Examining the Relationships between Organizational Climate and Employee Performance: A Malaysian Context

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ABSTRACT

In Malaysia's rapidly evolving Information Technology (IT) service provider industry, marked by increasing digital transformation demands and a scarcity of skilled software developers, this conceptual study explores the relationship between job demands, job resources, and employee performance among software developers. Drawing on the Job Demands-Resources (JD-R) model, this paper examines six predictors, workload, role ambiguity, work-life balance, organisational support, supervisory support, and job security, and their differential effects on task, adaptive, and contextual performance. The paper proposes a moderating role of employee resilience on the job security and performance relationship. Theoretically, this study enriches understanding by specifying which performance dimensions are most affected by each predictor. Practically, this conceptual paper aims to provide organisations with insights to enhance software developer performance. A methodological framework for empirical testing, including remedies for common method variance and a mixed-methods pilot study will be used in this study.

Keywords: Job Demands-Resources Model, Software Developers, Employee Performance, Malaysia, IT Service Providers, Employee Resilience

INTRODUCTION

In the modern era, the term "Information Technology" (IT) has become widely used to refer to the utilisation of computers and networks within the context of business operations [1]. It encompasses various applications such as data generation, manipulation, storage, retrieval, transmission, handling, exchange, analysis, and security in electronic formats. Furthermore, IT serves as an umbrella term encompassing telecommunication equipment, software, cyber security, the internet, and digital infrastructure [1].

The significance of IT extends beyond business environments and extends to personal and private spheres as well. Particularly with the increasing sophistication of digital transformation, ensuring the safety of personal and business data is of paramount importance while browsing the internet or engaging with digital communications. IT support plays a vital role in addressing technical challenges that may arise, ensuring the use of up-to-date software, and identifying the most effective tools for completing tasks efficiently. In the IT business, turnover rates are reported to be high, leading to a skills deficit caused by the imbalanced rise of technology and skill development [2]. This disparity between technological advancement and human capital capabilities may result in a scarcity of talent capable of supporting future technology development, particularly in the context of the Fourth Industrial Revolution (IR 4.0) [3].

In Malaysia's rapidly evolving IT service provider industry, the performance of software developers has garnered significant attention from researchers due to its potential consequences, such as decreased productivity, increased project delays, and reduced organisational competitiveness [4]. The pronounced performance challenges characteristic of the IT sector not only pose inherent risks to organisational stability but also underscore the industry's perpetual demand for updated skills. As employees grapple with the dynamic nature of their roles, employee performance manifests as a nuanced outcome, indicative of the interplay between job demands and job resources in the workplace.

In the domain of workplace characteristics within the IT industry, the ascendancy of the Job Demands-Resources (JD-R) model emerges as a noteworthy framework [5]. Defined by a distinct focus on classifying workplace characteristics into job demands and job resources, the JD-R model is posited as a potential predictor of employee performance. Organisations where job demands are balanced with adequate job resources witness a correlated enhancement in the propensity of individuals to perform effectively in their roles [6].

Further complicating this intricate landscape, the Malaysian IT service provider sector faces unique structural conditions that distinguish it from western contexts. Specifically, the Singapore compensation gravity, where approximately 85,000 Malaysian ICT professionals work in Singapore due to a 2.5 to 3.2 times salary premium, creates constant passive turnover pressure [7]. Additionally, research on skills mismatch has documented that labour market imbalances occur when available workers do not possess the specific competencies demanded by employers, which increases workload and role ambiguity for existing employees [8].

In the Malaysian context, recent empirical research has found that conventional HRM practices, work-life balance, rewards, recognition, and training and development, do not significantly predict employee retention, with only job security emerging as a significant predictor [9]. This finding suggests that Malaysian software developers may operate under a different psychological contract than their counterparts in Western contexts.

In summation, employee performance within the IT sector emerges as a complex phenomenon, intricately woven into the interplay of job demands, job resources, workplace dynamics, the ever-evolving technological landscape, and the unique structural conditions of the Malaysian labour market. While job resources surface as potential enhancing forces, the omnipresent challenges of high workload and role ambiguity underscore the imperative for organisations to systematically address these factors and cultivate environments that holistically promote employee performance and retention.

Hypothesis Development

Workload and Employee Performance

Workload is characterised by the perceived intensity, complexity, and time pressure associated with assigned tasks [10]. For software developers, workload manifests in quantitative (volume of code), qualitative (complexity of problems), and temporal (deadline pressure) forms. The relationship between workload and performance follows an inverted-U pattern: moderate workload enhances performance through increased focus, but excessive workload impairs performance through cognitive overload and fatigue [11].

Theoretically, workload is expected to most strongly affect task performance. When developers face excessive workload, their ability to write clean, error-free code and meet deadlines diminishes directly. Cognitive overload reduces attention to detail, increases bug rates, and impairs requirement fulfilment. While adaptive and contextual performance may also suffer, the primary mechanism is direct interference with core technical duties. A meta-analysis by Humphrey, Nahrgang, and Morgeson [12] confirmed that workload is negatively associated with job performance.

In the Malaysian context, the skills mismatch paradox means existing developers face increased workload intensity as organisations operate with leaner teams. Thus, the following hypothesis is suggested:

H1: Workload is negatively associated with task performance.

Role Ambiguity and Employee Performance

Role ambiguity refers to the degree to which job duties, performance expectations, responsibilities, and performance criteria are unclear to the employee [13]. In software development, role ambiguity may arise from unclear project requirements, changing client specifications, or inadequate documentation.

Theoretically, role ambiguity is expected to most strongly affect adaptive performance. When role expectations are unclear, developers are uncertain about how to respond to novel situations, changing requirements, or unexpected production issues. Adaptive performance requires understanding one's role boundaries and having the autonomy to respond flexibly, both of which are undermined by role ambiguity. While task and contextual performance are also affected, the primary mechanism is impaired ability to adapt to change. A meta-analysis by Tubre and Collins [14] found that role ambiguity had a significant negative correlation with job performance.

In the Malaysian IT context, Ayyasamy et al., [15] found that role ambiguity had the strongest negative effect on employee well-being among the job stressors examined. Thus, the following hypothesis is suggested:

H2: Role ambiguity is negatively associated with adaptive performance.

Work-Life Balance and Employee Performance

Work-life balance refers to the perceived compatibility between work demands and non-work responsibilities [16]. Good work-life balance should reduce burnout and enhance engagement, thereby improving performance across all dimensions [5].

Theoretically, work-life balance is expected to most strongly affect contextual performance. When employees have adequate work-life balance, they have the psychological and temporal resources to engage in discretionary behaviours such as helping colleagues, sharing knowledge, and participating in team activities. Contextual performance is more sensitive to work-life balance than task performance because discretionary effort is the first to be reduced when work-life balance is poor. However, recent Malaysian research found that work-life balance did not significantly impact employee retention [9]. While retention and performance are distinct outcomes, this finding suggests the need for empirical testing. Thus, the following hypothesis is suggested:

H3: Work-life balance is positively associated with contextual performance.

Organisational Support and Employee Performance

Organisational support refers to the belief that the organisation values the employee's contributions, cares about their well-being, and provides necessary resources for success [17]. A meta-analysis by Eisenberger et al., [18] found that perceived organisational support was positively associated with job performance.

Theoretically, organisational support is expected to most strongly affect task performance. When organisations provide adequate resources, training, tools, and emotional support, developers can focus on their core technical duties without distraction. Organisational support signals that the organisation is invested in the employee's success, which motivates reciprocation through diligent task execution. In the Malaysian software development context, Anwar et al., [19] found that organisational support moderated the relationship between knowledge sharing intentions and behaviour. Thus, the following hypothesis is suggested:

H4: Organisational support is positively associated with task performance.

Supervisory Support and Employee Performance

Supervisory support refers to the perceived guidance, feedback, and encouragement from the direct supervisor [20]. Supervisors serve as proximal representatives of the organisation. A meta-analysis by Ng and Sorensen [21] found that supervisory support was positively associated with job performance.

Theoretically, supervisory support is expected to most strongly affect adaptive performance. Supervisors provide critical guidance during times of change, uncertainty, or novel challenges. When supervisors are supportive, developers receive clear direction on how to adapt to new technologies, shifting requirements, or unexpected problems. This enables adaptive performance. For software developers, supervisory support

manifests in regular code reviews, constructive feedback, and career development conversations. Thus, the following hypothesis is suggested:

H5: Supervisory support is positively associated with adaptive performance.

Job Security and Employee Performance

Job security refers to the perceived stability and continuity of employment [22]. While the relationship between job security and performance is theoretically contested, empirical evidence predominantly supports a positive relationship. A meta-analysis by Sverke, Hellgren, and Näswall [23] found that job insecurity was negatively associated with job performance.

Theoretically, job security is expected to most strongly affect contextual performance. When employees feel secure in their jobs, they have the psychological safety to invest in discretionary behaviours such as helping colleagues, sharing knowledge, and organisational citizenship. When job security is threatened, employees conserve resources by reducing discretionary effort and focusing only on minimum required task performance. Drawing on Conservation of Resources (COR) theory [24], when job security is high, employees have psychological resources to invest in discretionary behaviours. In the Malaysian context, Vasudevan et al., [9] found job security to be the only significant predictor of retention among IT professionals. Thus, the following hypothesis is suggested:

H6: Job security is positively associated with contextual performance.

Moderating Role of Employee Resilience

Employee resilience refers to the ability of individuals to bounce back from setbacks, adapt to new situations, and maintain well-being in the face of adversity [25]. Drawing on the JD-R model, resilience can be conceptualised as a personal resource that buffers the negative effects of low job security on performance.

Theoretically, employee resilience is expected to moderate the relationship between job security and contextual performance. When job security is low, employees with high resilience are better able to maintain discretionary effort and contextual performance because they have internal psychological resources to cope with uncertainty. Employees with low resilience, conversely, are more likely to reduce contextual performance when job security is threatened.

This moderation effect is consistent with COR theory [24], which posits that individuals with greater resource reserves are better able to withstand resource threats. In the Malaysian context, where job security is particularly salient due to the Singapore compensation gravity [7], resilience may be a critical buffer.

Thus, the following hypothesis is suggested:

H7: Employee resilience moderates the relationship between job security and contextual performance.

Summary of Hypotheses

Table 1 summarises the seven hypotheses with their theoretically specified performance dimensions.

Table 1: Summary of Hypotheses

Hypothesis	Independent Variable	Moderator	Dependent Variable (Primary Dimension)	Theoretical Justification
H1	Workload	–	Task Performance	Cognitive overload directly impairs core technical duties

H2	Role Ambiguity	–	Adaptive Performance	Unclear expectations impair ability to respond to novel situations
H3	Work-Life Balance	–	Contextual Performance	Discretionary behaviours require surplus psychological resources
H4	Organisational Support	–	Task Performance	Resource provision enables focused execution of core duties
H5	Supervisory Support	–	Adaptive Performance	Guidance during change enables flexible responses
H6	Job Security	–	Contextual Performance	Psychological safety enables discretionary effort
H7	Job Security	Employee Resilience	Contextual Performance	Resilience buffers the negative effects of low job security

RESEARCH METHODOLOGY

Research Design

In this study, the research setting is characterised by a selection of diverse IT service provider companies, encompassing a rich tapestry of organisations within the Malaysian IT sector. These organisations specialise in various facets of IT services, including cybersecurity firms, IT service providers, technology consulting companies, and software development enterprises.

The research design serves as the methodological framework that underpins the empirical exploration [26]. In the pursuit of understanding the relationships between job demands, job resources, and employee performance, the researcher employs a quantitative cross-sectional survey design, which has been shown to be particularly efficacious in capturing a singular point in time [27]. The cross-sectional design facilitates the simultaneous examination of multiple variables and provides a foundation for statistical analysis [28].

The utilisation of surveys as a data collection tool is informed by the advantages they confer in quantifying and measuring the variables under investigation. Surveys have been established as valuable instruments in social science research [29]. Through structured questionnaires, the researcher captures the perceptions and experiences of employees. The structured nature of surveys enables the researcher to gather standardised data that can be analysed systematically, thus ensuring robust and comparable findings.

Common Method Variance Mitigation

A significant threat to validity in self-report survey research is common method variance (CMV), which occurs when variance in responses is attributable to the measurement method rather than the constructs of interest [30]. Because this study proposes collecting data for both independent and dependent variables from the same respondents using the same survey instrument, CMV is a potential concern.

Procedural remedies will be implemented to minimise CMV:

First, proximal separation will be employed by placing independent variable items (job demands and job resources) in separate sections of the questionnaire from dependent variable items (employee performance). Second, anonymity assurance will be explicitly stated to reduce social desirability bias. Third, reverse-coded

items will be included for selected scales to reduce acquiescence bias. Fourth, scale endpoint variation will be used, with some scales employing frequency anchors rather than agreement anchors.

Post-hoc statistical remedies will include Harman's single-factor test, where a single factor explaining more than 50 % of variance would indicate CMV [30], and the full collinearity test, where variance inflation factors below 3.3 suggest the model is free of CMV [31].

Mixed-Methods Pilot Study

Prior to full-scale data collection, a mixed-methods pilot study is recommended to validate whether the six predictors (workload, role ambiguity, work-life balance, organisational support, supervisory support, job security) and the moderator (employee resilience) are indeed salient to Malaysian software developers.

Qualitative phase: Semi-structured interviews with 10-15 software developers from IT service providers in the Greater Klang Valley to explore whether additional work-related factors emerge and to validate the relevance of the proposed predictors.

Quantitative phase: A pilot survey with 30-50 software developers to test the reliability of measurement instruments (Cronbach's alpha ≥ 0.70), assess clarity of instructions, and estimate completion time.

This mixed-methods approach aligns with best practices for instrument validation in cross-cultural and context-specific research [32].

Target Population

The target population for this study comprises all software developers employed in IT service provider companies operating in Malaysia. IT service providers are defined as organisations that generate revenue primarily through contracting software development, maintenance, testing, or consulting services to external clients [1]. According to the Malaysia Digital Economy Corporation (MDEC, 2024), there are approximately 1,200 IT service provider companies in Malaysia, employing an estimated 45,000 to 55,000 software developers. These developers are concentrated in three major technology hubs: the Greater Klang Valley (Kuala Lumpur, Petaling Jaya, Cyberjaya), Penang (Bayan Lepas, George Town), and Johor Bahru [7].

Sampling Frame

The sampling frame consists of software developers who meet four inclusion criteria. First, they must be currently employed full-time in an IT service provider company registered in Malaysia. Second, they must have a minimum of six months of tenure in their current organisation to ensure adequate exposure to the work-related factors under investigation. Third, their core job responsibilities must include writing, testing, debugging, maintaining, or architecting software code. Fourth, they must be accessible via professional networks such as LinkedIn or through employer referral.

Sampling Technique

This study employs stratified random sampling with proportionate allocation. The population is stratified by geographic location to ensure proportional representation across Malaysia's three major technology hubs, as work conditions and market dynamics differ between these regions [7]. The Greater Klang Valley comprises approximately 65% of the target population. Penang comprises approximately 25 %. Johor Bahru and other areas comprise the remaining 10 %.

Stratified random sampling is preferred as a probability sampling technique as it allows for the calculation of sampling error and enhances the generalizability of findings to the broader population of software developers in Malaysian IT service providers [33]. Within each stratum, potential respondents will be identified through LinkedIn searches and through referrals from human resource departments of participating IT service provider companies.

Sample Size Determination

The sample size for this study was determined using multiple criteria to ensure adequate statistical power for Partial Least Squares Structural Equation Modelling (PLS-SEM), the primary analytical method.

For a PLS-SEM model with seven predictors (six independent variables plus one interaction term), a sample size of 150 respondents is sufficient to detect moderate R^2 values of 0.25 with 80 % power [34]. To account for an estimated 25 % incomplete or unusable responses, which is standard for online surveys of IT professionals [35], the study targets 200 usable responses. To achieve 200 usable responses, the study will distribute the survey to approximately 700 potential respondents.

Measurement Instruments

The measurement instruments for this study are adopted from established scales validated in prior research. All constructs are measured using a 5-point Likert response format (1 = Strongly Disagree to 5 = Strongly Agree). Employee resilience will be measured using the Employee Resilience Scale [25].

Data Analysis

The proposed framework can be assessed using Structural Equation Modelling (SEM). There are three main advantages of using structural equation modelling compared to traditional methods [36]. First, it helps to test multiple regressions simultaneously. Second, structural equation modelling programs could examine more complex relationships and models. Third, it provides individual parameter estimate tests and overall model fit simultaneously.

This study proposes using partial least square (PLS) path modelling using SmartPLS 4.0 [37] that does not require normality assumptions. PLS path modelling involves the two-step approach [38–39]. First is evaluation of the measurement model (outer model), and second is evaluation of the structural model (inner model). The moderating effect of employee resilience (H7) will be tested using the product indicator approach or two-stage approach [40].

Theoretical Implications

This conceptual paper makes several theoretical contributions.

First, this conceptual paper extends the JD-R model to the under-researched context of Malaysian IT service providers. While the JD-R model has been extensively validated in Western contexts [41], its applicability to Southeast Asian labour markets with unique structural constraints has received limited attention. The paper demonstrates that the JD-R model's flexibility allows for the incorporation of context-specific factors without requiring modifications to the model's core structure.

Second, this paper addresses hypothesis proliferation by theoretically specifying which performance dimensions are most relevant to each predictor. Rather than proposing that each predictor affects all three performance dimensions equally, this paper argues that workload primarily affects task performance, role ambiguity primarily affects adaptive performance, and job security primarily affects contextual performance. This theoretical specification enhances parsimony and testability.

Third, this paper introduces employee resilience as a moderator of the job security–performance relationship, reflecting the JD-R model's recognition that personal resources interact with job resources to influence outcomes.

Fourth, the paper challenges the universal applicability of conventional HRM practices by foregrounding job security as a potentially predominant predictor of performance in the Malaysian context, consistent with recent empirical findings [9].

Practical Implications

For managers in Malaysian IT service providers, this conceptual paper offers four practical recommendations.

First, given the proposed centrality of job security as a predictor of contextual performance, organisations should prioritise job security communications and practices. In a context where 85,000 Malaysian ICT professionals work in Singapore and passive turnover pressure is constant, job security may be a primary lever for motivating discretionary behaviours.

Second, organisations should invest in employee resilience through training programmes. The proposed moderating role of resilience suggests that resilience-building interventions (e.g., stress management workshops, mindfulness training, cognitive reappraisal techniques) may buffer the negative effects of low job security on contextual performance.

Third, organisations should invest in organisational and supervisory support. The proposed positive relationships between support and performance suggest that interventions to enhance support, such as supervisor training, regular feedback systems, and resource provision,may yield performance improvements.

Fourth, organisations should reduce role ambiguity and manage workload proactively. Clear role expectations, adequate documentation, and realistic workload allocation are likely to enhance adaptive and task performance respectively.

Limitations And Future Research

Despite the rigorous conceptual development employed, this study has certain limitations that should be acknowledged.

First, common method variance is a potential threat. Because the proposed empirical approach relies on self-report surveys for both independent and dependent variables, common method variance may inflate observed relationships. Future empirical research should implement the procedural and statistical remedies outlined in the methodology section, including temporal separation and proxy reports where possible.

Second, the proposed empirical approach is cross-sectional, which precludes causal inference. While the theoretical arguments imply causal directions, cross-sectional data cannot establish causality. Future research should employ longitudinal designs or natural experiments to strengthen causal claims.

Third, the framework does not incorporate objective performance metrics. While self-report performance measures are widely used and correlate significantly with objective measures, future research should incorporate objective metrics such as code quality, velocity, bug rates, or client satisfaction scores where available.

Fourth, a mixed-methods pilot study is recommended prior to full-scale data collection to validate whether the six predictors and the moderator are indeed salient to Malaysian software developers. Qualitative interviews may reveal additional context-specific factors not captured by the existing literature.

Fifth, the moderating role of employee resilience requires empirical testing. Future research should examine whether resilience indeed buffers the negative effects of low job security on contextual performance, and whether other personal resources (e.g., self-efficacy, optimism) play similar roles.

CONCLUSION

This conceptual paper developed a theoretically grounded model examining the relationships between job demands, job resources, and software developer performance in Malaysian IT service providers. Drawing on the JD-R model, the paper proposed seven hypotheses with theoretically specified performance dimensions. A moderating role of employee resilience was introduced to reflect the complexity of the JD-R model. The paper

also provided a methodological framework for empirical testing, including remedies for common method variance and a recommendation for a mixed-methods pilot study. By elucidating the differential effects of each predictor on specific performance dimensions, this study provides a foundation for future empirical research and practical interventions aimed at enhancing software developer performance in the Malaysian IT service provider industry.

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