

**Beyond Rules and Regulations: Procurement Compliance Behaviour in the Malaysian Public Sector**Amir Che Mansor<sup>1\*</sup>, Norziation Ismail Khan<sup>2</sup><sup>1</sup> Accountant General's Department of Malaysia<sup>2</sup> Universiti Teknologi MARA Selangor, Kampus Shah Alam, Selangor, Malaysia<sup>1</sup>amircm.hlp@gmail.com; <sup>2</sup>norzi153@uitm.edu.my

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**Abstract**— Public procurement is essential to promoting accountability, transparency, and value for money in the management of public funds. Despite well-established regulatory frameworks in Malaysia, persistent non-compliance continues to undermine institutional credibility and public trust. Moving beyond a rule-based perspective, this study examines organisational enablers that influence procurement compliance behaviour among public sector personnel, drawing on the Theory of Planned Behaviour. Specifically, the effects of leadership quality, training and development, and information systems on compliance behaviour are investigated. Data were collected from 230 procurement personnel across Malaysian government agencies using a structured questionnaire and analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) via SmartPLS 4. The findings indicate that leadership quality is the most influential determinant of procurement compliance behaviour, followed by training and development and information systems, which play significant but comparatively smaller enabling roles. The model demonstrates significant explanatory power and strong out-of-sample predictive performance, as evidenced by PLSpredict analysis. These findings support Sustainable Development Goal 16 by strengthening accountable and transparent public institutions, as well as Sustainable Development Goal 12 by promoting responsible and efficient public procurement practices. The study contributes by advancing behavioural perspectives on procurement compliance and informing governance-oriented procurement reforms.

**Keywords**— Information Systems, Leadership Quality, Organizational Enablers, Procurement Compliance, Public Sector, Theory of Planned Behaviour, Training and Development. **Introduction**

Public procurement is a key aspect of public sector governance and economic management that contributes a substantial amount of government expenditure. The Organisation for Economic Co-operation and Development (OECD) estimates that public procurement represents approximately 12% of gross domestic product (GDP) across OECD member countries [1]. In the Malaysian context, public procurement has long been recognised as a strategic policy instrument, not only for infrastructure development and service provision, but also for promoting transparency, accountability, and integrity in the management of public funds [2].

Despite the existence of comprehensive procurement regulations and control mechanisms, including the Financial Procedure Act 1957, Treasury Instructions, and the implementation of digital procurement platforms such as eProcurement and MyGPIS, cases of non-compliance with the rules still occur in the ministries and government agencies [3]. Such typical types of non-compliance are insufficient or poor documentation, failure to follow prescribed procurement processes and absence of monitoring and oversight procedures. These weaknesses decrease operational efficiency and increase vulnerability to risks of mismanagement and corruption [4].

The implications of procurement non-compliance remain high, indicating that despite the need to regulate, the current regulatory frameworks and procedural controls are insufficient. Increasingly, procurement compliance is understood as a behavioural and organisational phenomenon influenced by factors beyond formal rules. In this regard, the Theory of Planned Behaviour (TPB) offers a useful foundation for interpreting compliance choices, as it predicts that behaviour is influenced by individual attitudes, perceived social pressures, and perceived control over performing the behaviour [5]. Previous studies have highlighted the role of organisational enablers such as the adequacy of training and development, the quality of leadership, and the effectiveness of information systems to shape the compliance behaviour among procurement personnel [6], [7]. Strengthening these factors is important to addressing compliance challenges and supporting broader governance reform agendas. This aligned with Sustainable Development Goals 12 and 16 [8], as well as Malaysia MADANI [9], which emphasises institutional integrity and effective public sector governance.

Thus, this study aims to investigate the impact of key organisational enablers on procurement compliance behaviour among public sector personnels in Malaysia. Specifically, its objectives are to determine the influence of factors such as training and development, leadership quality, and information systems on procurement compliance among public sector personnels in Malaysia.

## I. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### A. Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) explains behaviour through three key determinants: attitude, subjective norms, and perceived behavioural control [5]. Attitude reflects an individual's evaluation of a behaviour, subjective norms capture perceived social expectations, and perceived behavioural control refers to the perceived ability to perform the behaviour given available resources and support [10]. TPB has been widely applied in public sector and organisational research to explain compliance-related behaviour in rule-based and accountability-driven environments [11]. Guided by the TPB, this study posits that training and development, leadership quality, and information systems function as key behavioural determinants shaping procurement compliance behaviour. Specifically, training and development influence procurement personnel's attitudes by reinforcing positive evaluations of compliant practices, leadership quality shapes subjective norms by signalling ethical expectations and accountability standards, and information systems enhance perceived behavioural control by enabling officers to comply effectively with procedural requirements [12], [13]. Collectively, these factors are expected to strengthen compliance-oriented behaviour in public procurement settings.

### B. Procurement Compliance Behaviour

Procurement compliance behaviour refers to adherence to established laws, regulations, and prescribed procedures in the execution of public procurement activities [14]. Conversely, non-compliance involves variation from adherence to requirements, including avoidance of procurement rules, failure to maintain proper documentation, and awarding contracts without following the prescribed procedures [15], [16]. Such practices undermine governance arrangements, compromise value for money, and increase the exposure to corruption and mismanagement risks.

Despite the presence of comprehensive rules and regulations on public procurement, Auditor General's Reports have repeatedly raised issues related to procurement, indicating that procurement non-compliance persists [3], [4]. These findings suggest that formal rules alone are insufficient to secure compliant behaviour. Prior research found that procurement compliance as a behavioural outcome is motivated by factors such as organisational context, leadership enforcement, and individual behaviour [7], [17]. This perspective highlighted the need to examine organisational factors, such as training and development, leadership quality, and information systems, to better understand how compliance behaviour is formed and sustained within public sector settings. To explain variations in compliance behaviour, this study adopts the TPB, which presumes that behaviour is determined by attitudes, subjective norms, and perceived behavioural control. These components are reflected in organisational factors that shape how individuals interpret procurement rules and how capable they feel in following them. This perspective supports the need to examine key organisational factors such as training and development, leadership quality, and information systems to better understand how compliance behaviour is formed and sustained within public sector settings.

### C. Training and Development

Within the TPB, training and development can be understood as a key antecedent to the development of favourable attitudes toward compliant action. When employees believe that training enhances their knowledge, procedural competence, and confidence, they are more likely to evaluate compliance as beneficial and feasible. This forms a positive attitudinal foundation that supports compliant decision-making. In the context of public procurement, training and development are essential mechanisms to ensure that procurement personnel possess the technical competencies

and necessary knowledge to comply with complex procurement requirements. Effective training can enhance task accuracy, self-efficacy, and ethical awareness among employees, thereby reducing the likelihood of errors and the intention to non-comply [18], [19]. Therefore, training strengthens the perceived ability of individuals to perform required actions, which is vital for consistent compliance.

Empirical studies generally support a positive relationship between training and development and compliance-related behaviours. For instance, [20] found that effective procurement training and development significantly increased compliance among government personnel. Similarly, [21] reported that well-targeted training on procurement guidelines enhanced understanding and reduced procedural violations. [22] observed that training improved practical capabilities, reinforcing adherence to procurement rules. Therefore, the following hypothesis is developed.

H1: Training and development have a significant positive relationship with procurement compliance behaviour among public sector personnels in Malaysia.

#### D. Leadership Quality

Leadership quality plays a vital role in encouraging organisational compliance culture. Leaders are able to influence compliance behaviour among their subordinates by setting expectations, modelling ethical conduct, providing supervision, and reinforcing accountability mechanisms [7], [23]. The quality of leadership signals the importance of compliance norms and legitimises adherence to rules as an organisational priority. Conversely, weak leadership indirectly encourages tolerance of non-compliance [24].

Empirical evidence demonstrates this mechanism. [24] found that ethical and supportive leadership reduces opportunities for misconduct and strengthens alignment between individual actions and organisational goals. Additionally, [25] reported that leaders who communicate clearly, provide constructive guidance, and reduce role ambiguity significantly enhance compliance behaviour. From a TPB perspective, leadership serves as a subjective norm, signalling expected behaviour and shaping employees' perceived obligation to comply with procurement rules. Accordingly, leadership quality is expected to have a positive influence on procurement compliance behaviour among Malaysian public sector personnel. Hence, the following hypothesis is developed.

H2: Leadership quality has a significant positive relationship with procurement compliance behaviour among public sector personnels in Malaysia.

#### E. Information System

Information systems reflect the structural and technological enablers that shape procurement personnels' perceived behavioural control, a key component of the TPB. Effective systems simplify processes, reduce ambiguity, and offer automated guidance that enhances individuals' confidence in their ability to comply. Information systems have been widely recognised as key factors of transparency, efficiency, and accountability in public procurement processes [26]. Digital procurement, such as eProcurement, provides comprehensive workflows, automated controls, and audit trails to reduce discrepancies and opportunities for manipulation. Empirical evidence suggests that effective information systems can enhance compliance by minimising errors and strengthening monitoring and reporting functions [27], [28].

Empirical evidence suggests a positive relationship between information systems and procurement compliance behaviour [20]. Utilisation of e-procurement systems is able to strengthen adherence to regulations by automating workflows, enhancing real-time monitoring, and reducing opportunities for non-standard practices [29]. [30] emphasise that user-friendly technological interfaces enhance personnel confidence and willingness to comply by reducing complexity and cognitive effort. Collectively, these findings suggest that robust and well-supported information systems can strengthen compliance behaviour. Thus, the following hypothesis is developed.

H3: Information systems have a significant positive relationship with procurement compliance behaviour among public sector personnels in Malaysia. An easy way to comply with the conference paper formatting requirements is to use this document as a template and simply type your text into it.

## II. METHODOLOGY

The survey was distributed to procurement personnel across 177 government agencies operating under the accounting offices of federal ministries in Malaysia. A total of 230 responses were analysed. The final questionnaire comprised 62 items organised into seven sections. All items were measured using a seven-point Likert scale ranging from 1 ("strongly disagree") to 7 ("strongly agree"). Procurement compliance behaviour was measured using eleven (11) items adapted from [31]. Training and development were measured using ten (10) items adapted from [32] and [33]. Leadership quality was measured using eleven (11) items adapted from [34], whereas Information systems were measured using six (6) items adapted from [35]. All measurement items employed the same seven-point Likert scale to ensure measurement consistency.

This study employed Partial Least Squares Structural Equation Modelling (PLS-SEM) using SmartPLS 4 [36]. The method is well-suited for models comprising multiple latent constructs measured with reflective indicators and focuses on maximising explained variance in the dependent variable. PLS-SEM is also appropriate given the predictive orientation of the study and its suitability for survey-based public sector research that does not strictly satisfy multivariate normality assumptions [37]. paragraphs must be indented.

## III. RESULTS

### A. Data Screening and Common Method Bias

The data underwent a comprehensive screening process to ensure accuracy and quality prior to model measurement. This process involved examining for data entry errors, missing values, abnormal response patterns, outliers, and distributional properties. All screening and data cleaning procedures were conducted using SPSS version 30. As a result, 19 responses were excluded due to issues with straight-lining and outliers, yielding a final usable sample of 230 observations. Given that the data were collected from a single source, the potential for common method bias (CMB) was assessed using the full collinearity approach recommended by [38] and [39]. This method examines full collinearity variance inflation factors (VIFs) for all latent constructs, with VIF values below 3.3 [40] indicating the absence of serious common method bias. Most constructs recorded VIF values below the conservative threshold of 3.3 (Information System = 2.15; Training and Development = 2.998). Although the VIF value for Leadership Quality (VIF = 4.048) marginally exceeded the conservative cut-off, it remained below the conventional threshold of 5.0 [41], indicating no severe multicollinearity.

### B. Measurement Model Assessment

Partial Least Squares Structural Equation Modelling (PLS-SEM) was employed using SmartPLS version 4.1.1.6 [42] to assess both the measurement and structural models. The measurement model was first evaluated to establish the reliability and validity of the constructs prior to testing the structural relationships [43]. The measurement model was evaluated in terms of indicator reliability, internal consistency reliability, and convergent validity. Indicator reliability was assessed using outer loadings, while Cronbach's alpha (CA) and composite reliability (CR) were used to evaluate internal consistency. Convergent validity was assessed using the average variance extracted (AVE). The results from the measurement model shows that indicator loadings are between 0.580 and 0.878, which exceed the recommended threshold of 0.60, indicating satisfactory indicator reliability [44]. A small number of indicators exhibited loadings slightly below 0.60; however, these items were retained as their loadings exceeded the minimum acceptable level of 0.50 and did not adversely affect internal consistency or convergent validity [45]. Internal consistency reliability was established for all constructs, with Cronbach's alpha values ranging from 0.868 to 0.953 and composite reliability values ranging from 0.900 to 0.959, exceeding the recommended threshold of 0.70. Convergent validity was also confirmed, as AVE

values ranged from 0.521 to 0.683, surpassing the minimum criterion of 0.50 and indicating that each construct explains more than half of the variance in its indicators [45], [46].

**C. Discriminant Validity (HTMT Criterion)**

Discriminant validity was further assessed using the Heterotrait-Monotrait (HTMT) ratio of correlations, as proposed by [47] and further clarified by [48]. The HTMT criterion suggests that values below 0.85 indicate adequate discriminant validity under a conservative threshold, while values below 0.90 may be accepted under a more lenient criterion, particularly in applied social science research. Most HTMT values among the constructs were below the conservative threshold of 0.85. Although the HTMT value between Leadership Quality and Procurement Compliance Behaviour (HTMT = 0.892) marginally exceeded the conservative criterion, it remained below the lenient threshold of 0.90, indicating acceptable discriminant validity. All other construct pairs exhibited HTMT values well within the recommended limits.

**D. Structural Model Assessment**

In line with concerns regarding sole reliance on p-values for hypothesis testing [49], multiple criteria were employed to assess the structural model. These included standardised path coefficients ( $\beta$ ), t-values, p-values, bias-corrected confidence intervals, and variance inflation factors (VIF). The results of the structural model assessment are summarised in Table 4.

**TABLE 4**  
**Summary of Structural Model Assessment**

Relationship	$\beta$	SE	t-value	p-value	BCILL (5%)	BCIUL (95%)	VIF
Training and Development → Procurement Compliance Behaviour	0.279	0.066	4.209	< .001	0.167	0.382	2.998
Leadership Quality → Procurement Compliance Behaviour	0.482	0.075	6.453	< .001	0.364	0.609	4.048
Information System → Procurement Compliance Behaviour	0.184	0.056	3.268	.001	0.089	0.276	2.150

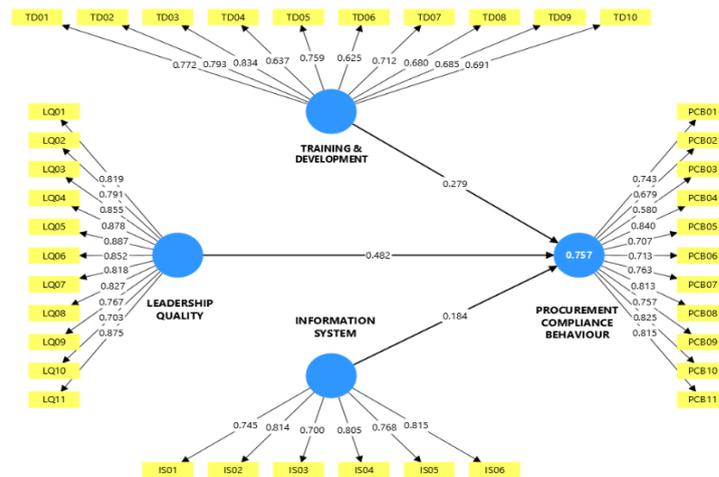
**Note.  $\beta$  = standardised path coefficient; SE = standard error (bootstrapping); BCILL = bias-corrected confidence interval lower bound; BCIUL = bias-corrected confidence interval upper bound; VIF = variance inflation factor.**

Table 4 and Fig. 1 present the results of the structural path coefficient analysis for hypotheses H1 to H3. The findings indicate that training and development have a significant positive effect on procurement compliance behaviour ( $\beta = 0.279$ ,  $p < 0.001$ ), thus H1 is supported. This result aligns with prior evidence indicating that well-structured procurement training and development programmes can enhance personnel compliance and subsequently strengthen organisational procurement performance [20]. Training as well enhances practical skills that support stronger compliance with procurement rules [22].

Leadership quality also exhibits a strong and statistically significant positive relationship with procurement compliance behaviour ( $\beta = 0.482$ ,  $p < 0.001$ ), indicating that H2 is supported. This finding indicates that ethical leadership enhances procurement compliance by aligning individual behaviour with organisational goals [24].

In addition, information systems demonstrate a significant positive effect on procurement compliance behaviour ( $\beta = 0.184$ ,  $p = 0.001$ ), supporting H3. Consistent with prior studies by [29], this research demonstrates that efficient electronic information systems enhance regulatory compliance by automating procurement workflows, improving real-time tracking, and minimising discretionary decision-making.

To ensure the robustness of the estimates, bias-corrected confidence intervals were examined alongside p-values and t-statistics, as recommended by [50]. The 95% bias-corrected confidence intervals for all hypothesised paths do not include zero, indicating statistically reliable and stable parameter estimates. Furthermore, all inner VIF values were below the conventional threshold of 5.0, suggesting that multicollinearity does not pose a concern in the structural model.



**Fig.1: Partial Least Squares Structural Model Results**

The explanatory power of the structural model was assessed using the coefficient of determination ( $R^2$ ), which indicates the proportion of variance in the endogenous construct explained by its exogenous predictors. Following [51] guidelines,  $R^2$  values of 0.26, 0.13, and 0.02 represent substantial, moderate, and weak levels of predictive accuracy, respectively. As presented in Table 5, training and development, leadership quality, and information systems collectively explain 75.7% of the variance in procurement compliance behaviour ( $R^2 = 0.757$ ), indicating a substantial level of explanatory power. In addition, effect size ( $f^2$ ) was examined to evaluate the relative contribution of each predictor to the explained variance in procurement compliance behaviour. The results show that leadership quality exhibits a moderate effect size ( $f^2 = 0.235$ ), while training and development ( $f^2 = 0.107$ ) and information systems ( $f^2 = 0.065$ ) demonstrate small effect sizes. These findings indicate that although all three predictors contribute meaningfully to procurement compliance behaviour, leadership quality plays a comparatively more influential role in explaining compliance outcomes. Overall, the results suggest that the structural model is both statistically robust and practically meaningful.

TABLE 5  
 Coefficient of Determination ( $R^2$ ) and Effect Size ( $f^2$ )

Relationship	$R^2$	$R^2$ Interpretation	$f^2$	Effect Size
Training and Development → Procurement Compliance Behaviour	0.757	Substantial	0.107	Small
Leadership Quality → Procurement Compliance Behaviour			0.235	Moderate
Information System → Procurement Compliance Behaviour			0.065	Small

Note.  $R^2$  represents the variance explained in the endogenous construct. Effect size thresholds:  $f^2 \geq 0.02$  (small),  $\geq 0.15$  (medium),  $\geq 0.35$  (large) (Cohen, 1988).

#### IV. DISCUSSION

This study indicates that compliance behaviour is not determined solely by personal capability or awareness of procurement rules. Instead, it is influenced by the support structures and expectations encountered in personnel's working environments. The findings therefore reinforce the relevance of behavioural perspectives in understanding compliance, and they point towards the need for continuous professional development, supportive leadership practices, and reliable information systems that enable personnel to perform their duties in accordance with established regulations. The findings of this study also have direct relevance for Sustainable Development Goal (SDG) 16, which emphasises accountable, transparent, and effective institutions. By identifying leadership quality as a key driver of procurement compliance behaviour, the study highlights the importance of strengthening ethical norms and governance capacity within public procurement entities as a pathway to enhancing institutional integrity and public trust. The results aligned with SDG 12, particularly in relation to responsible public spending and efficient resource utilisation. Procurement compliance reduces waste, improves value for money, and supports fair and transparent supplier selection processes [8]. Beyond national policy relevance, the findings resonate with broader regional and national governance aspirations. Within the ASEAN context, ongoing efforts to strengthen public financial management, institutional transparency, and regulatory accountability reflect similar concerns highlighted in this study. The central role of leadership quality mirrors ASEAN's emphasis on leadership accountability and institutional capacity as foundations for effective public sector reform. Similarly, within the Malaysian context, the findings align with the core principles of the Malaysian MADANI framework, particularly integrity, accountability, and effective governance [9]. The evidence suggests that behavioural reforms, supported by training and digital systems, are essential complements to regulatory reform in strengthening public institutions.

#### V. CONCLUSION

This study provides empirical evidence that procurement compliance behaviour is most appropriately understood as a behavioural outcome influenced by normative, capability-related, and structural conditions. Grounded in the TPB, the findings show that leadership quality emerges as the most influential determinant of compliance behaviour, while training and development, as well as information systems, function as important enabling factors. The model demonstrates strong explanatory capacity and solid predictive performance for cases outside the estimation sample, underscoring its practical relevance for strengthening public sector governance and supporting ongoing procurement reform efforts.

Despite these contributions, several limitations should be acknowledged. The cross-sectional research design restricts the causal interpretation of procurement compliance behaviour over time, and the reliance on self-reported, single-source data may introduce response bias. However, statistical diagnostics suggest that common method bias is unlikely to materially affect the results. In addition, the focus on Malaysian federal government procurement personnel enhances contextual relevance but limits generalisability to other administrative levels and institutional settings. Finally, while this study focused on key organisational enablers grounded in the TPB framework, procurement compliance is a multifaceted phenomenon that may also be influenced by additional behavioural, cultural, and institutional factors beyond the scope of the current model. Addressing these limitations in future research through longitudinal designs, comparative settings, and expanded theoretical perspectives would further strengthen the understanding of procurement compliance behaviour.

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