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VALIDITY AND RELIABILITY OF LECTURER LEADERSHIP STYLES QUESTIONNAIRE

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ABSTRACT

In the modern age, leadership is one of the teaching competencies that influences students' engagement in higher learning. However, leadership styles demonstrated by lecturers may be interpreted differently across cultures and populations. Hence, there is a need to establish new instrumentation with strong validity and reliability evidence of lecturer leadership style questionnaire according to the sample size, language, and acceptance of respondents. This study involved undergraduate students of the Faculty of Sport Science, UiTM, from the Arau, Shah Alam, Seremban 3, and Jengka campuses. There were 410 undergraduate students involved in this study. There were 44 items on the Lecturer Leadership Styles Questionnaire that underwent the process of constructing validity and reliability by employing exploratory factor analysis (EFA) and the Cronbach 'salpha model. After this process, 37 items on the Lecturer Leadership Styles Questionnaire were accepted, and the rest were discarded. To verify the factor structure of a set of observed variables, confirmatory factor analysis (CFA) was employed in the Leadership Styles Questionnaire. CFA analysis depicted the sample data fit the measurement model of Leadership Styles (RMSEA = .050, GFI = .942, AGFI = .917, TLI = .983, NFI = .969). In summary, the Lecturer Leadership Styles Questionnaire instrument with strong validity and reliable evidence can be used for further study in a similar setting.

Keywords: Lecturer, Leadership styles, Validity, Reliability, Questionnaire

1. INTRODUCTION

In the 21st century, learning must be aligned with the Industrial Revolution 4.0, and the education system demands that students be hardworking and able to learn independently by utilizing their learning time efficiently (Abersek, 2017). The objective is to produce graduates with a wide range of skills who are ready to face challenges and be employable (Mustapha, 2017). Soft skills, such as communication, interpersonal, and problem-solving skills, are the skill sets that employers are looking for, in addition to excellent academic achievement (Nurita, Shaharudin & Ainon, 2004). Most students obtain some soft skills during lecture sessions. To obtain such skills, the proper leadership styles of lecturers are significant. Ramsden (1992) emphasized that good teaching involves making assumptions about what and how students learn in the classroom. As everyone knows, teaching is a noble job, and it is not easy to be a good lecturer. The ultimate objective of their job is to educate and guide communities, especially students.

The selection of appropriate instrumentation is essential for measuring leadership styles among lecturers. A lot of instruments have been introduced by academic scholars to examine the leadership styles among lecturers and student engagement in the classroom. For instance, Tsai's (201) Teaching Leadership Style Scale (TLSS) was used to measure teachers' leadership styles in Macau. In another setting, Bass and Avolio's (199) Multifactor Leadership Questionnaire (MLQ) was developed to measure teacher leadership in Kathmandu, Nepal. In Malaysia, Afifah et al. 's (2005) instrumentation was developed to measure the leadership styles of lecturers at the Universiti Teknologi Malaysia (UTM) Technical and Vocational Training (TVeT).

Many instruments exist to measure lecturers' leadership styles. Existing instruments are readily used as they save time and resources; however, they may not be readily available in terms of the language used for targeted respondents. Furthermore, an improper choice of measurement scale resulted in the collection of inaccurate data. The incorrect selection of instrumentation may compromise the internal validity of a study. The problem that emerged in this study was the appropriateness of existing instrumentation for particular populations in terms of culture and language. Importantly, there is a lack of research on lecturers' leadership styles in Malaysia. Hence, there is a need to establish new instrumentation with strong validity and reliable evidence of lecturer leadership styles according to sample size, language, and acceptance of respondents.

2. LITERATURE REVIEW

Lecturer Leadership Styles

Numerous instruments measure lecturer leadership styles in the classroom. All of these instruments are applicable only to their respective populations and settings. Thus, the process of instrument adaptation of lecturer leadership styles is essential to guarantee the validity and reliability of this study. In this study, lecturer leadership styles include democratic, autocratic, and laissez-faire leadership styles.

2.1. Democratic Leadership Style

Several models have been developed by previous researchers for leadership style instrument adaptation. In the Malaysian context, Afifah et al. developed the Lecturer Leadership Styles Questionnaire.. *Alshahrani et al.* (2015) purposely measured the leadership styles used by lecturers during teaching and learning sessions in the classroom among Technical and Vocational students at University Tun Hussein Onn Malaysia. This study revealed that the leadership style preferred by students was the democratic leadership style of teaching and learning. This is because, with the democratic leadership approach, the lecturers were able to establish an atmosphere of shared responsibility with students and invite them to participate in all activities in the classroom. In the Croatian setting, as a whole, a high democratic leadership style in the classroom has been demonstrated, as it is influenced by democratic practice within Croatian society (Kolak 2010).

2.2. Autocratic Leadership Style

In tertiary education, for instance, in Estonia, autocratic leadership style is highly practiced because it promotes cognitive skills among students (Uibu & Kikas, 2014). However, the autocratic leadership style demonstrated by lecturers is limited. In contrast, some studies have examined the autocratic leadership styles practiced by educators; for example, the relationship between autocratic leadership styles by educators in U.S. public schools (Lunenburg, 2010). The results depicted a negative relationship between autocratic leadership styles and school climate, with factors such as student engagement, teacher morale, and parental involvement. A similar result was found in the study by Khan *et al.* (2015), who examined the autocratic lecturer leadership styles on student satisfaction at a university in Pakistan and found a negative association, while transformational leadership was positively associated with the outcomes. However, there is still a lack of studies conducted in Malaysia that have discussed the relationship between autocratic leadership styles and students' engagement in the classroom in a tertiary education setting.

2.3. Laissez-Faire Leadership Style

There is also a lack of studies on the effects of laissez-faire leadership in educational settings, whether in Malaysia or in other countries. However, one study found that laissez-faire leadership was negatively related to student engagement in secondary schools in the United States (Waldrip & Fisher, 2000). This study recommends that a lack of guidance or direction from educators leads to disengagement and poor performance among students and teachers. Other studies from Greece (Tsiarta *et al.,* 2017) found a negative association between laissez-faire leadership demonstrated by lecturers and students' levels of motivation and academic achievement. As a result, there is still a lack of studies discussing laissez-faire leadership styles in Malaysian educational settings.

2.4. The Instrument Adaptation And Development Of Lecturer Leadership Styles Questionnaire

There are limited findings on the questionnaire adaptation and development processes to ensure the validity and reliability of the lecturer leadership styles questionnaire. However, some researchers have adapted and developed instrumentation in general, which can also be used to develop a questionnaire that measures lecturer leadership styles. For instance, Hinkin (1995) outlined a seven-step process for questionnaire development: (1) defining the construct, (2) item generation, (3) content validity, (4) pilot testing, (5) item analysis, (6) reliability and validity, and (7) finalizing the instrument. In contrast, DeVellis (2017) proposed a process that is quite similar, including the following steps: (1) identifying the source instrument, (2) content validity, (3) pilot testing, (4) item analysis, (5) reliability and validity, and (6) finalizing the adapted instrument.

3. METHODOLOGY

3.1. Population and Sampling

The population in this study comprised undergraduate students from the Faculty of Sports Science and Recreation at Universiti Teknologi MARA. Yanik (2018) stated that any form of physical activity that involves student engagement will have a significant contribution to the education system. The main characteristic of this population is that they are mostly always dealing with hands-on assessments, which leads to engagement with their lecturers and peers. Considering the suggestions of renowned scholars such as Cohen (1992), Hair (2010), and Tabachnick and Fidell (2007), the researcher selected 410 respondents to eliminate outliers, incomplete responses from respondents, and respondents who withdrew from this study. The researcher chose undergraduate students from the Faculty of Sports Science and Recreation at UiTM as the population and sampling for this study.

3.2. Data Collection and Analysis

There are several procedures that the researcher has conducted to obtain data for this study. First, a set of questionnaires was created by adapting existing sources and going through the instrumentation development process. Subsequently, the researcher asked permission from the head of the program at each campus for data collection purposes. Next, the researcher met several lecturers at the respective campuses and explained the data collection procedure to them. To ensure that respondents understood the questions on each item, the questionnaire was conducted using simple language, and the use of technical jargon was avoided. Moreover, each lecturer debriefed all participants in detail. The questionnaire was then distributed to all respondents for completion. The responses will be kept confidential and only to be used for this study. The respondents were given a few minutes during the session to complete the questionnaire. Subsequently, the researcher collected all the answers and analyzed the data using IBM Statistical Package for Social Science (SPSS) Version 26.0. All data were subjected to a cleaning process to remove incomplete data and outliers to ensure that the analysis procedure would provide a clear result. In this study, statistical data analysis was used to analyze the data; namely, the Statistical Package for Social Science (SPSS) version 26.0 and Analysis Moment of Structure (AMOS) version 24. SPSS and AMOS are tools of data analysis that provide a large array of programs for univariate and multivariate statistical analysis.

4. FINDINGS AND DISCUSSION

First, EFA was used to verify the number of components of the lecturer leadership styles instrument and the arrangement of the item-factor loadings. EFA was run using 410 data, which is more than sufficient, as recommended by Osborne (2014). For factor loadings, the minimum suppressed factor should be above 0.3 (Joseph, William, Barry & Rolph, 2014). Table X presents the retained items of the three constructs of lecturer leadership styles: autocratic, democratic, and laissez-faire leadership, after conducting an exploratory factor analysis. To identify whether the data are appropriate, the researcher examined the correlation coefficient matrix of 0.3, as suggested by Tabachnick and Fidell (1996). Seven items were eliminated during the EFA analysis because of factor loadings of less than 0.3 and the redundancy of factor loadings. The list of eliminated items is as follows: DL8, AL1, AL2, AL3, AL4, AL5, and AL6. Next, these items were regrouped into a new group, which is democratic leadership (Component 1), laissez-faire leadership (Component 2), and autocratic leadership (Component 3). The new constructs and their respective items are presented below:

Table 1. EFA for Lecturer Leadership Styles

Lecturer Leadership Styles (LLS)	Factor 1	Factor 2	Factor 3
DEMOCRATIC			
DL14 - Always provide opportunities for students to evaluate teaching and learning systems (P&P)	.895		
DL13 - Give fair decisions to the students	.871		
DL6 - Put suggestions given by us into actions	.859		
DL10- Encourage the students to make decisions	.857		
DL16 - Help students accept responsibility for completing their work	.853		
DL11 - Provide support to students under any circumstances	.852		
DL17 - Believe that students are competent in completing the task	.849		
DL12 - Collaborate with students for success in a project	.847		
DL5 - Approachable	.841		
DL15 - Implement two-way communication with their students	.839		
DL9 - Receive opinions from students	.834		

DL18 – Give assignments and monitor progress	.833		
DL4 - Lecturers are friendly	.814		
DL7 - Lecturers treat us equally	.777		
DL2 - Lecturers let us do our work in the way we think best	.759		
DL3 - Lecturers will assign us a task, and then trust us to handle it	.747		
DL1 - Lecturers like to encourage our initiatives	.745		
AL8 - Students must be given rewards or punishments to motivate them to achieve course objectives	.687		
LAISSEZ-FAIRE			
LF2 - Lecturers are absent when needed in the classroom		.934	
LF4 - Lecturers delay responding to urgent questions		.932	
LF8 - Lecturers fail to handle the students' problems until they become serious		.931	
LF3 - Lecturers avoid making decisions in the classroom		.925	
LF9 - Lecturers wait for things to go wrong before taking action		.891	
LF13 - Lecturers never ask for feedback from us		.882	
LF11 - Lecturers give us assignments without monitoring our progress		.871	
LF14 - When I ask my lecturers, they ask me to ask another person or do it on our own		.870	
LF7 - Lecturers are lacking in giving clear instructions in which they do not explain the tasks given		.866	
LF1 - Lecturers avoid getting involved when important issues from students arise		.862	
AL12 - Lecturers do not allow us to contact him/her outside the classroom period		.817	
AL11 - Lecturers do not allow us to enter the classroom if we are late		.739	
LF10- In most situations, students prefer little input from the lecturer		.699	
AUTOCRATIC			
LF6 - Lecturers give us complete freedom in problem-solving			.583
LF5 - Lecturers give us complete freedom in decision-making			.544
AL10 - Lecturers want us to submit the assignments according to the due date			.531
LF12 - Lecturers put trust in their students to accomplish the assignment			.528
AL7 - Lecturers supervise closely each task given to us			.452
AL9 - The lecturer is the absolute assessor of the achievement of students			.426

Extraction Method: Principal component analysis.
Rotation Method: Varimax with Kaiser normalization.

The reliability of a particular instrument focuses on the consistency and dependability of the scores (McMillan, 2007). Cronbach 'salpha has been used to identify the reliability coefficient consistency of questionnaire items (Ahmad Hashim, 2014). An alpha index value of .60 or above is acceptable for the instrumentation scale, which has 10 items or more (Pallant, 2001). Table 1 presents the reliability analysis for the three constructs: democratic, autocratic, and laissez-faire.

Table 2. Reliabilitly Analysis for Democratic, Autocratic and Laissez-Faire Leadership Style

Construct	Democratic	Autocratic	Laissez-Faire
CRONBACH ALPHA(α)	0.993	0.918	0.94

After the EFA was conducted, all data were analyzed using analysis of moment structure (AMOS) version 24. Confirmatory factor analysis (CFA) was employed for the 37 items of lecturer leadership styles. Figure 1 shows an unfit model of lecturer leadership styles. Based on the figure above, the fitness index was unfit (RMSEA = .086, GFI = .741, AGFI = .706, TLI = .893, NFI = .861). Furthermore, the factor loading of several items did not surpass 0.50. Therefore, there is a must to have a modification to ensure that the model is fit. Any item with a value < 0.50 is dropped and examined by the modification index to fix the model based on absolute fit, incremental fit, and parsimonious fit.

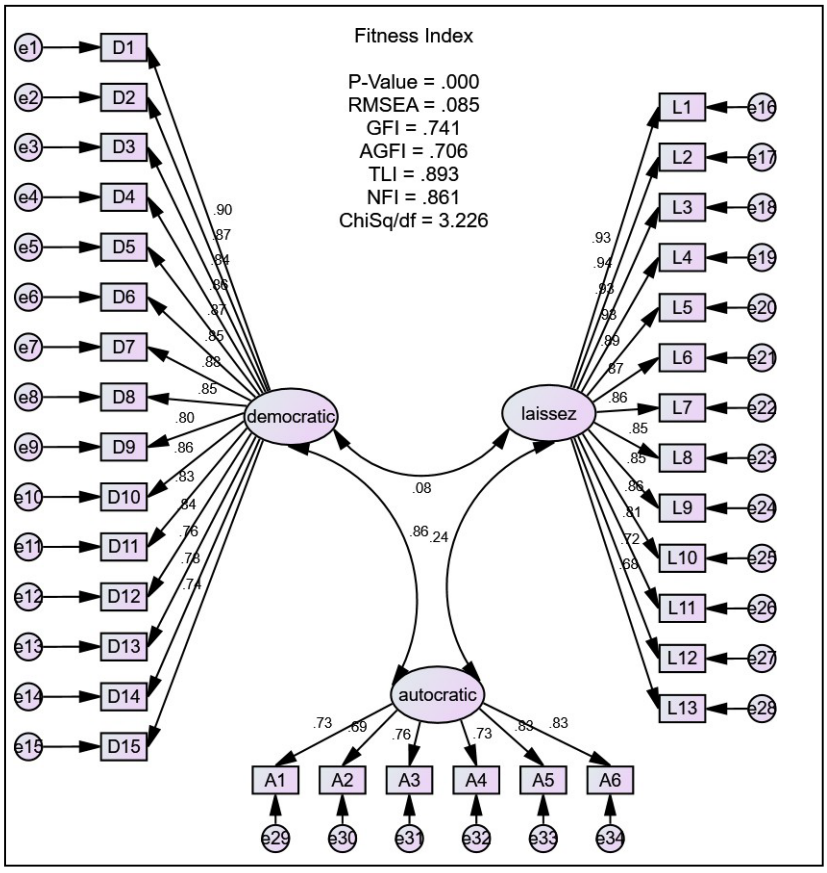

Figure 1: First Model of Lecturer Leadership Styles

Figure 2 showed 22 items of lecturer leadership styles such as D2, D3, D9, D10, D11, D12, D13, D14, D15, D16, D17, D18, L4, L8, L9, L10, L11, L12, L13, L14, L15, L16, L17, L18, A1, A2, and A3 have been dropped. These items were dropped as the factor loading for the items is less than 0.50 and does not fit the measurement model.

The figure also shows 15 items of lecturer leadership styles, such as D1, D4, D5, D6, D7, D8, L2, L3, L5, L6, L7, A4, A5, and A6, as the factor loading for the listed items exceeds 0.50 and fits the measurement model. The listed constructs are democratic, laissez-faire, and autocratic leadership styles.

Based on the model, the sample data fit the measurement model (RMSEA = .050, GFI = .942, AGFI = .917, TLI = .983, NFI = .969).

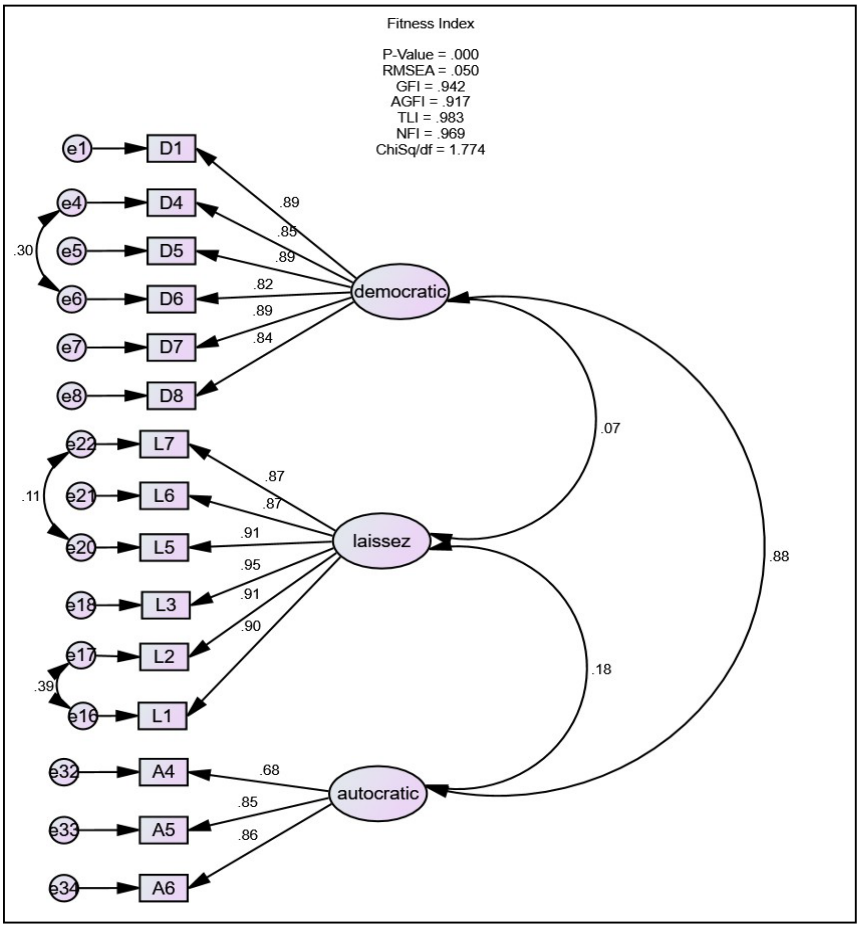

Figure 2: Reliability Analysis of Lecturer Leadership Styles after CFA

5. CONCLUSION

In summary, this instrument fulfilled the requirements for strong validity and reliability evidence and can be employed to analyze the data and draw conclusions based on the data analysis conducted in this study. The instrument can be used by anyone with a common population and setting, as it is suitable for undergraduate students from the university for any future study related to the topic or issue, especially in a similar population. As suggested by previous scholars (Baumgartner & Jackson, 1998; Miller, 2005), any instrument should be valid according to the population setting to have meaningful data. Hence, the questionnaire is valid and reliable to meet the requirement of data collection to ensure that the results of this study are precise.

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