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FACTORS INFLUENCING WORK ENGAGEMENT AMONG MALAYSIAN PUBLIC UNIVERSITY ACADEMICS: THE ROLES OF JOB DEMANDS-RESOURCES

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Abstract:

This study investigates the influence of personal resources, job resources (autonomy, social support, performance feedback), and job demands (workload, emotional demand) on work engagement among academic staff in Malaysian public universities. It contributes to the Job Demand-Resources (JD-R) model by incorporating Big Five personality traits as personal resources. Employing a cross-sectional quantitative design, data were collected from 132 academic respondents using a non-probability sampling method through an online questionnaire. Data analysis involved descriptive statistics, reliability testing, normality assessment, Pearson correlation, and multiple linear regression. Results indicate that personal resources and workload significantly predict work engagement, whereas autonomy, social support, performance feedback, and emotional demand do not. The findings suggest that enhancing motivational factors across multiple dimensions is essential to sustaining academic engagement and advancing the JD-R model's applicability within higher education contexts.

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Keyword:

Autonomy, Emotional Demand, Feedback, Job Demand, Job Resources, Performance, Personal Resources, Social Support, Workload, Work Engagement



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Introduction

The contemporary work environment has undergone substantial transformation due to rapid technological advancement, organizational restructuring, and changing performance expectations. These shifts, commonly associated with the Fourth Industrial Revolution (IR 4.0), have altered how work is organized, evaluated, and experienced across sectors. Organizations increasingly expect employees to demonstrate high adaptability, continuous skill development, and sustained performance under intensified work conditions. Consequently, employees are required to operate in increasingly complex, fast-paced, and digitally mediated environments that demand not only technical competence but also high levels of psychological resilience and motivation (Sonnentag et al., 2023; Xanthopoulou et al., 2021). Within this context, employee work engagement has emerged as a critical construct for understanding how individuals respond psychologically and behaviourally to evolving job demands.

Work engagement is widely conceptualized as a positive, fulfilling work-related state of mind characterized by vigour, dedication, and absorption (Schaufeli, Salanova & Gonzalez-Roma & Bakker, (2002). Engaged employees are energetic, enthusiastic, and deeply involved in their work, leading to favorable outcomes such as higher performance, well-being, and organizational commitment. Recent empirical studies further confirm that work engagement is strongly associated with enhanced creativity, proactive work behavior, reduced burnout, and long-term organizational sustainability (Bakker, Hetkand, Olsen & Espevik (2023); Karatepe & Olugbade, (2024); Wang, Li & Chen (2022). As a result, work engagement has gained significant attention from both scholars and practitioners, particularly as organizations seek to maintain productivity and competitiveness amid disruptive change.

Higher education institutions (HEIs) are not exempt from these developments. Universities are increasingly shaped by performance-based governance, digitalization of teaching and learning, intensified research expectations, and administrative accountability. Academics, as the core human capital of universities, are expected to balance multiple and often competing roles, including teaching, research, publication, supervision, community engagement, and

administrative responsibilities. These expanding role expectations raise concerns regarding academics' capacity to remain engaged with their work overtime.

In Malaysia, public universities play a strategic role in national development through human capital formation and knowledge production. In line with Education 4.0 aspirations, Malaysian academics are required to adopt digital pedagogies, produce high-impact research, and meet institutional performance indicators. While these expectations aim to enhance institutional quality and global competitiveness, they also introduce substantial job demands that may undermine academics' psychological well-being and work engagement if not adequately supported by appropriate job resources.

To understand work engagement within such complex work environments, the Job Demands–Resources (JD–R) model provides a robust and widely applied theoretical framework. The JD-R model posits that employee well-being and engagement are shaped by the interaction between job demands (aspects of work requiring sustained effort and associated with psychological costs) and job resources (aspects of work that facilitate goal achievement, reduce demands, and stimulate growth), Demerouti et al., 2001; Bakker & Demerouti, 2017.

More recent developments of the JD–R model emphasize the dynamic interplay between contextual factors and individual psychological capacities in predicting sustainable engagement across time (Bakker, Demerouti, & Sanz-vergel, 2021; Lesener, Gusy & Wolter, 2020). In addition, personal resources, such as personality traits that have been increasingly recognized as important individual-level factors influencing engagement. Guided by this framework, the present study examines how job demands, job resources, and personal resources jointly influence work engagement among academics in Malaysian public universities.

Background Of Study

Work engagement has been extensively examined across industries due to its strong association with performance, retention, and employee well-being with many other dimensions (Bakker & Demerouti, 2008; Schaufeli & Bakker, 2004; Harter, Schmidt, & Hayes, 2002). Large-scale international surveys consistently report concerning levels of disengagement, indicating that a substantial proportion of employees are psychologically disconnected from their work. Similar patterns have been observed in Asian contexts, including Malaysia, where employee engagement levels remain comparatively low. These trends raise important questions regarding the sustainability of high-performance expectations in knowledge-intensive sectors such as higher education.

Within universities, academic work has become increasingly demanding. In addition to core teaching and research responsibilities, academics are often required to undertake administrative tasks, comply with quality assurance mechanisms, secure research funding, and contribute to institutional rankings. Empirical evidence suggests that excessive workload and role overload among academics are associated with heightened stress, burnout, and reduced motivation. Such conditions pose a direct threat to sustained work engagement, particularly when job demands outweigh available resources.

The JD-R model offers a comprehensive lens for understanding these dynamics. According to the model, job demands such as workload and emotional demands initiate a health impairment process that may lead to strain and disengagement when demands are excessive and prolonged especially in long run. Conversely, job resources such as autonomy, social support, and performance feedback activate a motivational process that enhances engagement by fostering meaningfulness, competence, and psychological safety at work. In academic settings, autonomy in teaching and research, collegial support, and constructive feedback are particularly salient resources that can buffer the negative effects of high job demands.

Beyond job characteristics, personal resources have gained increasing attention in engagement research. Personality traits, particularly those conceptualized under the Big Five framework, influence how individuals perceive, interpret, and respond to their work environment. Traits such as conscientiousness, extraversion, openness to experience, agreeableness, and low neuroticism have been associated with higher levels of work engagement, as they shape behavioural tendencies, emotional regulation, and coping strategies. In demanding academic environments, these personal resources may play a crucial role in sustaining engagement despite increasing pressures.

Although numerous studies have applied the JD-R model to examine work engagement, several gaps remain. First, much of the existing literature is concentrated in corporate or Western contexts, with comparatively limited empirical evidence focusing on academics in Malaysian public universities (Makikangas et al., 2022). Second, studies often examine job demands and job resources in isolation, without adequately integrating personal resources as part of the engagement process. Third, the specific configuration of job demands and resources faced by Malaysian academics were shaped by national higher education policies and institutional structures that remains underexplored.

Given the strategic importance of public universities and the escalating demands placed on academic staff, a focused investigation into the determinants of work engagement is both timely and necessary. By examining job demands (workload and emotional demands), job resources (autonomy, social support, and performance feedback), and personal resources (Big Five personality traits) within a unified JD-R model, this study seeks to provide a contextualized understanding of work engagement among Malaysian public university academics. Such insights are expected to contribute to theory by extending the application of the JD-R model in higher education settings, and to practice by informing institutional policies aimed at fostering a more engaged and sustainable academic workforce.

Literature Review

Work engagement is conceptualized as a positive, fulfilling, and persistent work-related psychological state characterized by vigour, dedication, and absorption (Schaufeli et al., 2002). Within organizational research, engagement reflects the extent to which individuals invest physical, cognitive, and emotional energies into their work roles. Contemporary engagement literature converges on the notion that engaged employees demonstrate heightened motivation, sustained effort, and psychological presence in task performance.

In higher education settings, work engagement is particularly salient due to the complex and multifaceted nature of academic roles that combine teaching, research, administrative duties, and community engagement. Prior empirical studies consistently report that engaged

academics display higher instructional quality, stronger research productivity, and greater institutional commitment. Given its positive implications for individual and organizational outcomes, work engagement is positioned as the dependent variable in this study.

This study adopts work engagement as a unidimensional construct for analytical clarity, consistent with JD–R study, and avoids extensive elaboration on measurement instruments, as the primary focus lies on explanatory mechanisms rather than scale validation.

Theoretical Background - Social Exchange Theory

Social Exchange Theory (SET) explains workplace behavior as a series of reciprocal exchanges between employees and/with their organization. The theory posits that individuals develop attitudes and behaviours based on the perceived balance between contributions they make and benefits they receive (reciprocal relationship). When employees perceive that the organization provides valued resources especially in terms of support, autonomy, and fair treatment they experience a sense of obligation and sense of ownership to reciprocate through positive work-related attitudes and behaviours.

In the context of higher education, academics engage in continuous exchanges with their institutions that extend beyond formal contracts. Institutional provisions such as academic autonomy, collegial support, constructive feedback, and manageable role expectation's function seem as social and professional resources. When these resources are perceived as adequate and supportive, academics are more likely to reciprocate by investing greater cognitive, emotional, and behavioural energy into their work, manifested as higher work engagement and academics genuinely excited to engage.

Conversely, when job demands such as excessive workload or sustained emotional strain outweigh perceived organizational support, the reciprocity balance becomes strained. This imbalance may reduce academics' willingness to invest effort and dedication, thereby weakening work engagement (Liu et al., 2025; Umbara et al., 2024). SET therefore provides a theoretical explanation for both the motivational role of job resources and the potential disengaging effect of unmitigated job demands.

By integrating SET with the JD-R model, this study conceptualizes work engagement as a reciprocal response to the interplay between organizational provisions (job resources and demands) and personal resources, coined by Hossan, Karim & Tabash (2024); Rasheed, Abid & Iqbal (2025). This integration is particularly relevant in Malaysian public universities, where intrinsic motivation and psychological reciprocity often play a more prominent role than extrinsic rewards.

Job Demands–Resources (JD–R)

The Job Demands-Resources (JD-R) model serves as the central analytical framework guiding this study. The model categories working conditions into two broad domains; job demands and job resources. Job demands refer to aspects of the job that require sustained physical or psychological effort and are associated with potential costs, whereas job resources represent aspects that facilitate goal attainment, reduce demands, or stimulate personal growth.

Within the JD-R model, work engagement emerges primarily through a motivational process driven by job resources. However, personal resources referring to individual characteristics that influence how employees perceive and respond to their work environment which have increasingly been integrated into the model to enhance explanatory power.

In this study setting, where work autonomy and cognitive demands are high, the interaction between job demands, job resources, and personal resources becomes particularly critical. This study applies the JD-R model to Malaysian public university academics, focusing on selected job demands, job resources, and personal resources that are most relevant to academic work.

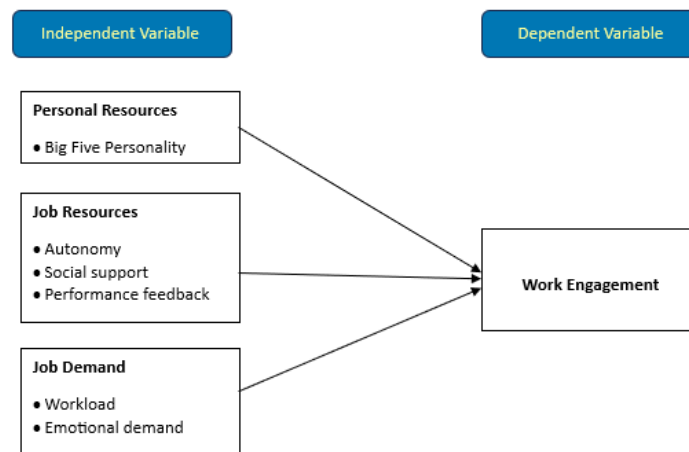


Figure 1: Research Framework

Job Resources and Work Engagement

Job resources are defined as organizational, social, or task-related aspects of work that support employees in achieving work goals, reduce the negative effects of job demands, and foster learning and development. In academic setting, autonomy, social support, and performance feedback consistently emerge as salient job resources.

Empirical evidence across higher education contexts indicates that autonomy enhances academics' sense of ownership and control over teaching and research activities, thereby fostering engagement. Social support from colleagues and supervisors strengthens professional belonging and emotional security, while constructive performance feedback clarifies expectations and reinforces competence. Studies conducted among academics in Malaysia and other regions consistently demonstrate positive associations between these job resources and work engagement. Drawing on SET, the availability of job resources signals organizational support, which academics reciprocate through higher engagement levels. In this study context, job resources (autonomy, social support, and performance feedback) are perceived positively related to work engagement among Malaysian public university academics.

Job Demands and Work Engagement

Job demands refer to aspects of academic work that require sustained effort and may generate psychological or emotional strain. In public universities, workload and emotional demands are among the most frequently reported stressors. Increasing teaching loads, publication pressures, administrative responsibilities, and emotional labour associated with student interactions intensify these demands.

Prior studies consistently demonstrate that excessive job demands are negatively linked with work engagement, particularly when such demands are not adequately balanced by enough job and personal resources. Moreover, high workload and prolonged emotional strain tend to exhaust employees' physical and psychological capacities, thereby undermining intrinsic motivation and reducing engagement levels (Bakker & Demerouti, 2022; Rasheed et al., 2025). However, emerging empirical evidence suggests that moderate job demands may function as challenge stressors, which stimulate learning, excellency, and engagement, especially when individuals possess adequate coping resources and organizational support (Mazzetti, Robledo, Vignoli, Topa and Giglielmi (2023) & Van Wingerden, Poell and Van der Heijden, (2024). This dual role of job demands highlights the importance of contextual and resource-based factors in shaping engagement outcomes, supporting the JD-R model's proposition that engagement emerges from a dynamic balance between demands and resources rather than from job demands alone (Lesener et al., 2023; Xanthopoulou et al., 2024).

It is understandable within the SET perspective, disproportionate job demands without corresponding support disrupt reciprocal balance, weakening employees' willingness to invest effort and commitment. In this study context, job demands (workload and emotional demand) are perceived negatively related to work engagement among Malaysian public university academics.

Personal Resources

Personal resources represent individual characteristics that influence how employees perceive, interpret, and respond to their work environment. In this study, personal resources are operationalized through the Big Five personality traits: extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience.

Personality traits shape behavioural tendencies, emotional regulation, and coping strategies, all of which are critical in demanding academic roles. Prior research suggests that extraversion, agreeableness, conscientiousness, and openness to experience are generally associated with higher engagement, as these traits facilitate proactive behaviour, collaboration, persistence, and adaptability. In contrast, neuroticism is consistently linked to lower engagement due to heightened emotional instability and stress sensitivity.

Despite growing interest in personal resources, limited empirical work has integrated the full Big Five framework within the JD-R model in academic settings, particularly in Malaysian public universities. Incorporating personality traits as personal resources extends the JD-R model by acknowledging individual differences in engagement formation. Personal resources (Big Five personality traits) are perceived significantly related to work engagement among Malaysian public university academics, such that extraversion, agreeableness,

conscientiousness, and openness to experience are positively related, while neuroticism is negatively related to work engagement.

Table 1: Hypotheses Proposition

Hypotheses	Description
H1	There is significant relationship between personal resources and work engagement.
H2	Autonomy is positively related to work engagement.
H3	Social support is positively related to work engagement.
H4	Performance feedback is positively related to work engagement.
H5	There is significant relationship between workload and work engagement.
H6	Emotional demand is negatively related to work engagement.

Table 1 shows hypotheses proposition of the study. This review consolidates extant scholarship on work engagement by drawing on SET and the JD-R model. The synthesis indicates that work engagement among Malaysian public university academics is contingent upon the dynamic interplay of job resources, job demands, and personal resources. By explicitly integrating Big Five personality traits within the JD-R model, the study extends existing engagement literature in higher education and provides a theoretically grounded basis for empirical hypothesis testing.

Methodology

Participants

The study employed a non-probability purposive sampling strategy to recruit academic staff from Malaysian public universities. This approach was adopted to ensure the inclusion of respondents with sufficient professional experience and institutional involvement to provide meaningful insights into work engagement. Accordingly, the sample focused on permanent academic staff holding positions such as professors, associate professors, senior lecturers, and lecturers, as these roles typically reflect higher levels of organizational commitment, job responsibility, and contextual understanding compared to contract or adjunct appointments.

In determining the sample size, Roscoe’s heuristic guideline for behavioural research was applied, which recommends a range between 30 and 500 respondents to achieve adequate statistical power and analytical robustness. Based on this guideline, a conservative target of approximately 10–15% of the accessible academic workforce was established. This sampling strategy ensured the collection of high-quality data suitable for rigorous statistical analysis while maintaining methodological feasibility.

Data Collection Instruments

Data were collected via a structured electronic questionnaire administered through the SurveyMonkey platform. The instrument comprised 56 items organized into five sections: introductory briefing, demographic, personal resources, job resources, job demands, and work engagement. Established and psychometrically validated scales were adapted to ensure construct validity and comparability with extant literature.

Independent variables were operationalized as follows, personal resources were measured by the Big Five Inventory-10 (BFI-10), encompassing the dimensions of extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience; job resources included autonomy, social support, and performance feedback. Meanwhile, job demands consisted of workload and emotional demands. Responses to these constructs were captured using five-point Likert scales anchored from “1” (Strongly Disagree) to “5” (Strongly Agree). The dependent variable, work engagement, was assessed through the nine-item Utrecht Work Engagement Scale (UWES), with frequency response options ranging from “1” (Never) to “5” (Always). Minor adaptations were made to terminology to enhance contextual relevance, such as substituting “supervisor” with “Head of Department” to align with the academic setting in Malaysian public universities.

Procedure and Ethical Considerations

A non-probability convenience sampling technique was adopted, whereby participants were selected based on their accessibility and willingness to take part in the study. Although this method does not ensure equal probability of selection across the population, it was deemed appropriate given the practical constraints and logistical considerations of the research. Survey questionnaires were administered to eligible respondents who were readily available during the data collection period. Prior to participation, respondents were clearly informed of the study’s objectives and were assured of the anonymity and confidentiality of their responses. Informed consent was obtained from all participants before the commencement of data collection.

Confidentiality and anonymity were emphasized throughout, with explicit assurances that data would be used exclusively for scholarly purposes and stored securely. Participation was entirely voluntary, with respondents informed of their right to withdraw at any stage without penalty. The utilization of an electronic survey platform enabled efficient data collection across geographically dispersed sites while upholding ethical standards related to informed consent and data protection.

Data Analysis

Data analysis was conducted using IBM SPSS Statistics (Version 24.0). Initial descriptive statistics summarized demographic variables and provided insights into the distribution, central tendency, and dispersion of study variables. Followed by reliability analysis of Cronbach’s coefficient alpha. Pearson’s correlation coefficients were computed to examine the strength and direction of bivariate relationships among the constructs. To address potential multicollinearity among predictor variables, variance inflation factors (VIF) and tolerance statistics were scrutinized, ensuring the independence of predictors. Multiple linear regression analyses were performed to test the hypothesized relationships and determine the extent to which personal resources, job resources, and job demand predict work engagement. Regression coefficients (β) and the coefficient of determination (R^2) were interpreted to assess the magnitude and explanatory power of the predictors.

Reliability Analysis

The internal consistency of measurement scales was rigorously evaluated using Cronbach’s alpha coefficients. Reliability analysis was conducted to evaluate the internal consistency of the measurement items using Cronbach’s coefficient alpha. The alpha values for the adapted

instruments are reported in the measurement section. In the present study, the interpretation of reliability levels was guided by the classification proposed by Hinton, Brownlow, McMurray, and Cozens (2004), whereby coefficient values of 0.50 and below indicates low reliability, values between 0.50 and 0.70 reflect moderate reliability, values ranging from 0.70 to 0.90 represent high reliability, and values of 0.90 and above denote excellent reliability.

Findings

Table 2 presents the demographic profile of the respondents who participated in the study, including gender, age, employment status, job position, and length of service. Descriptive statistics using frequency analysis were employed to summarize the data, as frequency distributions facilitate data simplification and classification (Sekaran & Bougie, 2010). Table 2 reports the demographic characteristics of the sample (n = 132).

Among 132 respondents, 70.5% (n=93) were female and 29.5% (n=39) male, indicating a higher female participation. Age distribution showed 21.2% (n=28) were 25–30 years old, 26.5% (n=35) aged 31–36, 23.5% (n=31) aged 37–42, 12.9% (n=17) aged 43–48, 10.6% (n=14) aged 49–54, and 5.3% (n=7) aged 55 and above. Regarding employment status, 80.3% (n=106) were permanent staff, while 19.7% (n=26) were on contract. Respondents were primarily from Universiti Sains Malaysia (40.9%, n=54), followed by Universiti Utara Malaysia (35.6%, n=47) and Universiti Teknologi MARA, Seri Iskandar campus (23.5%, n=31). In terms of academic rank, 7.6% (n=10) were Professors, 9.1% (n=12) Associate Professors, 49.2% (n=65) Senior Lecturers, 32.6% (n=43) Lecturers, and 1.5% (n=2) Visiting Lecturers. Length of service at current institution varied, with 24.2% (n=32) serving 1–5 years, 22.7% (n=30) 6–10 years, 20.5% (n=27) 11–15 years, 15.2% (n=20) over 16 years, and 17.4% (n=23) less than one year.

Table 2: Demographic Profile

Demographic	Frequency	Percentage (%)
Gender		
Male	39	29.5
Female	93	70.5
Age		
25 – 30	28	21.2
31 – 36	35	26.5
37 – 42	31	23.5
43 – 48	17	12.9
49 – 54	14	10.6
55 and above	7	5.3
Employment Status		
Contract	26	19.7
Permanent	106	80.3
Service Length		
Less than a year	23	17.4

1 year to 5 years	32	24.2
6 years to 10 years	30	22.7
11 to 15 years	27	20.5
More than 16 years	20	15.2

Position

Professor	10	7.6
Assistant Professor	12	9.1
Senior Lecturer	65	49.2
Lecturer	43	32.6
Visiting Lecturer	2	1.5

Descriptive Statistics

Table 3 presents the descriptive statistics for the variables under study, focusing on the mean, standard deviation, minimum, and maximum values. The mean and standard deviation provide insights into the central tendency and dispersion of the data, respectively, which are essential for understanding the importance of each construct. Prior to analysis, negatively worded items in the personal resources construct were reverse-coded to align all items positively, followed by the removal of unreliable items. The minimum and maximum values indicate no outliers beyond the scale range. Overall, the mean scores for most variables were above moderate, approaching 4 on the five-point scale, except for workload and emotional demand, which registered slightly moderate levels.

Table 3: Descriptive Statistics

Variables	Min	Max	Mean	SD
Work Engagement (WE)	2.37	5.00	3.85	0.45
Personal Resources (PR)	2.75	5.00	4.00	0.54
Autonomy (Auto)	1.50	5.00	3.86	0.65
Social Support (SS)	2.25	5.00	3.72	0.57
Performance Feedback (PF)	1.00	5.00	3.67	0.80
Workload (WL)	1.50	5.00	3.35	0.68
Emotional Demand (EDD)	1.83	4.83	3.43	0.64

Reliability Analysis

Reliability analysis (Table 4) was conducted to assess the internal consistency of the measurement scales (Sekaran & Bougie, 2010). Based on Hinton et al. (2004), reliability coefficients are classified as low (≤ 0.50), moderate (0.50–0.70), high (0.70–0.90), and excellent (> 0.90). The findings revealed that most constructs, namely work engagement, autonomy, social support, performance feedback, workload, and emotional demand demonstrated high reliability. In contrast, personal resources exhibited moderate reliability, which may be attributed to cultural differences in interpreting personality-related items and the contextual adaptation of Western-developed instruments. Recent studies suggest that cross-cultural variations and linguistic nuances can influence respondents' understanding of scale items, thereby affecting reliability outcomes (Fischer & Karl, 2021). Consequently, several items were removed to enhance the overall reliability of the measurement scales.

Table 4: Cronbach's Coefficient Alpha

Constructs	No. of Items	No. of Items Discarded	Cronbach's Alpha	Level of Reliability
WE	9	0	.816	High
PR	4	6	.508	Moderate
Auto	2	1	.703	High
SS	8	0	.825	High
PF	4	0	.883	High
WL	6	4	.729	High
EDD	6	0	.784	High

Correlation

Based on the results presented in Table 5, correlation analysis indicates that all independent variables exhibited weak associations with the dependent variable, namely work engagement. Nevertheless, four of the six variables demonstrated statistically significant relationships. Specifically, personal resources ($r = 0.290$, $p < 0.01$), autonomy ($r = 0.194$, $p < 0.05$), social support ($r = 0.232$, $p < 0.01$), and workload ($r = 0.225$, $p < 0.01$) were positively and significantly correlated with work engagement. In contrast, performance feedback ($r = 0.147$, $p > 0.05$) and emotional demand ($r = 0.073$, $p > 0.05$) did not exhibit statistically significant relationships. These findings suggest that while the overall strength of associations remains modest, selected job and personal resources play a meaningful role in influencing work engagement.

Table 5: Correlations

	WE	PR	Auto	SS	PF	WL	EDD
WE	1						
PR	0.290**	1					
Auto	0.194*	0.115	1				
SS	0.232**	0.207*	0.493**	1			
PF	0.147	0.083	0.405**	0.730**	1		
WL	0.225**	-0.057	0.222*	0.467**	0.585**	1	
EDD	0.073	-0.011	-0.008	-0.165	-0.153	0.054	1

Table 6 indicates that the intercorrelations among the independent variables are well below the threshold of 0.90, suggesting the absence of serious multicollinearity issues. This confirms that the independent variables are sufficiently distinct and do not exhibit excessive overlap. Further assessment using the Variance Inflation Factor (VIF) shows that all VIF values ranged from 1.081 to 2.626, while tolerance values ranged from 0.381 to 0.925, both within acceptable limits. These findings confirm that multicollinearity is not a concern in the present study, thereby supporting the appropriateness of the data for subsequent regression analysis.

Table 6: Multicollinearity Test: Correlation Matrix

Constructs	PR	Auto	SS	PF	WL	EDD
PR	1					
Auto	0.115	1				
SS	0.207*	0.493**	1			
PF	0.083	0.405**	0.730**	1		
WL	-0.057	0.222	0.467**	0.585**	1	
EDD	-0.011	-0.008	-0.165	-0.153	0.054	1

Multicollinearity was further assessed using the Variance Inflation Factor (VIF) and tolerance values. VIF values below 5 and tolerance values above 0.20 are generally considered indicative of acceptable multicollinearity levels. As presented in Table 7, the VIF values for the independent variables ranged from 1.081 to 2.626, while tolerance values ranged from 0.381 to 0.925. These results fall within the recommended thresholds, confirming that multicollinearity is not a concern and that the independent variables are suitable for subsequent regression analysis.

Table 7: Multicollinearity Test: Tolerance and VIF

Construct	Tolerance	VIF
PR	0.924	1.082
Auto	0.744	1.345
SS	0.393	2.547
PF	0.381	2.626
WL	0.614	1.630
EDD	0.925	1.081

As shown in Table 8, the multiple linear regression results indicate that only personal resources ($\beta = 0.234$, $p < 0.05$) and workload ($\beta = 0.159$, $p < 0.05$) significantly predicted work engagement, while autonomy ($\beta = -0.074$), social support ($\beta = 0.098$), performance feedback ($\beta = -0.078$), and emotional demand ($\beta = 0.045$) were not statistically significant ($p > 0.05$). Among all predictors, personal resources recorded the highest standardized beta coefficient, suggesting that individual characteristics play the most influential role in enhancing work engagement among academicians in Northern Region universities in Malaysia. Additionally, workload also demonstrated a significant positive effect, indicating that increased job demands may encourage greater engagement, possibly driven by a strong sense of professional responsibility.

Table 8: Multiple Linear Regression Analysis

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.870	0.432		4.326	.000
PR	0.234	0.071	0.278	3.274	.001**

Auto	0.074	0.067	0.105	1.111	.269
SS	0.098	0.105	0.122	.934	.352
PF	-0.078	0.076	-0.136	-1.026	.307
WL	0.159	0.070	0.237	2.270	.025**
EDD	0.045	0.060	0.064	.751	.454

Conclusion

This study examined the influence of personal resources, job resources, and job demands on work engagement among academic staff at public universities. Using correlation and multiple regression analyses, the findings revealed that not all independent variables significantly predicted work engagement. Among the predictors, personal resources and workload emerged as significant determinants, while autonomy, social support, performance feedback, and emotional demand were not statistically significant. These results highlight the central role of individual characteristics and job demands in shaping academic work engagement within the Malaysian public university context, particularly within the MyPerformance-driven higher education environment that emphasizes accountability, continuous monitoring, and performance-based evaluation.

Specifically, personal resources, particularly agreeableness and conscientiousness were found to be the strongest predictor of work engagement. This suggests that academics who demonstrate positive interpersonal tendencies, self-discipline, and goal-oriented behaviour are more likely to be engaged in their work. These findings align with previous research indicating that individual personality traits substantially influence engagement, performance, and motivation. In addition, workload exhibited a positive and significant relationship with work engagement, indicating that higher job demands may enhance engagement, particularly among academics who demonstrate strong professional responsibility, self-discipline, and commitment. This reflects the adaptive capacity of Malaysian academics to manage demanding workloads within structured institutional environments.

Conversely, job resources, including autonomy, social support, and performance feedback, did not significantly predict work engagement. This may be attributed to the highly structured and regulated nature of public universities, where standardized procedures and self-management practices are prevalent. Furthermore, emotional demand was also found to be insignificant, suggesting that respondents were able to manage emotionally challenging situations effectively, possibly due to strong personal resources and professional maturity. From the perspective of the JD-R and SET integration, these findings indicate that under the MyPerformance system, academics' engagement is primarily shaped by internal psychological resources and perceived workload expectations rather than external job resources, reflecting a reciprocity mechanism driven by institutional performance accountability.

Overall, the findings underscore the importance of strengthening personal capacities and managing workload strategically to enhance academic work engagement, while also encouraging institutions to explore alternative job resources that may better support academics' motivational needs in contemporary higher education settings.

Limitation and Future Direction of Research

Several limitations should be acknowledged, as they may influence the interpretation and generalizability of the findings. First, the study was confined to three public universities in the Northern region of Malaysia due to time constraints and restricted access to institutional staff databases. Consequently, non-probability sampling was employed, which limits the representativeness of the sample and restricts the generalization of findings to the broader population of academics, particularly those in private universities and colleges. Future research should expand the sampling frame to include a wider range of higher education institutions, including private and international universities, to enhance external validity and enable comparative analyses across institutional contexts.

Second, the exclusive use of an online survey resulted in a relatively low response rate, which may have constrained the depth and robustness of data interpretation. Future studies are encouraged to adopt mixed-mode data collection strategies, such as combining online questionnaires with face-to-face or interview-based methods, to improve response rates, data richness, and the reliability of findings. Third, this study focused primarily on positive personality traits within the personal resources construct. Future research could extend this framework by incorporating broader personality dimensions, including negative or “dark” traits, to provide a more comprehensive understanding of how diverse personality profiles influence work engagement.

This extension would be particularly relevant in the context of Industrial Revolution 4.0, where complex work environments may amplify both adaptive and maladaptive behavioural tendencies. Finally, the study was situated within the higher education sector, which limits the applicability of the findings to other occupational contexts. Future research may explore work engagement in diverse industries, such as real estate, aviation, and manufacturing, where employees face high job demands and rapid organizational changes. Examining these sectors could provide valuable insights into sector-specific engagement dynamics and support the development of targeted human resource strategies to enhance employee well-being and performance.

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Ethics Statement: This study was conducted in accordance with established ethical principles governing research involving human participants. Ethical approval was obtained from the relevant institutional authority prior to the commencement of data collection. All participants were provided with comprehensive information regarding the purpose and procedures of the study and gave informed consent before participating. Participation was entirely voluntary, and participants were informed of their right to withdraw from the study at any stage without penalty. To ensure the protection of participants' privacy, all responses were treated with strict confidentiality and anonymity. The data collected were used exclusively for research and academic purposes and were securely managed in accordance with applicable research ethics guidelines.

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