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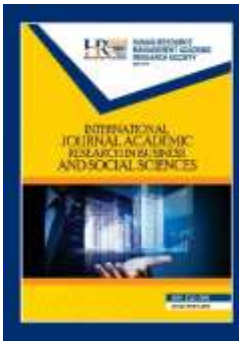
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Developing Item for Blue Ocean Leadership in Vocational College

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Abstract

This study aims to explore the applicable items for using in the research instrument by using Exploratory Factor Analysis (EFA). Therefore, actions are taken for developing and validating the instrument of Blue Ocean Leadership (BOL) construct through EFA accurately, in the context of vocational college in Penang, Malaysia. EFA has been employed as it is much distinctive from earlier studies in terms of demographic aspect, and some items of the earlier studies are not relevant for the present research. Predominantly, previous studies only reviewed the items instead of the aspects of BOL. But, no mutual understanding among researchers as the number of aspects and items which should be practiced to measure BOL. Hence, focus, visionary, and idealized influences have been assessed as an essential aspect to measure BOL and also to display an instrument of BOL. Cross-sectional research design has been implemented. Quantitative data was gathered from 630 lecturers from the population across the five vocational colleges in Penang, Malaysia, using the structured survey. This study concluded the instrument to thirteen (13) items comply with three (3) aspects, i.e., focus (7 items), visionary (3 items), and idealized influences (3 items) depend on reliability testing. Incidentally, researchers determined Cronbach Alpha value as the value of internal reliability for the recent BOL instrument. The overflow for performing EFA analysis for BOL construct has been clarified in detail. The instrument has been displayed by cross-examining across the different states in Malaysia, and other underdeveloped, developing, and developed countries should be further broadened by researchers in the future.

Keywords: Blue Ocean Leadership, Vocational College, Exploratory Factor Analysis

Introduction

Technical and Vocational Education is offered to prepare students for future careers that require specific skills and expertise. Furthermore, the emergence of new trends such as Industry 5.0 will have a significant impact on the labor market that requires skilled and experienced workforce to

improve the development of the high-income country (Rus & Yasin, 2015; Rus, Yasin, Yunus, Rahim & Ismail, 2015; Hanapi, Nordin & Khamis, 2015; Salleh, Ismail, Habidin, Latip & Ishak, 2014). Yet, Technical and Vocational Education and Training (TVET) faces key challenges in producing, recruiting and maintaining professionals in academic and teaching (Bălan, 2019; Clayton & Harris, 2019; Mmako & Schultz, 2016). This is due to the high burden of work among teachers at TVET colleges bringing low organizational commitment (Barkhuizen, Rothman & Viljver, 2014). High level of work pressure amongst higher education institutions contributes towards employees leaving institutions or create the desire to leave the institution (Mack, Johnson, Jones-Rincon, Tsatenawa & Howard, 2019; Mxenge, Dywill & Basaza, 2014). The other challenge for vocational lecturers is to play the role of the facilitator and to maintain the positive learning experience of the student in ensuring students are equipped with the needed skills in a precipitously changing different types of environment (Dymock & Tyler, 2018; Kareem, Bing, Jusoff, Awang & Yunus, 2011). However, the lack of capacity in academic development among lecturers brings negative impacts such as low motivation and lack of employee involvement.

To overcome this matter, blue ocean leadership is introduced to change leadership practices so that all employees become active using their talents and energy to move their organization forward. Meanwhile, the National Blue Ocean Strategy (NBOS) summit held in October 2014 has mandated the Public Service Department (PSD) to facilitate the application of BOL in the public sector.

BOL is recognized as a new style of leadership which were presented 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 focus on leaders' acts and activities to attain an organization enhances the strength in leadership rapidly and at low cost, which could be transformed into high productivity for the organization operation (Kim & Mauborgne, 2014; Loh, Yusof & Lau, 2019).

Even though blue ocean leadership have been evaluated and explained to some extent in several previous studies (Kim & Mauborgne, 2014; Hanafi & Daud, 2019; Hanafi, Daud & Baharin, 2016; Zakaria, Idris & Ismail, 2017; Zehra, 2015;), however, the literature review exposed that there is still no universal agreement among the researchers as the terms of aspects and items which should be used to measure BOL. Furthermore, the prior study of Zehra (2015) showed that, basically have concentrated only on items of BOL. Whereas Nur Lyana, Salina, Aerni & Yunus (2015) revealed that the leader attributes for BOL are visionary, contingent reward, courage, idealized influence, inspiration, intellectual stimulation, passion, strategic thinking/ planners, focus, collaborate, innovate, willingness to change and communication. Meanwhile, seven categories of lean activities for leaders which apply BOL are identified, which are 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 (Loh, Yusof & Lau, 2019).

Although extensive research has been carried out on BOL, however, by implementing quite a limited approach, present studies seem to miss some of the important points that may help to provide an accurate and comprehensive understanding of the number of aspects as well as items of BOL. Therefore, such limitation indicates a significant gap in the existing literature that need to be fulfilled to provide a more complete insight of validity and reliability item of BOL. Therefore, this study has produced focus, visionary, and idealized influences as the fundamental aspects to measure BOL and to portray an instrument of BOL remarkably in the perspective of vocational college in Penang,

Malaysia. Besides, if the technique is not suitable for developing and assessing the instrument, the validity and reliability of the questionnaire's items will be questioned. Therefore, researchers demand to initially utilize the EFA process for acquiring the validity and reliability and gaining the justly available items of measuring instruments (Hoque & Awang, 2016a, Hoque & Awang, 2016b, Hoque & Awang, 2016c). Hence, the objective of this study is:

- to clarify how to gain validity and reliability of the questionnaire's items by using the EFA process for measurement of the BOL construct

Literature Review

BOL is well-known as a new style of leadership which were presented 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 achieving an organization that enhances the strength in leadership rapidly and at low cost, which could be transformed into high productivity for the organization business (Kim & Mauborgne, 2014; Loh, Yusof & Lau, 2019). In BOL's viewpoint, every leader has their customer. The customer referring to peoples in the management of an organization, either 'buy' or 'don't buy' the service (leadership).

Kim and Mauborgne (2014) described BOL as an efficient and organized method to promote leadership skills that maximize the current untouched talent and energy of human capital towards organizational superiority. Blue ocean leadership can be practiced by getting employees to feedback for attention on leadership practices. At this point, leadership practices are explained as acts and activities in which leaders devote their time, money, and effort to the management of an organization. In response to this, employees will feel engaged as their feedback are taken into consideration towards evolving new leadership profiles at different level leadership position for organization transformation (Zakaria, Idris & Ismail, 2017).

The practice of BOL is more focused on the actions and activities of leaders rather than emphasizing on traditional leadership methods, which contribute attention to leader values, traits, styles, and behavior. By altering specific actions and events of leaders, it will furnish rapid effect towards detecting organizational change as employees do not assume their leader to switch characters and personality immediately. Meanwhile, this method can be instigated at low cost, debauched implementation, and capable of providing extraordinary effect results.

To synopsize, BOL is not about individual leadership but more paying focus on organizational performance through enhancing employee engagement. It is not dealing with top-level leadership but engages with different levels of distributed leadership. BOL concentrates on leaders' acts and activities and not converging about leadership traits, behaviors, or styles. Besides, varying routines is the most challenging part to accomplish as people desire to sit in a comfy zone. Horning BOL will guide to circulating current unexploited talent instead of pursuing extra resources to acquire other leadership programs (Zakaria, Idris & Ismail, 2017). As a result, BOL is going to offer a new pathway regarding leadership concept in this tremendous change moment among lecturers as this is the primary key to uphold the reputation for vocational college.

Methods

A cross-sectional research design applied to develop a valid and reliable measure for the Blue Ocean Leadership construct, especially in the perspective of vocational college in Penang. The

population for this study is the lecturers who are teaching in the vocational college in Penang. A total of 630 lecturers from the population across the five vocational colleges in Penang. This study randomly selected 300 lecturers as respondents. Data have been collected by using a structured survey questionnaire.

Research Instrument

For developing the BOL measuring instrument, the study adapted from Kim & Mauborgne (2014), and Zehra (2015) and finally produce three constructs, namely focus, visionary, and idealized influences. By developing a structured questionnaire, data is collected to measure the BOL construct in this study, which contains thirteen (13) items measured using a five-point interval scale.

Exploratory Factor Analysis (EFA)

EFA performs a vigorous position to explore the interrelationships among the items of three aspects of BOL. Meanwhile, a set of items compacted into a smaller set of combination factors with a minimum loss of information which consumed by EFA and can be understood much clearly and significantly (Duntemen, 1989; Field, 2006; Lewis-Beck, 1994) and thus placed the basis of structural equation modeling (Hair et al., 2006). Meanwhile, it is a standard method of developing an instrument to gauge the data set for its appropriateness (Kung-Tech, Omar, Yassin, Mustafa, Abdullah, Rahmatullah & Samuri, 2019).

By adapting and modifying instruments developed by previous researchers, the items used to match current research. Based on Awang (2012), Awang, Lim & Zainudin (2018), Hoque & Awang (2016b), Hoque & Awang (2016c), Hoque et al. (2017b), the researcher should conduct the EFA procedure, if they regulate the instruments earlier prepared by the researchers and modifies statements applicable to existing research. This is due to the existing field of study might be diverse from preceding studies, or the existing research population is widely dissimilar from prior studies in the perspective of demographic aspect. As a result, there might be some items that were formerly built and no longer suitable for existing research. Hence, the value of internal reliability for the existing instrument and the new Cronbach Alpha value need to be reanalyzed by the researchers (Awang, 2012, Awang, Lim & Zainudin, 2018;, Hoque & Awang, 2016b; Hoque et al. 2017a; Hoque et al., 2017c; Hoque et al., 2018a, Hoque et al., 2018c).

Findings and Discussion

The findings and discussion of this study will be deliberated as follow:

Results of Exploratory Factor Analysis

To decide the fundamental items and recommend aspects of the BOL construct, and also to validate the feature of the instrument, three hundred (300) respondents have been used in this study. There were three aspects and 13 recently developed items for the BOL construct. Among 20 items of BOL construct, a total of 7 items, three items, and three items belong to focus, visionary, idealized influences aspect, respectively, and six items have been deleted. The result is consequently displayed as follows:

Table 1 KMO and Bartlett's Test for the items of BOL Construct

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.906
Barlett's Test of Sphericity	Approx. Chi-Square	3535.972
	df	190
	Sig.	.000

The index of KMO that over 0.6 is commonly accepted. In Table 1 above, the KMO value of 0.906 is outstanding as it surpasses the recommended value of 0.6. Furthermore, the significance value of Bartlett's Test of Sphericity must not be as much of 0.05 for the factor analysis to be acceptable. Based on Table 1, Bartlett's Test significance value is 0.000, which meets the entailed significance value of the smaller amount of 0.05 (Awang, 2012, Awang, Lim & Zainudin, 2018; Hoque & Awang, 2016b; Hoque et al., 2017b;). Hence, data can be stated adequately within the KMO values, approximately 1.0, and Bartlett's test significance value nearly to 0.0. Therefore, the data can be applied and proceed with the reduction procedure.

Table 2 Total Variance Explained for BOL Construct

Comp.	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.771	43.854	43.854	8.771	43.854	43.854	5.421	27.103	27.103
2	1.969	9.844	53.698	1.969	9.844	53.698	3.572	17.861	44.965
3	1.354	6.770	60.468	1.354	6.770	60.468	3.101	15.503	60.468
4	.953	4.767	65.235						
5	.891	4.454	69.689						
6	.773	3.863	73.551						
7	.692	3.458	77.009						
8	.571	2.854	79.863						
9	.539	2.695	82.557						
10	.509	2.547	85.105						
11	.484	2.419	87.524						
12	.382	1.911	89.434						
13	.361	1.805	91.239						
14	.344	1.719	92.958						
15	.307	1.535	94.494						
16	.279	1.397	95.891						
17	.263	1.317	97.208						
18	.217	1.085	98.293						
19	.188	.941	99.234						
20	.153	.766	100.000						

Note: Principal Component Analysis as the extraction method

An extraction process of items need to be carried out to diminish them into an adaptable number before further analysis, is known as total variance explained. On top of it, components with eigenvalues higher than 1.0 are extracted into different components (Awang, 2012; Awang, Lim & Zainudin, 2018; Hoque & Awang, 2016b; Pallant, 2007). As can be perceived in Table 2, EFA has extracted three aspects, or components of BOL construct with eigenvalue 8.771, 1.969, and 1.354 for component numbers 1, 2, and 3 individually disclosed by the output. This designates that the items are convened into three aspects or components and could be reflected for further analysis. The total variance explained of 60.468 presented in Table 2.

Table 3 Rotated Component Matrix of BOL Construct

Item Code	Statement	Component		
		1	2	3
BOL1	I trained my subordinates to succeed.	.828		
BOL2	I motivate the subordinates to succeed.	.760		
BOL3	I clearly explain the strategy to the subordinates.	.758		
BOL4	I develop subordinate skills to accomplish a task.	.710		
BOL5	I convey the vision and mission of the college/department to the subordinates.	.664		
BOL6	I allow subordinates to do a project/job.	.654		
BOL7	I constantly monitor poor subordinate work performance.	.609		
BOL8	I provide a conducive environment for subordinate learning.	Deleted		
BOL9	I share clear and distinct college/department goals and objectives with subordinates.	Deleted		
BOL10	I reward subordinates who perform well.	Deleted		
BOL11	I know each person personally.	Deleted		
BOL12	I developed a plan for college / departmental change.		.843	
BOL13	I analyze future trends and their implications for colleges/departments.		.836	
BOL14	I set performance goals along with subordinates.		.695	
BOL15	I set an interesting strategy.	Deleted		
BOL16	Providing subordinates with the motivation to increase their confidence is important and necessary.			.831
BOL17	I share the best practices in the team.			.760
BOL18	I think leaders should lead but not rule.			.729
BOL19	I explore and highlight existing talent in subordinates.			.615
BOL20	I explain the strategy so that the subordinates can adapt to the college/department strategy.	Deleted		

Extraction Method: Principal Component Analysis

Rotation Method: Varimax with Kaiser Normalization

The result in Table 3 indicates that three components have been extracted by the EFA procedure. Several numbers of items with their separate factor loading for each component. Those item having factor loading exceeding 0.6 will be preserved since it denotes the usefulness of items in measuring the specific construct (Awang et al., 2017a; Awang et al., 2017b; Awang, 2012; Awang, Lim & Zainudin, 2018; Hoque & Awang, 2016b; Hoque & Awang, 2019;). Item BOL8, BOL9, BOL10, BOL11, BOL15, and BOL20 are removed due to these items do not contribute to accessing the planned construct (factor loading less than 0.6).

Table 4 Rotated Component Matrix of BOL Construct (After the deletion process)

Item Code	Statement	Component		
		1	2	3
BOL1	I trained my subordinates to succeed.	.828		
BOL2	I motivate the subordinates to succeed.	.760		
BOL3	I clearly explain the strategy to the subordinates.	.758		
BOL4	I develop subordinate skills to accomplish a task.	.710		
BOL5	I convey the vision and mission of the college/ department to the subordinates.	.664		
BOL6	I allow subordinates to do a project/ job.	.654		
BOL7	I constantly monitor poor subordinate work performance.	.609		
BOL12	I developed a plan for college / departmental change.		.843	
BOL13	I analyze future trends and their implications for colleges/ departments.		.836	
BOL14	I set performance goals along with subordinates.		.695	
BOL16	Providing subordinates with the motivation to increase their confidence is important and necessary.			.831
BOL17	I share the best practices in the team.			.760
BOL18	I think leaders should lead but not rule.			.729
BOL19	I explore and highlight existing talent in subordinates.			.615

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization

The selected item to be applied for the study is shown in Table 4 after the deletion process. Consequently, the above-rotated component matrix displayed all 13 items, which has a factor loading above 0.6. Hence, all 12 items will be cogitated for further analysis under three aspects or components of the BOL construct.

Reliability Analysis for the Measuring Item of BOL

In order to evaluate the measuring item under each construct and assess the degree to which they are error-free, reliability analysis is the technique that needs to be implemented. The reliability of items is measured by using the renowned value of Cronbach's Alpha. Yet, the acquiescence value of Cronbach's Alpha as an indicator of internal consistency items diverge by numerous researchers. To valid internal consistency reliability, Cronbach's Alpha of greater than 0.5 is recommended (Kerlinger & Lee, 2000). Besides, Cronbach's Alpha of 0.6 or higher offers a reliable measure of internal consistency (Awang, 2012; Awang, Lim & Zainudin, 2018; Hair et al., 1998; Hoque & Awang, 2016b; Nunnally, 1978; Nunnally & Bernstein, 1994; Sekaran & Roger, 2013;) while a score of 0.7 divulges that the instrument retains a high-reliability standard (Hoque & Awang, 2019; Hoque et al., 2018c) and it applied in this study.

Table 5 Reliability Statistics for the three Components of BOL Construct

Component	Number of items in a component	Cronbach's Alpha	Cronbach's Alpha based on standardized item
1	7	.894	.894
2	3	.826	.826
3	4	.787	.787

As displayed in Table 4, there are seven items, three items, and three items for component 1 (focus), component 2 (visionary), and component 3 (idealized influences) of the BOL construct, respectively. The Cronbach's Alpha for components 1, 2, and 3 are computed and retains a high-reliability standard as 0.894, 0.826, and 0.787 correspondingly. Hence, all reliability measures for the three aspects or components of BOL construct have surpassed the needed value of 0.6. Thus, the extracted aspects or components with their particular items are reliable and suitable to measure the BOL construct. Hence, employing those items for measuring BOL constructs in future researches.

Conclusion

The measurement of BOL constructs provided in the current study, predominantly from the perspective of vocational college in Penang. The major findings of this study exhibited by a structure that extracts three aspects of BOL (focus, visionary, and idealized influences) is generated by the EFA results of the current study. These aspects can be measured by 13 items developed in this study. At the same time, high Cronbach's Alpha value exhibited by all reliability measures for the three aspects or components of BOL construct, assembles Barlett Test achievements (significant), KMO (> 0.6), factors loading surpasses the minimum threshold of 0.6. This reveals that the items not set aside are appropriate in this study (Awang et al., 2017a; Awang et al., 2017b; Awang, 2012; Awang, Lim & Zainudin, 2018; Hoque & Awang, 2016c;). The new BOL instrument is internally consistent and stable across samples confirmed by the rigorous scale development and validation procedures of the current study.

Finally, the number of aspects, as well as items of BOL has been proven, and this will contribute to the BOL theory as it converses how management should perceive their employees as customers to whom they are offering a service of effective leadership. Besides, the validity and reliability of the BOL item in the context of vocational college have been verified too. These findings

are significant for those researchers who would like to examine the effect of BOL among the leaders in the education field especially in the context of vocational college. Yet, there is abundant room for further progress in determining item for BOL in other underdeveloped, developing, and developed countries need to be undertaken.

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