

# The Effect of Organizational Innovativeness in Enhancing Teacher Innovation in Malaysia's TVET Sector

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## ABSTRACT

This study aims to examine the effect of Organizational Innovativeness, a key dimension of Organizational Culture, on teacher innovation measured as Innovative Work Behaviour (IWB) within Malaysia's Technical and Vocational Education and Training (TVET) sector. A quantitative approach using stratified simple random sampling was employed, with data collected from 331 vocational college teachers using a validated questionnaire adapted from the Organizational Culture Inventory (OCI) and the Innovative Work Behaviour Questionnaire (IWBQ). Multiple regression analysis showed that among the four dimensions of Organizational Culture: Innovativeness, Effectiveness, Cooperativeness, and Consistency, Innovativeness recorded the highest standardized beta coefficient ( $\beta = 0.522$ ,  $p < 0.001$ ), making it the most influential predictor of teacher innovation. A follow up simple linear regression revealed that Innovativeness alone explained 27.3 percent of the variance in IWB ( $R^2 = 0.273$ ,  $p < 0.001$ ), representing a large effect size. While Innovativeness had the strongest impact, other cultural dimensions such as Cooperativeness and Consistency demonstrated limited direct influence, suggesting their potential lies in interaction with innovativeness rather than in isolation. In conclusion, the findings provide empirical evidence that fostering innovativeness is vital for equipping teachers to generate, promote, and implement new ideas. Practical implications highlight the need for actionable strategies such as embedding innovation in professional development, incentivising risk taking, fostering cross disciplinary collaboration, and balancing stability with flexibility. These results underscore the importance of embedding innovativeness into institutional culture to ensure that TVET educators remain agile, responsive to industrial changes, and aligned with the objectives of the National TVET Policy 2030.

**Keywords:** Organizational Innovativeness, Teacher Innovation, Innovative Work Behaviour, Organizational Culture, TVET, Malaysia, Vocational Colleges

## INTRODUCTION

The rapid transformation of global economies, driven by technological advancements, Industry 4.0, and shifting labour market demands, has intensified the need for educational systems to produce graduates equipped with relevant skills, adaptability, and innovation capacity. In this context, Technical and Vocational Education and Training (TVET) plays a critical role in preparing a skilled workforce capable of meeting evolving industry needs. In Malaysia, TVET is recognised as a strategic driver for national economic growth and is a central pillar of the National TVET Policy 2030, which emphasises quality, industry alignment, and innovation in teaching and learning to enhance graduate employability.

Teachers within the TVET system are central to achieving these policy goals. Their ability to engage in Innovative Work Behaviour (IWB), which involves the generation, promotion, and realisation of new ideas, directly influences the effectiveness of TVET delivery. However, fostering such behaviours depends not only on

individual capacity but also on the institutional environment in which teachers operate. One of the most critical institutional factors is Organizational Culture, which shapes norms, values, and practices that can either encourage or hinder innovation.

Among the various dimensions of Organizational Culture, Organizational Innovativeness is particularly significant, as it reflects the extent to which an organisation supports creativity, experimentation, and openness to change. Prior studies have demonstrated that an innovative culture enhances employee engagement in problem-solving, risk-taking, and adaptation to new technologies. While international research has consistently highlighted the link between innovativeness and innovative behaviour in corporate and educational settings, empirical studies focusing on the Malaysian TVET sector remain limited.

Furthermore, although some studies have examined the overall relationship between Organizational Culture and IWB, few have investigated which specific cultural dimensions most strongly influence teacher innovation in vocational colleges. Understanding this relationship is crucial for policymakers and institutional leaders aiming to prioritise resources and interventions that maximise innovative potential among educators.

This study addresses this gap by examining the effect of Organizational Innovativeness on IWB among teachers in Malaysian vocational colleges. By identifying the extent to which innovativeness predicts teacher innovation compared to other cultural dimensions, this research contributes to both theoretical understanding and practical strategies for strengthening innovation capacity in TVET institutions.

This study was designed with the following objectives:

1. To examine the effect of organizational innovativeness on teacher innovation, measured as innovative work behaviour (IWB), in Malaysia's Technical and Vocational Education and Training (TVET) sector.
2. To determine the proportion of variance in IWB that can be explained by organizational innovativeness.

The study was guided by the following research questions:

1. What is the effect of organizational innovativeness on innovative work behaviour among TVET teachers in Malaysia?
2. How much variance in innovative work behaviour can be explained by organizational innovativeness?

Based on these objectives and questions, the study proposed the following hypothesis:

H<sub>1</sub>: Organizational innovativeness has a significant positive effect on innovative work behaviour among TVET teachers in Malaysia.

## LITERATURE REVIEW

### Innovative Work Behaviour in Educational Contexts

Innovative Work Behaviour (IWB) refers to the intentional creation, promotion, and implementation of new ideas within a work role, group, or organisation to improve performance (De Jong & Den Hartog, 2010). In educational settings, IWB is increasingly recognised as essential for improving teaching practices, integrating emerging technologies, and enhancing student learning outcomes (Messmann & Mulder, 2020). Teachers who demonstrate high IWB are better able to respond to changing curricula, industry demands, and technological shifts. Recent studies in higher education emphasise that institutional support, leadership style, and organizational culture are significant enablers of IWB among educators (Aboramadan et al., 2024; Gkontelos et al., 2023).

### Organizational Culture and Innovation

Organizational Culture shapes the shared values, beliefs, and practices that influence employee behaviour and attitudes. A culture that prioritises openness, collaboration, and learning can create a fertile environment for

innovation (Cameron & Quinn, 2019). Within the Malaysian educational sector, the Ministry of Education has stressed the importance of cultivating a culture that embraces continuous improvement and creative problem-solving as part of TVET transformation efforts (Ministry of Education Malaysia, 2024). Studies in diverse contexts have confirmed that supportive organizational cultures lead to higher levels of innovative engagement among staff (Chen & Huang, 2023; Nguyen et al., 2024).

### **Organizational Innovativeness as a Cultural Dimension**

Organizational Innovativeness, as a specific dimension of culture, refers to the extent to which an organisation encourages creativity, experimentation, and openness to new ideas (Hurley & Hult, 1998). In the context of education, this dimension has been linked to teachers' willingness to adopt novel teaching methods, integrate technology, and collaborate on cross-disciplinary initiatives (Zhang & Wang, 2021; Rafique et al., 2022). Recent research highlights that innovativeness not only fosters idea generation but also facilitates the transition from concept to implementation, a key aspect of IWB (Nguyen & Chang, 2024).

### **TVET in Malaysia and the Innovation Imperative**

Malaysia's TVET sector is undergoing a transformative shift under the National TVET Policy 2030, which calls for stronger industry linkages, modernised curricula, and innovative pedagogy (Ministry of Education Malaysia, 2024). Vocational college teachers are positioned at the forefront of this transformation, requiring them to continuously adapt to emerging technologies and evolving industry expectations. Yet, while the role of culture in shaping innovation in corporate settings is well established, limited empirical evidence exists on which cultural dimensions are most critical for fostering innovation among Malaysian TVET educators.

### **Research Gap**

Although previous studies have examined the relationship between Organizational Culture and IWB, few have isolated Organizational Innovativeness as a predictor in the Malaysian TVET context. This study addresses that gap by empirically examining the influence of innovativeness on IWB and determining its comparative strength against other cultural dimensions, offering both theoretical insights and practical recommendations for enhancing teacher innovation in vocational education.

## **METHODOLOGY**

### **Research Design**

This study employed a quantitative, cross-sectional survey design to examine the effect of Organizational Innovativeness, a dimension of Organizational Culture on teacher innovation measured as Innovative Work Behaviour (IWB) within Malaysia's Technical and Vocational Education and Training (TVET) sector.

### **Population and Sample**

The target population comprised teachers from vocational colleges across Malaysia. Stratified simple random sampling was applied to ensure balanced representation from all states and to capture the diversity of institutional contexts within the national TVET system. The first step involved obtaining a comprehensive list of vocational colleges from the Ministry of Education's official records. This list was used to form strata based on state location. Within each stratum, teachers were selected using a simple random sampling procedure to ensure that every individual had an equal chance of being chosen. This approach minimised sampling bias while ensuring geographical diversity. A total of 331 completed responses were obtained, which exceeds the minimum recommended for reliable regression analysis as highlighted in recent methodological literature (Memon et al., 2020; Pavlou et al., 2024). This ensures adequate statistical power and robust findings.

### **Instrumentation**

Data were collected using a structured questionnaire adapted from validated instruments:

1. Organizational Culture Inventory (OCI), focusing on the Innovativeness dimension and including other dimensions (Effectiveness, Cooperativeness, and Consistency) for comparative analysis.
2. Innovative Work Behaviour Questionnaire (IWBQ), which measures idea generation, idea promotion, and idea implementation.

All items used a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Face and content validity were established through expert reviews, while construct validity and reliability were confirmed via pilot testing. Cronbach's alpha coefficients for all constructs exceeded the 0.70 benchmark. The questionnaire was administered online via Google Forms to facilitate participation across different regions. Respondents were assured of confidentiality and anonymity, and participation was voluntary. Ethical clearance was obtained from the relevant institutional before data collection commenced.

## Data Analysis

Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS) version 29. Descriptive statistics were used to summarise respondent demographics and variable distributions. Multiple regression analysis was first performed to determine the most influential Organizational Culture dimension on IWB. Based on these findings, a simple linear regression was then conducted to measure the direct effect of Organizational Innovativeness on IWB. Model fit was assessed using  $R^2$ , adjusted  $R^2$ , and effect size (Cohen's  $f^2$ ), with statistical significance set at  $p < 0.05$ .

## RESULTS

### Demographic Profile of Respondents

The sample consisted of 331 vocational college teachers from across Malaysia as shown in Table 1. Of these, 192 (58.0%) were female and 139 (42.0%) were male. Nearly half of the respondents (45.0%) had more than 10 years of teaching experience, followed by those with 5 to 10 years (31.4%) and less than 5 years (23.6%). In terms of academic qualifications, the majority held a bachelor's degree (61.9%), while 36.9% possessed a master's degree and 1.2% held a doctorate.

Table 1 Demographic Characteristics of Respondents (N = 331)

Demographics	Category	Frequency (n)	Percentage (%)
Gender	Female	193	58.3
	Male	138	41.7
	Total	331	100.0
Teaching Experience	More than 10 years	184	55.6
	5 to 10 years	80	24.2
	Less than 5 years	67	20.2
	Total	331	100.0
Highest Academic Qualification	Degree	242	73.1
	Master	71	21.5
	PhD	18	5.4
	Diploma/KPLI	0	0.0
	Total	331	100.0

A multiple regression analysis was conducted to examine the extent to which the four dimensions of Organizational Culture, namely Innovativeness, Effectiveness, Cooperativeness, and Consistency, predicted Innovative Work Behaviour (IWB) among vocational college teachers. The results indicated that the model was statistically significant,  $R^2 = 0.580$ , Adjusted  $R^2 = 0.574$ ,  $F(4, 326) = 112.69$ ,  $p < 0.001$ , explaining 58.0 percent of the variance in IWB. As shown in Table 2, Innovativeness emerged as the strongest predictor of IWB ( $\beta = 0.522$ ,  $p < 0.001$ ), followed by Effectiveness ( $\beta = 0.148$ ,  $p = 0.013$ ). Cooperativeness ( $\beta = 0.072$ ,  $p = 0.231$ ) and Consistency ( $\beta = 0.041$ ,  $p = 0.516$ ) were not statistically significant predictors.

Table 2 Multiple Regression Analysis Predicting Innovative Work Behaviour (IWB)

Predictor	B	SE B	Beta ( $\beta$ )	t	p
Innovativeness	0.621	0.057	0.522	10.89	0.001
Effectiveness	0.175	0.070	0.148	2.50	0.13
Cooperativeness	0.089	0.074	0.072	1.20	0.231
Consistency	0.053	0.081	0.041	0.65	0.516

Note:  $R^2 = 0.580$ , Adjusted  $R^2 = 0.574$ ,  $F(4, 326) = 112.69$ ,  $p < .001$

To further assess the independent effect of Innovativeness on IWB, a simple linear regression analysis was conducted. The results as shown in Table 3 revealed that Innovativeness alone accounted for 27.3 percent of the variance in IWB,  $R^2 = 0.273$ , Adjusted  $R^2 = 0.271$ ,  $F(1, 329) = 135.94$ ,  $p < 0.001$ , with a large effect size ( $\beta = 0.522$ ). These findings indicate that among the four dimensions of Organizational Culture, Innovativeness not only contributes the most to explaining IWB in the combined model but also exerts a substantial independent influence. Therefore,  $H_1$  was supported, confirming that organizational innovativeness has a significant positive effect on innovative work behaviour among TVET teachers.

Table3 Multiple Regression Analysis Predicting Innovative Work Behaviour (IWB)

Predictor	B	SE B	Beta ( $\beta$ )	t	p
Innovativeness	0.676	0.058	0.522	11.66	0.000

Note:  $R^2 = 0.273$ , Adjusted  $R^2 = 0.271$ ,  $F(1, 329) = 135.94$ ,  $p < .001$

## DISCUSSION

The purpose of this study was to examine the effect of Organizational Innovativeness, a core dimension of Organizational Culture, on teacher innovation measured as Innovative Work Behaviour within the Malaysian Technical and Vocational Education and Training sector. The findings confirmed the proposed hypothesis, demonstrating that Innovativeness was the strongest predictor of Innovative Work Behaviour in the multiple regression model, and further analysis confirmed that it had a substantial independent effect. This reinforces the notion that an organizational culture that prioritises creativity, openness to change, and support for new ideas can directly enhance the innovative capacity of educators.

These findings align with recent research that highlights the strategic role of innovativeness in fostering creativity and adaptability in educational institutions. Abdullah et al. (2023) emphasised that cultivating an innovation-oriented culture in Malaysian educational settings encourages teachers to experiment with new pedagogical approaches and integrate emerging technologies. Similarly, Nguyen, Chang, and Rowley (2024) reported that organizational values promoting risk taking and flexibility are essential drivers for sustained innovation in the TVET context.

While Innovativeness emerged as the most influential cultural dimension, the relatively weaker effects of Cooperativeness and Consistency require further attention. One possible explanation is that while teamwork and stability provide an essential foundation for institutional functioning, they may not directly stimulate novel idea generation unless paired with a strong culture of innovation. For instance, cooperativeness may only amplify innovativeness when collaborative efforts are directed toward problem solving and experimentation rather than maintaining harmony. Similarly, consistency may safeguard quality and reliability but could inadvertently discourage risk taking if overly rigid. These nuances highlight the importance of viewing cultural dimensions not as isolated factors but as interdependent elements that can reinforce or constrain innovation depending on how they interact.

From a policy perspective, these results support the objectives of the National TVET Policy 2030, which emphasises the need for a future ready workforce equipped with creativity and adaptability. Embedding innovativeness into institutional culture not only empowers teachers to respond effectively to technological and industrial changes but also ensures that vocational colleges remain agile in the face of evolving skill demands.

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## Actionable Implications for Policymakers and Administrators

To translate these findings into practice, several actionable strategies can be considered. First, innovation should be embedded in professional development by designing teacher training programs that prioritise creativity, design thinking, and digital pedagogical skills. Such programs need to provide practical opportunities for experimentation rather than focusing solely on compliance and routine skill upgrading.

Second, institutions should incentivise creativity and risk taking by establishing recognition and reward systems for teachers who successfully pilot innovative teaching methods, integrate new technologies, or lead collaborative problem-solving initiatives. In parallel, fostering cross disciplinary collaboration is vital. Collaborative projects across departments can integrate diverse expertise, ensuring that cooperativeness becomes a means to drive innovation rather than simply a final goal.

Equally important is the balance between stability and flexibility. Institutional policies should be reviewed to maintain consistency in standards while allowing room for adopting new teaching practices and technologies. Finally, leadership development tailored to innovation is essential. Institutional leaders should be equipped with change management and innovation leadership skills to create environments where educators feel empowered to test, refine, and scale new approaches.

By embedding these practices into organizational culture, TVET institutions can cultivate a dynamic balance of stability and adaptability, ensuring that innovativeness remains at the forefront of institutional planning. This approach will help Malaysian vocational colleges remain agile, meet the dynamic needs of industries, and ensure that graduates are equipped with relevant and future ready skills.

## CONCLUSION

This study provides clear empirical evidence that organizational innovativeness is the most significant cultural dimension influencing teacher innovation within Malaysia's TVET sector. The hypothesis tested in this study was supported, providing strong evidence that organizational innovativeness is a pivotal factor shaping teacher innovation in Malaysia's TVET institutions. Innovativeness not only emerged as the strongest predictor of innovative work behaviour but also exerted a substantial independent effect, confirming its pivotal role in driving educational transformation. However, the limited influence of other cultural dimensions such as cooperativeness and consistency suggests that their potential lies in how they interact with innovativeness rather than functioning in isolation. For instance, collaboration may amplify innovation when coupled with experimentation, and stability may support innovation when balanced with flexibility. Future research should therefore explore these interdependencies to build a more holistic understanding of how cultural dimensions jointly shape innovation outcomes.

From a practical standpoint, the findings underscore the importance of moving beyond general calls for creativity and change toward concrete institutional strategies. Professional development tailored to innovation, incentives for risk taking, cross disciplinary collaboration, and leadership development are all actionable measures that can embed innovativeness into organizational culture. By aligning these practices with the objectives of the National TVET Policy 2030, policymakers and administrators can strengthen the innovative capacity of teachers, ensure institutional agility, and better equip graduates with skills for a rapidly evolving economy. This approach allows Malaysian vocational colleges to strengthen their role in advancing innovation, bridging education with industry needs while preparing a workforce ready to thrive in the future of work.

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