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# Validating the Instruments Measuring Blue Ocean Leadership Construct Using Confirmatory Factor Analysis

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## Abstract

This study aims to validate the research instrument measuring blue ocean leadership. This study implemented a cross-sectional research design. Quantitative data was gathered from 401 lecturers as respondent which across the 22 vocational colleges in North Zone of Malaysia which is Penang, Kedah, Perlis, and Perak using the structured survey. The data were used to validate the instruments by using the Confirmatory Factor Analysis (CFA) procedure. The CFA procedure validates the instruments measuring Blue Ocean Leadership construct for uni-dimensionality, validity, and reliability. The finding indicated that the measurement model of the Blue Ocean Leadership construct achieved the requirement for construct validity and reliability and ought to be proficient to be applied by other researchers. Thus, this study validates instruments that can be used to access Blue Ocean Leadership among lecturers in vocational colleges in Malaysia. Further study should be conducted on the different zone of Malaysia as well as the private sector due to the aspect of demographic factors.

**Keywords:** Blue Ocean Leadership, Vocational College, Confirmatory Factor Analysis.

## Introduction

Technical and Vocational Education and Training (TVET) is a rising arena aligned with Industry 4.0. In order to hustle Malaysia's development, coherent with other developed countries, TVET needs to be given precedence. TVET is essential in relinquishing an intense qualification and will be able to fill jobs and prepare for this Industry 4.0 (Zulkifli et al., 2020) with students' technical and soft skills (Kayode, Noordin, & Wahid, 2020). However, TVET confronts main contests for recruiting and retaining talented lecturers in academic and teaching (Bălan, 2019; Clayton & Harris, 2019; Mmako & Schultz, 2016). Yet, lecturers now realized themselves facing escalating pressure to familiarise classroom instruction to adapt for contemporary and embryonic technologies (Waters & Hensley,

2020) and enhance graduate employability and teaching which included skills-oriented and vocational training (Macheridis, Paulsson, & Pihl, 2020)

This is imputable to the high burden of work among lecturers at TVET colleges bringing numerous and heavy pressure (Pellerone, Rapisarda, Trischitta, Vitale & Ramaci, 2020) and low organizational commitment amongst lecturers (Shafiq & Akram Rana, 2016; Barkhuizen, Rothman & Van de Viljver, 2014). Meanwhile, lecturers at vocational colleges with lower organizational commitment and lower job involvement will lead to higher intentions to quit (Chambers Mack, Johnson, Jones-Rincon, Tsatenawa & Howard, 2019) or create the desire to leave the institution to another working place (Chambers Mack, Johnson, Jones-Rincon, Tsatenawa & Howard, 2019; Mxenge, Dywill & Basaza, 2014). To overcome this matter, blue ocean leadership (BOL) is introduced to change leadership practices so that all employees get active using their gifts and vigor to affect their actions, practices, and persistence in their organization.

BOL is recognized as a new way of leadership which were introduced by Kim and Mauborgne (2014), it is a leadership style which benefits organization engage the formerly disengaged employee by altering the organization leadership profile. BOL focuses on leaders' acts and activities to attain an organization that enhances the strength in leadership rapidly and budgetary, which could be transformed into better productivity of the organization operates (Kim & Mauborgne, 2014; Loh, Yusof & Lau, 2018).

Even though BOL has been gauged and clarified to some extent in various previous studies (Kim & Mauborgne, 2014; Loh et al., 2018; Hanafi & Daud, 2019; Wan Hanafi, Daud & Baharin, 2016; Wan Hanafi, Daud, Islam, Bahrin, Ramli & Isa, 2017; Zakaria, Idris & Ismail, 2017; Zehra, 2015;), but, the previous studies have not dealt with the indicators which should be employed to measure BOL. Besides, the erstwhile study of Hanafi et al. (2017) identified the blue ocean leadership attributes namely visionary, contingent reward, courage, idealized influence, inspiration, intellectual stimulation, passion, strategic thinking, focus, collaborate, innovate, willingness to change and communication. Whereas Hanafi & Daud (2019) having the same though with Wan Hanafi et al. (2017) and purpose one more attribute which is conventional. In the contrast, Loh et al. (2018) recommended visionary and forward-thinking, self-development, continuous improvement (Kaizen), Genchi Genbutsu (go and see/genba), empower and coaching oriented, two-way effective communication and motivation. Such expositions are unsatisfactory because they are only briefly focussed on the term and not treated BOL indicators in much detail. A more comprehensive study would include related terms and indicators to provide a better understanding. Hence, there is a needs to identify the indicators to measure BOL and taking further actions to improve the lecturers' employee engagement. Therefore, the objective of this study is:

- to validate the measurement model of BOL for lecturers in vocational college by using CFA procedure

## **Literature Review**

### **The Definition of Blue Ocean Leadership**

BOL is distinguished as a new paradigm of leadership which was presented by Kim and Mauborgne (2014). By varying the organization's leadership profile, this leadership style able to transform disengaged employees to become engage employees in an organization. BOL emphases on triumphing an organization that boosts the strength in leadership rapidly and at less monetary, which could be transformed into better productivity for the organization operation (Loh et al., 2018;

Kim & Mauborgne, 2014). From the perspective of BOL, every leader has their customer. The customer mentioning to the person in the management of an organization, either 'buy' or 'don't buy' the service (leadership).

At the moment, BOL also explained as an effective and organized approach to encourage leadership skills that exploit the present unrevealed talent and vitality of human capital towards organizational dominance (Kim & Mauborgne, 2014). BOL can be employed by asking employees to respond to responsiveness on leadership practices. Currently, leadership practices are clarified as acts and activities in which leaders allocate their time, money, and effort to the management of an organization. Hence, employees will feel engaged since their feedback are taken into consideration which leading to sprouting new leadership profiles at different level leadership position for organization transformation (Zakaria et al., 2017).

The application of BOL is more concentrated on the actions and activities of leaders instead of highlighting on traditional leadership practices, which interpose focus on leader values, traits, styles, and behavior. Meanwhile, it will secure a speedy impact on discovering organizational change as employees do not undertake their leader to shift characters and personality instantly by changing particular actions and occasions of leaders. Besides, this approach can be prompted at low cost, ease implementation, and capable of delivering amazing impact results.

To synopsise, BOL is not about self-leadership but the more paying emphasis on organizational performance through augmenting employee engagement. It is not apportioning with top-level leadership but engrosses with different levels of distributed leadership. While diverging routines is the most exigent element to achieve as people intend to remain in a confront zone. Promoting BOL will conduct to disseminating present untapped talent instead of tailing extra resources to obtain other leadership programs (Zakaria et al., 2017). Consequently, BOL is recommending a new alleyway about leadership concepts in this marvelous transformation moment among lecturers as this is the main key to sustain the reputation for vocational college.

## **Methods**

A quantitative approach by using a cross-sectional design has been employed. The research respondents were the lecturers who are teaching in the vocational college in Penang. A total of 2580 lecturers from the population across the 22 vocational colleges in North Zone of Malaysia which is Penang, Kedah, Perlis, and Perak. This study randomly selected 401 lecturers as respondents. Data have been collected by using a structured survey questionnaire. Data was gathered using a five-point interval scale with 14 items applied from Oh, Khoo & Awang (2020) to measure the main construct named BOL. The data was analyzed using Structural Equation Modeling (SEM) approach by AMOS 20 software.

## **Confirmatory Factor Analysis (CFA)**

CFA is applied for authenticating the factor loading and measurement that involved. Factor loadings and fitness indexes play an important role in the CFA approach. Additionally, the fitness index unable to achieve the requirement whenever the factor loading is in high value which indicates the data is incompetent to be accepted.

Absolute fit, incremental fit, and parsimonious fit are three categories included in the measurement of the fitness index. However, the researcher able to choose any fitness as long as each

category is included, or at least one fitness index from each category model fit is used (Afthanorhan, 2013).

Meanwhile, if the fitness indexes achieved the requirements from the three Model Fit aspects which are Absolute Fit (RMSEA < 0.08), Incremental Fit (CFI and TLI >0.9) and Parsimonious Fit (Chisq/df <5.0) respectively, the specific latent construct is counted valid (Awang, Lim & Zainudin, 2018)

Next, there are three types of validity explicitly construct validity, convergent validity, and discriminant validity need to be achieved by the measurement model of latent constructs which measure by Fitness Indexes of the Measurement Model, Average Variance Extracted (AVE), and Discriminant Validity Index Summary individually (Mohamad, Ali & Awang, 2018).

Table 1: Types of validity and its threshold

| Validity              |                                     | Name of Category | Threshold      | Sources                        |
|-----------------------|-------------------------------------|------------------|----------------|--------------------------------|
| Construct Validity    | Fitness Indexes                     | Absolute Fit     | RMSEA <0.08    | Awang et al. 2015              |
|                       |                                     | Incremental Fit  | CFA & TLI >0.9 |                                |
|                       |                                     | Parsimonious Fit | Chisq/df<3.0   |                                |
| Convergent Validity   | Average Variance Extracted (AVE)    |                  | > 0.5          | Afthanorhan et al., 2018, 2019 |
| Discriminant Validity | Discriminant Validity Index Summary |                  |                |                                |
| Composite Reliability | CR                                  |                  | > 0.6          | Awang 2014, 2015               |

## Result and Discussion

### The Assessment of Normality of the Items

Initially, the distribution of items for measuring the BOL construct ought to be evaluated. Table 2 displayed the evaluation of normality the distribution from the text-output of IBM-SPSS-AMOS by using the skewness of the distribution within the Maximum Likelihood Estimator (MLE). In order to be adequate for normally distributed, the skewness values for all items should plunge in the range between -1.5 to 1.5 (Awang et al., 2018).

Table 2: The assessment of normality of the items

| Variable     | Min   | Max   | Skew          | C.R.   | Kurtosis | C.R.   |
|--------------|-------|-------|---------------|--------|----------|--------|
| B14          | 2.000 | 5.000 | <b>-.101</b>  | -.826  | 2.627    | 10.738 |
| B13          | 2.000 | 5.000 | <b>-.213</b>  | -1.742 | .341     | 1.395  |
| B12          | 2.000 | 5.000 | <b>.512</b>   | 4.184  | 2.351    | 9.610  |
| B11          | 2.000 | 5.000 | <b>.432</b>   | 3.530  | 2.177    | 8.900  |
| B10          | 2.000 | 5.000 | <b>-.648</b>  | -5.298 | 3.207    | 13.109 |
| B9           | 2.000 | 5.000 | <b>-.562</b>  | -4.594 | 1.284    | 5.250  |
| B8           | 2.000 | 5.000 | <b>-.612</b>  | -5.001 | 1.180    | 4.824  |
| B6           | 3.000 | 5.000 | <b>.345</b>   | 2.822  | 1.247    | 5.097  |
| B5           | 2.000 | 5.000 | <b>-.315</b>  | -2.578 | 2.162    | 8.836  |
| B4           | 2.000 | 5.000 | <b>-.197</b>  | -1.609 | 3.216    | 13.147 |
| B3           | 2.000 | 5.000 | <b>-.363</b>  | -2.969 | 4.444    | 18.166 |
| B1           | 2.000 | 5.000 | <b>-1.141</b> | -9.329 | 4.412    | 18.033 |
| Multivariate |       |       |               |        | 140.765  | 76.889 |

The study realized that all skewness values plunge within the range between -1.5 to 1.5 by referring to Table 2. Hence, the data distribution for items measuring the BOL construct can prove that it achieved the normality assumption of parametric statistical analysis.

Table 3: Construct validity

| Construct Validity  | Name of Category | Name of Index | Level of Acceptance | Index Value | Remark   |
|---|------------------|---------------|---------------------|-------------|----------|
|   | Absolute Fit     | RMSEA         | < 0.08              | 0.079       | Achieved |
|   | Incremental Fit  | CFI           | > 0.9               | 0.938       | Achieved |
|   | Parsimonious Fit | Chisq/df      | < 5.0               | 3.510       | Achieved |
| Hence, the measurement model of BOL has achieved the requirement for construct validity |                  |               |                     |             |          |

Table 3 indicated the result for Absolute Fit (RMSEA = 0.079), Incremental Fit (CFI = 0.938) and Parsimonious Fit (Chisq/df = 3.510) correspondingly. The fix indexes showed the model was fit. Therefore, the measurement model of BOL has achieved the requirement for construct validity.

Table 4: Composite reliability, convergent validity and discriminant validity

| Construct | Item | Factor Loading | CR (above 0.6) | AVE (above 0.5) | $\sqrt{\text{AVE}}$ | Convergent Validity<br>CR > AVE<br>AVE > 0.5 |
|-----------|------|----------------|----------------|-----------------|---------------------|--|
| BOL       | BOL1 | 0.99           | 0.89           | 0.70            | 0.84                | Yes  |
|           | BOL2 | 0.75           |                |                 |                     |  |
|           | BOL3 | 0.75           |                |                 |                     |  |
| BOL1      | B1   | 0.60           | 0.72           | 0.54            | 0.73                | Yes  |
|           | B3   | 0.75           |                |                 |                     |  |
|           | B4   | 0.77           |                |                 |                     |  |
|           | B5   | 0.78           |                |                 |                     |  |
|           | B6   | 0.75           |                |                 |                     |  |
| BOL2      | B8   | 0.74           | 0.79           | 0.60            | 0.77                | Yes  |
|           | B9   | 0.82           |                |                 |                     |  |
|           | B10  | 0.76           |                |                 |                     |  |
| BOL3      | B11  | 0.68           | 0.56           | 0.43            | 0.66                | Yes  |
|           | B12  | 0.68           |                |                 |                     |  |
|           | B13  | 0.53           |                |                 |                     |  |
|           | B14  | 0.70           |                |                 |                     |  |

The result of the reliability and validity test for testing the measurement mode displayed in Table 4. The composite reliability of BOL, BOL1, and BOL2 are 0.89, 0.72, and 0.79 separately, which meet the requirement (above 0.6). Whereas the result AVE of BOL, BOL1, and BOL2 are 0.70, 0.54, and 0.60 singly, which also achieve the requirement (above 0.5). However, even though composite reliability of BOL 3 is 0.56 (lower than 0.6) and AVE of BOL 3 is 0.43 (lower than 0.5), slightly lower than the appropriate value but it is still acceptable because the model is fit. By applying the CFA approach, the result well performs after achieving all the requirements of the measurement model. The study displays that the reliability of CR meets the requirement, convergent validity as well as the discriminant validity.

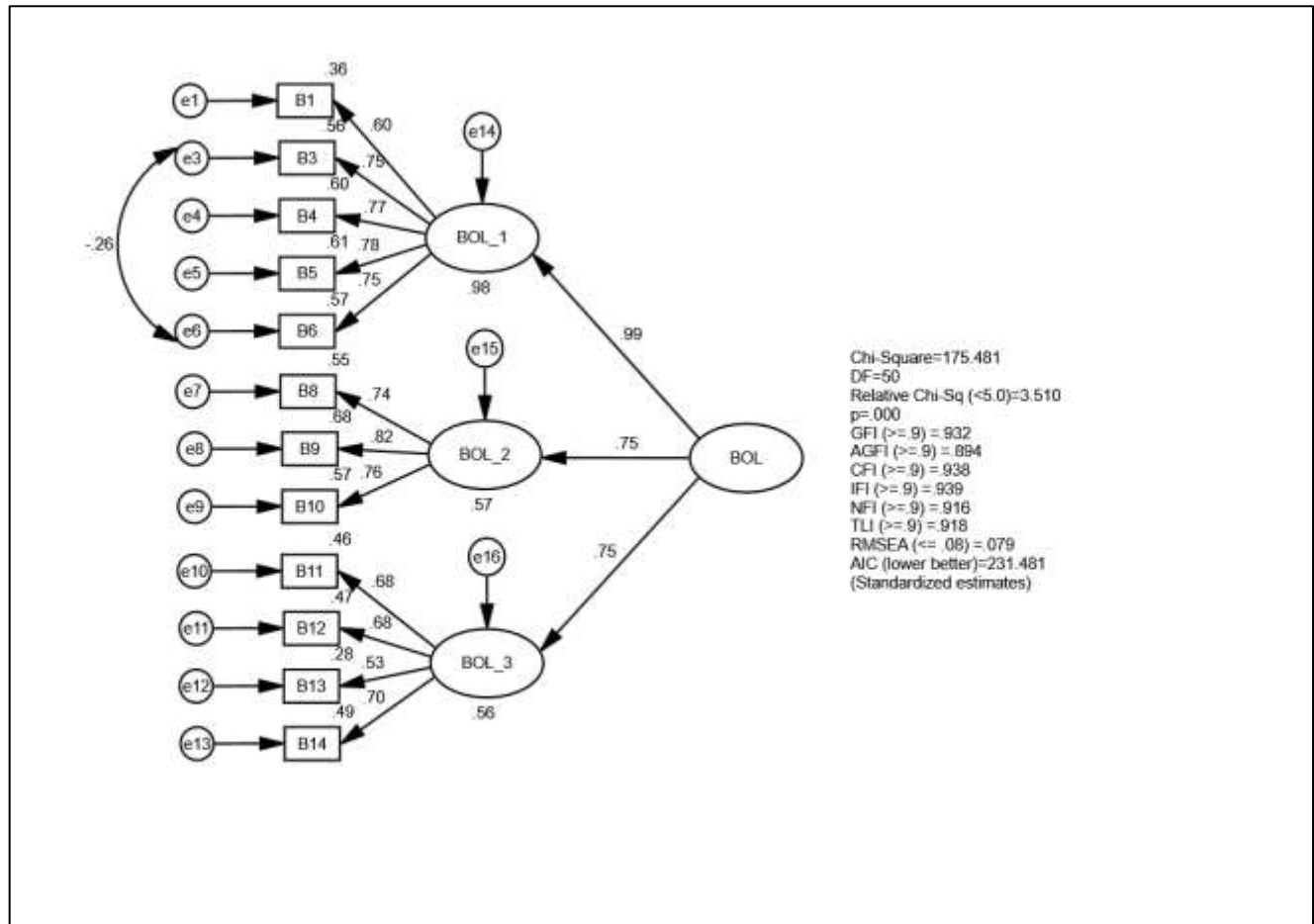


Figure 1: CFA results for BOL

The second-order construct for the measurement model of BOL demonstrated in Figure 1. This construct has three components which are BOL1 represents focus, BOL2 represents visionary, and BOL3 represents idealized influences.

Whereas discriminant validity is another validity requirement which also needs to be tested. The intensity of the correlation between these three components requests to be examined since BOL is a second-order construct with three components. If the coefficient of correlation among the components does not surpass 0.85, the discriminant validity for the BOL construct is achieved (Noor, Aziz, Mostapa & Awang, 2015). The coefficient of correlation between the components is considered and organized in Figure 2.



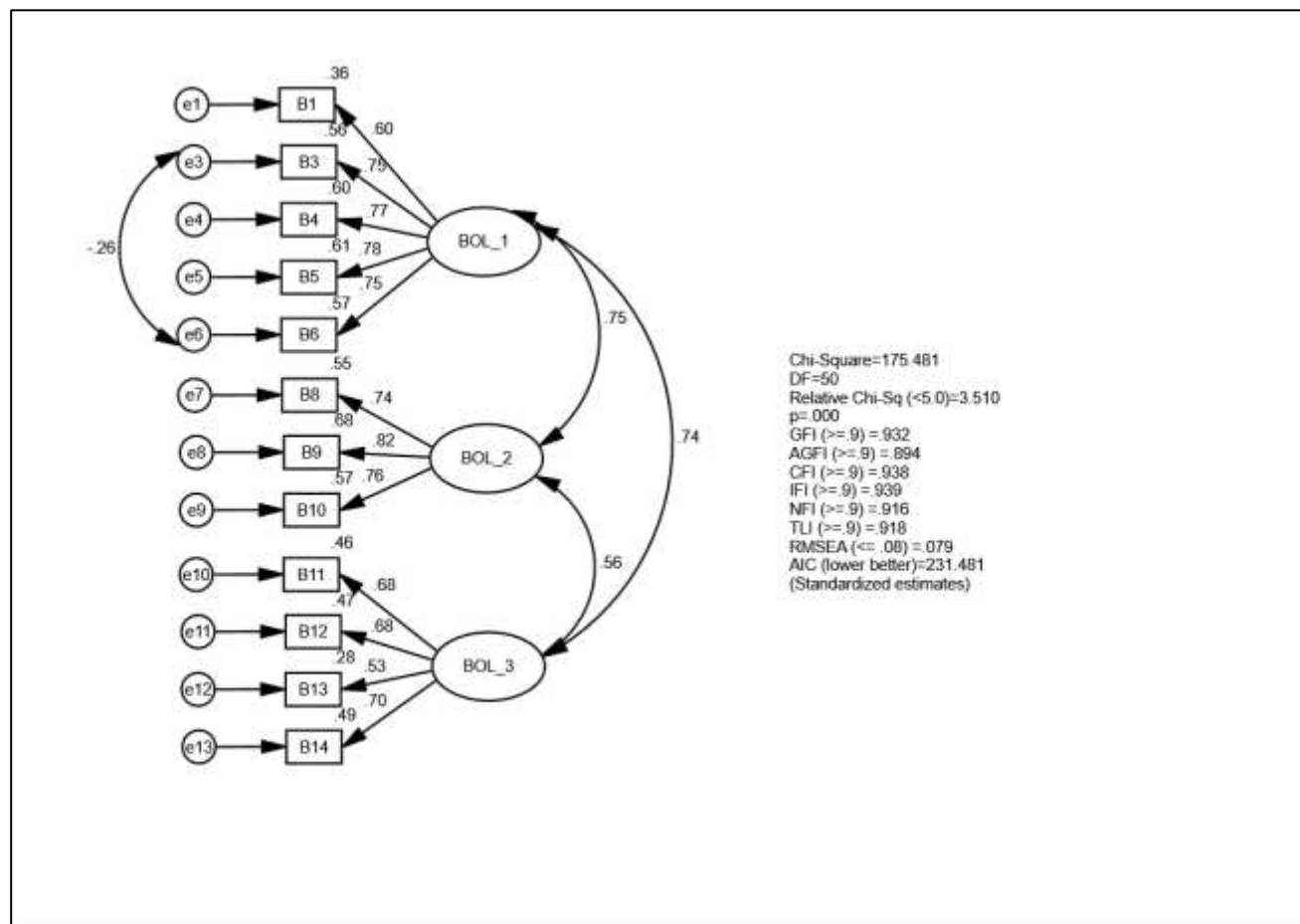


Figure 2: The assessment of convergent validity for BOL construct

The review of discriminant validity for the BOL construct exhibited in Figure 2. The correlation coefficient between BOL1, BOL2, and BOL3 figured by the IBM-SPSS-AMOS. The results designate the correlation coefficients between all components are 0.75, 0.56, and 0.74 which do not exceed 0.85. As a result, the discriminant validity achieved by the measurement model for the BOL construct.

### Conclusion

Overall, this study attempt to validate the indicator connected to BOL that promotes lecturers to apply good leadership as BOL to improve their employee engagement and performance in vocational college. We achieved the required fitness and the reliability and validity test by using the CFA procedure. This measurement model could be measured for future research so that the following study would be counted in this model.

### Contribution of the Study

The findings can help the leader make a better decision in the field of management to get better employee engagement and performance among the lecturers in vocational colleges. Furthermore, this study proposing validating the measurement item on BOL in Malaysia which could be an essential factor and reliable source of information for driving possible researchers to struggle the BOL research in the future.

### Limitation and Recommendation

It could not be proficient to simplify for the entire Malaysian lecturers' population in terms of their leadership status since the study only focuses on the North Zone of Malaysia. Therefore, further research can be conducted in a different zone of Malaysia to provide a comprehensive understanding. Besides, the following researcher can be implemented the instrument in private colleges to compare the different perspectives with vocational colleges in the government sector.

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