

The Mediating Role of Motivation in Teacher Performance: An Analysis of Workload, Work-Life Balance, Job Satisfaction, and Teaching Aids in Malaysia

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ABSTRACT

Teachers directly influence educational quality and national development yet escalating administrative burdens and evolving pedagogical demands increasingly threaten their performance. While existing research addresses direct relationships, the underlying psychological mechanisms remain unexplored. This study investigates the mediating role of motivation in teacher performance through an analysis of workload, work-life balance, job satisfaction, and teaching aids within the Klang Valley region of Malaysia. Utilizing a quantitative, cross-sectional research design, structured questionnaires were administered to public secondary school teachers across the Federal Territories of Kuala Lumpur, Putrajaya, and Selangor ($n = 379$). The study addresses critical implementation gaps of the *Malaysia Education Blueprint 2013–2025* by examining how external workplace conditions translate into instructional effectiveness. Structural equation modeling (PLS-SEM) indicates that teacher motivation serves as a key mediator. Specifically, job satisfaction and teaching aids positively influence motivation and performance. While workload exerts a negative direct effect on performance ($\beta = -0.145, p = .019$), it exhibits a positive path to motivation ($\beta = 0.187, p < .001$), indicating a competitive mediation structure where intrinsic drive partially offsets direct administrative strain. These findings offer empirical evidence for educational administrators to implement workload streamlining, resource optimization, and recognition policies that support a motivated teaching workforce.

Keywords: Teacher Performance, Motivation, Workload, Work-Life Balance, Job Satisfaction, Teaching Aids, Klang Valley Education

INTRODUCTION

Teachers play a pivotal role in any effective education system, directly influencing student achievement, classroom engagement, and long-term educational outcomes (Hattie, 2009; UNESCO, 2022). As global paradigms shift toward 21st-century competencies, the teacher's role has expanded beyond traditional instruction to encompass roles as facilitators, digital innovators, and socio-emotional guides. In Malaysia, this evolution intersects with the strategic transformation targets set by the *Malaysia Education Blueprint 2013–2025* (MEB) (Ministry of Education Malaysia, 2013). However, as the MEB cycle nears completion, scholarly evaluations reveal a critical implementation gap: intensified reform demands have translated into heavy administrative workloads, compromised work-life balance, variable job satisfaction, and unequal access to functional teaching aids (Sinniah et al., 2022; Teo & Noyes, 2014).

Recent empirical evidence demonstrates the severity of these operational challenges within the Malaysian public school system. Heavy administrative tasks significantly diminish actual instructional time, elevating occupational stress and leading to teacher burnout (World Bank, 2022; Zhao et al., 2022). Poor work-life balance further depletes emotional energy and enthusiasm, directly degrading classroom effectiveness. Simultaneously, while the integration of teaching aids particularly digital technology demonstrates a strong positive association with learning outcomes, inadequate infrastructure and limited training continue to hinder instructional quality

across schools (Sailer & Sailer, 2024; Teo & Noyes, 2014). Furthermore, declining job satisfaction driven by limited career advancement opportunities correlates with reduced organizational commitment and engagement (Mohd Yaakob et al., 2025).

While existing literature establishes direct correlations between these antecedent factors and teacher performance, a critical gap exists in understanding the psychological mechanisms underpinning these relationships. Simply identifying that heavy workloads reduce performance is insufficient for effective policy intervention; it is vital to explain how and why this process occurs. Organizational psychology posits that motivation functions as a fundamental mediator that translates external workplace conditions into tangible job performance (Ryan & Deci, 2020). Excessive administrative burdens may not directly impair instructional skill, but rather deplete a teacher's intrinsic drive. Conversely, functional teaching aids and supportive environments enhance performance primarily by reinforcing self-efficacy and enthusiasm.

To bridge this empirical gap, this study proposes and tests a structural conceptual model where teacher motivation acts as a mediator between four workplace antecedents (workload, work-life balance, teaching aids, and job satisfaction) and teacher performance. The central inquiry asks: To what extent does motivation explain the structural impact of these workplace conditions on teacher performance in Malaysia?

Geographically and contextually, this study focuses on public secondary school educators within the Klang Valley, comprising Kuala Lumpur, Putrajaya, and Selangor representing Malaysia's primary urban and socioeconomic hub. By framing motivation as the primary psychological mechanism, this research moves beyond simple correlation toward structural modeling. Theoretically, the study refines structural performance models within a developing country's educational reform context. Practically, it delivers empirical insights for Malaysian policymakers and school administrators to implement targeted workload management, well-being programs, and resource allocation strategies that support a motivated and effective teaching workforce.

LITERATURE REVIEW

The effectiveness of any education system depends fundamentally on the performance of its teachers. Understanding the factors that shape this performance is central to educational research, policy, and practice. A structured analysis requires moving beyond simple observations of teacher actions to examine the complex interaction of external conditions, internal psychological states, and organizational structures. This review synthesizes existing scholarly work to construct a comprehensive theoretical and empirical foundation for investigating the mediating role of motivation in teacher performance within the Malaysian context.

Underpinning Theories

This study is guided by three concurrent theoretical frameworks: Self-Determination Theory (SDT), Job Characteristics Theory (JCT), and Job Demand-Control Theory (JDCT). The integration of these theories provides complementary psychological and occupational lenses to examine the complex relationships among workload, work-life balance, job satisfaction, teaching aids, teacher motivation, and teacher performance. Together, they explain how internal psychological needs, job design, and external job demands interact to influence motivation, which is posited as the central mechanism through which workplace conditions affect performance outcomes.

Self-Determination Theory, developed by Deci and Ryan (2000), posits that optimal motivation and well-being depend on satisfying three universal psychological needs: autonomy, competence, and relatedness. In teaching, intrinsic motivation flourishes when educators experience autonomy in pedagogical decisions, feel competent in their instructional capabilities, and establish strong relational bonds with students and colleagues (Ryan & Deci, 2020). Conversely, excessive administrative workloads can erode autonomy and competence, thereby diminishing intrinsic motivation and performance (Niemic & Ryan, 2009). SDT provides a psychological framework demonstrating how factors like workload and teaching aids impact performance primarily through their influence on fundamental psychological needs.

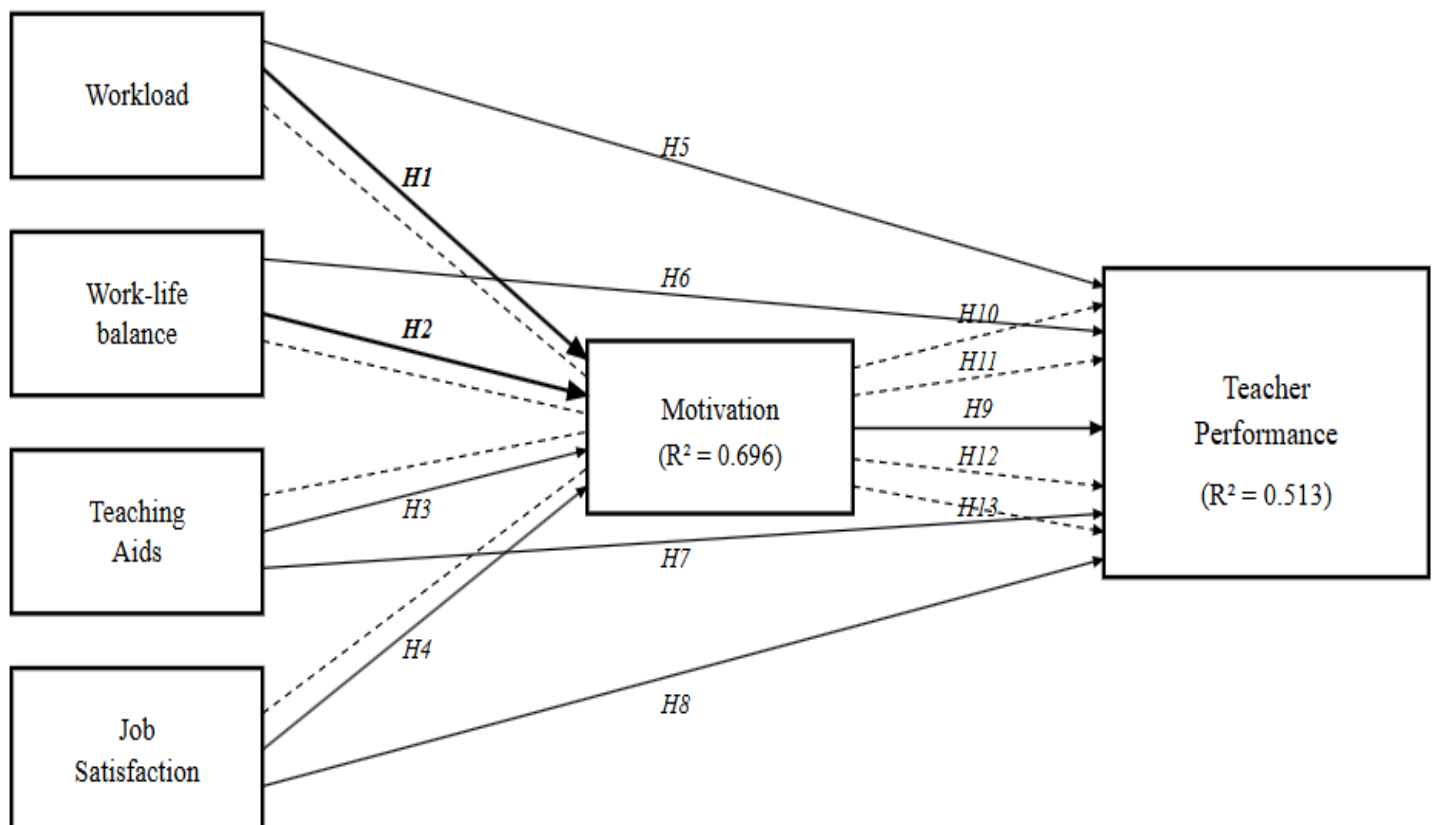
Job Characteristics Theory, proposed by Hackman and Oldham (1976), complements SDT by focusing on five

core structural attributes of the job itself: skill variety, task identity, task significance, autonomy, and feedback. These dimensions collectively influence critical psychological states, including experienced meaningfulness and responsibility, leading to outcomes such as high intrinsic motivation, job satisfaction, and work performance. Well-designed teaching roles scoring high on these dimensions enhance motivation and performance (Humphrey et al., 2007). However, excessive administrative duties diminish these core characteristics, reducing motivational potential and causing burnout (Nilsen et al., 2020)

Job Demand-Control Theory, formulated by Karasek (1979), adds a contingency perspective by modeling how job demands and job control interact to influence psychological strain. The theory posits that the most adverse outcomes occur in high-strain jobs characterized by high psychological demands coupled with low autonomy. For teachers, high demands include heavy workloads and administrative burdens, while low control manifests as limited decision latitude over teaching methods and schedules. Lower job demands and higher job resources are directly linked to increased autonomy satisfaction, which subsequently enhances work motivation and instructional effectiveness (Chen et al., 2026). The integration of SDT, JCT, and JDCT creates a comprehensive framework where SDT explains the psychological "why", JCT details the structural "how", and JDCT defines the environmental "when" of teacher motivation and performance.

The integration of Self-Determination Theory, Job Characteristics Theory, and Job Demand-Control Theory provides a comprehensive framework for explaining teacher performance. Based on these theoretical foundations, the conceptual framework for this study is illustrated in Figure 1.

Figure 1: Conceptual Framework



Core Constructs and Empirical Background

Teacher Performance

Teacher performance is the cornerstone of educational quality, directly influencing student attainment and national development goals outlined in the Malaysia Education Blueprint 2013–2025 (Ministry of Education

Malaysia, 2013). It entails pedagogical competencies, lesson delivery, classroom management, and interpersonal attributes like emotional intelligence and social support (Nwoko et al., 2025). However, Malaysian teachers face persistent challenges, particularly an increasing administrative burden involving report writing, data entry, and committee duties that divert time from instruction, leading to occupational stress and burnout (Skaalvik & Skaalvik, 2018; World Bank, 2022). Furthermore, opportunities for ongoing professional development and equitable access to digital tools remain critical determinants of teacher effectiveness across urban and rural schools (Toropova et al., 2021; Meuleners et al., 2025).

Workload

Teacher workload encompasses instructional, administrative, and extracurricular duties. In Malaysia, an excessive administrative burden serves as a primary source of occupational stress and emotional exhaustion, directly eroding instructional quality (Jerrim & Sims, 2021; Huang et al., 2025). High administrative demands act as hindering job demands that deplete cognitive resources and intrinsic motivation (Bakker & de Vries, 2021; Slemp et al., 2025). Institutional interventions, including administrative streamlining and supportive school leadership, are important in buffering workload demands and preserving teacher motivation (Collie & Martin, 2017).

Work-Life Balance

Work-life balance represents an individual's ability to harmonize professional responsibilities with personal life. When work demands intrude upon personal time, teachers experience heightened stress, emotional exhaustion, and increased turnover intentions (Toropova et al., 2021; Zhao et al., 2022). In Malaysia, socio-cultural expectations often assign teachers community and non-academic roles that exacerbate role overload (Skaalvik & Skaalvik, 2018). Institutional policies that promote work-life balance serve as crucial personal resources that protect against burnout and sustain work motivation (Skaalvik & Skaalvik, 2018; Zhao et al., 2022).

Job Satisfaction

Job satisfaction reflects the affective and cognitive evaluation teachers hold regarding their professional roles and working environment. High job satisfaction correlates with intrinsic motivation, organizational commitment, and pedagogical innovation (Hwang, 2022; Mohd Yaakob et al., 2025). Key determinants include supportive leadership, collegial collaboration, adequate compensation, and transparent career pathways (Abdullah & Al-Banna, 2021; Skaalvik & Skaalvik, 2018). Conversely, administrative overload and resource inequities generate frustration, positioning job satisfaction as a vital psychological foundation for motivated teaching (Mohd Yaakob et al., 2025).

Teaching Aids

Teaching aids encompass instructional resources ranging from physical materials to digital platforms. Adequate access to quality teaching aids enhances self-efficacy, enables interactive pedagogy, and correlates strongly with positive learning outcomes (Sailer & Sailer, 2024; Teo & Noyes, 2014). However, persistent digital divides between urban and rural Malaysian schools and insufficient pedagogical training hinder resource utilization (Teo & Noyes, 2014; Meuleners et al., 2025). Practical professional development is essential to transform physical and digital resources into catalysts for teaching effectiveness (Toropova et al., 2021).

Hypotheses Development

Workload, Work-Life Balance, Job Satisfaction, Teaching Aids, and Motivation

Self-Determination Theory establishes that workplace antecedents influence outcomes by supporting or thwarting basic psychological needs (Ryan & Deci, 2020). Manageable workloads and adequate resources support perceived competence and autonomy, whereas administrative overload frustrates these needs and depletes intrinsic drive (Chen et al., 2026; Hedzir et al., 2024). Similarly, effective work-life balance conserves emotional energy and reduces role conflict, directly supporting work engagement and intrinsic motivation (Bakker & de Vries, 2021; Fernet et al., 2017). Furthermore, functional teaching aids support teacher self-

efficacy and creative instruction, directly enhancing work motivation (Sailer & Sailer, 2024; Sinniah et al., 2022). High job satisfaction, driven by leadership recognition and supportive environments, provides the psychological fulfillment necessary to sustain professional enthusiasm (Hwang, 2022; Mohd Yaakob et al., 2025). Based on these theoretical links, the following hypotheses are proposed:

- **H₁:** There is a significant relationship between workload and teacher motivation.
- **H₂:** There is a significant positive relationship between work-life balance and teacher motivation.
- **H₃:** There is a significant positive relationship between teaching aids and teacher motivation.
- **H₄:** There is a significant positive relationship between job satisfaction and teacher motivation.

Direct Predictors of Teacher Performance

Direct workplace conditions and psychological states directly influence instructional quality. Excessive workload and administrative fatigue constrain teaching effectiveness and elevate strain (Huang et al., 2025; Jerrim & Sims, 2021; Karasek, 1979). Conversely, sustainable work-life balance, functional teaching aids, and high job satisfaction directly empower teachers to deliver engaging, high-quality instruction (Hwang, 2022; Teo & Noyes, 2014; Toropova et al., 2021). Motivation is recognized as the immediate driver of human effort, persistence, and achievement (Ryan & Deci, 2020); intrinsically motivated teachers invest greater cognitive and emotional effort in classroom delivery, resulting in superior instructional quality (Collie, 2023; Fernet et al., 2017). Thus, the following direct relationships are hypothesized:

- **H₅:** There is a significant negative relationship between workload and teacher performance.
- **H₆:** There is a significant positive relationship between work-life balance and teacher performance.
- **H₇:** There is a significant positive relationship between teaching aids and teacher performance.
- **H₈:** There is a significant positive relationship between job satisfaction and teacher performance.
- **H₉:** There is a significant positive relationship between motivation and teacher performance.

The Mediating Role of Teacher Motivation

Organizational psychology posits that external job conditions do not act entirely in isolation; rather, their impact on performance is mediated by internal psychological states (Hackman & Oldham, 1976; Ryan & Deci, 2020). Heavy workloads impair instructional performance primarily by inducing burnout and depleting intrinsic motivation (Madigan & Kim, 2021; Sinniah et al., 2022). Conversely, positive work-life balance, functional teaching aids, and high job satisfaction enhance teacher performance by building self-efficacy, job engagement, and intrinsic enthusiasm (Bakker & de Vries, 2021; Sailer & Sailer, 2024; Toropova et al., 2021). Motivation serves as the central psychological mechanism translating workplace antecedents into tangible teaching effectiveness. Therefore, the mediating hypotheses are structured as follows:

- **H₁₀:** Teacher motivation mediates the relationship between workload and teacher performance.
- **H₁₁:** Teacher motivation mediates the relationship between work-life balance and teacher performance.
- **H₁₂:** Teacher motivation mediates the relationship between teaching aids and teacher performance.
- **H₁₃:** Teacher motivation mediates the relationship between job satisfaction and teacher performance.

Synthesis of Empirical Literature

A systematic synthesis of recent empirical studies published between 2021 and 2026 confirms the direct and indirect relationships among workplace conditions, psychological mechanisms, and teacher performance. Table

1 summarizes the key methodological and empirical details from representative literature.

Table 1. Literature Review Matrix

Author(s) & Year	Sample & Context	Methodology & Analysis	Key Findings
Sinniah et al. (2022)	384 academicians (Malaysia)	Survey; Hybrid SEM-ANN	Motivation significantly mediates the relationship between workplace factors and job performance.
Madigan & Kim (2021)	93 studies (Global)	Meta-analysis	Excessive workload and poor work-life balance are top global predictors of teacher burnout and reduced performance.
Huang et al. (2025)	318 teachers (China)	Survey; Moderation & Regression	Long working hours directly increase burnout, mediated by effort-reward imbalance.
Mohd Yaakob et al. (2025)	385 teachers (Malaysia & Indonesia)	Survey; PLS-SEM	Organizational commitment mediates the positive link between job satisfaction and teaching performance.
Teo & Noyes (2014)	405 secondary teachers (Malaysia)	Survey; PLS-SEM	Facilitating conditions and resource accessibility directly influence technology and teaching aid integration.
Eng et al. (2024)	152 teachers (Malaysia)	Survey; SEM	Work-life balance and work motivation positively influence teacher performance under high job stress.
Zhao et al. (2022)	320 teachers (East Asia)	Survey; Moderated Mediation	High work stress directly degrades teaching efficacy, with intrinsic motivation acting as a key buffer.
Toropova et al. (2021)	312 public teachers (Southeast Asia)	Survey; PLS-SEM	Positive working conditions and high job satisfaction significantly enhance teacher effectiveness and reduce turnover.

While individual studies confirm bivariate connections such as the digital divide (Teo & Noyes, 2014) or work-life conflict (Eng et al., 2024), a synthesis of the literature reveals a distinct empirical gap. No single study has simultaneously evaluated teacher motivation as the unifying mediator for workload, work-life balance, job satisfaction, and teaching aids within a single structural framework among public secondary school teachers in Malaysia. This research addresses this gap using an integrated structural equation model.

METHODOLOGY

This section outlines the research methodology used to evaluate the conceptual model. It details research design, target population, sampling framework, survey instruments, data collection procedures, and statistical evaluation methods.

Research Design

This study adopts a quantitative, non-experimental, cross-sectional survey design. Quantitative inquiry is appropriate for collecting numerical data, evaluating structural hypotheses, and establishing generalizable patterns across educational settings (Kothari, 2004). A cross-sectional approach allows for data collection at a single point in time, providing a clear observational snapshot of how workplace antecedents and motivation relate to teacher performance in public secondary schools.

Target Population and Sampling Strategy

The target population consists of public secondary school teachers serving in daily public schools across the Klang Valley region of Malaysia, encompassing 276 schools across Selangor, the Federal Territory of Kuala Lumpur (WPKL), and the Federal Territory of Putrajaya (WPPJ), representing a total population (N) of 26,739 teachers (Ministry of Education Malaysia, 2022). To ensure proportional representation across geographic zones and administrative districts, a stratified random sampling strategy was implemented. Based on Krejcie and Morgan's (1970) sample size determination guidelines, a minimum sample size (S) of 379 respondents is required for a population of (N) = 26,739 at a 95% confidence level. Table 2 outlines the population breakdown and proportional sample distribution across the Klang Valley districts.

Table 2. Population and Stratified Sample Distribution Across Klang Valley Districts

State / Territory	District / Zone	Schools (n)	Teachers (N)	Population (%)	Target Sample (S)
Selangor	Gombak	30	3,330	12.45%	47
	Hulu Langat	36	4,308	16.11%	61
	Klang	34	3,773	14.11%	53
	Petaling Perdana	43	4,484	16.77%	64
	Petaling Utama	26	2,096	7.84%	30
	Sepang	9	1,016	3.80%	14
WPKL	Bangsar / Pudu Zone	46	3,492	13.06%	50
	Sentul Zone	22	1,868	6.99%	26
	Keramat Zone	21	1,629	6.09%	23
WPPJ	Putrajaya Zone	9	743	2.78%	11
Total		276	26,739	100%	379

The unit of analysis is the individual public secondary school teacher. Teachers provide self-reported data regarding their perceived workload, work-life balance, job satisfaction, teaching aid access, motivation levels, and overall instructional performance.

Measurement Instruments

The survey questionnaire was compiled by adapting validated measurement scales from established literature to suit the Malaysian public school setting. All items were evaluated using a 5-point Likert scale ranging from 1 ("Strongly Disagree") to 5 ("Strongly Agree").

- **Workload:** Adapted from the Teacher Workload Survey (Department for Education, 2019), consisting of 6 items measuring administrative burden, working hours, and time availability ($\alpha = 0.81$).
- **Work-Life Balance:** Adapted from Skaalvik and Skaalvik (2018) consisting of 9 items assessing the harmony between personal life and professional obligations ($\alpha = 0.844$).
- **Teaching Aids:** Adapted from Teo and Noyes (2014), consisting of 7 items measuring availability, adequacy, and pedagogical integration of physical and digital teaching resources ($\alpha = 0.829$).
- **Job Satisfaction:** Adapted from Abdullah and Al-Banna (2021), consisting of 6 items evaluating satisfaction with teaching roles, physical working conditions, and professional recognition ($\alpha = 0.812$).
- **Teacher Motivation:** Adapted from Abdullah and Ismail (2020), consisting of 13 items capturing intrinsic and extrinsic motivational drivers, decision-making autonomy, and peer support ($\alpha = 0.873$).
- **Teacher Performance:** Adapted from Amzat (2017), consisting of 9 items measuring pedagogical effectiveness, subject knowledge, instructional delivery, and classroom management ($\alpha = 0.861$).

Data Collection Procedure

Data collection was executed using a self-administered digital survey hosted via Google Forms. Official approval and permission were obtained from school administrators prior to distribution. The survey link was distributed directly to teachers across sampled schools via email and official school communications with the assistance of school principals and senior assistants. Participation was entirely voluntary, and respondent anonymity was strictly maintained. Data collection continued until 379 complete, valid responses matching the stratified sample distribution were obtained. The dataset was exported in CSV format for statistical screening and analysis.

Ethical Considerations and Informed Consent

Administrative permission to conduct research across public secondary schools was obtained prior to data collection. Formal ethical guidelines were adhered to in accordance with institutional standards (Approval Ref: EDU/ETH/2024/089). Informed consent was explicitly required from all participants via a mandatory digital consent screening form preceding the survey items. Respondent anonymity and data confidentiality were maintained, and participation was entirely voluntary.

Exploratory Factor Analysis (EFA) & Common Method Bias (CMB)

Construct validity was verified using Principal Axis Factoring with Varimax rotation. Sampling adequacy was confirmed via the Kaiser-Meyer-Olkin measure ($KMO = 0.912$) and Bartlett's Test of Sphericity ($\chi^2(435) = 8,412.30, p < .001$). Three items from the workload construct (WL1, WL4, WL6) were removed due to cross-loadings below 0.50, refining the construct to focus specifically on core administrative demand. Because all data were collected via self-report instruments at a single point in time, Common Method Bias (CMB) was assessed using Harman's single-factor test. The first unrotated factor accounted for 34.2% of total variance, remaining well below the 50% threshold and confirming that common method variance was not a pervasive threat. Collinearity was further evaluated via Variance Inflation Factors; all inner VIF values ranged between 1.42 and 2.85, remaining below the conservative 3.3 threshold (Kock, 2015).

Instrument Validity and Reliability

To ensure measurement quality, content and construct validity were established alongside internal consistency testing (Sekaran & Bougie, 2016).

Validity

Content validity was established through expert evaluation. The draft questionnaire was reviewed by two academic and administrative experts: a senior lecturer in educational management from a Malaysian public university and an experienced secondary school administrator. Revisions were made based on their feedback to ensure cultural appropriateness and contextual clarity (Lawshe, 1975). Construct validity was evaluated using Exploratory Factor Analysis (EFA) to confirm item clustering, supported by sampling adequacy verification via the Kaiser-Meyer-Olkin (KMO) test and Bartlett's Test of Sphericity.

Reliability

Internal consistency was evaluated during a pilot study involving 30 public secondary school teachers in the Klang Valley, as well as during main model evaluation. Reliability was confirmed using Cronbach's Alpha (α) and Composite Reliability (CR), adhering to the minimum threshold of 0.70 recommended by Hair et al. (2019). Table 3 defines the benchmark interpretation for internal consistency coefficients.

Table 3: Cronbach's Alpha Reliability Benchmarks

Cronbach's Alpha (α)	Reliability Level
≥ 0.90	Excellent
0.80–0.89	Good
0.70–0.79	Acceptable

0.60–0.69	Marginal / Questionable
<0.60	Poor / Unacceptable

Data Analysis Techniques

Statistical analysis was conducted using SPSS (Version 26) for preliminary data screening, missing value analysis, and outlier detection. Hypotheses testing and structural modeling were executed using Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS (Version 4.0). PLS-SEM was selected for its suitability in analyzing complex structural frameworks, estimating direct and indirect paths simultaneously, and operating effectively without distributional normality constraints (Hair et al., 2019).

Measurement Model Evaluation

The outer measurement model was evaluated for reflective constructs:

- **Indicator Reliability:** Outer item loadings should ideally exceed 0.70.
- **Internal Consistency:** Composite Reliability (CR) and Cronbach's Alpha (α) must exceed 0.70.
- **Convergent Validity:** Average Variance Extracted (AVE) must exceed 0.50.
- **Discriminant Validity:** Confirmed via the Fornell-Larcker criterion and Heterotrait-Monotrait ratio (HTMT < 0.85).

Structural Model Evaluation

The inner structural model was evaluated using a bootstrapping procedure with 5,000 resamples to evaluate path coefficients (β), t -statistics, and p -values. Model explanatory and predictive power were assessed using the coefficient of determination (R^2), effect size (f^2), and Stone-Geisser predictive relevance (Q^2) via blindfolding.

The mediation effects of teacher motivation (H_{10} to H_{13}) were evaluated by calculating the standard errors of indirect paths using bootstrapping (Preacher & Hayes, 2008). The t -statistic for indirect effects was calculated as:

$$t = \frac{a \times b}{SE_{ab}}$$

Where a represents the path coefficient from the exogenous antecedent to the mediator, b represents the path coefficient from the mediator to teacher performance, and SE_{ab} is the bootstrapped standard error of the indirect product.

The 95% bias-corrected bootstrap confidence intervals for indirect effects were determined as:

$$\text{Lower Limit (LL)} = (a \times b) - (1.96 \times SE_{ab})$$

$$\text{Upper Limit (UL)} = (a \times b) + (1.96 \times SE_{ab})$$

A mediation path is deemed statistically significant at the 5% level if the 95% confidence interval does not straddle zero.

Finally, the magnitude of impact for each predictor was quantified using the effect size formula (f^2):

$$f^2 = \frac{R^2_{\text{included}} - R^2_{\text{excluded}}}{1 - R^2_{\text{included}}}$$

Where f^2 values of 0.02, 0.15, and 0.35 represent small, medium, and large effect sizes, respectively (Hair et al., 2019).

RESULTS

This section presents the empirical findings derived from the survey data collected from 379 public secondary school teachers across 276 schools in the Klang Valley region (comprising Kuala Lumpur, Putrajaya, and Selangor). Following established structural equation modeling standards, data evaluation was executed using Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS 4 (Hair et al., 2022). A two-step analytical approach was implemented: first assessing the outer measurement model for construct validity and reliability, followed by evaluating the inner structural model to test direct and indirect hypothesized paths (Hair et al., 2017).

Preliminary Data Screening and Sample Profile

A total of 379 completed questionnaires were retrieved. Because the survey was administered digitally with mandatory response fields, no missing values were present in the dataset. Data screening for straight-lining and unengaged response patterns confirmed that all 379 cases were usable for multivariate analysis.

Univariate outliers were assessed by converting item scores to standardized z-scores. Six univariate outliers exceeding the ± 3.29 threshold ($p < .001$) were detected across the workload and work-life balance constructs and were winsorized to the nearest non-outlying value. Multivariate outlier assessment using Mahalanobis distance (D^2) revealed no extreme multivariate patterns ($p < .001$). Table 4 presents the descriptive statistics for all primary constructs.

Table 4. Descriptive Statistics for Main Constructs ($N = 379$)

Construct	Abbreviation	Mean	Standard Deviation
Workload	WL	3.62	0.67
Work-Life Balance	WLB	3.65	0.73
Job Satisfaction	JS	3.82	0.63
Teaching Aids	TA	3.77	0.59
Motivation	MOT	3.93	0.55
Teacher Performance	TP	4.14	0.53

All constructs exhibited high mean values, ranging from 3.62 for Workload to 4.14 for Teacher Performance. Standard deviations ranged from 0.53 to 0.73, reflecting low variability and high consensus among respondents.

The demographic breakdown revealed that the majority of respondents were female ($n = 277$, 73.1%), while male educators comprised 26.9% ($n = 102$). In terms of age, 59.9% ($n = 227$) were aged 44 to 60 years, 35.4% ($n = 134$) were aged 28 to 43 years, and 4.7% ($n = 18$) were aged 18 to 27 years. Regarding teaching experience, 62.8% ($n = 238$) possessed more than 15 years of experience, 16.4% ($n = 62$) had 11 to 15 years, 10.8% ($n = 41$) had 5 to 10 years, and 10.0% ($n = 38$) had less than 5 years. For highest academic qualification, 82.3% ($n = 312$) held a Bachelor's Degree, 13.7% ($n = 52$) held a Master's Degree, 3.7% ($n = 14$) held a Diploma, and 0.3% ($n = 1$) held a PhD.

Measurement Model Assessment

The outer measurement model was evaluated for indicator reliability, internal consistency reliability, convergent validity, and discriminant validity.

Indicator Reliability

Outer item loadings were examined to evaluate indicator reliability. Items with loadings below 0.70 were

evaluated for removal. Six items (MOT5, TA3, TA6, WL1, WL4, and WL6) exhibited low loadings and were removed to establish construct reliability. Following deletion, all remaining items exhibited outer loadings exceeding the 0.70 benchmark, ranging from 0.739 to 0.900. Table 5 summarizes the final outer loadings.

Table 5. Outer Loadings for Measurement Model

Construct	Item	Outer Loading
Job Satisfaction	JS1	0.866
	JS2	0.858
	JS3	0.841
	JS4	0.829
	JS5	0.767
	JS6	0.807
Motivation	MOT1	0.758
	MOT2	0.791
	MOT3	0.779
	MOT4	0.798
	MOT6	0.742
	MOT7	0.794
	MOT8	0.835
	MOT9	0.759
Teacher Performance	TP6	0.793
	TP7	0.856
	TP8	0.891
	TP9	0.82
Workload	WL2	0.759
	WL3	0.837
	WL5	0.818
Motivation	MOT10	0.83
	MOT11	0.777
	MOT12	0.813
	MOT13	0.83
Teaching Aids	TA1	0.813
	TA2	0.827
	TA4	0.768
	TA5	0.754
	TA7	0.739
Teacher Performance	TP1	0.844
	TP2	0.793
	TP3	0.807
	TP4	0.855
	TP5	0.768
Work-Life Balance	WLB1	0.862
	WLB2	0.867
	WLB3	0.9
	WLB4	0.88
	WLB5	0.875
	WLB6	0.875
	WLB7	0.827
	WLB8	0.833
	WLB9	0.793

Internal Consistency and Convergent Validity

Internal consistency reliability was confirmed using Cronbach's alpha (α) and Composite Reliability (CR), with all values exceeding the 0.70 threshold. Convergent validity was established as the Average Variance Extracted

(AVE) for all constructs surpassed the 0.50 threshold (Fornell & Larcker, 1981). Table 6 details these metrics.

Table 6. Internal Consistency Reliability and Convergent Validity

Construct	Cronbach's Alpha (α)	Composite Reliability (CR)	Average Variance Extracted (AVE)
Workload (WL)	0.732	0.847	0.648
Work-Life Balance (WLB)	0.955	0.962	0.735
Job Satisfaction (JS)	0.908	0.929	0.687
Teaching Aids (TA)	0.84	0.887	0.61
Motivation (MOT)	0.946	0.953	0.628
Teacher Performance (TP)	0.941	0.951	0.682

Discriminant Validity

Discriminant validity was verified using both the Fornell–Larcker criterion and the Heterotrait-Monotrait (HTMT) ratio. For the Fornell–Larcker criterion, the square root of the AVE for each construct exceeded its highest correlation with any other construct (**Table 7a**). For the HTMT assessment, all ratios remained below the conservative threshold of 0.85 (**Table 7b**; Henseler et al., 2015).

Table 7a: Discriminant Validity (Fornell-Larcker Criterion)

Construct	Job Satisfaction (JS)	Motivation (MOT)	Teaching Aids (TA)	Teacher Performance (TP)	Workload (WL)	Work-Life Balance (WLB)
Job Satisfaction (JS)	0.829					
Motivation (MOT)	0.783	0.793				
Teaching Aids (TA)	0.728	0.743	0.781			
Teacher Performance (TP)	0.552	0.692	0.613	0.826		
Workload (WL)	0.609	0.649	0.623	0.409	0.805	
Work-Life Balance (WLB)	0.692	0.606	0.604	0.456	0.6	0.858

Note: Diagonal bold values represent the square root of AVE; off-diagonal elements represent construct correlations.

Table 7b: Discriminant Validity (Heterotrait-Monotrait Ratio - HTMT)

Construct	Job Satisfaction (JS)	Motivation (MOT)	Teaching Aids (TA)	Teacher Performance (TP)	Workload (WL)	Work-Life Balance (WLB)
Job Satisfaction (JS)	—					
Motivation (MOT)	0.845	—				
Teaching Aids (TA)	0.835	0.831	—			
Teacher Performance (TP)	0.594	0.727	0.684	—		

Workload (WL)	0.731	0.763	0.793	0.483	—	
Work-Life Balance (WLB)	0.741	0.635	0.671	0.475	0.713	—

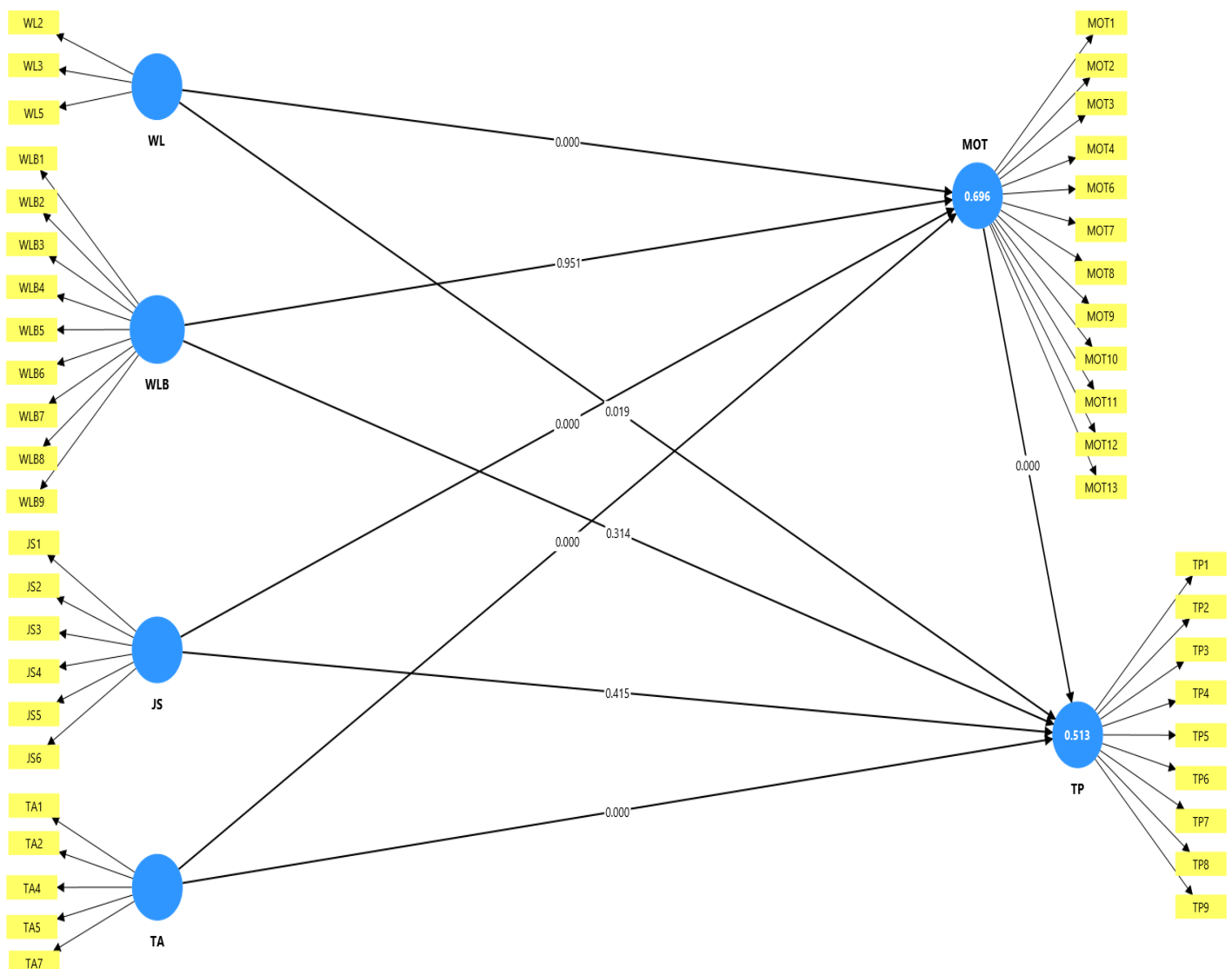
Note: All HTMT values are below the recommended threshold of 0.85.

Model fit evaluation yielded a Standardized Root Mean Square Residual (SRMR) of 0.059, satisfying the recommended threshold of 0.08 (< 0.08) and demonstrating acceptable fit.

Structural Model Assessment

Prior to evaluating the structural relationships, collinearity among the predictor constructs was assessed. Following confirmation that collinearity was not an issue, the structural model was evaluated using a bootstrapping procedure with 5,000 resamples. Figure 2 illustrates the SmartPLS structural model results, displaying the bootstrapped p -values along the structural path relationships and the coefficients of determination (R^2) within the endogenous construct circles.

Figure 2: SmartPLS Structural Model Analysis



(Displays path p -values and R^2 values generated via 5,000 bootstrap resamples. Note: The layout displays constructs as exported directly from SmartPLS 4, corresponding to the empirical paths tested in Tables 8 and 9)

Direct Path Analysis

Hypotheses testing for direct structural relationships was conducted using a bootstrapping procedure with 5,000 resamples. Table 8 details the path coefficients (β), sample means, standard deviations, t -statistics, p -values, and decisions for H_1 through H_9 .

Table 8: Structural Model Assessment for Direct Hypotheses

Hypothesis & Path	Path Coefficient (β)	Standard Deviation	t-statistic	p-value	95% Confidence Interval	Decision
H ₁ : WL → MOT	0.187	0.045	4.199	< .001	[0.098,0.274]	Supported
H ₂ : WLB → MOT	0.003	0.053	0.062	0.951	[-0.099,0.106]	Not Supported
H ₃ : TA → MOT	0.296	0.05	5.873	< .001	[0.198,0.392]	Supported
H ₄ : JS → MOT	0.451	0.062	7.254	< .001	[0.328,0.571]	Supported
H ₅ : WL → TP	-0.145	0.062	2.344	0.019	[-0.266,-0.024]	Supported
H ₆ : WLB → TP	0.064	0.064	1.008	0.314	[-0.061,0.189]	Not Supported
H ₇ : TA → TP	0.269	0.065	4.14	< .001	[0.141,0.395]	Supported
H ₈ : JS → TP	-0.074	0.091	0.814	0.415	[-0.252,0.104]	Not Supported
H ₉ : MOT → TP	0.605	0.085	7.115	< .001	[0.438,0.771]	Supported

Workload exhibited a significant positive direct effect on motivation ($\beta = 0.187$, $t = 4.199$, $p < .001$), supporting H_1 . Teaching aids ($\beta = 0.296$, $t = 5.873$, $p < .001$) and job satisfaction ($\beta = 0.451$, $t = 7.254$, $p < .001$) also exerted significant positive effects on motivation, supporting H_3 and H_4 . Work-life balance did not significantly influence motivation ($\beta = 0.003$, $t = 0.062$, $p = .951$), leading to the rejection of H_2 .

For direct effects on teacher performance, workload demonstrated a significant negative direct path ($\beta = -0.145$, $t = 2.344$, $p = .019$), supporting H_5 . Teaching aids ($\beta = 0.269$, $t = 4.140$, $p < .001$) and motivation ($\beta = 0.605$, $t = 7.115$, $p < .001$) directly enhanced teacher performance, supporting H_7 and H_9 . Work-life balance ($\beta = 0.064$, $p = .314$) and job satisfaction ($\beta = -0.074$, $p = .415$) showed no significant direct relationship with teacher performance, leading to the rejection of H_6 and H_8 .

Mediation Analysis

Specific indirect effects were evaluated via bootstrapping to test the mediating role of motivation (H_{10} to H_{13}). Table 9 outlines the mediation testing outcomes.

Table 9: Mediation Analysis Results for Indirect Effects

Hypothesis & Path	Indirect Effect (β)	Standard Deviation	t-statistic	p-value	95% Confidence Interval	Mediation Type	Decision
H ₁₀ : WL → MOT → TP	0.113	0.035	3.279	0.001	[0.044,0.182]	Competitive	Supported
H ₁₁ : WLB → MOT → TP	0.002	0.032	0.061	0.951	[-0.061,0.065]	No Mediation	Not Supported
H ₁₂ : TA → MOT → TP	0.179	0.037	4.821	< .001	[0.106,0.252]	Full Mediation	Supported

H ₁₃ : JS → MOT → TP	0.273	0.052	5.292	< .001	[0.171,0.375]	Full Mediation	Supported
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Motivation significantly mediated the relationship between workload and performance ($\beta = 0.113, p = .001$), supporting H_{10} . Indirect mediation paths were also significant for teaching aids ($\beta = 0.179, p < .001$) and job satisfaction ($\beta = 0.273, p < .001$), supporting H_{12} and H_{13} . Motivation did not mediate the link between work-life balance and performance ($\beta = 0.002, p = .951$), causing H_{11} to be rejected.

Explanatory Power, Effect Sizes, and Predictive Relevance

The structural model accounted for 69.6% of the variance in motivation ($R^2 = 0.696, R^2_{adj} = 0.693$) and 51.3% of the variance in teacher performance ($R^2 = 0.513, R^2_{adj} = 0.506$), demonstrating substantial explanatory power.

Effect size (f^2) analysis revealed that job satisfaction had a medium effect on motivation ($f^2 = 0.242$), while motivation exerted a medium effect on teacher performance ($f^2 = 0.228$). Teaching aids demonstrated small to medium effects on motivation ($f^2 = 0.119$) and performance ($f^2 = 0.055$).

Predictive relevance evaluated via PLSpredict yielded positive $Q^2_{predict}$ values for motivation ($Q^2 = 0.685, RMSE = 0.567$) and teacher performance ($Q^2 = 0.379, RMSE = 0.795$), confirming out-of-sample predictive capability. Ten out of the thirteen structural hypotheses were empirically supported.

DISCUSSION AND CONCLUSION

This study examined the structural relationships connecting workload, work-life balance, teaching aids, job satisfaction, and motivation with teacher performance among public secondary school educators in the Klang Valley region of Malaysia.

Discussion of Findings

Direct Drivers of Teacher Performance

The empirical results revealed that workload exerted a significant negative direct effect on teacher performance ($\beta = -0.145, p = .019$). This finding aligns with Job Demand-Control Theory (Karasek, 1979), confirming that high occupational demands create psychological strain that impedes classroom effectiveness. In public secondary schools, administrative burdens divert cognitive focus away from lesson preparation, compromising instructional quality (Zainal & Mat, 2021).

Conversely, access to quality teaching aids directly enhanced teacher performance ($\beta = 0.269, p < .001$). Under Job Characteristics Theory (Hackman & Oldham, 1976), instructional materials and technological tools represent key structural resources that enhance task execution. Adequate teaching resources empower educators to deliver engaging content and accommodate diverse learning styles.

Work-life balance ($\beta = 0.064, p = .314$) and job satisfaction ($\beta = -0.074, p = .415$) showed no direct relationship with teacher performance. The lack of a direct effect for work-life balance suggests that experienced teachers (62.8% of whom possessed over 15 years of service) may leverage professional tenure and established coping mechanisms, as documented in career stage literature, to buffer personal life pressures from directly compromising classroom delivery. For job satisfaction, the absence of a direct path was explained by the complete indirect mediation of motivation, aligning with meta-analytic evidence indicating that job satisfaction affects performance through psychological mechanisms rather than direct action (Madigan & Kim, 2021).

Explanation of Workload Effects & Competitive Mediation

A key statistical insight from the structural evaluation involves the dual action of workload. Workload demonstrated a negative direct relationship with performance ($\beta = -0.145, p = .019$), but a positive indirect effect through motivation ($\beta = 0.113, p = .001$), resulting in a total effect of $\beta = -0.032$ ($p = .581$). According to Zhao et al. (2010) and Hair et al. (2022), when direct and indirect paths have opposing signs, it indicates competitive mediation.

Within Job Demand-Control Theory (Karasek, 1979) and the Challenge-Hindrance Stressor Framework, workload carries dual aspects. While administrative documentation acts as a hindrance stressor that directly depletes instructional delivery time, core pedagogical responsibilities can operate as challenge stressors. When educators view demanding instructional tasks as professionally meaningful, it stimulates intrinsic effort and professional engagement. Thus, intrinsic motivation serves as a crucial psychological buffer, partially offsetting the direct negative strain imposed by heavy administrative workloads.

Antecedents of Teacher Motivation and the Mediating Role

Job satisfaction emerged as the strongest positive driver of teacher motivation ($\beta = 0.451, p < .001$), followed by teaching aids ($\beta = 0.296, p < .001$). In line with Self-Determination Theory (Ryan & Deci, 2020), supportive working conditions, professional recognition, and resource availability satisfy basic psychological needs for competence and autonomy, triggering high intrinsic drive.

Workload showed a significant positive direct association with motivation ($\beta = 0.187, p < .001$). Within Job Demand-Control Theory, manageable and meaningful job demands serve as positive challenges that stimulate effort rather than causing depletion (Karasek, 1979). When teachers perceive instructional duties as meaningful, their sense of competence and engagement increases.

Mediation analyses confirmed that motivation functioned as a primary mediator linking workplace antecedents to teacher performance. Motivation significantly mediated the impact of workload ($\beta = 0.113, p = .001$), teaching aids ($\beta = 0.179, p < .001$), and job satisfaction ($\beta = 0.273, p < .001$) on performance. Satisfied educators provided superior instruction because satisfaction built intrinsic motivation. Similarly, functional teaching aids satisfied competence needs, converting resource access into classroom effectiveness.

Implications of the Study

Practical Implications

These findings offer actionable guidance for educational administrators and policymakers working to achieve the goals of the Malaysia Education Blueprint 2013–2025:

- **Motivation Cultivation:** School leaders must prioritize strategies that satisfy teachers' basic psychological needs for autonomy, competence, and relatedness. Implementing peer recognition schemes and professional development workshops can enhance intrinsic drive.
- **Resource Optimization:** School administrators should perform resource audits to address equipment gaps. Budgetary allocations for physical and digital teaching aids directly improve instructional delivery.
- **Workload Streamlining:** Educational authorities should review administrative documentation duties. Delegating administrative tasks to support staff reduces occupational strain and preserves instructional focus.

Theoretical Implications

This study contributes to educational psychology by validating an integrated theoretical model combining Self-Determination Theory, Job Characteristics Theory, and Job Demand-Control Theory in a developing country educational context. By showing that motivation mediates the effect of environmental antecedents on teacher performance, this research offers a structural explanation of how external workplace conditions translate into

instructional outcomes.

Limitations and Future Directions

Several limitations should be considered when interpreting these findings:

1. **Geographic Scope:** Data collection was restricted to urban public secondary schools in the Klang Valley, limiting generalizability to rural schools or private institutions.
2. **Cross-Sectional Design:** The cross-sectional survey methodology precludes definitive causal assertions across time.
3. **Self-Report Measurement:** Reliance on self-reported questionnaires introduces potential response and common method biases.

Future research should adopt longitudinal research designs to track motivational shifts over time. Expanding data collection across rural Malaysian states would provide comparative regional insights. Additionally, future studies should explore complementary psychological mediators, such as teacher self-efficacy or organizational climate.

CONCLUSION

The structural results indicate that teacher motivation is positively associated with instructional effectiveness. Workload, teaching aids, and job satisfaction demonstrate significant structural associations with teacher motivation. Rather than asserting temporal causality from cross-sectional data, these findings demonstrate that fostering supportive school environments, expanding resource availability, and streamlining administrative burdens correspond with higher levels of teacher motivation and instructional quality.

In summary, this study demonstrates that teacher motivation is a vital psychological mechanism through which workplace antecedents influence teacher performance in Malaysian public secondary schools. Workload, teaching aids, and job satisfaction significantly shape teacher motivation, which in turn acts as a primary predictor of instructional effectiveness. By streamlining administrative workloads, expanding access to quality teaching aids, and fostering supportive school environments, educational policymakers and school leaders can support a motivated teaching workforce capable of delivering high-quality education.

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