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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 in teaching and learning that influences students' engagement in higher learning. However, leadership styles demonstrated by lecturers may be interpreted differently across different cultures and populations. Hence, there is a need to establish new instrumentation with strong validity and reliability evidence of lecturer leadership styles 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 are 410 undergraduate students involved in this study. There are 44 items of the Lecturer Leadership Styles Questionnaire undergone the process of constructing validity and reliability by employing the Exploratory Factor Analysis (EFA) and Cronbach Alpha model. After going through the process, 37 items of the Lecturer Leadership Styles Questionnaire were accepted and the rest were dropped out. 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 a nutshell, the Lecturer Leadership Styles Questionnaire instrument with strong validity and reliable evidence can be used for further study in a similar setting.

1.0 INTRODUCTION

In the 21st century learning aligned with the Industrial Revolution 4.0, the education system demands students to be hardworking and able to learn independently by utilizing their learning time in an efficient way (Abersek, 2017). The objective is to produce a graduate who has a lot of skills and is ready to face challenges and be an employable graduate (Mustapha, 2017). Soft skills such as communication, interpersonal, and problem-solving skills are the skill sets that employers are looking for, besides having excellent academic achievement (Nurita, Shaharudin & Ainon, 2004). Most students obtain some soft skills while learning in the lecture session. To obtain those kinds of skills, the proper leadership styles of lecturers are very significant. Ramsden (1992) emphasized that good teaching is to make 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.

To measure leadership styles among lecturers, the selection of appropriate instrumentation is essential. 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, the Teaching Leadership Style Scale (TLSS) by Tsai (2017) was used to measure the leadership styles of teachers in Macau. In another setting, the Multifactor Leadership Questionnaire (MLQ) was developed by Bass and Avolio (1992) to measure teacher leadership of teachers in Kathmandu, Nepal. In Malaysia, instrumentation has been developed by Afifah et al. (2005) with the purpose is to measuring the leadership styles of lecturers in UTHM Technical and Vocational Training (TVeT).

There are many instruments to measure leadership styles among lecturers. However, the existing instruments are readily used as they will save time and resources, but they may not be readily available in terms of the language used for targeted respondents. Furthermore, improper choice of measurement scales resulted in getting inaccurate data. The wrong selection of instrumentation may compromise the research's internal validity. The problem that emerged in this study is the appropriateness of existing instrumentation only for particular populations, in terms of culture and language used. The important point is, there is a lack of research discussing lecturer 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 the sample size, language, and acceptance of respondents.

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2.0 LITERATURE REVIEW

Lecturer Leadership Styles

There are so many instruments to measure lecturer leadership styles in the classroom. All the instrumentations are only applicable 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, the lecturer's leadership styles include democratic, autocratic, and laissez-faire leadership styles.

2.1 Democratic Leadership Style

For leadership style instrument adaptation, there are several models developed by past researchers. In the Malaysian context, Lecturer Leadership Styles Questionnaire was developed by Afifah *et. al.* (2015) purposely to measure 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 those lecturers were able to establish an atmosphere of shared responsibility with students and also invite students 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 the tertiary education setting, for instance, in Estonia, the 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. On the other hand, some studies have examined the autocratic leadership styles practiced amongst educators, for example, the relationship between autocratic leadership styles by educators in United States public schools (Lunenburg, 2010). The result depicted that there is a negative relationship between autocratic leadership styles to school climate, which the factors such as student engagement, teacher morale, and parental involvement. In a similar result, the study by Khan *et al.,* (2015 examined the autocratic lecturer leadership styles on student satisfaction in 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 towards students' engagement in the classroom in a tertiary education setting.

2.3 Laissez-Faire Leadership Style

There is also a lack of studies regarding the effects of laissez-faire leadership in education settings, whether it's from Malaysia or another country. However, there is 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), the study found that negative association between laissez-faire leadership demonstrated by the lecturers to students' level of motivation and academic achievement. As a result, there is still a lack of studies discussing the laissez-faire leadership styles in Malaysia's education setting.

2.4 The Instrument Adaptation And Development Of Lecturer Leadership Styles Questionnaire

There are limited findings of questionnaire adaptation and development process to ensure the validity and reliability of the lecturer leadership styles questionnaire. However, there is still some researcher who adapt and develop the instrumentation in general, which can also be used to develop a questionnaire that measures lecturer leadership styles. For instance, Hinkin (1995) outlined the 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. On the other hand, DeVellis (2017) proposed a quite similar process that includes (1) identifying the source instrument, (2) content validity, (3) pilot testing, (4) item analysis, (5) reliability and validity; and (6) finalizing the adapted instrument.

3.0 METHODOLOGY

3.1 Population and Sampling

The population in this study is undergraduate students from the Faculty of Sports Science and Recreation, Universiti Teknologi MARA. Yanik (2018) stated that any kind of physical activity that involves student engagement will have a great contribution to the education system. The great sense of having this population is, mostly, they are always dealing with the hands-on assessment which leads to engagement with their lecturer and their peers as well. By considering the suggestions of renowned scholars such as Cohen (1992), Hair (2010), and Tabachnick and Fidell (2007), the researcher decided to select 410 respondents to eliminate the outliers, the incomplete responses from respondents, and the respondents who are withdrawn from this study. The researcher has chosen undergraduate students from the Faculty of Sports Science and Recreation, 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. Firstly, a set of questionnaires is created which is adopted from sources and goes through the instrumentation development process. Then, 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 the respondents understand the question on each item, the questionnaire is conducted by using simple language, and the usage of technical jargon was avoided. Moreover, each lecturer debriefed all participants in detail. Then, the questionnaire was distributed to all respondents to answer. The responses will be kept confidential and only to be used for this study. The respondents will be given a couple of minutes during the session to complete the questionnaire. After that, the researcher collected all answers and analyzed the data by using IBM Statistical Package for Social Science (SPSS) Version 26. All of the data has gone through a cleaning process to remove incomplete data and outliers to ensure the analysis procedure will give a clear result. In this study, statistical data analysis was used to analyze the data; namely Statistical Package of Social Science (SPSS) version 26.0 SPSS and Analysis Moment of Structure (AMOS) version 24 is a tool of data analysis that provides a large array of programs for univariate and multivariate statistical analysis.

4.0 FINDINGS AND DISCUSSION

In the first place, the 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 by using 410 data, which is more than enough as recommended by Osborne (2014). For factor loadings, the minimum suppressed factor should be above 0.3 (Joseph, William, Barry & Rolph, 2014). The table below presents the retained items of three constructs of lecturer leadership styles; autocratic leadership, democratic leadership, and laissez-faire leadership after conducting an exploratory factor analysis. To identify whether the data is appropriate, the researcher is looking at the correlation coefficient matrix 0.3 as suggested by Tabachnick and Fidell (1996). Seven items were eliminated during EFA analysis due to factor loading less than 0.3 and the redundancy of factor loadings. The list of eliminated items was DL8, AL1, AL2, AL3, AL4, AL5, and AL6. Next, these items were regrouped into a new group which is democratic leadership (component one) laissez-faire leadership (component two), and autocratic leadership (component three). The new constructs and their respective items are stated 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 Alpha 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). The table below shows the reliability analysis for the three constructs which are 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 EFA was conducted, all of the data were analyzed by using Analysis of a Moment Structure (AMOS) version 24. Confirmatory Factor Analysis (CFA) was employed towards 37 items of lecturer leadership styles. Figure 1 shows the 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 less than 0.50 will be dropped and examined by the modification index to fix the model based on absolute fit, incremental fit, and parsimonious fit.
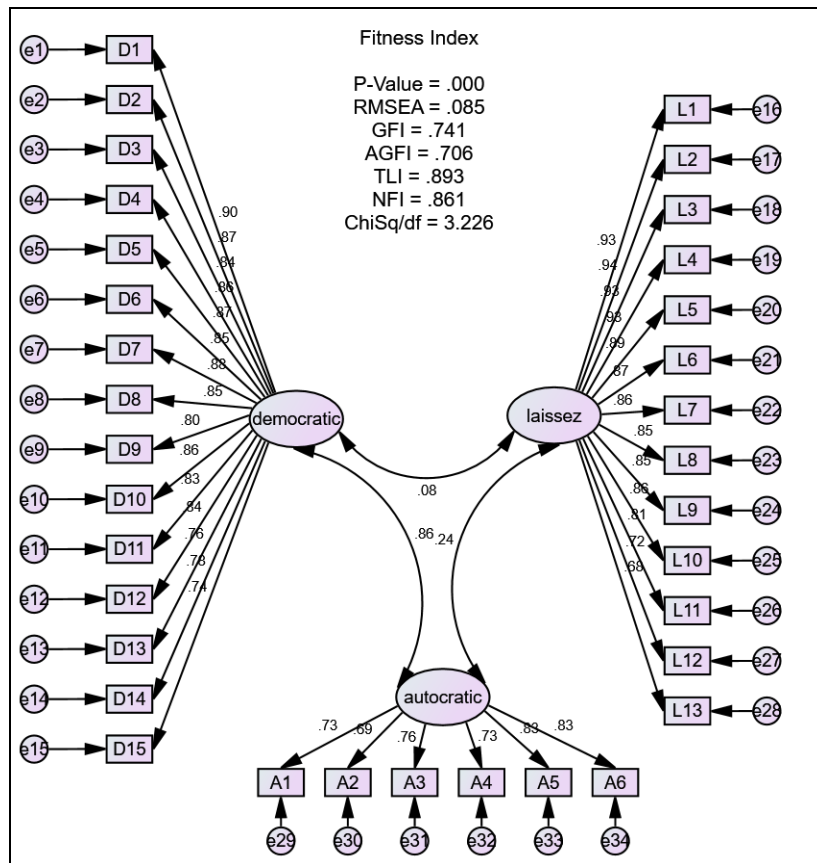

Figure 1: First Model of Lecturer Leadership Styles

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 showed 15 items of lecturer leadership styles such as D1, D4, D5, D6, D7, D8, L2, L3, L5, L6, L7, A4, A5, and A6 remains, as the factor loading for the listed items exceeds 0.50 and fit 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).
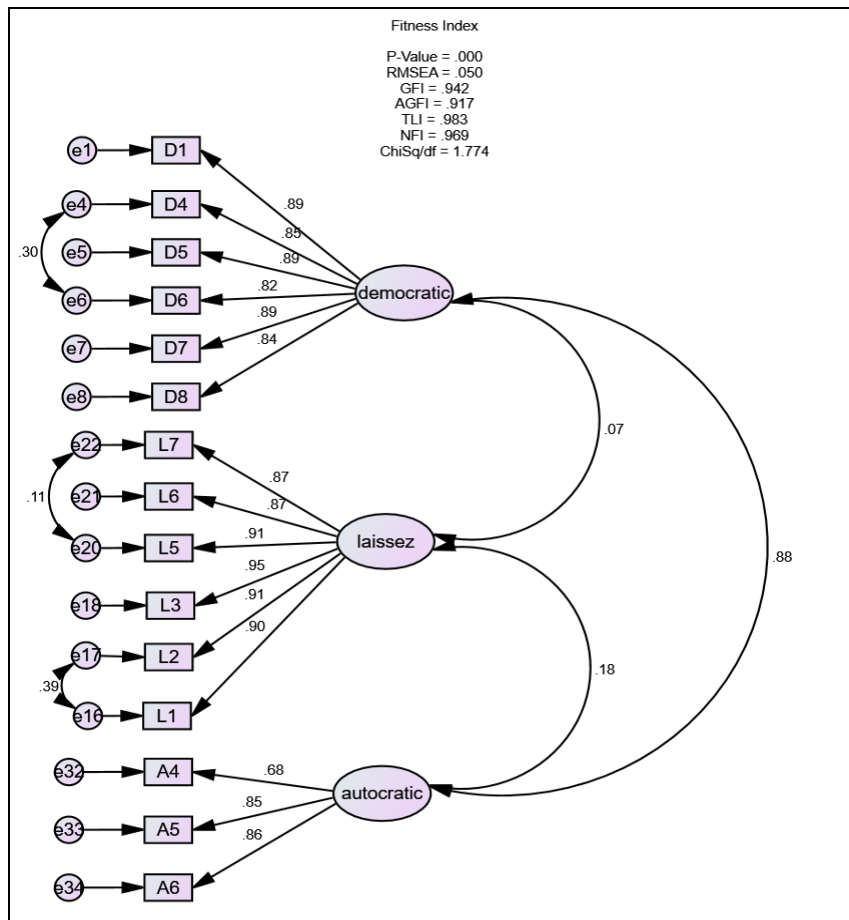

Figure 2: Reliability Analysis of Lecturer Leadership Styles after CFA

5.0 CONCLUSION

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

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