The Validation of Measurement Model for Academics' Job performance: A Confirmatory Factor Analysis

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Abstract

Higher education is a critical component of societies' 'absorptive capacity,' the extent to which new knowledge is accessed, comprehended, and applied, and a critical way of achieving the goal of making a nation more innovative. In order to effectively teach the future generation of thinkers, academics' motivation, commitment, and performance are critical concepts to explore and improve. Quality of work-life (QWL) has become vital for promoting positive job-related outcomes among academics. Drawing on Maslow's Need Theory, this study uses Pooled Confirmatory Factor Analysis (CFA) to validate an integrated measurement model for academics' QWL, organizational commitment (OC), and job performance (JP). Additionally, this is a novel investigation of OC as a mediator in the relationship between QWL and JP among Malaysian academics. A self-administered questionnaire was used to collect data, and IBM SPSS AMOS version 21.0 was employed to analyze a sample of 387 academics working with Malaysia's five research universities (RUs). The CFA results indicate that Unidimensionality (factor loadings greater than 0.60), Validity (RMSEA = 0.066, CFI = 0.919, TLI = 0.906, and ChiSq/df = 2.526, AVE values greater than 0.50), and Reliability (CR values higher than 0.70) for all constructs met acceptable levels of acceptance. Additionally, the dataset's normality assessment was established (skewness values range from -1.355 to -0.392). Consequently, the results establish the validity of the measurement model and the reliability of the indicators used to assess the constructs. This study raises awareness of the crucial QWL components that boost academics' commitment and performance at work. These findings are expected to spur future research into the mediating role of OC in the interaction between QWL and JP among academics and have practical and theoretical ramifications.

Keywords: Academics, Job Performance, Quality of Work-life, Organizational Commitment, Confirmatory Factor Analysis, IBM SPSS AMOS

Introduction

Employers are constantly focused on enhancing employees' JP (Zahra & Kee, 2019), as staff are critical stakeholders in developing and maintaining an organization's human and social capital (Davidescu et al., 2020). Thus, employee performance is the primary determinant of a firm's ability to achieve its objectives, and each employee must contribute to the vision and mission of the organization. The term

"performance" focuses on the results of the employees' conduct, which are determined by their expertise and abilities (Dahkoul, 2018). In the education sector, university academics are the primary resource in institutions of higher learning (IHLs) and are critical to the institution's success (Alfagira et al., 2017). The labor market is ever-changing, and academics play an important role in developing exceptional graduates.

Academics are important forces in the knowledge society due to their traditional roles as educators and knowledge creators (Milledzi et al., 2018). The growth of the knowledge-based economy (KBE) emphasizes the critical role of education in developing productive workforces (Phale et al., 2021), which requires highly motivated and committed academics to produce the greatest benefits to society through teaching, supervision, research, and innovation. Therefore, it is critical for stakeholders wishing to influence universities' role in the knowledge society to grasp the factors that motivate and commit academics in their daily work lives.

Upon reviewing previous research on academics' JP, it was revealed that several authors had examined various predictors of JP among academics in IHLs, including e-learning and development (Hassan et al., 2020), emotional intelligence, organizational trust, and job satisfaction (Li et al., 2018), human resource management (HRM) practices (Manzoor et al., 2019), QWL (Mohammadi & Karupiah, 2019), and OC (Tolentino, 2013). As a result, this research focuses on the QWL and OC constructs due to scholars' limited attention studying the determinants of JP among academics in Malaysia (Ehido et al., 2019, 2020; Khairunneezam et al., 2017).

Recently, a substantial body of literature has emphasized the significance of QWL as a predictor of OC (Adikoeswanto et al., 2020) and JP (Leitão et al., 2019), contending that employees with greater levels of QWL are more likely to perform better. According to Pandey and Tripathi (2018), QWL is linked to job satisfaction, engagement, efficiency, healthcare, job security, safety, and well-being, and consists of four important components: a safe and healthy working environment; occupational health and safety; appropriate work time; and acceptable compensation. The concept of QWL has a strong foundation in Maslow's Need Theory (Maslow, 1954). By elucidating the various stages of human aspirations and contentment, the theory stresses the complexity of humanness. Maslow's theory is referred to as the need hierarchy theory. As the name implies, these needs are ordered hierarchically. Priority is given to lower-order necessities, followed by higher-order necessities. According to Maslow's motivational theory of needs hierarchy, the needs for satisfaction are identical to those of the components of QWL. As per Wong and Low (2018), Maslow's hierarchy has been deemed extremely valuable in establishing a motivating framework that will inspire younger employees to perform their responsibilities with passion and to the best of their abilities to accomplish organizational goals.

Thakur and Sharma (2019) conducted an empirical study and discovered a positive and significant relationship between QWL and the overall job performance of employees. Additionally, Acheampong et al. (2016) and Nayak and Sahoo (2015) discovered that OC partially mediates the relationship between QWL and JP and that the work environment has a major effect on employee OC and hence JP. Additionally, it was suggested that enhancing an organization's QWL could result in higher work satisfaction, OC, and JP (Al-Otaibi, 2020; Vadivel & Ramaswamy, 2017). To

improve employee OC and hence JP, managers should focus on addressing different dimensions of QWL (Yadav et al., 2019).

Despite the overwhelming effect of QWL on employee OC and JP, to our knowledge, no study has validated the academics' QWL, OC, and JP measurements in a single model using the Pooled CFA procedure. CFA is a technique for determining if the number of factors or constructs and the observed indicator variables' loadings follow theoretical predictions (Malhotra et al., 2007). The CFA procedure examines and determines the overall quality of the latent constructs' measurement model, which is required prior to modeling their interrelationship in a Structural Equation Modeling (SEM) for testing the hypothesis of the study (Awang et al., 2018; Mohamad et al., 2019). CFA is used to access the study constructs' unidimensionality, validity, and reliability (Awang, 2015). Thus, this study aims to validate the measurement model for the academics' JP. This research is expected to contribute to the literature by establishing a valid and reliable performance measurement model for academics that incorporates QWL as an exogenous construct and OC as a mediator and encouraging future researchers to employ similar measurements for academics' performance studies. Understanding the role of OC in the relationship between QWL and JP will be of significant interest to the academics and IHLs. Following this need, the current investigation is especially pertinent, given the absence of empirical evidence that OC acts as a mediator in the interaction above in the Malaysian context. For instance, a few of the limited attempts were undertaken in Ghana with a sample of 50 academic staff members at the university of education, Kumasi campus (Acheampong et al., 2016) and in India with 205 private health care professionals (Nayak & Sahoo, 2015). As a result, this study will generate the indicator variables using

well-established quantitative methodologies to ensure accuracy and narrow the research gap on the issues mentioned above.

The remainder of the inquiry is arranged as follows. The next section presents the research methodology, followed by data analysis, discussion, conclusion, and implications. Finally, the limitations and future research directions were presented.

Methodology

Sample and Demographics

The research methodology was established using structured questionnaires designed to consider the academics (senior lecturers, associate professors, and professors) from the five Malaysian public RUs. The survey was carried out in two phases. Phase 1 data collection occurred from the second week of January to the first week of March 2020, prior to Malaysia's first COVID-19 pandemic lockdown. Phase 2 of the data collection was conducted online using Google Forms, and a link to the questionnaire was sent to the academics' email addresses to solicit their responses. This phase took longer to complete, lasting from the fourth week of March to the third week of July 2020. Respondents were asked to rate their level of agreement with a set of questions for each construct under investigation using Likert scales ranging from 1 – strongly disagree to 5 – strongly agree. With a population (N) of 11 894, the study used 387 samples to represent the target population adequately.

The representative samples of certain subgroups of academic ranking in the RUs were defined using a stratified random sampling technique. Additionally, this study used a systematic sampling technique to choose the sample in each population strata, randomly selecting the first individual and then selecting every second individual in each population strata. Based on the 387 acceptable responses obtained, participants were 42.1 percent male and 57.9

percent female. Academics' ages ranged from 30-34 years (35.4%), 35-39 years (13.4%), 40-44 years (27.1%), 45-49 years (8.8%), 50-54 years (10.6%), 55-59 years (2.6%), to over 60 years (2.1%). The majority of respondents, 281, were married (72.6%), 104 (26.9%) were single, and only two (0.5%) were divorced. A total of 55 (26.9%) respondents held a Master's degree, whereas 329 (85%) possessed a Ph.D. Only three people (0.8%) held a DBA (Doctor of Business Administration) degree. A total of 250 (64.6%) respondents were senior lecturers, followed by 91 (23.5%) associate professors and only 46 (11.9%) professors.

The study's primary objective is to validate the QWL, OC, and JP measurements for academics in the five Malaysian RUs. The degree of uniqueness, in this case, is due to the detailed assessment of academics' QWL, OC, and JP components utilizing the CFA technique.

Measurements and Procedure

This study utilized the QWL, OC, and JP instruments adapted by Ehido et al. (2020a, 2020b), obtained from reliable sources. This inquiry conducted a pilot study, an Exploratory Factor Analysis (EFA), on data from 100 academics in two RUs to create reliable and accurate measures for the constructs. The EFA approach determines the usefulness of each indicator variable through factor loading and dimensionality of the indicator variables using the rotated component matrix (Bahkia et al., 2019; Hoque & Awang, 2019).

The pilot study data were utilized to refine items in the questionnaire in order to improve its quality. The constructs' internal consistency measures were computed, and the findings are summarized in Table 1.

Table 1
EFA result for study constructs

Construct	Component	No of Items	Kaier-Meyer-Olkin (KMO) > 0.60 (Bahkia et al.,2019)	Cronbach's Alpha> 0.70 (Rovai et al., 2014)
QWL	Job Stress (JS)	12	0.907	0.940
	Fair Compensation (FC)	9		0.905
	Physical Work Environment (PWE)	8		0.801
	Perceived Organizational Support (POS)	3		0.752
OC	Continuance Commitment (CC)	8	0.846	0.927
	Affective Commitment (AC)	3		0.903
	Normative Commitment (NC)	2		0.768
JP	Supervision and Services (SS)	7	0.878	0.903
	Research and Innovation (RI)	2		0.734

The outcome of the EFA procedures on the study constructs is depicted in Figure 1. As illustrated in the Figure, the study framework consists of three second-order constructs and nine first-order constructs represented as components. They are all considered latent constructs because they cannot be observed directly and thus cannot be measured directly without capturing the indicator variables that represent the constructs.

Figure 1
The framework showing the direction of hypotheses after EFA
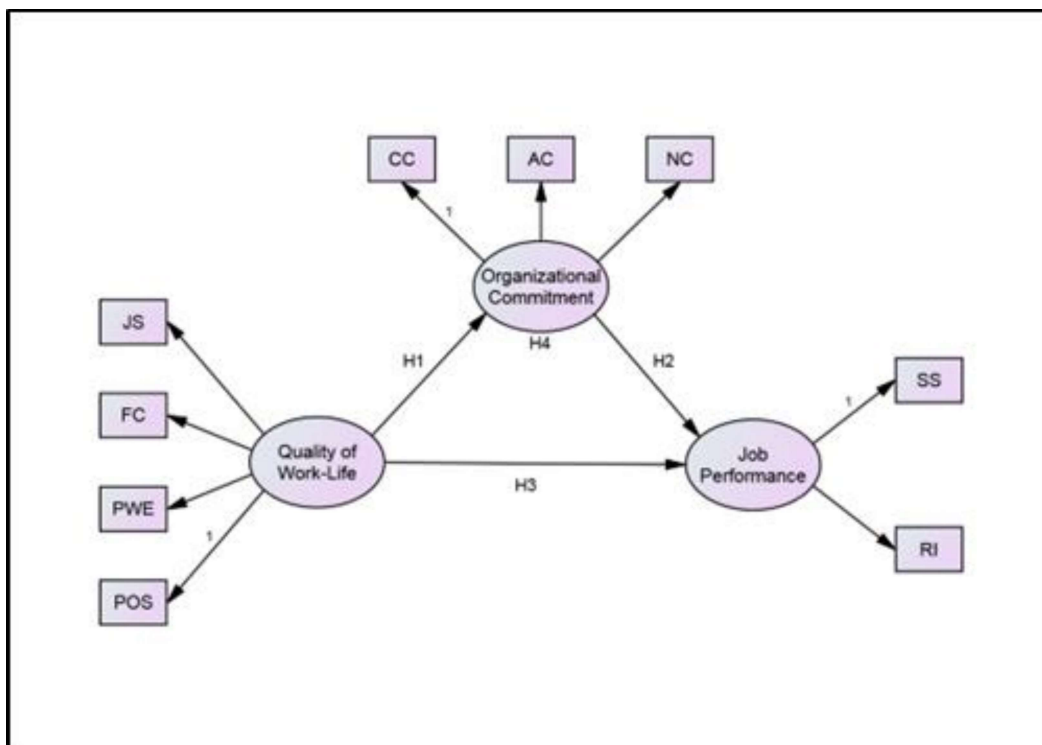
Data Analysis

The collected data from the field study were analyzed using IBM SPSS version 21.0 and IBM SPSS AMOS version 21.0 for descriptive statistical analysis and CFA.

Descriptive Statistics

As shown in Table 2, the mean and standard deviation values for the research constructs were obtained.

The mean indicates the average value for each construct, which spans between 3.39 and 3.74. The standard deviations for all constructs range between 0.62 and 0.91, indicating that the respondents' responses were reliable. Skewness values ranging from -1.038 to -0.296 suggest that only a small proportion of respondents reported experiencing low QWL, OC, or JP levels.

Table 2
Descriptive statistics

Descriptive Statistics	Quality of work-life (QWL)	Organizational Commitment (OC)	Job Performance (JP)
Mean	3.45	3.74	3.39
Std. Deviation	0.81	0.62	0.91
skewness	-1.038	-0.806	-0.296

Confirmatory Factor Analysis (CFA)

Before modeling the structural model to assess the study hypothesis, it is required to confirm all measurement models of latent constructs for unidimensionality, validity, and reliability. This technique is referred to as CFA (Afthanorhan et al., 2019, 2020). According to Asnawi et al., (2019) and Awang (2015), convergent validity, construct validity, and discriminant validity are required for latent constructs' measurement model. Convergent validity is measured using the average variance extracted (AVE), construct validity is evaluated using the fitness indices for the measurement model, and discriminant validity is determined by creating a summary of the discriminant validity index.

The study must calculate composite reliability (CR) as a substitute for the standard method of obtaining the Cronbach Alpha for analysis utilizing SEM (Mohamad et al., 2016; Yusof et al., 2017). When the fitness indices fall into one of the three model fit categories shown in Table 3, the latent construct is valid (Awang, 2015; Kashif et al., 2016).

Table 3
The three categories of model fit and their level of acceptance

| Name of category	Name of Index	Full Name	Level of Acceptance
Absolute Fit Index	RMSEA	Root Mean Square Error of Approximation.	RMSEA < 0.08
	GFI	Goodness of Fit Index	GFI > 0.90
Incremental Fit Index	AGFI	Adjusted Goodness of Fit Index	AGFI > 0.90
	CFI	Comparative Fit Index	CFI > 0.90
	IFI	Incremental Fit Index	IFI > 0.90
	TLI	Tucker-Lewis Index	TLI > 0.90
	NFI	Normed Fit Index	NFI > 0.90
Parsimonious Fit Index	Chisq/df	Chi Square/Degree of Freedom	Chi-Square/df < 3.0

Note. ***The indices in **bold** are suggested since they are commonly stated in the literature.
Source: Awang (2015) and Awang et al. (2018).

The Pooled Confirmatory Factor Analysis (CFA)

Due to the possibility of fitting the model in Figure 1 into a single measurement model, this study chose to validate all constructs simultaneously in Figure 2 using the Pooled CFA technique (Awang et al., 2018). The final result of the Pooled CFA is depicted in Figure 3, following the elimination of a few irrelevant indicators to achieve the required level of fitness indices for the measurement model.

Figure 2
The initial (original) measurement model of Quality of Work-Life
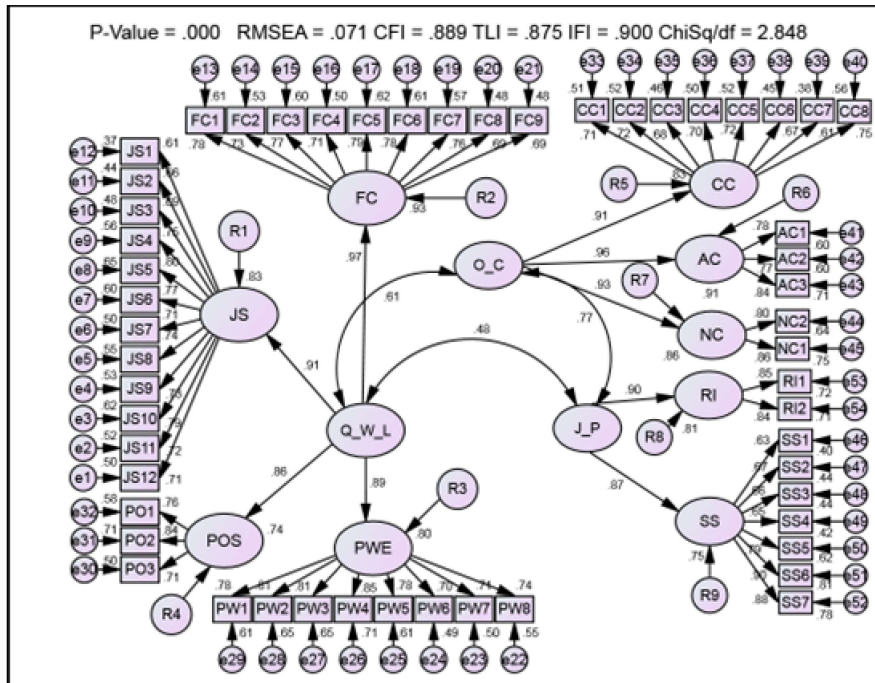
Figure 3
The final measurement model for Quality of Work-Life
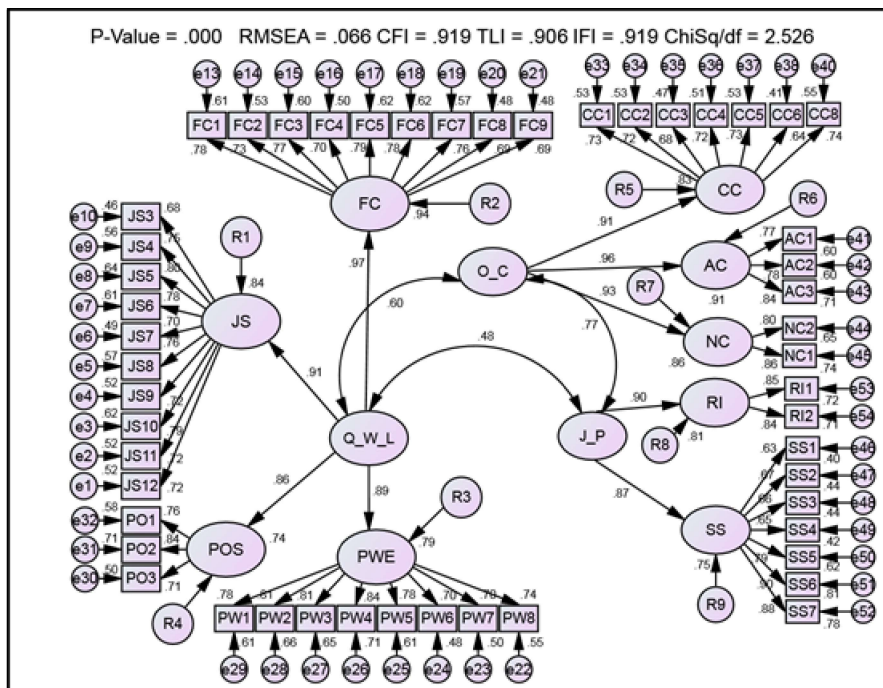
As illustrated in Figure 3, the final model includes all components and indicator variables with factor loadings greater than 0.60 and fewer significant indicators than the original model. The unidimensionality method was used to eliminate a few indicators, and the evaluation of fitness was considered a requirement for a measurement model to achieve the best fit for subsequent analyses.

Additionally, Figure 3 presented the standardized estimates for all of the study's components and indicators. The factor loadings of QWL on the four components are (JS = 0.91, FC = 0.97, PWE = 0.89, and POS = 0.86),

respectively, and all components have a high coefficient of determination (R^2) (0.84, 0.94, 0.79, and 0.74). For OC, the three components similarly have high factor loadings of (CC = 0.91, AC = 0.96, and NC = 0.93), respectively, with R^2 values of 0.83, 0.91, and 0.86. Furthermore, the two components of the JP factor loadings are (SS = 0.87 and RI = 0.90), respectively, with R^2 values of 0.75 and 0.81. These numbers imply that the second-order constructs loaded well on their sub-constructs and contributed significantly to their variance explanation. As a result, the concept of QWL having four components, OC having three components, and JP having two components is strongly supported.

Construct Validity

Table 4
Fitness of measurement model

Name of category	Name of Index	Observed Value	Threshold Value	Comment
Absolute Fit Index	RMSEA	0.066	< 0.08	Required Level Achieved
Incremental Fit Index	TLI	0.906	> 0.90	Required Level Achieved
	CFI	0.919	> 0.90	Required Level Achieved
	IFI	0.919	> 0.90	Required Level Achieved
Parsimonious Fit Index	Chisq/df	2.526	Chi-Square/df < 3.0	Required Level Achieved

The model fit indices are shown in Figure 4, which included all of the study model's first and second-order constructs, which were satisfactory (Chi-Square/df = 2.526, RMSEA = 0.066, TLI = 0.906, CFI = 0.919, IFI = 0.919). All values obtained fulfilled the requirements for model fit indices (see Table 4). Thus, the measurement model for the QWL, OC, and JP constructs satisfies the construct validity criteria (Awang et al., 2018; Awang, 2015).

Convergent Validity and Composite Reliability

Convergent validity describes the degree to which indicator variables are connected in determining a particular construct. It is determined by examining the standardized estimates of the indicator variables, the Composite Reliability (CR) and the Average Variance Extracted (AVE). The AVE measures the variance captured by a construct compared to the variance attributable to measurement error (Fornell & Larcker, 1981), and the score should be greater than 0.50 (Afthanorhan et al., 2019; Awang et al., 2018). CR is the square of

the total of the standardized estimates plus the summation of the error variables, and its value should be greater than 0.70, as indicated by Peterson and Kim (2013), and greater than 0.60 by Awang (2015) and Shkeer and Awang (2019). Table 5 contains data derived from the Pooled CFA outputs shown in Figure 3. As presented in Table 5, each indicator variable loaded strongly on the specific construct, with standardized estimates greater than 0.60. The AVE and CR values for all latent constructs were also higher than the cut-off values.

Table 5
Measurement model results

Construct	Measurement Item	Factor Loading	CR (above 0.60)	AVE (above 0.50)
Quality of Work-Life (QWL)	JS	0.915	0.950	0.827
	FC	0.968		
	PWE	0.891		
	POS	0.860		
JS	JS3	0.676	0.925	0.551
	JS4	0.748		
	JS5	0.800		
	JS6	0.778		
	JS7	0.703		
	JS8	0.757		
	JS9	0.722		
	JS10	0.790		
	JS11	0.719		
	JS12	0.723		
FC	FC1	0.783	0.918	0.556
	FC2	0.729		
	FC3	0.774		
	FC4	0.705		
	FC5	0.785		
	FC6	0.785		
	FC7	0.757		
	FC8	0.690		
	FC9	0.691		
PWE	PW1	0.779	0.922	0.597
	PW2	0.810		
	PW3	0.809		
	PW4	0.845		
	PW5	0.782		
	PW6	0.696		
	PW7	0.705		
	PW8	0.740		
POS	PO1	0.763	0.816	0.597
	PO2	0.840		
	PO3	0.710		
Organizational Commitment (OC)	CC	0.908	0.951	0.867
	AC	0.955		
	NC	0.929		
CC	CC1	0.726	0.876	0.502
	CC2	0.725		
	CC3	0.683		
	CC4	0.716		
	CC5	0.727		

	CC6	0.639		
	CC8	0.740		
AC	AC1	0.773	0.840	0.637
	AC2	0.775		
	AC3	0.844		
NC	NC1	0.804	0.819	0.694
	NC2	0.861		
Job Performance (JP)	SS	0.866	0.876	0.779
	RI	0.900		
SS	SS1	0.633	0.897	0.558
	SS2	0.665		
	SS3	0.661		
	SS4	0.646		
	SS5	0.785		
	SS6	0.903		
	SS7	0.883		
RI	RI1	0.850	0.833	0.714
	RI2	0.840		

Discriminant Validity

The discriminant validity of a construct reflects how significantly distinct it is from other constructs. It is determined by comparing the variances shared by the constructs with the square root of the AVE of a particular construct. The study constructs must not be highly correlated. Thus, correlations between exogenous constructs should be less than 0.85 to achieve the required level (Afthanorhan et al., 2019; Awang, 2015; Shau, 2017). Correlation values greater than 0.85 indicate that the two exogenous constructs are redundant or suffer from severe multicollinearity (Awang, 2015). Table 6 illustrates that the discriminant validity values of the constructs (in bold) are greater than their shared correlation, indicating each construct's uniqueness.

Table 6
The discriminant validity index summary

Construct	Quality of work-life	Organizational Commitment	Job Performance
Quality of Work-Life	**0.909**		
Organizational Commitment	0.602	**0.931**	
Job Performance	0.482	0.774	**0.883**

Assessment of Normality

According to Awang et al. (2018) and Yusof et al. (2017), the study only needs to demonstrate that the skewness values for all indicators do not deviate from normality and that the skewness values should be within the range of ±1.5. As a result, all indicators in this study passed the normality test, with skewness values ranging from -1.355 to -0.392. (Table 7)

Table 7
Assessment of Normality

Variable	min	max	skew	c.r.	kurtosis	c.r.
SS7	1.000	5.000	-1.127	-9.053	1.411	5.665
SS6	1.000	5.000	-1.008	-8.095	1.033	4.150
SS5	1.000	5.000	-.839	-6.739	.865	3.475
SS4	1.000	5.000	-.682	-5.478	.582	2.339
SS3	1.000	5.000	-.666	-5.352	.143	.576
SS2	1.000	5.000	-.710	-5.703	.087	.348
SS1	1.000	5.000	-1.134	-9.107	1.125	4.518
AC3	1.000	5.000	-1.182	-9.489	1.905	7.650
AC2	1.000	5.000	-.837	-6.723	.967	3.883
AC1	1.000	5.000	-.571	-4.588	.326	1.307
CC8	1.000	5.000	-.905	-7.266	1.270	5.100
CC6	1.000	5.000	-.817	-6.558	.969	3.890
CC5	2.000	5.000	-1.082	-8.687	.436	1.750
CC4	2.000	5.000	-.713	-5.730	-.072	-.289
CC3	2.000	5.000	-.392	-3.151	-.852	-3.420
CC2	1.000	5.000	-.505	-4.057	.236	.946
CC1	2.000	5.000	-.653	-5.244	.040	.160
RI2	1.000	5.000	-1.113	-8.937	1.425	5.723
RI1	1.000	5.000	-.902	-7.243	1.189	4.773
NC1	1.000	5.000	-1.023	-8.217	1.657	6.654
NC2	1.000	5.000	-1.325	-10.639	1.932	7.757
PO1	2.000	5.000	-.723	-5.807	.087	.348
PO2	2.000	5.000	-.612	-4.917	-.113	-.454
PO3	2.000	5.000	-.568	-4.559	-.360	-1.444
PW1	1.000	5.000	-.520	-4.175	.041	.165
PW2	2.000	5.000	-.655	-5.260	-.020	-.081
PW3	2.000	5.000	-.828	-6.650	.487	1.957
PW4	2.000	5.000	-.650	-5.222	-.267	-1.071
PW5	2.000	5.000	-.865	-6.945	.374	1.500
PW6	1.000	5.000	-.931	-7.479	1.078	4.327
PW7	1.000	5.000	-.918	-7.372	.859	3.450
PW8	2.000	5.000	-.586	-4.705	-.145	-.581
FC9	1.000	5.000	-.871	-6.997	1.070	4.298
FC8	2.000	5.000	-.539	-4.327	-.087	-.349
FC7	2.000	5.000	-.995	-7.994	.418	1.680
FC6	1.000	5.000	-.804	-6.459	.365	1.465
FC5	1.000	5.000	-.802	-6.444	.458	1.839
FC4	1.000	5.000	-.535	-4.296	.206	.827
FC3	1.000	5.000	-.868	-6.968	.794	3.188
FC2	1.000	5.000	-.991	-7.957	.974	3.913
FC1	1.000	5.000	-.966	-7.756	.908	3.646
JS3	1.000	5.000	-.871	-6.996	.592	2.378
JS4	1.000	5.000	-.983	-7.898	.474	1.904
JS5	1.000	5.000	-.854	-6.861	.466	1.872
JS6	1.000	5.000	-.893	-7.171	.912	3.664

JS7	1.000	5.000	-.821	-6.594	.523	2.101
JS8	1.000	5.000	-1.355	-10.881	2.154	8.650
JS9	1.000	5.000	-.976	-7.841	1.130	4.538
JS10	1.000	5.000	-.972	-7.805	1.151	4.620
JS11	1.000	5.000	-1.081	-8.681	1.279	5.136
JS12	1.000	5.000	-1.030	-8.274	1.703	6.840
Multivariate					832.843	111.417

Discussion and Conclusion

The analysis of data collected from academics working with five Malaysian RUs revealed important information about their QWL, OC, and JP and the robustness of the measurement model incorporating the three constructs. Furthermore, the study evaluated the entire measurement model's validity and reliability using Pooled CFA, which was the primary reason for this investigation. The preliminary assessment established that the mean values for all study constructs were between 3.39 and 3.74 (moderate to high level). As a result, most academics agreed to have a moderate to a high level of QWL and JP. Simultaneously, a greater proportion of academics considered their OC to be high. As a result, the IHLs highly value academics' QWL, which promotes OC and enhanced JP.

The outcome of this research adds to the body of knowledge in the literature by facilitating academics' deep understanding of valid measurements of QWL, OC, and JP. The Pooled CFA approach evaluated the unidimensionality, validity, and reliability of all constructs and the normality assessment of the indicator variables. The mandatory requirements for a measurement model to pass a CFA were met (Afthanorhan et al., 2018, 2019; Asnawi et al., 2019; Awang et al., 2018; Mishra, 2020; Mahadzirah Mohamad et al., 2019). The Pooled CFA results in Figure 3 demonstrated that the factor loading for each indicator variable is greater than 0.60, which satisfies the standard of acceptability for the measures' unidimensionality (Asnawi et al., 2019; Kashif et al., 2016; Majid et al., 2019). The outputs in Figure 3 indicated that the measurement model met the construct validity requirements (RMSEA = 0.066, CFI = 0.919, TLI = 0.906, and ChiSq/df = 2.526) (Awang et al., 2018; Awang, 2015; Yusof et al., 2017).

All of the CR values in Table 5 exceed 0.70, indicating an exceptionally high level of construct reliability (Asnawi et al., 2019; M Mohamad et al., 2016; Shkeer & Awang, 2019). As a result, the findings confirm that the variables used in this study are reliable, as they are extremely consistent in explaining variance among the constructs. Convergent validity was also attained, as none of the variables have an AVE value less than 0.50 (Afthanorhan et al., 2019; Awang et al., 2018; Mishra, 2020). Thus, it is sufficient to conclude that the model variables are reliable because the AVE values demonstrate that the indicators account for at least 50% or more of the variance in the observed constructs. As illustrated in Table 6, discriminant validity was achieved when the square root of the AVE for each construct exceeded its correlation value with other constructs, suggesting that the constructs are distinct from one another and do not exhibit multicollinearity (Awang et al., 2018; Awang et al., 2015; Mohamed & Ahmed, 2020; Shkeer & Awang, 2019). Finally, normality analysis showed that all indicators met the recommended skewness value of ±1.5. (Awang et al., 2018; Yusof et al., 2017).

Confirmation of the academics' performance model is expected to encourage scholars to continue exploring how the effect of QWL on JP can be strengthened through OC to promote positive work-related outcomes among the academics. Additionally, the IHLs' management understanding of the factors that motivate academics to perform at their best would enable them to adequately meet their needs for sustained active participation.

Theoretical and Practical Implications

This study makes significant theoretical and practical contributions by utilizing Maslow's hierarchy of needs theory to describe the complex phenomenon of academics' various levels of needs (e.g., QWL) that they are continually attempting to meet to perform optimally. This theory emphasizes the critical role of enhanced QWL in improving overall work motivation. Hernandez and Guarana (2018) revealed that a critical concept underlying work motivation is the view of the workplace as a location for meeting various needs (e.g., QWL): extrinsic needs such as income and prestige, and intrinsic needs like enjoyment and personal challenge. This view almost certainly strengthens the connection between employees' motivation to work and the workplace or the task itself, enhancing employees' participation (e.g., OC) and effort put into their work (e.g., JP). This study contributes to the literature by providing evidence through Pooled CFA that academics' JP can be explored using QWL and OC as predictors and confirming the overall measurement model using a professionally employed population, namely academics from Malaysian RUs.

The study focused on job stress, fair compensation, physical work environment and perceived organizational support as critical QWL components for academics' OC and JP enhancement. As such, this study aims to raise academics' understanding of these QWL components that promote their commitment to and performance at work.

This study draws attention to the critical role of OC as a mediator in the interaction between QWL and JP, which is important for the improvement of academics' JP. Organizations with highly committed personnel are perceived to have a higher rate of employee retention, lower absenteeism, and improved performance (Allen & Meyer, 1990; Naz et al., 2020).

Limitations and Further Research

Despite the considerable contribution to the literature in terms of developing valid and reliable measures of academics' QWL, OC, and JP, this study surprisingly did not examine any hypothesis to confirm the statistical influence of QWL on OC and JP or to assess the mediating effect of OC on the interaction between QWL and JP. The above could be justified, given that this study acts as a guide and preliminary examination for future empirical studies. Nonetheless, there is a considerable opportunity to improve QWL and OC to strengthen the academics' conduct and improve organizational performance.

The analysis's main shortcoming is that it is limited to academics in Malaysia's five RUs. In the future, it is suggested that a more in-depth investigation of the relationships between QWL, OC, and JP be conducted through a comparative analysis involving academics from comprehensive and private universities, as the organizational cultures of these institutions are quite different and could result in significantly different statistical results. Additionally, the responses to this inquiry were mainly the academics' subjective opinions. While subjective assessments derived from multi-item scales are generally consistent with objective measures, it appears reasonable to examine various alternative measures of academics' JP, which will require further investigation. As a result, this opens the door to future research attempts that incorporate both objective and subjective measures to assess possible differences in the associations established between QWL components, OC, and JP.

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Questionnaire

Please specify how strongly you agree or disagree with the following statements on a scale of 1 - Strongly Disagree (SD) to 5 - Strongly Agree (SA).

Section A: Academics' Job Performance

This section examines your responsibilities and contributions towards the university you are working with presently.

	i) Supervision and Services	SD				SA
1	I have a sufficient number of postgraduate students to supervise every semester	1	2	3	4	5
2	I have obtained external recognition for the works I supervised	1	2	3	4	5
3	I have successfully completed several research projects	1	2	3	4	5
4	I have published many academic papers in high impact journals	1	2	3	4	5
5	I have participated in workshops for sharing of information at the university's level	1	2	3	4	5
6	I have participated in several voluntary services	1	2	3	4	5
7	I have been appointed as a fellow of the advisory panel for higher learning establishment	1	2	3	4	5
	ii) Research and Innovation	SD				SA
8	I have been involved in different multi-disciplinary research	1	2	3	4	5
9	I have successfully collaborated with several other researchers	1	2	3	4	5

Section B: Quality of work-life

This section examines the overall quality of relationships between the employees, employers, and the work environment.

	i) Job Stress	SD				SA

1. There are many occasions my job makes me angry	1	2	3	4	5
2. Occasionally when I reflect on my career, I get chest tightness	1	2	3	4	5
3. I repeatedly get the feeling I am married to my job	1	2	3	4	5
4. I have very limited time to accomplish all my task	1	2	3	4	5
5. I have a sense of guilt when I take time away from my job	1	2	3	4	5

6. It feels like I am constantly working without any break	1	2	3	4	5
7. I am afraid sometimes when my phone rings at home because it might be a work-related call	1	2	3	4	5
8. Many people at my position in the institution experience mental exhaustion by workloads	1	2	3	4	5
9. I can retain my employment for as long as I desire to	1	2	3	4	5
10. It is difficult to have quality time with my family because of my job	1	2	3	4	5
11. I have very little time for other personal engagements	1	2	3	4	5
12. I have trouble attaining a state of steadiness in my career and personal events	1	2	3	4	5
ii) Fair Compensation	**SD**				**SA**
13. This job has retirement security	1	2	3	4	5
14. I receive adequate feedbacks from my supervisor to improve my proficiency	1	2	3	4	5
15. I can be certain of my employment provided I perform well	1	2	3	4	5
16. I receive more benefits than others employed by this university	1	2	3	4	5
17. I receive more benefits than other workers in my job type at this institution	1	2	3	4	5
18. I receive more benefits than others I know with comparable capabilities	1	2	3	4	5
19. I receive much more benefits than others in my age level	1	2	3	4	5
20. I receive much more benefits than my family members and friends	1	2	3	4	5
21. I receive much more benefits than what I require to see to my monetary desires	1	2	3	4	5
iii) Physical Work Environment	**SD**				**SA**
22. My job encompasses several responsibilities	1	2	3	4	5
23. People with more proficiency thoroughly direct me	1	2	3	4	5
24. My department is devoted to guaranteeing the protection of its workers	1	2	3	4	5

25. My place of work is free from unnecessary noise	1	2	3	4	5
26. I presently have decent stability between my work and personal undertakings	1	2	3	4	5
27. I have regular connection with others having vast experience in the same job field	1	2	3	4	5
28. The stability between my work and personal activities is just about right	1	2	3	4	5
29. Generally, I trust that my job and personal affairs are balanced	1	2	3	4	5

iv) Perceived Organizational Support	SD				SA
30. The institution values my contribution to its well-being	1	2	3	4	5
31. The institution cares about my overall fulfillment at work	1	2	3	4	5
32. The institution is proud of my achievements at work	1	2	3	4	5

Section C: Organizational Commitment

This section assesses the employees' attachment and degree of responsibility to an establishment and the costs of exiting.

i) Continuance Commitment	SD				SA
1. I do not feel any obligation to remain with the university	1	2	3	4	5
2. Even if it were to my advantage, I do not feel it would be right to leave	1	2	3	4	5
3. I would feel remorseful if I left this university now	1	2	3	4	5
4. This university deserves my devotion	1	2	3	4	5
5. Too much of my life will be disrupted if I leave	1	2	3	4	5
6. Staying with my job now is a matter of necessity	1	2	3	4	5
7. I believe I have very few alternatives to consider leaving this university	1	2	3	4	5
8. Available alternatives would be scarce elsewhere	1	2	3	4	5
ii) Affective Commitment	SD				SA
9. I feel as if this university's problems are my own	1	2	3	4	5
10. I do not feel like 'part of the family at this university	1	2	3	4	5
11. I do not feel a strong sense of attachment to this university	1	2	3	4	5
iii) Normative Commitment	SD				SA
12. I have a strong sense of obligation to this university	1	2	3	4	5
13. I owe a great deal to this university	1	2	3	4	5

Section D: Socio-demographic profile

1. Gender

☐ Male

☐ Female

2. Age

☐ Below 25 years   ☐ 35 – 39 years   ☐ 50 – 54 years

☐ 25 – 29 years   ☐ 40 – 44 years   ☐ 55 – 59 years

☐ 30 – 34 years   ☐ 45 – 49 years   ☐ Above 60 years

3. Marital status

☐ Single

☐ Married

☐ Divorced

☐ Widowed

4. Highest level of formal education

☐ Masters Degree

☐ PhD

☐ Others (please specify)............................

5. Current position (rank) in the academic ladder

☐ Senior Lecturer

☐ Associate Professor

☐ Professor

☐ Others (please specify)...........................