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# Establishing Valid and Reliable Measures for Organizational Commitment and Job Performance: An Exploratory Factor Analysis

**Amauche Ehido**[1*]
**Zainudin Awang**[2]
**Bahyah Abdul Halim**[3]
**Chukwuebuka Ibeabuchi**[4]

[1]*Doctoral Research Fellow, Faculty of Business and Management, Universiti Sultan Zainal Abidin (UniSZA), Malaysia.*
*Email: jehido@yahoo.com*
*Tel: 60169758456*
[2]*Professor, Faculty of Business and Management, Universiti Sultan Zainal Abidin (UniSZA), Malaysia.*
*Email: zainudinawang@unisza.edu.my*
*Tel: 6096688267*
[3]*Senior Lecturer, Faculty of Business and Management, Universiti Sultan Zainal Abidin (UniSZA), Malaysia.*
*Email: bahyahahalim@unisza.edu.my*
*Tel: 6096688280*
[4]*School of International Studies, College of Law, Government and International Studies, Universiti Utara Malaysia, Kedah Darul Aman, Malaysia.*
*Email: chukwuebuka@celegant.com.ng*
*Tel: 60163064637*



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*(* Corresponding Author)*

## Abstract

*The sustainability of organizations is increasingly reliant on the involvement, loyalty, and, more importantly, the commitment of their employees. Organizational commitment (OC) is extensively studied in management literature as a predictor of employees' job performance (JP). Several studies discovered a positive correlation between OC and JP among employees. However, most of these studies failed to conduct preliminary analyses on the measuring instruments for the above constructs to determine their appropriateness for other detailed analyses. Therefore, this study responded to the call by conducting a comprehensive Exploratory Factor Analysis (EFA) procedure to develop an effective instrument to measure OC and JP constructs. This study was based on a cross-sectional research design involving 100 randomly selected academics from five Malaysian research universities, and data was obtained using a structured self-administered questionnaire. The validity and reliability of the OC and JP instruments were established using EFA and reliability analysis. The results revealed that the 18 items measuring OC construct were grouped into four components, 1 item with factor loading below .6 was deleted, and 17 items were retained. The 13 items measuring the JP construct were grouped into two components, 1 item was also deleted for the same reason, and 12 items were retained for further analysis. All the components have high internal reliabilities (Cronbach's Alpha > .785). Consequently, this study contributes to an improved understanding of the dimensions of OC among academics. The universities' management should develop strategies to enhance the degree of employees' commitment and efforts towards the organization.*

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## 1. Introduction

The achievement or low performance of a company is firmly identified with the motivation and commitment of its workers (Redmond & Alderton, 2016). The motivation of workers is usually the result of their commitment to their profession. The degree to which a worker participates in his or her job (job involvement), pledges to and trusts in the establishment's objectives and principle (organizational commitment), and commits to a particular profession can have a collective effect on a company. Because of the considerable effect on job attitudes such as job satisfaction, employee turnover, job performance, and employee absenteeism, the organizational commitment has become the focal point of consideration for several research studies (Akhtar, Durrani, & Waseef-ul-Hassan., 2015).

Organizational commitment (OC) is essential for establishments that have an aspiration to enjoy the continuous contributions of skillful workers (Dinc, 2017). OC exemplifies the extent to which workers relate with their employer (Fu & Deshpande, 2014). The existing literature (Grego-Planer, 2019; Manap, 2017; Stinglhamber et al., 2015) suggest that workers with high OC feel connected to and relate to their organization and, along these lines, are happy to utilize significant effort in the interest of the organization. OC has been associated with important employee outcomes, for example, job performance (e.g., (Kim, Shin, Vough, Hewlin, & Vandenberghe, 2018; Sungu, Weng, & Xu, 2019)) job satisfaction (Dinc, 2017; Luz, Paula, & Oliveira, 2018) and turnover and absenteeism (e.g., (Ali, Zhong Bin, Jian Ping, Ali, & Sultan, 2018; Woods, Poole, & Zibarras, 2012)). The call for this study is on OC and job performance (JP). For that reason, JP is the result of activities with the expertise of employees who perform in some circumstances (Ihionkhan & Itua, 2018). Suharto and Hendri (2019) in their study, confirmed that OC could enhance workers' job performance and promote general organizational effectiveness. Folorunso, Adewale, and Abodunde (2014) state that improved performance is the key to the attainment of organizational objectives. Therefore, increased effort is needed to improve the employees' job performance.

Although there are plenty of studies that have investigated employees' OC and JP, literature focusing on the established validated and reliable measures of OC and job performance are somewhat limited. Several past studies adopted and adapted the widely known instruments established by (Allen & Meyer, 1990; Meyer & Allen, 1997) measuring the three dimensions of OC and applied directly in their studies without any form of preliminary analysis to ascertain that all the items are deemed appropriate for further analysis (Batugal & Tindowen, 2019; Dinc, 2017; Folorunso et al., 2014; Metin & Kaplan, 2018; Nazem & Mozaiini, 2014; Princy & Rebeka, 2019). Additionally, the commonly employed measures of JP (task performance, adaptive performance, contextual performance, and counterproductive work conduct) are significantly different from the identified measures of academics' job performance (teaching and supervision, research and innovation, writing, and publication, consultancy, and service). In this study, the above measures of academics' job performance were based on study findings by Ishak, Suhaida, and Yuzainee (2009) and were considered for the data collection and analysis. Their study was conducted using the academicians in Malaysian private higher education as the sampling frame to develop key performance indicators to measure the performance of academics. Hence, there is a great need to validate the instruments mentioned above.

This study aims to carry out an exploratory factor analysis (EFA) and reliability analysis to establish validated and reliable measures for both OC and JP among academics in the Malaysian research universities. The success of the education sector depends on the involvement, efforts, and contributions of the academics, and their professional capabilities (Ehido, Halim, & Awang, 2019). Consequently, improving the performance of academics through OC is crucial to any country's socioeconomic and political development because the academics are charged with the responsibility of ensuring that knowledgeable individuals in different disciplines are developed for the smooth running of any economy.

## 2. Literature Review

### *2.1. Organizational Commitment (OC)*

Lamba and Choudhary (2013) described OC as a psychological condition that characterizes a workers' relationship with the establishment and has implications for their choice to proceed with participation, feelings of commitment to remain with where both their interests and organizational objectives are progressively incorporated for contribution to the organizational well-being. OC is a situation of identification with a specific establishment and its objectives by an employee who wants to remain its contributor (Khan & Jan, 2015). Organizations have been undergoing enormous competition in the last years, and this development necessitates active participation, and effort of their workers, which can be transformed into an improved level of commitment of the workers in accordance to the execution of procedures, tactics, and objectives directing towards the steadiness and subsistence of these organizations (Lizote, Verdinelli, & Nascimento, 2017).

### *2.2. Dimensions of Organizational Commitment (OC)*

According to Allen and Meyer (1990) OC has three unique subscales indicated as an affective, continuance and normative commitment. The Affective subscale is workers' psychological connection to the organization, identification with and participation in the organization. Workers, who have a solid affective commitment, remain in the association since they need to Allen and Meyer (1990) Thus, this aspect of commitment is grounded on desire. The continuance subscale stipulates the need to continue working in the same company because workers evaluate the cost to the company if they discontinue their employment (Metin & Kaplan, 2018). Since employees sometimes face limited job alternatives and feel reluctant to change their employments, they prefer to remain with the same employer (Wasti, 2002). The continuance subscale emphasizes on the evaluation of the costs associated with employee dismissal, and a calculation of losses and gains involved in the exchanges between the individual and the company (Singh & Gupta, 2015). Lastly, the normative subscale reveals workers' ethical and moral responsibility to remain with the establishment (Manap, 2017). Workers stay in the company because they must do so. It is suggested that normative commitment is guided by people's experiences both previously and after joining the organization (Anttila, 2014). This subscale indicates that not

only organizational enculturation but also enculturation that takes place in the families and society in general also influences how workers' normative commitment develops.

#### 2.2.1. Organizational Commitment (OC) and Organizational Success

Organizational commitment has been recognized as a significant human element which is a crucial determining factor of organizational success (Alsiewi & Agil, 2014) university success (Dou, Devos, & Valcke, 2017) and intrinsic motivation which aids to encourage university academics to perform activities for attaining favorable outcomes (Ahluwalia & KaurKamal, 2017). OC of university academics suggests their substantial commitment and participation in the university (Markovits, Davis, Fay, & Dick, 2010) confidence in and recognition of the university's objectives and principles, a readiness to employ significant exertion on behalf of the university and devotion or a substantial need to retain association in the university (Thabo, Esther, Debra, Ntonghanwah, & James, 2018). Commitment to the academic career has been positively linked with intrinsic motivation to participate in research, and with higher research outputs (Becker, 2016). In the Malaysian context, research works on organizational commitment (OC) has been regarded as an essential area in determining workers' conduct (Daud, 2010). Some researchers have studied and determined the significance of OC among academics in their studies (e.g., (Bashir & Long, 2015; Lew, 2011; Thabo et al., 2018)). A study carried out in a Malaysian public university by Bashir and Long (2015) focused on the correlation between training and OC among academics in Malaysia. The results of their study revealed a significant and positive correlation among the training-based variables (motivation to learn, co-worker provision for training, accessibility of training, advantages of training, and supervisor provision for training) and affective and normative commitment dimensions of the OC; conversely, no significant correlation was found with continuance commitment.

### 2.3. Job Performance (JP)

Employees' JP has a significant influence on the effectiveness of any organization (Jayaweera, 2015). Performance is vital for organizations as workers' performance leads to organizational goals accomplishment and equally essential for individuals, as accomplishing responsibilities can be a basis of fulfilment (Muchhal, 2014). Job performance can be defined as conducts or actions that are executed toward realizing the organization's objectives (Al-Omari & Okasheh, 2017). Organizational performance is the definite yield or outputs of a company, as assessed in the determination of the gap to its projected outputs (Murali, Poddar, & Seema, 2017).

#### 2.3.1. Dimensions of Job Performance

Traditionally, the main focus of the job performance construct has been on task performance. Task performance involves job-related conduct, which includes job tasks that are significant and allocated as a part of the job design and job responsibilities (Pradhan, Panda, & Jena, 2017). Apart from task performance, the job performance domain comprises of contextual performance, adaptive performance, and counterproductive work behaviors (e.g., (Bekenova, 2015; Koopmans, Bernaards, Hildebrandt, De Vet, & Van der Beek, 2014)). The contextual performance involves actions that do not have a direct contribution to organizational performance but aids the organizational, psychological, and social environment (Díaz-Vilela et al., 2015). Adaptive performance is an individual's ability to alter conduct in order to meet the requirements of the environment, incident, or new situation (Huang, Ryan, Zabel, & Palmer, 2014). An active adaptive performance requires employees' capability to competently handle unstable job situations (Baard, Rench, & Kozlowski, 2014). Lastly, counterproductive work behaviors involve any intentional behavior that is harmful to the organization and the people within the organization (Ching, Tsay, Hu, & Hung, 2016).

Job performance is vital to measure the success and outcome of the firm (LiLin & Shiqian, 2018). Organizational performance is an indication of the capability of an organization to resourcefully attain different objectives (Muda, Rafiki, & Harahap, 2014). The performance of academic staff is significant in the lives of students as it affects the quality of education they receive (Naseer, 2010). Higher education places a higher emphasis on academic assessments as compared to financial assessments (Masron, Ahmad, & Rahim, 2012). The job description of university academics was traditionally characterized by three major components: teaching, research, and service (Lechuga, 2005; Tinuke, 2015). However, the job description of university academics has been expanded to include teaching and supervision, writing and publication, research and innovation, services, and consultancy (Ishak et al., 2009). In this study, academics' job performance was assessed using the five dimensions identified by Ishak et al. (2009).

### 2.4. Organizational Commitment (OC) and Job Performance (JP)

Organizational Commitment is of significant research interests because of the relationship between commitment and desirable organizational outcomes such as creativity and innovativeness (Ali. & Puah, 2017; Battistelli, Odoardi, Vandenberghe, Di Napoli, & Piccione, 2019; Li & Zheng, 2014) increased job performance (Kim et al., 2018; Sungu et al., 2019) employee loyalty (Suresh & Mahalingam, 2018) and job satisfaction (Sait, 2017; Luz, Paula, & Oliveira, 2018). Committed employees help create an organization's competitive advantage and are motivated to give their best to the organization.

Previous studies revealed a positive and significant correlation between OC and employees' JP. For example, a study conducted by Al Zefeiti and Mohamad (2017) found that all three OC subscales have a significant effect on employees' JP. In the comparative analysis of three OC dimensions, Dinc (2017) study showed a positive correlation between OC and JP among employees and, in particular, the affective component of OC has a significant and positive effect on workers' JP. Hafiz (2017) in his study, found that affective, normative, and continuance commitment are positively connected to employee's JP distinctly and mutually. A study carried out by LiLin and Shiqian (2018) among academics in the top ten private universities in China discovered that OC has a positive and significant effect on JP of the staff. A study done by Tolentino (2013) revealed that academics have a firmer affective and normative commitment when compared to the administrative staff, whereas the administrative staff have a firmer continuance commitment. Among the academics, only affective commitment has a significant correlation with JP, while among the administrative staff, no commitment dimension was related to JP.

## 3. Methodology

### 3.1. Participants

In order to produce an extensive and meaningful study, this study randomly selected 100 academics from the five recognized research universities in Malaysia involving senior lecturers, associate professors, and professors as the research subjects. This paper was based on a cross-sectional study design because data was collected only once from the respondents within a limited time. The inquiry approach was quantitative, and a structured questionnaire served as the data gathering instrument. Once the data gathering was completed, SPSS package 21.0 was utilized to conduct an Exploratory Factor Analysis (EFA) procedure and reliability analysis on the two constructs to determine their valid and reliable measures.

### 3.2. Measures

Two constructs were involved in this study, specifically organizational commitment (OC) and job performance (JP). OC was considered as the independent construct involving three distinct subscales: affective, normative, and continuance commitment. OC was assessed using the 18 revised items from Allen and Meyer (1990). OC scale (6 items representing each of the dimensions). The affective subscale measures how the individual is attached and wants to stay with the organization. A model statement for the affective subscale is, "I feel as if this organization's problems are my own." The normative subscale assesses the degree of responsibility an employee feels to remain with the organization because it is the proper thing to do. A model statement for the normative subscale is, "I would feel guilty if I left this organization now." The continuance subscale evaluates the costs connected with exiting from the organization and readiness of rewarding substitutions. A model statement for continuance subscale is, "I believe I have too few options to consider leaving this organization." All the items were assessed using a 10-point Likert scale ranging from 1 "strongly disagree" to 10 "strongly agree." Job performance was considered as the dependent construct and was assessed using 13 revised items from Ishak et al. (2009). A sample item is "I am always available for consultations with my students," and the items were also rated on a 10-point Likert scale ranging from 1 "strongly disagree" to 10 "strongly agree."

## 4. Exploratory Factor Analysis (EFA)

### 4.1. Data Analyses

This inquiry stage aims to determine the suitability of the items and the internal configuration of the constructs that the instruments assess. Therefore, an EFA was first carried out to assess the dimension structure of the scale. Followed by a reliability analysis on preliminary items to determine the reliability of the pilot questionnaire set. EFA is a statistical process that enhances the reliability of the scale by recognizing unsuitable items that can then be eliminated (Taeho Yu, 2018; Yu & Richardson, 2015). EFA procedure is employed when there is ambiguity about the number of factors that may exist in a set of variables (Nayak, 2016). Thus, EFA is implemented in the initial phases of developing a first-hand or adapted instrument (Mirzaei, Dehdari, Taghdisi, & Zare, 2019). Prior to carrying out EFA, measurement suitability for the study items was assessed using descriptive statistics. In order to determine the measurement suitability, the mean and the standard deviations (SD) of entire responses for every item were determined.

#### 4.1.1. The EFA procedure

The EFA procedure was initiated with the first analysis to get the eigenvalues for every component in the dataset. Following, the two regularly utilized data assessment methods for EFA, Bartlett's test of sphericity (Bartlett, 1950) and the Kaiser-MeyerOlkin (KMO) Measure of Sampling Adequacy (Dziuban & Shirkey, 1974) . These two analyses were performed to determine whether adequately significant interactions occur within the dataset of attention to implement EFA. For the fact that factor analysis clarifies the interactions of variables, an utter absence of interactions inside a dataset (i.e., an identity matrix) stops EFA from being implemented (Howard, 2015). Bartlett's Test of Sphericity is expected to be below .05 of statistical significance for EFA to be performed. Items are deleted from the EFA results when items are loading on the incorrect

components or cross-loading on several components with factor loading less than .6 (Awang, Afthanorhan, Mohamad, & Asri, 2015; Bahkia, Awang, Afthanorhan, Ghazali, & Foziah, 2019; Yahaya, Idris, Suandi, & Ismail, 2018). Finally, reliability analysis was implemented to test the consistency, stability, and dependability across items assessing the same construct. The internal reliability was confirmed using Cronbach's alpha for every construct in SPSS. According to Blunch (2008) if the alpha value is higher than .9, the internal consistency is considered exceptional, and if the alpha value is slightly higher than .7, the internal consistency is satisfactory and acceptable for further analysis.

### *4.2. The Exploratory Factor Analysis (EFA) for Organizational Commitment (OC) Construct*

The OC construct comprised of 18 items, and the items were coded as OT1 to OT18 Table 1. The outputs in Table 1 display the descriptive statistics for individual items assessing the OC construct. The mean score for individual items ranged from 3.65 to 7.45, whereas the standard deviation of the score ranked from 2.152 to 2.814.

**Table-1.** The descriptive statistics for items assessing oc construct.

| | **Descriptive Statistics** | | |
|---|---|---|---|
| **Item Code** | **Item Statement** | **Mean** | **Std. Deviation** |
| | Affective Commitment | | |
| OT1 | I would be delighted to spend the rest of my career in this university | 7.45 | 2.451 |
| OT2 | I feel as if this university's problems are my own | 6.78 | 2.476 |
| OT3 | I do not feel like 'part of the family' at this university | 3.84 | 2.525 |
| OT4 | I do not feel 'emotionally attached' to this university | 3.82 | 2.297 |
| OT5 | This university has a great deal of personal meaning for me | 7.21 | 2.152 |
| OT6 | I do not feel a strong sense of belonging to this university | 3.65 | 2.622 |
| | Normative Commitment | | |
| OT7 | I do not feel any obligation to remain with the university | 3.87 | 2.460 |
| OT8 | Even if it were to my advantage, I do not feel it would be right to leave | 6.58 | 2.474 |
| OT9 | I would feel remorseful if I left this university now | 6.68 | 2.777 |
| OT10 | This university deserves my devotion | 6.85 | 2.750 |
| OT11 | I have a strong sense of commitment to this university | 7.25 | 2.475 |
| OT12 | I owe a great favor to this university | 7.41 | 2.437 |
| | Continuance Commitment | | |
| OT13 | It would be tough for me to leave my job at this university | 6.96 | 2.763 |
| OT14 | Too much of my life will be disrupted if I leave | 6.24 | 2.814 |
| OT15 | Staying with my job now is a matter of necessity | 7.24 | 2.256 |
| OT16 | I believe I have too few options to consider leaving this university | 6.60 | 2.526 |
| OT17 | There would be a lack of obtainable alternative somewhere else | 5.95 | 2.567 |
| OT18 | Quitting would necessitate substantial personal sacrifice | 7.17 | 2.486 |

The scree plot in Figure 1 shows that four components (factors) surfaced from the EFA process for this construct. Accordingly, the EFA analysis assembled the 18 items into four components. Each component has a specific group of items. The rotated component matrix defines the items that are grouped with each component.

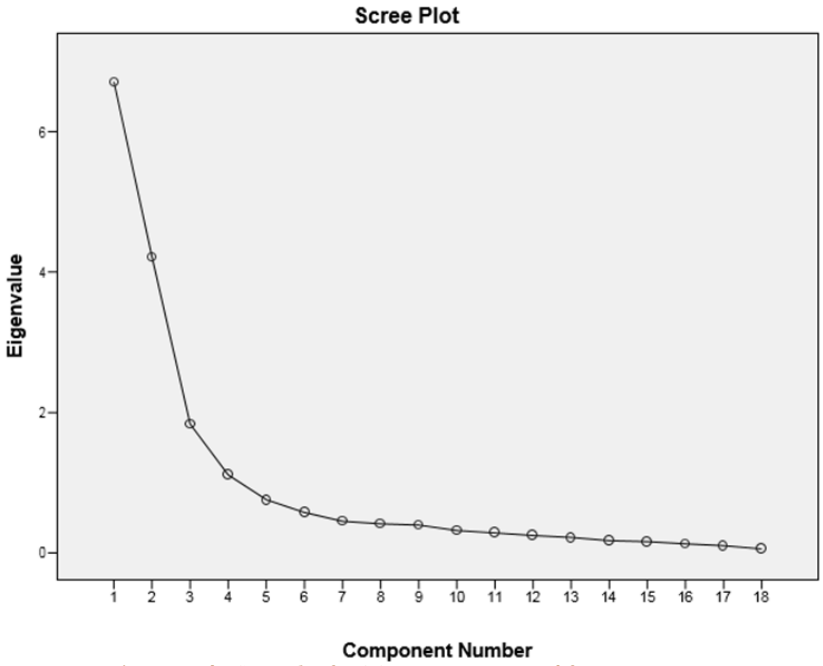


**Figure-1.**The Scree plot for OC construct extracted four components.

The EFA using the extraction method of Principal Component with Varimax (Variation Maximization) Rotation was carried out on the 18 items assessing OC construct. The outputs in Table 2 demonstrate that the Bartletts' Test of Sphericity is significant (P-Value < .05). Additionally, the measure of sampling adequacy by Kaiser-Meyer-Olkin (KMO) (.794) is excellent as it surpassed the mandatory value of .6. These two outcomes (Bartlett's test is significant, and KMO > .6) specify that interactions between items are adequately large for EFA to be conducted (Awang et al., 2015; Ehido, Awang, Halim, & Ibeabuchi, 2020; Hoque, Siddiqui, Awang, & Baharu, 2018; Noor, Aziz, Mostapa, & Awang, 2015).

**Table-2.** The KMO and bartlett's test.

| **KMO and Bartlett's test** | |
|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | .794 |
| Bartlett's Test of Sphericity Approx. Chi-Square | 1484.686 |
| df | 153 |
| Sig. | .000 |

*4.2.1. The Components and Total Variance Explained*

The outputs in Table 3 illustrate there are four components from the EFA process based on the computed Eigenvalue above 1.0. The eigenvalues ranged between 1.102 and 6.699. While the variance explained for component 1 is 37.216%, component 2 is 23.355%, component 3 is 10.143%, and component 4 is 6.123. The overall variance explained for assessing OC construct is 76.839%. Accordingly, the number of components and their items are excellent in assessing the OC construct since the total variance explained by the items surpassed 60% (Awang et al., 2015; Ehido et al., 2020; Noor et al., 2015; Yahaya et al., 2018).

**Table-3.** The number of components and total variance explained for OC construct.

| **Component** | **Initial Eigenvalues** | | | **Extraction Sums of Squared Loadings** | | |
|---|---|---|---|---|---|---|
| | **Total** | **% of Variance** | **Cumulative %** | **Total** | **% of Variance** | **Cumulative %** |
| 1 | 6.699 | 37.216 | 37.216 | 6.699 | 37.216 | 37.216 |
| 2 | 4.204 | 23.355 | 60.572 | 4.204 | 23.355 | 60.572 |
| 3 | 1.826 | 10.143 | 70.715 | 1.826 | 10.143 | 70.715 |
| 4 | 1.102 | 6.123 | 76.839 | 1.102 | 6.123 | 76.839 |

Table 4 displays the four components and their items that emerged from the EFA process. The factor loading for each item except OT13 is larger than .6. Accordingly, only OT13 should be deleted, and others retained since they accomplished the minimum condition for factor loading above .6 (Awang et al., 2015; Ehido et al., 2020; Yahaya et al., 2018). Therefore, seventeen (17) items were retained and are suitable to measure the OC construct.

**Table-4.** The four components and their items.

| Rotated Component Matrix[a] | | | | |
|---|---|---|---|---|
| | Component | | | |
| | 1 | 2 | 3 | 4 |
| OT1 | | | | .713 |
| OT2 | | | | .734 |
| OT3 | | | .794 | |
| OT4 | | | .833 | |
| OT5 | .652 | | | |
| OT6 | | | .916 | |
| OT7 | | | .898 | |
| OT8 | .818 | | | |
| OT9 | .863 | | | |
| OT10 | .831 | | | |
| OT11 | .888 | | | |
| OT12 | .773 | | | |
| OT13 | Deleted Item | | | |
| OT14 | | .652 | | |
| OT15 | | .835 | | |
| OT16 | | .795 | | |
| OT17 | | .803 | | |
| OT18 | | .781 | | |

**Note: Extraction Method:** Principal Component Analysis.
**Rotation Method:** Varimax with Kaiser Normalizationa.
**a.** Rotation converged in 6 iterations.

### *4.2.2. The Internal Reliability for the Instrument Measuring OC Construct*

The final test was to determine the value of Cronbach's Alpha for individual components to evaluate the Internal Reliability of each component assessing the OC construct. The value of Cronbach's Alpha must be more than .7 for the items to attain high Internal Reliability (Rovai, Baker, & Ponton, 2014).

**Table-5.** The reliability analysis for every component measuring OC construct.

| No. | Name of Component | No of items | Cronbach's Alpha |
|---|---|---|---|
| 1 | Component 1 | 6 | .925 |
| 2 | Component 2 | 5 | .857 |
| 3 | Component 3 | 4 | .907 |
| 4 | Component 4 | 2 | .809 |

**Table-6.** The descriptive statistics for items measuring JP construct.

| | Descriptive Statistics | | |
|---|---|---|---|
| **Item Code** | **Item Statement** | **Mean** | **Std. Deviation** |
| JC1 | I have a sufficient number of postgraduate students to supervise every semester | 6.89 | 2.639 |
| JC2 | I am always available for consultations with my students | 7.92 | 1.721 |
| JC3 | I have the ability to teach multi-discipline subjects | 7.62 | 1.674 |
| JC4 | I have obtained external recognition for the works I supervised | 7.09 | 2.429 |
| JC5 | I have completed several research projects | 7.86 | 2.305 |
| JC6 | I have been involved in different multi-disciplinary research | 7.37 | 1.920 |
| JC7 | I have successfully collaborated with several other researchers | 7.90 | 1.987 |
| JC8 | I have published many academic papers in high impact journals | 6.81 | 2.604 |
| JC9 | I have made presentations at international conferences | 7.85 | 2.362 |
| JC10 | I have participated in workshops for sharing of information at the university's level | 7.44 | 2.446 |
| JC11 | I have worked as an advisor for other organizations | 6.10 | 2.815 |
| JC12 | I have participated in several voluntary services | 6.67 | 2.538 |
| JC13 | I have been appointed as a fellow of the advisory panel for higher learning establishment | 5.30 | 3.043 |

The Cronbach's Alpha values for the four components assessing the OC construct, as presented in Table 5, ranged from .809 to .925. Therefore, the items representing the four components accomplished the mandatory Internal Reliability for this study (Cronbach's Alpha > .7).

### 4.3. The Exploratory Factor Analysis (EFA) Procedure for Job Performance (JP) Construct

The JP construct comprised of 13 items, and the items were coded as JC1 to JC13 Table 6. The outputs in Table 6 display the descriptive statistics for each item assessing the JP construct. The mean score for each item ranged from 5.30 to 7.92, whereas the standard deviation of the score ranked from 1.674 to 3.043.

The scree plot in Figure 2 shows that two components (factors) surfaced from the EFA process for this construct. Accordingly, the EFA analysis assembled the 13 items into two components. Each component has a specific group of items. The rotated component matrix defines the items that are grouped with each component.

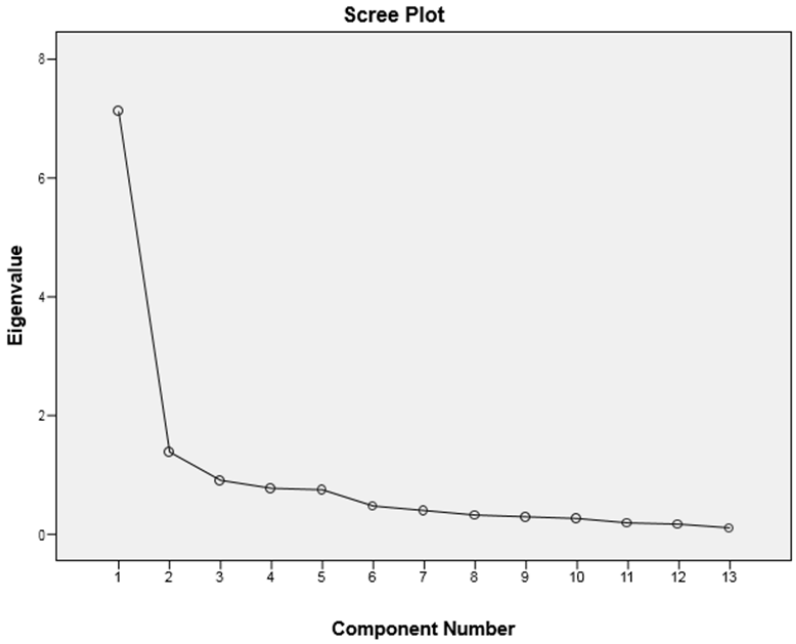


**Figure-2.** The Scree Plot for JP Construct extracted two components.

The EFA utilizing the extraction method of Principal Component with Varimax (Variation Maximization) Rotation was carried out on the 13 items assessing JP construct. The outputs in Table 7 demonstrate that the Bartletts' Test of Sphericity is significant (P-Value < .05). Additionally, the measure of sampling adequacy by Kaiser-Meyer-Olkin (KMO) (.880) is excellent as it surpassed the mandatory range of .6. These two outcomes (Bartlett's Test is significant and KMO > .6) specify that interactions between the items are adequately large for EFA to be conducted (Awang et al., 2015; Hoque et al., 2018; Noor et al., 2015).

**Table-7.** The KMO and bartlett's test for JP construct.

| **KMO and Bartlett's test** | |
|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | .880 |
| Bartlett's Test of Sphericity Approx. Chi-Square | 931.337 |
| df | 78 |
| Sig. | .000 |

#### 4.3.1. The Components and Total Variance Explained

The outputs in Table 8 illustrate there are two components from the EFA process based on the computed Eigenvalue greater than 1.0. The eigenvalues ranged from 1.373 to 7.119. While the variance explained for component 1 is 54.760%, and component 2 is 10.560. The overall variance explained for assessing the JP construct is 65.320%. Consequently, the number of components and their items are excellent in assessing the JP construct since the total variance explained by the items surpassed 60% (Awang et al., 2015; Noor et al., 2015; Yahaya et al., 2018).

**Table-8.** The number of components and total variance explained for JP construct.

| **Component** | **Initial Eigenvalues** | | | **Extraction Sums of Squared Loadings** | | |
|---|---|---|---|---|---|---|
| | **Total** | **% of Variance** | **Cumulative %** | **Total** | **% of Variance** | **Cumulative %** |
| 1 | 7.119 | 54.760 | 54.760 | 7.119 | 54.760 | 54.760 |
| 2 | 1.373 | 10.560 | 65.320 | 1.373 | 10.560 | 65.320 |

Table 9 displays the two components and their items that emerged from the EFA process. The factor loading for each item except JC2 is higher than .6. Accordingly, only JC2 should be deleted, and others retained since they accomplished the minimum condition for factor loading above .6 (Awang et al., 2015; Ehido et al., 2020; Yahaya et al., 2018). Therefore, twelve (12) items were retained and are suitable to measure the JP construct.

**Table-9.** The two components and their items.

| Rotated Component Matrix[a] | | |
|---|---|---|
| | Component | |
| | 1 | 2 |
| JC1 | | .667 |
| JC2 Deleted Item | | |
| JC3 | .705 | |
| JC4 | .830 | |
| JC5 | .847 | |
| JC6 | .736 | |
| JC7 | .659 | |
| JC8 | .832 | |
| JC9 | .839 | |
| JC10 | .705 | |
| JC11 | | .730 |
| JC12 | | .847 |
| JC13 | | .667 |

**Note: Extraction Method:** Principal Component Analysis.
**Rotation Method:** Varimax with Kaiser Normalization.a
**a.** Rotation converged in 3 iterations.

### *4.3.2. The Internal Reliability for the Instrument Measuring JP Construct*

Finally, the study determined the value of Cronbach's Alpha for each component to evaluate the Internal Reliability of the respective component assessing the JP construct.

**Table-10.** The Reliability Analysis for every component measuring JP Construct.

| No. | Name of Component | No of items | Cronbach's Alpha |
|---|---|---|---|
| 1 | Component 1 | 8 | .933 |
| 2 | Component 2 | 4 | .786 |

The Cronbach's Alpha values for the two components assessing the JP construct, as presented in Table 10, ranged from 0.786 to 0.933. Therefore, the items representing the two components accomplished the mandatory Internal Reliability for this study (Cronbach's Alpha > .7).

## 5. Conclusion

From the results of the Exploratory Factor Analysis (EFA) for the organizational commitment (OC) construct, the measuring instrument explained a total variance of 76.839% in the structure of interactions among the items. All four components had high and acceptable reliability coefficients (Cronbach's Alpha = .925, .857, .907, and .809 respectively). Seventeen items were retained in the questionnaire and are suitable to measure the OC construct after deleting one item (OT13) with factor loading below .6. Consequently, the four components structure of the OC instrument has been confirmed in this study.

The EFA results for the job performance (JP) construct revealed that the measuring instrument explained a total variance of 65.320% in the structure of interactions among the items. All two components had high and acceptable reliability coefficients (Cronbach's Alpha = .933, and .786, respectively). Twelve items were retained in the questionnaire and are suitable to measure the JP construct after deleting one item (JC2) with factor loading below .6. Therefore, the two components structure of the JP instrument has been confirmed in this study. Furthermore, it was established that the data utilized in this study was adequate to conduct a valid EFA procedure using the outputs from the descriptive statistics analysis. The 100 academics sample size was sufficient for the EFA because it was equal to the suggested minimum sample size of 100 by Hair, Black, Babin, and Anderson (2010) and Shkeer and Awang (2019).

## 6. Limitations and Future Research Direction

EFA is a valuable statistical technique employed to study the construct validity and reliability characteristics of an instrument. Though, because EFA is not enough to confirm the theoretical basics of the instrument, a Confirmatory Factor Analysis (CFA) is thereby recommended for additional knowledge in this aspect. The second drawback is a sampling bias. The samples in this study comprised of academics at five

Malaysian public research universities. This sampling method might hinder the possibility to generalize the outcomes of this study to other public universities. For future study, it is suggested that this study is repeated among academics from other public and private universities to limit the statistical sampling bias.

Additionally, response bias in the questionnaire structure is another limitation. The structured questionnaire was circulated with several sections. Each section contained several items for each construct and the socio-demographic profile section. This form of survey structuring might cause "yea-saying" response bias as participants are likely to agree with a statement when in doubt, showing similar responses in a section. A future study could reduce the number of sections in a questionnaire and include some negatively worded items that will require the participants to pay more attention to each item and their responses. A final recommendation is to further this study to other noteworthy influencing factors on academics' job performance (e.g., adequate compensation, motivation, clear goals and expectations, flexible work arrangements) in order to measure better their willingness to perform their jobs efficiently with expected outputs.

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