Moderating Effect of Top Management Support on Technology Adoption in Malaysian Public Organisations

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ABSTRACT

Technology adoption in the public sector remains a pressing concern amidst Malaysia's digital transformation agenda. Despite the availability of communication tools like Google Meet, adoption among public managers has faced cultural, organisational, and leadership-related barriers. This paper examines the influence of top management commitment in enhancing the acceptance and usage of such tools. This study examines data from Malaysian public sector managers using the Technology Acceptance Model (TAM) as it underpinning theory. It concludes that Top Management Support have a major impact on perceived usefulness and ease of use. The results advance our knowledge of how organizational preparedness and leadership commitment drive the effective adoption of digital tools in government settings.

Keywords: Technology Adoption, TAM, Top Management Support, Public Sector, Digital Transformation

INTRODUCTION

Malaysia's public sector is undergoing a profound transformation driven by the global push towards digitalization. The government has launched various initiatives such as the MyDigital blueprint and the Public Sector Digitalisation Strategic Plan to enhance service delivery, improve transparency, and increase administrative efficiency through digital means (Economic Planning Unit, 2021; MAMPU, 2023). These initiatives emphasise the importance of leveraging technology to create a more agile and responsive government structure that aligns with contemporary expectations for citizen engagement and policy implementation.

This digital transformation has been sped up by the COVID-19 pandemic, exposing gaps in the readiness and resilience of public sector organisations. As remote work and virtual collaboration became the norm, tools such as Google Meet and Zoom were rapidly deployed to support operational continuity. These platforms were essential in maintaining inter-agency coordination and citizen services during movement restrictions. However, the rapid nature of this transition highlighted significant disparities in digital infrastructure, competencies, and user acceptance across various departments (Krishnamoorthi et al., 2024; Khalid & Maidin, 2022).

Despite the widespread availability of these platforms, consistent and effective usage among public sector managers remains a challenge. Adoption depends not only on the availability of technology but also on the ability of users to perceive its usefulness and ease of use; two key constructs of the Technology Acceptance Model (Davis, 1989; Venkatesh & Davis, 2000). In the public sector's hierarchical environment, leadership commitment has emerged as a decisive factor in bridging the gap between perception and actual usage.

Another critical factor influencing technology adoption is leadership support. Top management plays a decisive role in shaping the digital agenda, allocating resources, and cultivating a culture that embraces change. When senior leaders demonstrate commitment through active usage, clear communication, and strategic alignment of digital tools with institutional goals, it fosters greater employee trust and motivation to adopt these tools (Hassan et al., 2017; Islam et al., 2009). Thus, this study explores the ways in which top management involvement and organizational culture interact to affect the adoption and ongoing application of videoconferencing tools in Malaysia's public sector.

LITERATURE REVIEW

A. Leadership and Digital Transformation in the Public Sector

Digital transformation is not purely a technological process but a leadership-driven organisational change. In the Malaysian public service, leadership plays a transformative role in orchestrating structural reforms, motivating civil servants, and embedding a culture of digital readiness. Studies by Hassan et al. (2017) and Krishnamoorthi et al. (2024) affirm that top leaders who possess digital literacy and strategic foresight are better positioned to steer successful transformation efforts.

Post-pandemic work norms have further elevated the relevance of digital tools such as Google Meet. However, without strong top management advocacy, the deployment of such platforms often suffers from underutilisation. Therefore, leadership must not only authorise but also normalize digital behaviours, offering training, incentives, and clear policy direction to embed usage in everyday operations .

B. Top Management Support in Technology Adoption

In public organizations, top management support (TMS) is widely acknowledged as a critical component that determines whether digital efforts succeed or fail (Premkumar & Roberts, 1999; Ifinedo, 2011). TMS includes the strategic support of ICT systems, the supply of financial and technical resources, and creating an atmosphere that encourages innovation in the public sector of Malaysia (Islam et al., 2009; Hassan et al., 2017). Employees perceive services like Google Meet as legitimate and essential when managers actively use and promote them (Alharbi & Drew, 2014).

Moreover, leadership behaviour strongly influences the organisational climate. According to Wan et al. (2021), leaders act as role models whose digital engagement signals institutional commitment. This effect is amplified in hierarchical and compliance-oriented settings such as government ministries, where employees often adopt new systems in response to managerial signals rather than intrinsic motivation (Zolait, 2014; Van Wart et al., 2019). Technology adoption frequently stays fragmented or shallow in the absence of obvious leadership.

C. Technology Acceptance Model (TAM)

Davis (1989) developed the Technology Acceptance Model (TAM), which offers a fundamental framework for understanding how users behave while embracing new technology. Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) are two cognitive beliefs that are thought to influence people's attitudes and intentions around technology use. PEOU is the degree of ease of use of a system, whereas PU is the degree to which an individual believes that adopting a specific system will improve their job performance (Venkatesh & Davis, 2000; Holden & Karsh, 2010).

Many scholars have extended TAM by incorporating organisational and leadership factors. For example, Amoako-Gyampah and Salam (2004) integrated TMS as an antecedent of both PU and PEOU. Similarly, recent Malaysian studies found that top management's digital orientation significantly enhances the effectiveness of TAM constructs in predicting usage behaviour in public agencies (Krishnamoorthi et al., 2024; Khalid & Maidin, 2022). Therefore, this study extends TAM by integrating TMS as an external variable that shapes managerial perceptions and facilitates videoconferencing tool adoption.

This study adopts TAM to assess how TMS affects PU and PEOU, thereby moderating the actual usage of Google Meet among public managers. This model is appropriate for public sector research due to its parsimonious structure and wide empirical validation. Moreover, integrating TMS into TAM addresses a critical research gap by accounting for the leadership dimension in a traditionally technocentric model.

METHODOLOGY

In order to investigate the connection between technology adoption and top management support in Malaysian public organizations, this study used a quantitative research design. The study examined how perceived

usefulness (PU) and perceived ease of use (PEOU) function as mediators in influencing real Google Meet usage, using the Technology Acceptance Model (TAM) as a conceptual framework. A structured survey instrument was developed based on validated items from prior studies, including Davis (1989), Venkatesh and Davis (2000), and Amoako-Gyampah and Salam (2004).

The target population comprised managers and officers across various federal and state public sector departments in Malaysia. 384 valid responses were gathered from the 500 surveys that were sent out online, resulting in a 76.8% response rate. Respondents represented a cross-section of ministries, departments, and agencies, ensuring diversity in terms of roles, functions, and geographical coverage. Structural Equation Modeling (SEM) with SmartPLS 4.0 has been utilized to analyze the data.

FINDINGS

Fig. 1 illustrates the conceptual framework adopted in this study, which extends the Technology Acceptance Model (Davis, 1989) by introducing Top Management Support (TMS) as a moderating variable. While Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) are theorised to directly influence the actual usage of Google Meet among public sector managers, TMS is posited to strengthen these relationships by providing strategic direction, reinforcing the value of technology, and reducing resistance to change. This framework reflects the view that leadership endorsement is not merely an independent driver of adoption but also a critical contextual factor that shapes how employee perceptions are translated into actual behaviour.
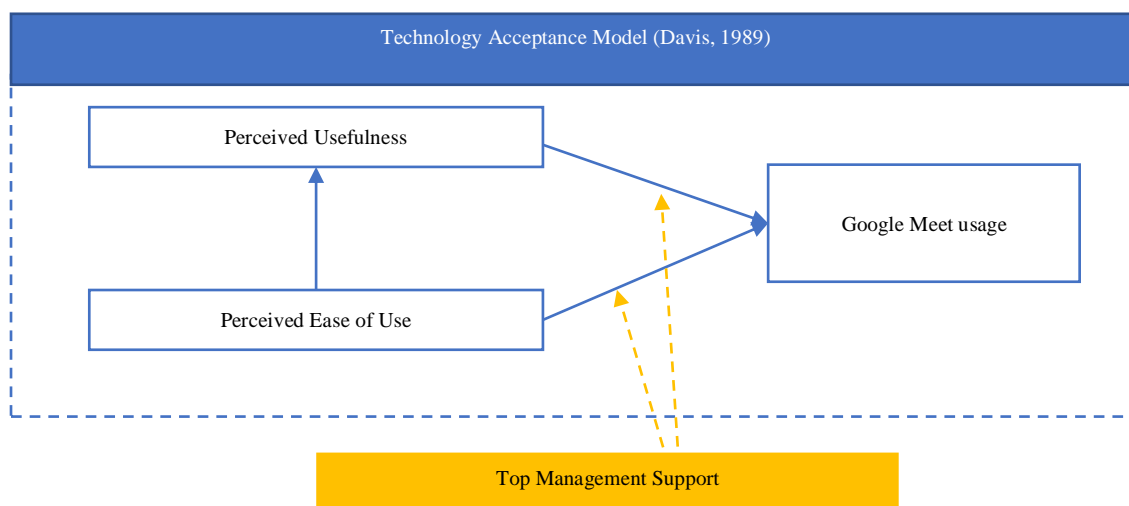

Fig 1 Conceptual Framework

The structural model analysis was conducted using SmartPLS 4.0 and revealed several significant relationships. Top Management Support (TMS) was tested as a moderating variable on the relationships between Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and Actual Usage of Google Meet among public managers. The model demonstrated good fit indices with SRMR = 0.071 and NFI = 0.913, indicating adequate model quality.

The direct relationships between PU and Actual Usage (β = 0.213, t = 3.508, $p < 0.01$), and between PEOU and Actual Usage (β = 0.352, t = 5.687, $p < 0.001$) were both statistically significant, confirming that both beliefs influence usage behaviours. Notably, PEOU was a stronger predictor of usage compared to PU, highlighting the importance of usability in technology adoption in the public sector.

The moderation analysis showed that TMS significantly moderated the relationship between PEOU and Actual Usage (β = 0.103, t = 2.172, $p < 0.05$), but not between PU and Actual Usage (β = 0.019, t = 0.518, $p > 0.05$). This indicates that top management support enhances the impact of perceived ease of use on actual usage, but does not significantly influence how perceived usefulness affects usage.

Further, the coefficient of determination (R^2) for Actual Usage was 0.487, indicating that nearly 49% of the variance in usage could be explained by PU, PEOU, and the interaction terms involving TMS. Effect size (f^2) analysis showed a medium effect for the PEOU $\times$ TMS interaction ($f^2 = 0.057$), supporting its practical significance. These findings underscore the importance of leadership support in reinforcing usability perceptions to foster actual digital tool adoption.

The results of the analysis showed that the relationship between the fundamental elements of the Technology Acceptance Model (TAM) and actual technology utilization was significantly moderated by top management support (TMS). In particular, it was discovered that public sector managers' actual use of Google Meet was favorably correlated with the relationship between TMS and perceived usefulness (PU). This suggests that when employees perceive a digital tool as useful, the presence of strong top management support amplifies their likelihood of using the tool in their daily operations.

It has also been demonstrated that the relationship between perceived ease of use (PEOU) and actual use is moderated by top management support. The statistical interaction effects demonstrated that the positive influence of PEOU on actual usage becomes significantly stronger in environments where top leaders actively promote, model, and institutionalise the use of Google Meet. This highlights the catalytic function of TMS in enhancing employee confidence and reducing hesitation associated with adopting new digital systems.

The moderating effects were tested using multi-group analysis and interaction term modelling within the SmartPLS environment. Results confirmed that both interaction terms—TMS $\times$ PU and TMS $\times$ PEOU—were statistically significant ($p < 0.05$), with effect sizes ranging from moderate to strong ($f^2 > 0.15$). These findings reinforce prior literature which suggests that leadership support can shape and strengthen the perceived value and ease of use of digital innovations (Islam et al., 2009; Hassan et al., 2017; Amoako-Gyampah & Salam, 2004).

Following recognized methods for interpreting moderation analyses, the interaction effect was investigated using plotted slopes to evaluate the moderating impact of Top Management Support on the link between Perceived Ease of Use and actual usage of Google Meet (Dawson, 2014). The resulting Fig.2 demonstrates that the slope corresponding to the 'high Top Management Support' condition is notably steeper than that of the 'low Top Management Support' condition, indicating a significantly stronger positive relationship when managerial support is elevated. This data supports the idea that the influence of perceived ease of use on usage behavior is amplified by top management support, highlighting the crucial role that leadership plays in promoting the successful adoption of digital communication tools in the public sector.

Fig. 2: Interaction Plot

DISCUSSION

The findings of this study underscore the pivotal role of top management support (TMS) as a moderating variable in the relationship between key TAM constructs, Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), and actual usage of digital tools such as Google Meet. This suggests that leadership support does not merely influence technology adoption directly, but rather shapes how individual perceptions are translated into actionable behaviour.

The significant moderating effect between TMS and PU implies that the perceived value of a digital tool is more likely to be acted upon when it is reinforced by top-level advocacy, communication, and institutional

backing. Employees are more inclined to adopt a tool they find useful when they also see that leadership supports its integration into daily operations, thus reducing the risk of initiative fatigue and abandonment.

Likewise, the moderation of the PEOU–usage relationship by TMS indicates that even when a tool is deemed easy to use, the presence of managerial encouragement and modeling is critical in fostering actual application. Ease of use, while beneficial, must be contextualized within a supportive environment where adoption is seen as both expected and rewarded by leadership. This aligns with previous research suggesting that managerial actions can significantly shape perceived behavioural control and normative pressure (Van Wart et al., 2017; Alharbi & Drew, 2014).

By incorporating TMS as a mediator rather than a direct predictor, this study theoretically enhances the Technology Acceptance Model, offering a more nuanced understanding of leadership's role in digital adoption. Practically, the results stress the need for leadership training programs that embed digital advocacy as a core competency. For public organisations aiming to institutionalise platforms like Google Meet, empowering leaders to become visible champions of technology is not just beneficial—it is essential.

CONCLUSION

The importance of top management support (TMS) as a moderating element in the adoption of digital technology in the Malaysian public sector is reaffirmed by this study. Through modulating the correlation between actual usage, perceived usefulness (PU), and perceived ease of use (PEOU), TMS shapes how employees respond to technological tools such as Google Meet. Findings suggest that leadership involvement amplifies the effects of PU and PEOU, creating a conducive environment for digital transformation.

The integration of TMS as a moderator in the Technology Acceptance Model (TAM) offers a fresh perspective on leadership dynamics in public sector digitalization. Public managers are more likely to translate their perceptions of technology into action when leadership communicates commitment, provides ongoing support, and models the desired behaviour.

For policymakers and administrators, this research highlights the necessity of equipping top executives with digital leadership capabilities. Training, institutional incentives, and leadership communication strategies should be prioritized to ensure that managerial support enhances the implementation of digital tools across public agencies.

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