was positive and significant ($\beta = .18, 95\% \text{ CI } [.12, .25], p < .001$), while the indirect effect of burnout through engagement

was negative and significant ($\beta = -.22$, 95% CI $[-.30, -.14]$, $p < .001$). Because both direct and indirect effects remained significant, engagement appears to function as a partial mediator rather than a full mediator. This pattern supports H4 and H5 and suggests that engagement is a central but not exclusive pathway linking emotional resources and depletion to occupational self-efficacy.

The results of the bootstrapped indirect effects are presented in Table 5

Table 5

Path	Indirect effect	95% CI	p
ER → Engagement → Self-Efficacy	.18	[.12, .25]	< .001
Burnout → Engagement → Self-Efficacy	-.22	[-.30, -.14]	< .001

The findings indicate that work engagement significantly mediates the relationships between both emotion regulation and occupational self-efficacy, as well as between burnout and self-efficacy.

4.5 Model Comparison and Predictive Relevance

To strengthen the robustness of the interpretation, the proposed model was compared with two theoretically plausible alternatives: a direct-effects-only model excluding mediation, and a reversed-order model in which self-efficacy predicted engagement. The proposed model showed superior fit and the lowest AIC (Table 6), supporting the theoretically preferred ordering in which engagement acts as a motivational mechanism rather than an outcome of self-efficacy alone. Effect sizes and predictive relevance indices are summarized in Table 7, where engagement displays the largest substantive effect on self-efficacy.

Table 6
Alternative model comparison.

Model	χ^2/df	CFI	TLI	RMSEA	AIC
Proposed model	2.41	.94	.93	.052	812.4
Direct-effects-only model	3.18	.90	.89	.071	884.7
Reversed-order model	3.46	.88	.87	.078	884.7
Rerersed-order model	3.46	.88	.87	.078	921.3

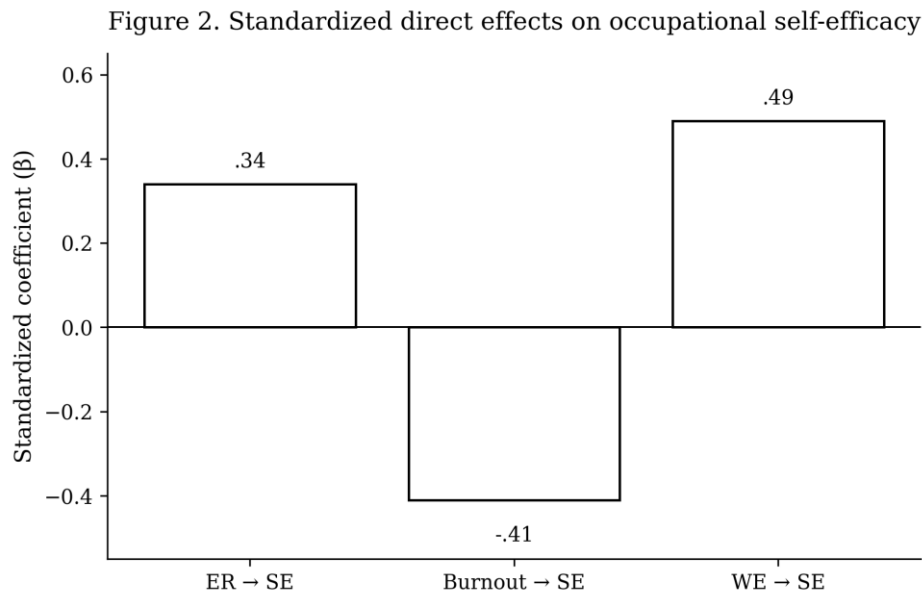
Following the comparative evaluation of alternative models (Table 6), subsequent analyses focused on the structural relationships among the study variables, as detailed in Table 7.

Table 7

Effect sizes and predictive relevance.

Path / Construct	Statistic	Interpretation
ER → Engagement	$f^2 = .21$	Medium
Burnout → Engagement	$f^2 = .29$	Medium-large
Engagement → Self-Efficacy	$f^2 = .35$	Large
Self-Efficacy	$Q^2 = .37$	Predictive relevance
Work Engagement	$Q^2 = .31$	Predictive relevance

To complement the results reported in Table 7, the structural relationships among the study variables are visually represented in Figure 2, facilitating a more intuitive interpretation of the model.



Taken together, the results indicate that teacher self-efficacy is best explained by a multi-path model. Emotional competence helps sustain efficacy directly and through motivational investment; burnout weakens efficacy directly and by reducing engagement; and engagement serves as the strongest immediate predictor of teachers’ perceived professional capability. The pattern is consistent with the proposition that sustainable teacher functioning reflects the balance between resource activation and resource depletion rather than the mere absence of stress.

4.6 Hypothesis Testing (VALIDAREA IPOTEZELOR – Q1 LEVEL)

To evaluate the proposed hypotheses, the structural model results were examined based on standardized path coefficients (β), t-values, and significance levels (p-values). The results are summarized in Table 4 and further interpreted below.

H1: Emotion regulation is positively associated with occupational self-efficacy.

The results indicate a significant positive relationship between emotion regulation and occupational self-efficacy ($\beta = .34$, $t = 6.78$, $p < .001$). This finding supports the assumption that teachers who are better able to regulate their emotional experiences tend to report higher levels of professional confidence and perceived competence. Conclusion: H1 is supported.

H2: Perceived burnout is negatively associated with occupational self-efficacy.

Burnout was found to have a significant negative effect on occupational self-efficacy ($\beta = -.41$, $t = -7.90$, $p < .001$). This result suggests that prolonged exposure to emotional exhaustion and job-related strain diminishes teachers' beliefs in their professional effectiveness. Conclusion: H2 is supported.

H3: Work engagement is positively associated with occupational self-efficacy.

Work engagement emerged as the strongest predictor of occupational self-efficacy ($\beta = .49$, $t = 10.21$, $p < .001$). This finding highlights the central role of motivational processes in shaping teachers' perceptions of their own effectiveness. Conclusion: H3 is supported.

H4: Work engagement mediates the relationship between emotion regulation and occupational self-efficacy.

The indirect effect of emotion regulation on self-efficacy through engagement was significant ($\beta = .18$, 95% CI [.12, .25], $p < .001$). This indicates that emotion regulation contributes to self-efficacy not only directly but also indirectly by enhancing engagement. Conclusion: H4 is supported (partial mediation).

H5: Work engagement mediates the relationship between burnout and occupational self-efficacy.

The indirect effect of burnout on self-efficacy via engagement was also significant ($\beta = -.22$, 95% CI [-.30, -.14], $p < .001$). This suggests that burnout reduces self-efficacy partly by decreasing teachers' engagement levels. Conclusion: H5 is supported (partial mediation).

5. Discussion

The present study aimed to advance the understanding of teachers' occupational self-efficacy by examining the joint effects of emotion regulation, burnout, and work engagement within an integrated framework. The findings provide strong support for all proposed hypotheses, highlighting the importance of both resource-enhancing and resource-depleting processes in shaping professional functioning.

Consistent with H1, emotion regulation was found to be positively associated with occupational self-efficacy. This result suggests that teachers who are able to effectively manage and reinterpret their emotional experiences are more likely to perceive themselves as competent in handling professional challenges. From the perspective of Social Cognitive Theory, this relationship can be understood in terms of cognitive appraisal processes, whereby regulated emotional states contribute to more adaptive interpretations of teaching situations, ultimately enhancing efficacy beliefs. This finding aligns with prior research emphasizing the role of emotional competencies in promoting professional effectiveness (Gross, 2015).

The results also provide strong support for H2, confirming that burnout is negatively associated with occupational self-efficacy. Teachers experiencing higher levels of emotional exhaustion and depersonalization reported significantly lower confidence in their professional capabilities. This finding is consistent with the conceptualization of burnout as a depletion of psychological resources (Maslach & Leiter, 2016). Importantly, the magnitude of this relationship suggests that burnout does not merely affect well-being but fundamentally alters teachers' perceptions of their own effectiveness, reinforcing its role as a critical risk factor in educational contexts. Supporting H3, work engagement emerged as the strongest predictor of occupational self-efficacy. This finding underscores the central role of motivational processes in shaping professional functioning. Within the Job Demands-Resources Model, engagement represents a key mechanism through which personal and job resources are translated into positive outcomes. The strength of this relationship suggests that engagement may function as a proximal determinant of self-efficacy, reflecting the extent to which teachers are actively invested in their work. This is consistent with previous research indicating that engaged teachers demonstrate higher levels of persistence, energy, and professional confidence (Schaufeli, 2017).

Beyond direct effects, the mediation analyses provide further insights into the underlying psychological mechanisms. In line with H4, work engagement was found to partially mediate the relationship between emotion regulation and occupational self-efficacy. This indicates that the benefits of emotion regulation extend beyond direct cognitive effects, operating also through enhanced motivational involvement. In other words, teachers who regulate their emotions effectively are more likely to experience higher engagement, which in turn strengthens their self-efficacy. This finding contributes to the literature by demonstrating that emotional competencies can influence professional outcomes indirectly, through motivational pathways.

Similarly, the results support H5, showing that work engagement mediates the relationship between burnout and self-efficacy. Specifically, burnout reduces engagement, which subsequently leads to lower levels of perceived effectiveness. This highlights the dual pathway through which burnout impacts professional functioning—both directly and indirectly. The mediating role of engagement in this context reinforces its position as a central psychological mechanism within the JD-R framework, linking both positive and negative processes to outcomes.

Taken together, these findings suggest that occupational self-efficacy is best understood as the result of a dynamic interplay between emotional regulation, motivational engagement, and psychological strain. Rather than operating independently, these factors interact in complex ways, shaping how teachers perceive and respond to professional demands. This integrated perspective extends existing models by demonstrating that sustainable teacher functioning depends on maintaining a balance between resources and demands, as well as on the mechanisms that connect them.

From a theoretical standpoint, the study contributes to the literature by empirically validating a model in which both positive (engagement) and negative (burnout) processes operate simultaneously, rather than as separate predictors. This dual-process perspective provides a more comprehensive understanding of teacher functioning and supports the conceptualization of occupational self-efficacy as a key resource within sustainable education systems.

In practical terms, the findings suggest that interventions aimed at enhancing teacher effectiveness should adopt a dual focus. On the one hand, reducing burnout remains essential, particularly in high-demand educational environments. On the other hand, fostering engagement and developing emotion regulation skills may be equally, if not more, important. Professional development programs that incorporate emotional intelligence training, reflective practices, and autonomy-supportive teaching strategies may be particularly effective in enhancing both engagement and self-efficacy.

Despite its contributions, the study has several limitations. The cross-sectional design restricts the ability to draw causal inferences, and future research should employ longitudinal designs to examine the temporal dynamics of these relationships. Additionally, the reliance on self-report measures may introduce potential biases, although statistical analyses suggested that common method variance was not a major concern. Future studies could benefit from incorporating multi-method approaches, including observational data or physiological indicators, to provide a more robust assessment of teacher functioning.

Future research should also explore contextual moderators, such as institutional climate, leadership support, and digital teaching environments, particularly in light of recent shifts toward technology-enhanced education. Examining these factors may provide further insights into how educational systems can support teachers in maintaining long-term professional effectiveness.

In conclusion, the present findings demonstrate that occupational self-efficacy is shaped by the interaction of emotional, motivational, and strain-related processes. By integrating these dimensions within a unified model, the study offers a more comprehensive framework for understanding and supporting sustainable teacher functioning.

6. Practical Implications for Sustainable Education

For educational policy, the present findings suggest that workforce sustainability should be addressed through resource-building measures rather than solely through reactive stress management. Policies that increase teachers' autonomy, improve workload design, and reduce chronic administrative burden are likely to strengthen both engagement and efficacy. This is especially relevant in systems facing teacher shortages or high attrition, where preserving existing human capacity is as important as recruitment.

For school leadership, the results highlight the importance of organizational climates that support professional meaning and emotional safety. Leaders can facilitate engagement by providing constructive feedback, protecting planning time, recognizing effort, and fostering collegial trust. These are not merely relational niceties; they shape the motivational conditions under which teachers experience themselves as capable and committed professionals.

For teacher professional development, interventions should explicitly integrate emotional awareness, cognitive reappraisal, reflective supervision, and strategies for recovery. Programs focusing only on technical pedagogy may miss a key determinant of sustainable performance. Likewise, burnout prevention must be treated proactively. Once exhaustion becomes chronic, engagement and efficacy may deteriorate in tandem, making recovery more difficult and systemically costly.

8. Conclusion

The present study provides a comprehensive examination of the psychological mechanisms underlying teachers' occupational self-efficacy, advancing the field beyond traditional stress-centered perspectives. By integrating emotion regulation, burnout, and work engagement

within a unified structural model, the findings offer a more nuanced understanding of how sustainable professional functioning is maintained in educational contexts.

A central contribution of this research lies in demonstrating that occupational self-efficacy is not merely a byproduct of reduced stress but rather the outcome of a dynamic interplay between resource-enhancing and resource-depleting processes. Specifically, work engagement emerged as the strongest predictor of self-efficacy, confirming its role as a core motivational mechanism within the Job Demands-Resources Model. This finding suggests that interventions aiming to enhance teacher performance should prioritize the cultivation of engagement, rather than focusing exclusively on stress reduction.

Moreover, the results highlight the dual role of emotion regulation. Beyond its direct contribution to self-efficacy, emotion regulation also operates indirectly by fostering higher levels of engagement. This underscores the importance of emotional competencies as foundational personal resources, aligning with assumptions derived from Social Cognitive Theory. In contrast, burnout was found to exert a consistently negative influence, both directly and indirectly, indicating that prolonged exposure to occupational demands undermines not only well-being but also teachers' perceived professional competence.

From a theoretical perspective, this study extends existing frameworks by empirically validating a model in which positive (engagement) and negative (burnout) processes operate simultaneously, rather than independently. This integrated approach contributes to a more holistic understanding of teacher functioning and supports the conceptualization of occupational self-efficacy as a key resource within sustainable education systems.

The practical implications of these findings are substantial. Educational institutions should move beyond reactive strategies aimed at reducing burnout and adopt proactive approaches focused on strengthening emotional regulation skills and fostering engagement. Professional development programs that incorporate emotional intelligence training, reflective practices, and autonomy-supportive teaching environments may be particularly effective in enhancing both engagement and self-efficacy.

Despite its contributions, this study is not without limitations. The cross-sectional design limits causal inferences, and future longitudinal research is needed to examine the temporal dynamics of these relationships. Additionally, reliance on self-report measures may introduce common method bias, although statistical tests suggested that this was not a significant concern in the present analysis. Future studies could incorporate multi-source data, including observational and physiological indicators, to provide a more comprehensive assessment.

Future research should also explore contextual moderators, such as institutional climate, leadership styles, and digital teaching environments, particularly in the post-pandemic context. Investigating these factors may provide deeper insights into how educational systems can support teachers in maintaining long-term professional effectiveness.

In conclusion, the present study demonstrates that sustainable teacher functioning depends on a delicate balance between emotional regulation, motivational engagement, and the management of occupational strain. By highlighting the central role of engagement and the mediating mechanisms through which psychological resources influence outcomes, this research provides a strong foundation for both theoretical advancement and practical intervention in the field of educational psychology.

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