



e-ISSN: 2600-7568

Available online at  
<https://gadingssuitm.com/index.php/gadingss>

GADING Journal for the Social Sciences 28(2) 2025, 97 – 113

**GADING Journal  
for the Social  
Sciences**

# The Work Engagement of Non-academic Administrators in Malaysian Public Universities: An Exploratory Factor Analysis (EFA)

Mohamad Nasaruddin Mahdzir<sup>1</sup>, Rohayu Abdul Ghani<sup>2\*</sup>, Zaleha Yazid<sup>3</sup>

<sup>1</sup>*Faculty of Health Sciences, Universiti Teknologi MARA, Puncak Alam Campus, 42300 Puncak Alam, Selangor, Malaysia*

<sup>2</sup>*Faculty of Economics and Management, Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia*

<sup>3</sup>*Faculty of Economics and Management, Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia*

## ARTICLE INFO

### *Article history:*

Received 12 December 2024

Revised 18 July 2025

Accepted 01 August 2025

Online first 15 August 2025

Published

### *Keywords:*

work engagement

administrators

public university

Exploratory Factor Analysis

### *DOI:*

<https://doi.org/10.24191/gading.v28i2.572>

## ABSTRACT

This article presents details on how to develop and validate a Malay-language work engagement questionnaire for non-academic administrators at a public university. This study employed a cross-sectional research design to establish reliable measures for the work engagement construct. The items were adapted and modified to suit this study. Study data was obtained using a structured, validated questionnaire from 100 randomly selected non-academic administrators from the 20 Malaysian public universities by using purposive sampling method. The final model EFA on the Malay version of work engagement indicated Bartlett's Test of Sphericity was significant (Chi Square = 143.769,  $p$  value < 0.05) and the Kaiser-Meyer-Olkin (KMO = .756). The Cronbach's alpha analysis of one (1) component in the work engagement exceeded the threshold value of 0.6. It was determined that the construct-measuring instruments used in this research met all criteria for internal validity. This study contributes theoretically by extending the applicability of the Job Demands-Resources (JD-R) Theory to non-academic administrators in Malaysian higher education and empirically by providing a validated Malay-language work engagement instrument that enables universities to assess, monitor, and strengthen employee engagement for improved administrative performance. The findings support cross-cultural generalisability and offer practical value for university leadership to develop targeted engagement strategies that enhance workforce retention, service quality, and organisational effectiveness.

## 1. INTRODUCTION

The sustained success of higher education institutions is fundamentally dependent on the quality of their human resources and the strategic management of those resources. To remain competitive and relevant, universities must prioritize the recruitment, development, and retention of both academic and non-academic

\*Corresponding author. Rohayu Abdul Ghani. *E-mail address:* [rohayu@ukm.edu.my](mailto:rohayu@ukm.edu.my)

<https://doi.org/10.24191/gading.v28i2.572>

staff who collectively support the institution's core missions of teaching, research, and community engagement (Chowhan et al., 2017). Among the many human resource outcomes that drive organisational performance, work engagement has gained significant attention due to its strong association with improved service delivery, employee well-being, and organisational sustainability. Defined as a positive, fulfilling, work-related state of mind characterized by vigour, dedication, and absorption (Schaufeli & Bakker, 2004, 2010), work engagement reflects an employee's psychological investment in their job. According to Bakker and Oerlemans (2019), this engagement is fostered by access to job resources such as managerial support, autonomy, and constructive feedback, as well as personal resources including resilience, optimism, and self-efficacy. Conversely, excessive job demands and organisational constraints can diminish engagement, particularly in public sector environments where bureaucratic processes and resource limitations are common (de Sousa & van Dierendonck, 2014; Shim et al., 2020).

In the context of public universities, non-academic administrators - often regarded as the backbone of university operations—play a crucial role in ensuring the effective delivery of student services, administrative functions, and institutional governance (Kallenberg, 2020). Their engagement is essential not only for maintaining operational excellence but also for supporting the academic mission indirectly through administrative efficiency and service quality. However, sustaining high levels of work engagement among these staff members presents significant challenges. Non-academic administrators frequently face role ambiguity, limited career progression, and a lack of recognition compared to their academic counterparts (Zeeshan et al., 2021). Despite their critical contributions, engagement practices for non-academic staff are often inconsistent, lacking structured support systems such as targeted professional development, performance feedback mechanisms, and well-being initiatives (Aboramadan et al., 2022). This structural oversight risks creating disengaged administrative environments, reducing organisational resilience, and compromising service quality. Recent studies have highlighted that work engagement among non-academic administrators is a key determinant of institutional performance, yet remains underexplored in both research and practice (Aboramadan et al., 2022; Mahdzir et al., 2022).

Recognising these gaps, this study addresses the need for a contextually relevant and psychometrically validated instrument to assess work engagement among non-academic university administrators in Malaysia. By focusing on this underrepresented group, the study not only contributes to the theoretical understanding of employee engagement in higher education settings but also offers practical insights for enhancing engagement practices. Specifically, this research aims to evaluate the reliability and validity of a Malay language version of the work engagement scale, thereby supporting evidence-based human resource strategies that strengthen the capacity of non-academic staff to contribute meaningfully to university performance and sustainability.

## 2. LITERATURE REVIEW

### 2.1 Job Demands-Resources (JD-R) Theory

The factors being examined are explained by two theories: Job Demands-Resources (JD-R) Theory (Bakker & Demerouti, 2014) and Work Engagement theory (Kahn, 1990). The JD-R model is a well-established theory in the field of industrial psychology, as evidenced by the works of Bakker and Oerlemans (2019). Based on the model, every task consists of a specific combination of requirements and assets (Bakker & Albrecht, 2018). Job demands refer to the specific aspects of a job that place pressure on an individual's psychological, physical, social, or organisational well-being (Bakker & Oerlemans, 2019).

Job resources refer to the financial and non-financial assets that help individuals do their activities efficiently and be more engaged in their job responsibilities (Bakker & Albrecht, 2018). Job resources are components of a job position that can successfully counteract the negative consequences of job demands. These resources can be physical, social, or organisational in nature and enable the employee to accomplish

desired personal and organisational goals (Bakker & Oerlemans, 2019; Huang et al., 2022). The JD-R paradigm provides the theoretical basis for utilizing job demands and resources to elucidate work involvement in higher education.

Kahn (1990) asserts that human behaviours can exhibit a blend of personal involvement and detachment. Personal engagement refers to the simultaneous employment and expression of an individual's desired self in job-related behaviours that contribute to the support of work and interpersonal relationships in the workplace. It also involves the individual's physical, cognitive, and emotional presence to improve performance (Bakker & Albrecht, 2018; Saks, 2019). Personal disengagement refers to the simultaneous withdrawal and protection of one's desired self by engaging in behaviours that discourage interpersonal relationships in the workplace. It also involves being physically, cognitively, and emotionally absent or minimally involved in organisational activities (Huang et al., 2022; Kahn, 1990). Therefore, we assert that JD-R Theory offers the necessary understanding to analyse the impact of work engagement among non-academic administrators in higher education institutions in Malaysia.

## 2.2 Work Engagement

Kahn (1990) defined personal engagement as "the harnessing of organisation members' selves to their work role; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances". Since then, various work engagement researchers have proposed various definitions and measures of engagement, some of which overlap with other well-established constructs such as organisational commitment, job satisfaction, and job involvement. Bakker and Oerlemans (2019) and Kaur and Mittal (2020) were able to identify two (2) engagement characteristics. "A psychological connection with the performance of work tasks rather than an attitude toward features of the organisation or the job" is what engagement means. Engagement also refers to the investment of multiple personal resources in work in order to have a simultaneous and holistic experience with one's work. Pham-Thai et al. (2018) identified work engagement as an indicator of activation, reflecting an individual's experience related to his or her job. The phrase "job involvement" refers to "a cognitive or belief state of psychological identification" with a particular job. This phrase represents one dimension of engagement (the cognitive dimension) rather than the entire construct of engagement (Huang et al., 2022).

Based on the research of Kahn (1990) and Christian et al. (2011), Pham-Thai et al. (2018) defines work engagement as a relatively long-lasting mental state that refers to the simultaneous investment of an individual's physical, cognitive, and emotional energies in the performance of job duties. According to Kahn (1990), there are three (3) psychological conditions associated with work engagement: psychological meaningfulness, safety, and availability. Saks (2019), on the other hand, proposed the application of Social Exchange Theory (Blau 1964) as a stronger theoretical rationale for understanding job engagement and pointed out that Kahn (1990) engagement theory had a limitation in elucidating because people responded to the conditions with varying levels of engagement.

Work environment, leadership, team and co-worker, training and career development, compensation, organisational policies, and workplace well-being are some of the factors that have been identified and empirically tested as valid determinants of employee engagement. The work environment was discovered to be one of the significant factors that influence an employee's level of engagement. Employee engagement is the result of a variety of workplace factors (Kaur & Mittal, 2020). According to Bakker and Albrecht (2018), management that fosters a supportive working environment shows concern for employees' needs and feelings, provides positive feedback, and encourages them to voice their concerns, learn new skills, and solve work-related problems. As a result, a meaningful workplace environment that promotes focused work and interpersonal harmony is regarded as a key determinant of employee engagement (Kaur & Mittal, 2020).

The physical environment includes the physical risks that workers face on the job. Decent work entails safe work in physical risks such as ergonomic risks, ambient, biological, and chemical hazards, which are all important in employee health (Rajendran et al., 2021). A safe physical environment is associated with increased personal growth, learning opportunities, and worker professional development. As a result, an adequate physical environment can increase the level of energy with which employees perform their job tasks, their resilience to workplace problems, and their ability to fully concentrate on tasks that are fundamental aspects of work engagement (Saleem et al., 2021). The social environment assesses how much social support workers perceive from their peers and superiors. The quality of the social environment at work is a critical factor in determining employees' level of work engagement, because the social support of bosses and colleagues influences workers' perceptions of workplace justice. Work engagement with their employer increases when they have a sense of justice (Rasool et al., 2021).

Leadership has been identified as a critical factor in influencing employee engagement. Effective leadership is a higher-order, multi-dimensional construct that includes self-awareness, balanced information processing, relational transparency, and internalised moral standards (Chiwawa, 2022). When leaders inspire, engagement occurs naturally. Leaders must communicate to employees that their efforts are critical to the overall success of the business (Tao et al., 2022). When employees' work is deemed important and meaningful, it naturally increases their interest and engagement. Authentic and supportive leadership is thought to increase employee engagement by increasing involvement, satisfaction, and enthusiasm for work. The leadership factor assessed included indicators of effective leadership as well as perceived supervisor support (Aboramadan et al., 2022).

Another aspect that emphasises the interpersonal harmony aspect of employee engagement is the team and co-worker relationship. Employee engagement is promoted by supportive and trusting interpersonal relationships, as well as a supportive team (Kahn, 1990). An open and supportive environment is required for employees to feel safe in the workplace and to fully engage in their responsibilities. Members in supportive environments are free to experiment, try new things, and even fail without fear of repercussions (Kahn, 1990). Workplace relationships had a significant impact on meaningfulness, one of the components of engagement (Kaur & Mittal, 2020). Individuals have relatedness needs, and it has been argued that people who have positive interpersonal interactions with their co-workers should have more meaning in their work (Rasool et al., 2021). As a result, if the employee has positive relationships with his co-workers, his work engagement is likely to be high.

Training and career development is another important aspect to consider when hiring employees because it allows them to focus on a specific work dimension. Training improves competency, which has an impact on service performance and employee engagement (Sendawula et al., 2018). When an employee participates in training and learning development programmes, his or her confidence in the area of training grows, motivating them to be more engaged in their work (Stofkova & Sukalova, 2020). Skills and discretion refer to the abilities required for certain job tasks, as well as the freedom employees have to use those abilities in the workplace. On the one hand, providing workers with the necessary training to perform their functions becomes a critical factor influencing their motivation and commitment.

Career advancement is defined as a component of decent work that directly contributes to meeting workers' material and psychological needs related to self-esteem (Chiwawa, 2022). Healthy self-esteem leads to high levels of enthusiasm and resilience in the workplace, which favours work engagement. Employees who are more committed to the company are those to whom the company offers more stable employment and opportunities for advancement (Rasool et al., 2021). In contrast, a lack of job security and/or career opportunities leads to a lack of commitment and, as a result, high levels of turnover (Al-Suraihi et al., 2021).

Compensation or remuneration is an essential component of employee engagement because it motivates employees to achieve more and thus focus more on work and personal development. It includes both monetary and non-monetary rewards. Attractive compensation consists of a combination of pay, bonuses, other financial rewards, and non-financial benefits such as extra vacation and voucher schemes. Employee engagement is strongly influenced by recognition and rewards (Saks, 2019). They discovered that when employees are rewarded and recognised by their company, they feel obligated to respond with higher levels of engagement. Employee engagement is determined by their perceptions of the benefits they receive (Kahn, 1990). As a result, regardless of the amount or type of reward, the employee's perception of it determines his/her content and, as a result, one's engagement in the job. If management wants to achieve a high level of engagement, it must present acceptable standards of remuneration and recognition for their employees.

Employee engagement in an organisation is determined by organisational policies, procedures, structures, and systems. Friendly organisational policies and procedures are critical for employee engagement and the eventual achievement of business goals (Çop et al., 2021). Fair recruitment and selection, flexi-timing, assistance in balancing work and life, and fair promotional policies are all examples of important policies and procedures. The significance of organisational policies and procedures that best support flexible work arrangements that help employees balance their work and home environments; organisations with such arrangements are more likely to have engaged employees. Autonomy, on the other hand, encourages employees' proper relationship with their job, favouring their work commitment (Kaur & Mittal, 2020).

Workplace wellbeing is a comprehensive measure that increases employee engagement. Wellbeing is defined as "all the things that are important to how we think about and experience our lives", so it becomes the most important metric for assessing an organisation's influence on its employees (Albrecht et al., 2021). Working time quality is a determining factor in work engagement levels. Employees' ability to balance their work and personal lives is hampered by the organisation and length of working hours (Atiku & Van Wyk, 2024). Work that is characterised by long working hours, shift work, unsocial hours, night work, and so on, creates difficulties in work-life balance, which generates work stress and reduces employee commitment within the company because they believe their personal needs are not being heard by the employer (Albrecht et al., 2021).

On the contrary, allowing employees to choose different work schedules that are more suitable for them increases employees' commitment to the company and the job itself (Seppälä et al., 2021). A job that requires high emotional demands (such as being in emotionally disturbing situations), among other things, creates a work environment that prevents motivation and, as a result, negatively influences work engagement (Lalić et al., 2021).

### *2.3 Universities and Work Engagement*

Work engagement in public organisations is a new field of study that has provided extensive evidence on the antecedents and positive outcomes of engagement (Fletcher et al., 2020). Individually, engaged public employees report higher levels of job and life satisfaction as well as good mental health (Ancarani et al., 2021; Guglielmi et al., 2016). Work engagement is also associated with increased efficiency, task proficiency, and organisational commitment (Eldor, 2018) and in role behaviour (Luu, 2019). Work engagement improves knowledge sharing and training transfer at the organisational level (Nik Nazli & Khairudin, 2018; Tamta & Rao, 2017).

Despite the importance of work involvement in public organisations, there is a dearth of empirical research on work engagement in higher education institutions in poor countries (Atiku & Van Wyk, 2024; Davis & Southey, 2024). It is crucial to address this gap in order to take into account the particular context

and reality of research in social and management science. This study seeks to examine work engagement in higher education in Malaysia, while simultaneously investigating the influence of JD-R Theory (Bakker & Demerouti, 2014) on this association.

Higher education is critical in the generation of knowledge for the development of future talent and socioeconomic development. Governments competing in the global economy are increasingly affecting the availability of talent in higher education through socioeconomic and political strategies (Park et al., 2022). Despite much debate, university is primarily regarded as a senior management activity, with middle management receiving little attention. Middle managers are critical members of the professional academic and non-academic staff who play critical roles in university governance and educational development. Based on the findings of their thematic review, Mahdzir et al. (2022) propose that future researchers investigate the various antecedents, mediators, and outcomes associated with non-academic university administrators in greater depth.

#### *2.4 Non-Academic Administrators of Universities and Work Engagement*

In universities, non-academic administrators are in charge of department governance, programme management, human resource management, financial and resource management, effective communication, and office management (Mahdzir et al., 2022; Nguyen, 2013). They are also tasked with steering their division in accordance with the university's long-term objectives, as well as leading the way toward those objectives. Non-academic administrators play an important role as enablers by facilitating communication between departments and making it easier for stakeholders to implement programmes and manage resources (Obembe et al., 2020). They help academics by mediating conflicts that arise when the needs of various disciplines collide. Middle managers who are non-academic administrators play an important role in enabling and supporting unit/department activities by providing technical support and expertise, as well as assistance with human resource issues such as staffing, training, and funding resources. In a fast-paced environment, non-academic administrator is critical for translating the university's mission and vision into action and results (Sukoco et al., 2022).

Non-academic administrators may play a 'brokerage role' in the university hierarchy, facilitating information flows from top-level managers to lower-level managers, implementing deliberate strategies, and facilitating adaptability (Gould & Fernandez, 1989; Shi et al., 2009). Non-academic administrators orchestrate resources and personnel to achieve organisational goals and to persuade subordinates to go the "extra mile" (Ancarani et al., 2021). Interaction with operating roles is facilitated by non-academic administrators' technical competence and detailed understanding of university capabilities (Sukoco et al., 2022), whereas interaction with senior management is more effective when non-academic administrators understand the university's goals and competitive strategy. Given that non-academic administrators serve as a conduit for both operational and strategic information (Ancarani et al., 2021), they must be equipped with both managerial and leadership skills (Sukoco et al., 2022).

The adoption of the shared services model directly impacts non-academic professional workers employed at universities. Nevertheless, there has been a dearth of research undertaken on their experiences up to this point. The non-academic administrators in the university setting refers to employees who collaborate with academic staff and hold administrative, technical, qualified-professional, managerial, and/or leadership positions related to the university's different systems and functions (Atiku & Van Wyk, 2024; Davis & Southey, 2024).

However, recent research has identified some barriers to work engagement among Malaysia's non-academic administrators in the higher education sector. The 10-year duration of thematic review by Mahdzir et al. (2022) revealed that the researchers focused on academic administrators and academic managers rather than non-academic administrators in universities. This research examines how the

employee engagement among non-academic administrators working in shared services governance in a Malaysian public university is examined and quantified. This study contributes to the existing literature on employee engagement, non-academic administrator and public university by examining the experiences of stakeholders working in these teams. It also sheds light on the rarely studied experiences of non-academic administrators at public higher education institutions.

### 3. METHODOLOGY

This study utilises a quantitative and ex-post facto research design because it examines the correlations between variables as they naturally occur in the population of interest, establishes cause and effect under highly controlled conditions, and tests theories or hypotheses (Piaw, 2021; Sekaran & Bougie, 2016). To address the research objective, the cross-sectional validation study (Preliminary) in Pilot Phase commenced on September 1<sup>st</sup>, 2022. The survey involved the distribution of a questionnaire to collect data on the current perceptions of non-academic administrators at Malaysian public universities regarding their work engagement. The research was approved by the Department of Planning, Research, and Policy Coordination, Ministry of Higher Education Malaysia (KPT.600-2/1/1 (34)) and the Post-Graduate Committee, Faculty of Economics and Management, Universiti Kebangsaan Malaysia (UKM). Additionally, authorisation was obtained from the Registrars, Human Resources Departments, and Ethics Committees of 20 Malaysian public universities (5 research universities, 4 comprehensive universities and 11 focus universities).

The study's target population consists of non-academic administrators in N Scheme (Management & Professional Group) from Grades N41 to N54 from 20 Malaysian public universities. The population framework for this study includes 2,357 non-academic administrators from the 20 public universities in Malaysia. Randomly selected 100 non-academic administrators participated in the pilot study by using purposive sampling method (Awang et al., 2018; Awang et al., 2016). In conclusion, a validated, structured, six-item survey questionnaire in Malay was utilised. The inclusion criteria for this study were Malaysian nationality, age 18 or older, the ability to read in Malay and/or English, appointment as N Scheme (Grade N41 to N54), employment at any of 20 Malaysian public universities, and the willingness to give consent and participate. Only potential respondents who met the inclusion criteria were included in the study. Participants were provided with sufficient information about the study, and their participation was entirely voluntary. Along with the questionnaire, the researcher personally distributed the inclusion criteria and consent. The respondent self-administered the questionnaire and was given sufficient time and information to complete it.

The close-ended questionnaire was used as the research instrument in this study, Saks (2006), the author, modified the work engagement questionnaire items. The questionnaire comprises with six (6) items demographic questions of the participants developed by Kathiravelu (2016). The work engagement questionnaire was originally composed of (4) four items. This construct was measured using the interval scale ranging from 1 (strongly disagreed) to 5 (strongly agreed) with the given item statement (Piaw, 2021). The questionnaires were available in both hardcopy and online (email, WhatsApp, Telegram, and QR code) formats. To contribute to the body of knowledge, we decided to use dual-language instruments, adopted from English (original version) and translated into Malay (translation version), with a total of four (4) items in Malaysian multiracial culture and (6) items for sociodemographic. In order to complement the non-academic administrator and public university environments, we felt it was necessary to adapt and adopt some measurement items and terms from Chukwuyem et al. (2015). During the translation stage, some related terms such as administrator and public university were added from the original English language version. Measuring work engagement has improved over the last decade in this situation. Existing tools, on the other hand, have not been developed in Malaysian, administrator or public university settings. As a

result, the goal of this research was to localise the investigation tools used by non-academic administrators at Malaysian public universities.

The work engagement construct measuring instrument was adapted from previous research, and the items were modified to fit the current study. Validating the modified instrument requires pre-testing and pilot testing, especially if the original instrument was developed with a Western cultural sample and for a different industry than the one being studied (Awang et al., 2018; Bahkia et al., 2019; Hoque et al., 2018). Following the modification process, a group of qualified experts comprised of researchers, one (1) linguist (certified by the Malaysian Institute of Translation & Books (ITBM)), four (4) subject matter experts (human resource development field), two (2) practitioner experts, and 30 potential respondents tested the forward and backward translation questionnaires for content and face validity. The translation process was meticulously planned, with a strong emphasis on preserving each word's meaning, and it was followed by the content validity and face validity processes. Some of the questions should be reworded to avoid double-barrelled questions, according to the experts. Potential respondents were asked to provide feedback on the clarity and relevance of the questionnaire to their jobs. This questionnaire's content validity was used as a pre-test to ensure that the measures used to collect data are appropriate for statistical analysis and fit for the intended purpose.

#### **4. RESULTS**

The questionnaires were distributed to the respondents after all of the necessary adjustments were made based on the pre-test results in order to collect a minimum of 100 respondents for the Exploratory Factor Analysis (EFA) (Awang et al., 2018; Hair et al., 2014). EFA analysis is used in this study to examine the interrelationships between the items of one (1) component of work engagement construct. EFA analysis is used to compress a group of items into a smaller set of combination factors with minimal information loss that can be interpreted more easily and meaningfully, laying the groundwork for Structural Equation Modelling (SEM) analysis (Hair et al., 2010, 2014). The items used in this study were adapted from instruments used by previous researchers, with some statements modified to fit the current study. If researchers make modifications to statements and instruments that are pertinent to ongoing research, EFA analysis is required. This is because the current field of study may differ from previous studies, or because the socioeconomic, racial, and cultural status of the current research population greatly differs from that of previous studies (Awang et al., 2018; Hair et al., 2014). As a result, there may be items that were constructed in the past but are no longer pertinent to current research. Therefore, researchers must recalculate both the current instrument's internal reliability value and the new Cronbach Alpha value (Awang et al., 2018; Hoque et al., 2018).

In this study, Kiser-Meyer-Olkin (KMO) and Bartlett's test for sphericity were used to determine sampling adequacy, which is recommended for calculating the case-to-variable ratio. For the factor analysis to be valid, Bartlett's Test of Sphericity must be statistically significant at (P0.05) (Hair et al., 2010). The KMO ranges from 0 to 1, whereas the acceptable index is greater than .6. (Awang et al., 2018; Hair et al., 2014). Total Variance Explained (TVE) was also examined as an item extraction method to reduce the number of items to a manageable level prior to further analysis. During this procedure, items with eigenvalues greater than 1.0 are extracted into distinct components (Awang et al., 2018; Hair et al., 2014). In addition, the Rotated Component Matrix was analysed, and only items with a Factor Loading greater than .60 were retained for further examination. Nonetheless, a reliability analysis of the measuring items was performed during the EFA analysis, and only items with a Cronbach's Alpha of .70 or higher were considered. According to Hair et al. (2014) and Awang et al. (2018), a Cronbach's Alpha of .60 or higher provides a reliable measure of internal consistency, while a score of .70 indicates that the instrument has a high reliability standard. Data were processed and analysed with SPSS 24.0 and EFA using the Principal



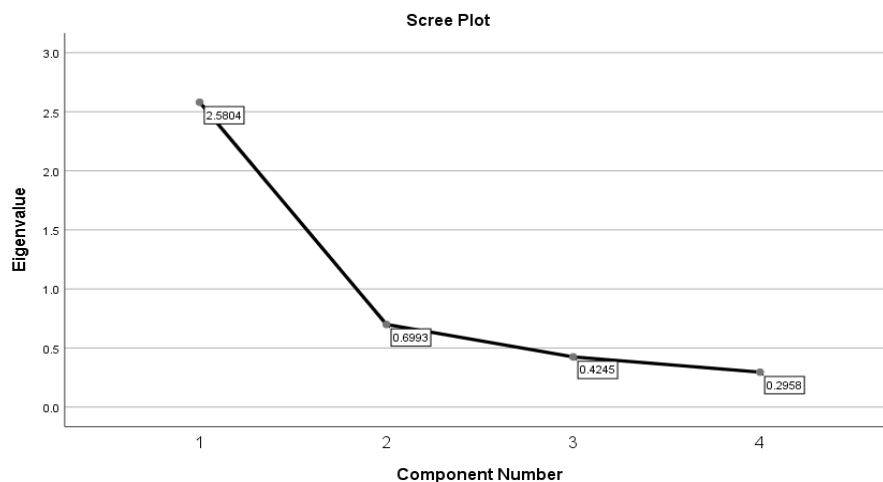
Component Analysis (PCA) extraction method with Varimax (Variation Maximization). These four (4) items measuring the work engagement construct.

The work engagement construct included four (4) items, which were coded as WE01 to WE04. The descriptive statistics for individual items assessing the work engagement construct are displayed in Table 1. Individual item mean scores ranged from 4.12 to 4.23, with score standard deviations ranging from 0.715 to 0.808.

**Table 1.** The descriptive statistics for measuring work engagement construct

Item Code	Mean	Std. Deviation
WE01	4.12	.808
WE02	4.21	.743
WE03	4.21	.715
WE04	4.23	.777

According to the screen plot in Figure 1, one (1) component emerged from the EFA procedure for this construct. The four (4) items of work engagement construct went through the EFA analysis.



**Fig. 1.** The scree plot for work engagement construct

Principal component analysis was utilised to determine factor extraction, which was subsequently analysed using the Varimax method with Kaiser normalisation. Since the factor correlation matrix revealed insignificant inter-factor correlations, the Varimax method was utilised for rotation. The initial step must be completed prior to the KMO and Bartlett's examinations. The KMO test was used to assess sampling adequacy for each variable in the structure, while the Bartlett test was used to determine the direction of the significance of the correlation between the study variables. The KMO test value must be at least .60 to indicate adequate sample size for EFA. The Bartlett's test was used to investigate the hypothesis, with results indicating either rejection of the null hypothesis or acceptance of an alternative hypothesis, depending on the significance of the p-value. Both the KMO and Bartlett tests are essential for EFA analysis.

At each iteration, the anti-image correlation was examined. The question with the lowest anti-image correlation was eliminated, and the process was repeated for the remaining items. Bartlett's sphericity test and the Kaiser-Meyer-Olkin (KMO) sampling adequacy measure were used to evaluate each iteration. The

critical value must exceed .50, and factor analysis cannot be performed below this threshold. Using Principal Component Analysis (PCA), the EFA procedure was applied to the four (4) items assessing the work engagement construct (Awang et al., 2018; Na-Nan & Saribut, 2020). The results of the Bartlett's Test of Sphericity (p-value .05) are shown in Table 2. Furthermore, the Kaiser-Meyer-Olkin (KMO) sampling adequacy measure .756 is acceptable because it is greater than the minimum value of .60 (Awang et al., 2018; Bahkia et al., 2019). These two (2) results (Bartlett's Test is significant and KMO > .60) indicate that the data is sufficient to proceed with the data reduction technique (Awang et al., 2018; Ehido et al., 2020). According to Watkins (2018), the significance level of p-value should be less than .05 to indicate sufficient correlation between the variables, and Bartlett's test of sphericity depicted a significance level of .000 as very significant.

**Table 2.** The KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.756
Bartlett's Test of Sphericity	Approx. Chi-Square	143.769
	df	6
	Sig.	.000

The Principal Component Analysis (PCA) result for four (4) items under the work engagement construct was shown in Table 3. The PCA procedure extracted one (1) component with Eigenvalues greater than 1.0, and the component's Total Variance Explained is 64.511%, which is greater than the recommended 60.0% for a valid construct. Clearly, the component accounted for 64.511% of the Total Variance.

**Table 3.** The components and total variance explained for work engagement construct

Component	Total Variance Explained				
	Initial Eigenvalues			Extraction Sums of Squared Loadings	
	Total	% of Variance	Cumulative %	Total	% of Variance
WE01	2.580	64.511	64.511	2.580	64.511
WE02	.699	17.481	81.992		
WE03	.425	10.614	92.606		
WE04	.296	7.394	100.000		

Extraction Method: Principal Component Analysis.

The correlation coefficient between each question and the common factor is represented by Factor Loading. Common factors can be obtained after analysing a principal component factor by merging questions with highly related Factor Loadings. Tabachnick and Fidell (2007) proposed that questions with poor Factor Loading of less than 0.32 be removed in order to accept the interpretation of the factors. A good factor loading value is greater than 0.55. To select questions with Factor Loading greater than 0.55 as common factors (Liu et al., 2018; Na-Nan & Saribut, 2020). Table 4 presents the one (1) component and respective items. Accordingly, none of items with Factor Loading less than .60 were deleted (Awang, 2015; Awang et al., 2018). Therefore, four (4) items will be retained and are suitable to assess the work engagement construct because the Factor Loading for each item under these components was above the cut-off point of .60.

**Table 4.** The components and items of work engagement construct

Component Matrix <sup>a</sup>
Component 1

WE01	.686
WE02	.831
WE03	.879
WE04	.805
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

The final analysis consists of calculating the Cronbach's Alpha value to assess the Internal Reliability of work engagement construct. Internal Reliability measures the uniformity of results across items measuring the same construct. Cronbach's Alpha must be greater than .7 for items to have a high level of Internal Reliability (Awang et al., 2018). The Cronbach's Alpha for assessing the work engagement construct is .809, as shown in Table 5. As a result, the construct examined have achieved acceptable Internal Reliability because Cronbach's value is greater than 7.

**Table 5.** The reliability analysis for measuring work engagement construct

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.809	.813	4

## 5. DISCUSSION

The present study employed Exploratory Factor Analysis (EFA) to validate the work engagement construct (Appendix A) after adapting and refining items from established instruments. Consistent with methodological recommendations by Hair et al. (2014) and Awang et al. (2018), EFA was conducted to assess the interrelationships among the adapted items, ensuring they reflect the underlying construct reliably within the Malaysian higher education context. This is particularly important when instruments are adapted to new cultural and institutional settings, as factors such as socioeconomic status, language, and organisational culture may influence item relevance and performance (Awang et al., 2018; Hoque et al., 2018).

The findings of this study corroborate prior research by confirming the adequacy of the sample through a Kaiser-Meyer-Olkin (KMO) value of .756 and a highly significant Bartlett's Test of Sphericity ( $p < .001$ ). These results align with previous validation studies (Bahkia et al., 2019; Na-Nan & Arunyaphum, 2021), which report similar benchmarks as acceptable for proceeding with EFA. Furthermore, the Total Variance Explained (64.511%) exceeds the 60% threshold recommended by Awang et al. (2018), indicating that the extracted factor adequately represents the work engagement construct. Moreover, all four items (WE01–WE04) demonstrated strong factor loadings ranging from .686 to .879, surpassing the .60 cut-off suggested by Liu et al. (2018) and Na-Nan and Saribut (2020). This outcome supports the construct validity of the adapted items and aligns with findings by previous researchers who have demonstrated that well-constructed engagement measures typically load onto a single factor representing the unified nature of engagement (Aboramadan et al., 2022).

However, this finding contrasts with some earlier multidimensional conceptualizations of work engagement, which argue that engagement may consist of distinct but related dimensions such as vigour, dedication, and absorption (Aboramadan et al., 2022). In this study, the unidimensional structure emerging from the EFA suggests that in the context of non-academic university administrators, engagement may manifest as a holistic experience rather than as distinct dimensions. This aligns with emerging evidence from more recent studies (Kaur & Mittal, 2020), which suggest that in certain organisational or cultural

settings, engagement is best measured as a single overarching construct to capture its practical implications more effectively. Additionally, the Cronbach's Alpha value of .809 indicates a high level of internal consistency, supporting the reliability of the adapted instrument. This is consistent with prior research (Awang et al., 2018; Hair et al., 2014) and supports the use of the scale in subsequent SEM analysis. Interestingly, while some prior studies have reported that shortened or adapted scales may suffer from reduced reliability (Schaufeli & Bakker, 2004, 2010), the present results demonstrate that, with careful adaptation and validation, shorter scales can retain strong psychometric properties without sacrificing measurement quality.

Finally, the descriptive statistics showed moderately high mean values (4.12 to 4.23), indicating that respondents generally perceived themselves as engaged in their roles. This aligns with findings by Chukwuyem et al. (2015) and Seppälä et al. (2020), who found that public sector employees often report moderate to high engagement when organisational support and meaningful work are present. However, the relatively high engagement levels in this study should be interpreted cautiously, as self-report measures may be subject to social desirability bias (Kaur & Mittal, 2020). Future research could address this limitation by incorporating multi-source data, such as supervisor ratings or objective performance indicators. The current results provide strong empirical support for the validity and reliability of the adapted work engagement scale in the Malaysian higher education context. The findings both corroborate and extend previous literature by demonstrating that, for non-academic university administrators, work engagement can be effectively measured as a unidimensional construct with high reliability. This supports the practical application of the instrument for future research and organisational assessments.

## 6. CONCLUSION

The current work engagement instrument underwent systematic forward and backward translation, content validation, face-to-face validation, and Malay language modification. It was determined that the Malay version of the work engagement was valid and reliable for assessing the work engagement of non-academic administrators, based on satisfactory EFA analysis results and internal consistency. Therefore, the work engagement instrument is suitable for use in the field research.

Building on the robust validation outcomes obtained through EFA, the study proceeds to further test the measurement and structural properties of the work engagement construct using SEM analysis. While EFA serves as an essential preliminary step to identify the underlying structure of the construct in the context of this study, SEM analysis allows for a more rigorous evaluation of the measurement model by examining the relationships between observed variables and their corresponding latent factors (Awang et al., 2018; Hair et al., 2014). Furthermore, SEM analysis provides a comprehensive framework to test the hypothesized relationships between work engagement and other key constructs, such as job demands, job resources, and innovative work behaviour, as outlined in the study's conceptual framework. By integrating the validated measurement model into the structural model, SEM enables the assessment of both the direct and indirect effects, offering deeper insights into the mechanisms through which work engagement influences employee outcomes in the Malaysian higher education context. This transition marks a critical step in advancing from measurement validation to theory testing, ensuring that the subsequent findings are both statistically sound and practically meaningful.

From the theoretical perspective, the JD-R Theory (Bakker & Demerouti, 2014) states that employees will become engaged in their work when they have sufficient resources available to them. It is important to closely and comprehensively manage both personal and work-related requirements and resources. Additional investigation is required about the needs and resources inside organisations. Additionally, it is imperative to provide a comprehensive framework for assessing resources and requirements that considers

emerging needs such as diversity and digitalisation. Moreover, it is plausible that the results were influenced by other employee characteristics that were not examined in the present study. The subjective worth that workers attribute to their jobs. Although certain resources are essential for sustaining employment in the long run, there are occasions when they become very critical. Just as various professional roles may need more demanding tasks, it is important to consider this element while developing engagement. Hence, it is necessary to evaluate the present condition of employees, their resources, and any possible obstacles they can encounter in that particular position during future enquiries in a university environment.

#### ACKNOWLEDGEMENTS/FUNDING

*The authors gratefully acknowledge the approval and support provided by the Ministry of Higher Education (MOHE), Malaysia, which enabled the successful completion of this research. Special appreciation is extended to the Human Resource Departments of the 20 Malaysian public universities for their invaluable assistance in data collection, coordination, and facilitation throughout the study. The authors also wish to express their gratitude to the Faculty of Economics and Management, National University of Malaysia (UKM), for their continuous guidance, administrative support, and provision of research resources. Sincere thanks are also conveyed to all respondents for generously contributing their time and insights, without which this study would not have been possible.*

#### CONFLICT OF INTEREST STATEMENT

*The authors declare no commercial, financial, or personal relationships that could be construed as a potential conflict of interest. There were also no funders involved in the study design, data collection and analysis, manuscript preparation, or publication decisions.*

#### AUTHORS' CONTRIBUTIONS

*All authors contributed substantially to the conception and design of the study, the development of the research protocols, data collection, data analysis, and the preparation of figures and tables. All authors participated in drafting, revising, and critically reviewing the manuscript for important intellectual content, and all approved the final version for submission. Specifically, Mohamad Nasaruddin Mahdzir conducted the fieldwork, performed the statistical analyses, and interpreted the quantitative results. Rohayu Abdul Ghani conducted the literature review, synthesised relevant theoretical frameworks, and assisted in interpreting the findings. Zaleha Yazid developed the research methodology section, evaluated the robustness of the analytical procedures, and analysed the research outcomes.*

#### REFERENCES

- Aboramadan, M., Hamid, Z., Kundi, Y. M., & El Hamalawi, E. (2022). The effect of Servant Leadership on Employees' Extra-role Behaviours in NPOs: The role of Work Engagement. *Nonprofit Management and Leadership*, 33(1), 109–129. <https://doi.org/10.1002/nml.21505>
- Al-Suraihi, W. A., Samikon, S. A., Al-Suraihi, A.-H. A., & Ibrahim, I. (2021). Employee Turnover: Causes, Importance and Retention Strategies. *European Journal of Business and Management Research*, 6(3), 1–10. <https://doi.org/10.24018/ejbmr.2021.6.3.893>
- Albrecht, S. L., Green, C. R., & Marty, A. (2021). Meaningful Work, Job Resources, and Employee Engagement. *Sustainability*, 13(7), 4045. <https://doi.org/10.3390/su13074045>

- Ancarani, A., Arcidiacono, F., Mauro, C. Di, & Giammanco, M. D. (2021). Promoting Work Engagement in Public Administrations: The Role of Middle Managers' Leadership. *Public Management Review*, 23(8), 1234–1263. <https://doi.org/10.1080/14719037.2020.1763072>
- Atiku, S. O., & Van Wyk, E. (2024). Leadership Practices and Work Engagement in Higher Education: The Mediating Role of Job Demands-Resources. *SAGE Open*, 14(1), 1–13. <https://doi.org/10.1177/21582440241233378>
- Awang, Z. (2015). *SEM Make Simple: A Gentle Approach to Learning Structural Equation Modeling*. MPWS Rich Resources.
- Awang, Z., Hui, L. S., & Zainudin, N. F. S. (2018). *Pendekatan Mudah SEM: Structural Equation Modelling* (1st Editio). MPWS Rich Resources.
- Bahkia, A. S., Awang, Z., Afthanorhan, A., Ghazali, P. L., & Foziah, H. (2019). Exploratory Factor Analysis on Occupational Stress in Context of Malaysian Sewerage Operations. *AIP Conference Proceedings*, 2138, 1–6. <https://doi.org/10.1063/1.5121111>
- Bakker, A. B., & Albrecht, S. (2018). Work Engagement: Current Trends. *Career Development International*, 23(1), 4–11.
- Bakker, A. B., & Demerouti, E. (2014). Job Demands–Resources Theory. In *Work and Wellbeing: Wellbeing: A Complete Reference Guide* (pp. 1–28). John Wiley & Sons, Ltd. <https://doi.org/10.1002/9781118539415.wbwell019>
- Bakker, A. B., & Oerlemans, W. G. M. (2019). Daily Job Crafting and Momentary Work Engagement: A Self-Determination and Self-Regulation Perspective. *Journal of Vocational Behaviour*, 112, 417–430. <https://doi.org/10.1016/j.jvb.2018.12.005>
- Blau, P. M. (1964). Exchange and Power in Social Life. In *Bock, G. W. and Young-Gul, K* (Vol. 15). J. Wiley.
- Chiwawa, N. (2022). Determinants of Employee Engagement in Public Sector Organisations: Case of Zimbabwe. *International Journal of Public Sector Management*, 35(7), 749–764. <https://doi.org/10.1108/IJPSM-03-2021-0073>
- Chowhan, J., Pries, F., & Mann, S. (2017). Persistent Innovation and The Role of Human Resource Management Practices, Work Organization and Strategy. *Journal of Management and Organization*, 23(3), 456–471. <https://doi.org/10.1017/jmo.2016.8>
- Christian, M. S., Garza, A. S., & Slaughter, J. E. (2011). Work Engagement: A Quantitative Review and Test of its Relations with Task and Contextual Performance. *Personnel Psychology*, 64(1), 89–136. <https://doi.org/10.1111/j.1744-6570.2010.01203.x>
- Chukwuyem, O. A., Md Nor, K., & Okyere-Kwakye, E. (2015). The Influence of Knowledge Sharing on Employee Innovation Capabilities. *International Journal of Human Resource Studies*, 5(3), 102–110. <https://doi.org/10.5296/ijhrs.v5i3.8210>
- Çop, S., Olorunsola, V. O., & Alola, U. V. (2021). Achieving Environmental Sustainability through Green Transformational Leadership Policy: Can Green Team Resilience Help? *Business Strategy and the Environment*, 30(1), 671–682. <https://doi.org/10.1002/bse.2646>
- Davis, K., & Southey, K. (2024). Employee Engagement in Shared Services in a Regional University Context. *Journal of Higher Education Policy and Management*, 46(3), 291–306. <https://doi.org/10.1080/1360080X.2024.2344238>
- Ehido, A., Awang, Z., Abdul Halim, B., & Ibeabuchi, C. (2020). Developing Items for Measuring Quality

- of Work Life among Malaysian Academics: An Exploratory Factor Aanalysis Procedure. *Humanities & Social Sciences Reviews*, 8(3), 1295–1309. <https://doi.org/10.18510/hssr.2020.83132>
- Eldor, L. (2018). Public Service Sector: The Compassionate Workplace—The Effect of Compassion and Stress on Employee Engagement, Burnout, and Performance. *Journal of Public Administration Research and Theory*, 28(1), 86–103. <https://doi.org/10.1093/jopart/mux028>
- Fletcher, L., Bailey, C., Alfes, K., & Madden, A. (2020). Mind the Context Gap: A Critical Review of Engagement within the Public Sector and an Agenda for Future Research. *The International Journal of Human Resource Management*, 31(1), 6–46. <https://doi.org/10.1080/09585192.2019.1674358>
- Gould, R. V., & Fernandez, R. M. (1989). Structures of Mediation: A Formal Approach to Brokerage in Transaction Networks. *Sociological Methodology*, 19, 89–126. <https://doi.org/10.2307/270949>
- Guglielmi, D., Avanzi, L., Chiesa, R., Mariani, M. G., Bruni, I., & Depolo, M. (2016). Positive Aging in Demanding Workplaces: The Gain Cycle between Job Satisfaction and Work Engagement. *Frontiers in Psychology*, 7, 1224–1234. <https://doi.org/10.3389/fpsyg.2016.01224>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis* (7th Editio). Prentice Hall, Upper Saddle River.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate Data Analysis* (7th Editio). Pearson Education Limited.
- Hoque, A. S. M. M., Siddiqui, B. A., Awang, Z., & Baharu, S. M. A. T. (2018). Exploratory Factor Analysis Of Entrepreneurial Orientation In The Context Of Bangladeshi Small And Medium Enterprises (SMES). *European Journal of Management and Marketing Studies*, 3(2), 81–94.
- Huang, S. Y. B., Huang, C.-H., & Chang, T.-W. (2022). A New Concept of Work Engagement Theory in Cognitive Engagement, Emotional Engagement, and Physical Engagement. *Frontiers in Psychology*, 12, 6503. <https://doi.org/10.3389/fpsyg.2021.663440>
- Jorge Correia de Sousa, M., & van Dierendonck, D. (2014). Servant Leadership and Engagement in a Merge Process under High Uncertainty. *Journal of Organisational Change Management*, 27(6), 877–899. <https://doi.org/10.1108/JOCM-07-2013-0133>
- Kahn, W. A. (1990). Psychological Conditions of Personal Engagement and Disengagement at Work. *Academy of Management Journal*, 33(4), 692–724. <https://doi.org/10.2307/256287>
- Kallenberg, T. (2020). Differences in Influence: Different Types of University Employees Compared. *Tertiary Education and Management*, 26(4), 363–380. <https://doi.org/10.1007/s11233-020-09058-w>
- Kathiravelu, S. R. (2016). *Managerial Roles On Knowledge Sharing Behaviour Among Malaysian Civil Servants*. Universiti Teknologi Malaysia.
- Kaur, P., & Mittal, A. (2020). Meaningfulness of Work and Employee Engagement: The Role of Affective Commitment. *The Open Psychology Journal*, 13(1), 115–122. <https://doi.org/10.2174/1874350102013010115>
- Lalić, D., Milić, B., & Stanković, J. (2021). Internal Communication and Employee Engagement as the Key Prerequisites of Happiness. In *Advances in Public Relations and Communication Management* (Vol. 5, pp. 75–91). Emerald Publishing Limited. <https://doi.org/10.1108/s2398-391420200000005007>
- Liu, W., Zhao, T., Zhou, W., & Tang, J. (2018). Safety Risk Factors of Metro Tunnel Construction in China: An Integrated Study with EFA and SEM. *Safety Science*, 105, 98–113. <https://doi.org/10.1016/j.ssci.2018.01.009>

- Luu, T. T. (2019). Service-oriented High-Performance Work Systems and Service-oriented Behaviours in Public Organizations: The Mediating role of Work Engagement. *Public Management Review*, 21(6), 789–816. <https://doi.org/10.1080/14719037.2018.1526314>
- Mahdzir, M. N., Ghani, R. A., & Yazid, Z. (2022). Faced With Obstacles and Uncertainty: A Thematic Review of Middle Managers in Higher Education. *International Journal of Professional Business Review*, 7(6), 1–39. <https://doi.org/https://doi.org/10.26668/businessreview/2022.v7i6.1129>
- Na-Nan, K., & Arunyaphum, A. (2021). Effect of Employees' Work Engagement and Knowledge Sharing as Mediators of Empowering Leadership and Innovative Work Behaviour. *Industrial and Commercial Training*, 53(4), 313–330. <https://doi.org/10.1108/ICT-08-2020-0100>
- Na-Nan, K., & Saribut, S. (2020). Validation of Employees' Self-Leadership using Exploratory and Confirmatory Factor Analysis. *International Journal of Quality & Reliability Management*, 37(4), 552–574. <https://doi.org/10.1108/IJQRM-10-2018-0287>
- Nguyen, T. L. H. (2013). Middle-level Academic Management: A case study on the roles of the Heads of Department at a Vietnamese university. *Tertiary Education and Management*, 19(1), 1–15. <https://doi.org/10.1080/13583883.2012.724704>
- Nik Nazli, N. N. N., & Sheikh Khairudin, S. M. H. (2018). The Factors that Influence Transfer of Training and Its effect on Organisational Citizenship Behaviour. *Journal of Workplace Learning*, 30(2), 121–146. <https://doi.org/10.1108/JWL-09-2017-0080>
- Obembe, D., Al Mansour, J., & Kolade, O. (2020). Strategy Communication and Transition Dynamics Amongst Managers: A Public Sector Organization Perspective. *Management Decision*, 1–18. <https://doi.org/10.1108/MD-11-2019-1589>
- Park, H. M., Patel, P., Varma, A., & Jaiswal, A. (2022). The Challenges for Macro Talent Management in the Mature emerging Market of South Korea: A Review and Research Agenda. *Thunderbird International Business Review*, 64(5), 393–404. <https://doi.org/10.1002/tie.22260>
- Pham-Thai, N. T., McMurray, A. J., Muenjohn, N., & Muchiri, M. (2018). Job Engagement in Higher Education. *Personnel Review*, 47(4), 951–967. <https://doi.org/10.1108/PR-07-2017-0221>
- Piaw, C. Y. (2021). *Kaedah Penyelidikan* (Edisi Keem). McGraw-Hill.
- Rajendran, S., Giridhar, S., Chaudhari, S., & Gupta, P. K. (2021). Technological Advancements in Occupational Health and Safety. *Measurement: Sensors*, 15, 100045. <https://doi.org/10.1016/j.measen.2021.100045>
- Rasool, S. F., Wang, M., Tang, M., Saeed, A., & Iqbal, J. (2021). How Toxic Workplace Environment Effects the Employee Engagement: The Mediating Role of Organisational Support and Employee Wellbeing. *International Journal of Environmental Research and Public Health*, 18(5), 1–17. <https://doi.org/10.3390/ijerph18052294>
- Saks, A. M. (2006). Antecedents and Consequences of Employee Engagement. *Journal of Managerial Psychology*, 21(7), 600–619. <https://doi.org/10.1108/02683940610690169>
- Saks, A. M. (2019). Antecedents and Consequences of Employee Engagement Revisited. *Journal of Managerial Psychology*, 21(7), 19–38. <https://doi.org/10.1108/JOEPP-06-2018-0034>
- Saleem, F., Malik, M. I., & Qureshi, S. S. (2021). Work Stress Hampering Employee Performance During COVID-19: Is Safety Culture Needed? *Frontiers in Psychology*, 12, 1–13. <https://doi.org/10.3389/fpsyg.2021.655839>
- Schaufeli, W. B., & Bakker, A. B. (2004). Job Demands, Job Resources, and Their Relationship with



- Burnout and Engagement: A Multi-Sample Study. *Journal of Organisational Behaviour*, 25(3), 293–315. <https://doi.org/10.1002/job.248>
- Schaufeli, W. B., & Bakker, A. B. (2010). Defining and Measuring Work Engagement: Bringing Clarity to the Concept. In *Work Engagement: A Handbook of Essential Theory and Research* (pp. 10–24). Psychology Press.
- Sekaran, U., & Bougie, R. (2016). *Research Methods for Business : A Skill-building Approach* (7th Editio). John Wiley & Sons.
- Sendawula, K., Nakyejwe Kimuli, S., Bananuka, J., & Najjemba Muganga, G. (2018). Training, Employee Engagement and Employee Performance: Evidence from Uganda's Health Sector. *Cogent Business & Management*, 5(1), 1–12. <https://doi.org/10.1080/23311975.2018.1470891>
- Seppälä, P., Ansio, H., Houni, P., & Hakanen, J. J. (2020). A Two-wave Quasi-Experimental Intervention Study of a Participatory Visual Art Intervention: Unexpected effects on Job Resources and Work Engagement. *Arts & Health*, 12(1), 38–52. <https://doi.org/10.1080/17533015.2018.1517370>
- Shi, W., Markoczy, L., & Dess, G. G. (2009). The Role of Middle Management in the Strategy Process: Group Affiliation, Structural Holes, and Tertius Iungens. *Journal of Management*, 35(6), 1453–1480. <https://doi.org/10.1177/0149206309346338>
- Shim, D. C., Park, H. H., Keum, J., & Kim, S. (2020). Street-Level Bureaucrats' Work Engagement: Can Public Managers' Servant-Leader Orientation Make a Difference? *Public Personnel Management*. <https://doi.org/10.1177/0091026020941043>
- Stofkova, Z., & Sukalova, V. (2020). Sustainable Development of Human Resources in Globalization Period. *Sustainability*, 12(18), 1–14. <https://doi.org/10.3390/su12187681>
- Sukoco, B. M., Lestari, Y. D., Susanto, E., Nasution, R. A., & Usman, I. (2022). Middle Manager Capabilities and Organisational Performance: The mediating Effect of Organisational Capacity for Change. *International Journal of Productivity and Performance Management*, 12(1), 1–20. <https://doi.org/10.1108/IJPPM-07-2019-0364>
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics* (5th ed.). Allyn & Bacon/Pearson Education.
- Tamta, V., & Rao, M. K. (2017). Linking Emotional Intelligence to Knowledge Sharing Behaviour: Organisational Justice and Work Engagement as Mediators. *Global Business Review*, 18(6), 1580–1596. <https://doi.org/10.1177/0972150917713087>
- Tao, W., Lee, Y., Sun, R., Li, J.-Y., & He, M. (2022). Enhancing Employee Engagement via Leaders' Motivational Language in times of crisis: Perspectives from the COVID-19 outbreak. *Public Relations Review*, 48(1), 102133. <https://doi.org/10.1016/j.pubrev.2021.102133>
- Watkins, M. W. (2018). Exploratory Factor Analysis: A Guide to Best Practice. *Journal of Black Psychology*, 44(3), 219–246. <https://doi.org/10.1177/0095798418771807>
- Zainudin Awang, Afthanorhan, A., & Mamat, M. (2016). The Likert Scale Analysis using Parametric Based Structural Equation Modeling (SEM). *Computational Methods in Social Sciences*, 4(1), 13–21. <https://doi.org/10.5281/zenodo.1299429>
- Zeeshan, S., Ng, S. I., Ho, J. A., & Jantan, A. H. (2021). Assessing the Impact of Servant Leadership on Employee Engagement through the mediating role of Self-efficacy in the Pakistani Banking Sector. *Cogent Business & Management*, 8(1), 1–19. <https://doi.org/10.1080/23311975.2021.1963029>



© 2023 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

## APPENDIX (MENTIONED ON PAGE 107)

Authors including an appendix section should do so after References section. Multiple appendices should all have headings in the style used above. They will automatically be ordered A, B, C etc.

### A. Work engagement construct

English Language		Malay Language (Translation Version)
i.	Sometimes I am so into my job that I lose track of time.	<i>Kadangkala saya begitu asyik dengan kerja saya sehingga kehilangan jejak masa.</i>
ii.	This job is all consuming and I am totally into it.	<i>Pekerjaan ini menuntut keseluruhan tumpuan saya dan saya benar-benar meminatinya.</i>
iii.	I am highly engaged in this job by my Head of Department and colleagues.	<i>Saya sangat terlibat dalam kerja ini hasil sokongan Ketua Jabatan dan rakan sekerja saya.</i>
iv.	I am highly engaged in this Department.	<i>Saya sangat terlibat dalam jabatan ini.</i>

## About the Authors

*Mohamad Nasaruddin Mahdzir, PhD*, is Deputy Registrar in the Department of Administration and Human Resource, Faculty of Health Science at MARA University of Technology (UiTM). His primary research interests include leadership, human resource development, hospital management, and health economics. He has published extensively on these topics in journals such as the *International Journal of Professional Business Review*, *Neuroquantology*, *Malaysian Journal of Public Health Medicine*, *BMC Public Health*, *International Journal of Public Health Research*, and *Advances in Business Research International Journal*. He can be contacted via email at [mnasaruddin@uitm.edu.my](mailto:mnasaruddin@uitm.edu.my).

*Rohayu Abdul Ghani, PhD*, is an Associate Professor at the Centre for Value Creation and Human Well-being Studies (INSAN), Faculty of Economics and Management, National University of Malaysia (UKM). Her primary research interests include expatriation management, work–life balance, and human resource management. She has published extensively in journals such as the *International Journal of Human Resource Management*, *Jurnal Pengurusan*, *International Journal of Professional Business Review*, *Neuroquantology*, and *Advanced Science Letters*. She can be contacted via email at [rohayu@ukm.edu.my](mailto:rohayu@ukm.edu.my).

*Zaleha Yazid, PhD*, is an Associate Professor at the Centre for Value Creation and Human Well-being Studies (INSAN), Faculty of Economics and Management, National University of Malaysia (UKM). Her

primary research interests include organizational management, leadership, project team dynamics, and qualitative research approaches. She has published extensively in journals such as *PLOS ONE*, *SAGE Open*, *Sustainable Production and Consumption*, *Issues in Educational Research*, *International Journal of Professional Business Review*, and *Jurnal Pengurusan*. She can be contacted via email at leyha@ukm.edu.my.