(RESEARCH ARTICLE)

Priority weight of main performance indicators on lecturers' personality competency in the design of performance measurement models in private higher education

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Abstract

Lecturers are one of the main components in the development of higher education, especially at private universities in South Sulawesi. To improve lecturer performance, it is necessary to increase the performance of personal competence. This research examines in depth the development of performance measurement models in private tertiary institutions. For the design needs of the performance measurement model, it is necessary to determine the main performance indicators and determine the priority scale weighting of Key Performance Indicators (KPIs). The methods used in this study are statistical methods and Analytic Hierarchy Process methods. The findings in this study are to establish and justify 6 main performance indicators on the personality competency aspect (CP). The main priority weight value on the KPIs is that the lecturer's criteria must be an example in attitude and behavior (PC3) with a weight value of 0.342. This shows that in the design of a performance measurement model for lecturer personality competencies, the PC3 performance indicator can contribute to the performance score on the personality competence aspect by 34.2% compared to the other 5 performance indicators.

Keywords: Model Design; Personality Competence; Lecturer; Performance Measurement

1. Introduction

The role of the lecturer is the driving force and spearhead of the institution's success in carrying out tridharma activities. As one of the most important components in Private Higher Education (PHE), lecturers are also required to be able to increase their role in institutional governance and professional development. This is quite reasonable considering that lecturers are the executors of the main functions: education, research, community service and higher education management. Therefore, empowering lecturers is a must for PHE, because qualified and high-performing lecturers are the key to the success of a PHE.

At the same time, lecturers need feedback from the institution on their work as a guide for their future behavior. Feedback on lecturer performance can be done through performance measurement. Measuring lecturer performance is a process in which institutions evaluate or assess lecturer performance or evaluate lecturer work results. The development of lecturer performance measurements for lecturers in PHE refers to the elements contained in the lecturer performance report.

Lecturer performance is the result of the process carried out by the lecturer through work implementation, work presentations, work achievements, work results and work performance. Performance is also something that can be measured through the application of performance measurement instrument models. According to Robbins [1],

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performance is a measure of what activities are done and not done by employees. Meanwhile, according to Mangkunegara [2] explains that work performance comes from the word actual performance or job performance, namely the results of work in quality and quantity achieved by an employee in carrying out his duties in accordance with the responsibilities given to him. Lecturer performance is one of the determining factors for the success of the teaching and learning process in tertiary institutions.

In this regard, to optimize the performance of lecturers at private tertiary institutions, performance management is needed. Performance management and performance measurement are goal-oriented processes [3] and the terms are often used interchangeably with performance evaluation, performance appraisal or performance measurement [3]. The conventional wisdom is that to manage one's performance one must first be able to measure it [4]. It may be necessary at first to discuss the definition and assumptions underlying the term 'evaluation'. 'assessment', 'measurement' and 'performance management', because it is very important to understand the actual relationship of these terms in the performance measurement process for lecturers in higher education settings and also, because of the proximity of the meanings of these terms [5].

In this regard, this research specifically discusses the identification and determination of Key Performance Indicators (KPI) and the weight of performance indicators on aspects of lecturer personality competence. This study uses a statistical method approach to validate KPIs and the AHP method to determine the weight of the main performance indicators on aspects of lecturer personality competencies.

2. Materials and Methods

To identify and justify Key Performance Indicators (KPIs) on aspects of lecturer personality competence, descriptive statistical techniques are used to determine the average weight value of the importance level of KPIs. This method was used in this study because it refers to previous research [6, 7, 8]. In data analysis used descriptive statistical techniques to find out the average value of expert respondents' perceptions. A descriptive statistical approach using the average calculation method has been used by several researchers before (7, 8). Descriptive statistics in the form of the average value (AM) is the comparison between the total value of the variable (ΣX) and the number of observations (N) as shown in formula 1, namely: $AM=((\Sigma X))/N$

In addition to the descriptive method, this study also uses the Analytic Hierarchy Process (AHP) method approach to determine the priority weight values of KPIs. In applying this method, the help of Expert Choice and Excel software applications is used. At the first stage of applying the method, determine expert respondents with the criteria of lecturers coming from tertiary institutions that are accredited at least B, having a Doctoral education, having held positions within the faculty and higher education quality assurance institutions. At the AHP analysis stage, the pair wise questionnaire was filled out first. The results of filling in the assessment of expert respondents were transformed into a pairwise comparison matrix. Based on this matrix, the value of each matrix element is normalized. After getting the results of normalizing the values of the matrix comparison criteria elements, a step is taken to add up all the numerical values in the matrix rows to get the value of the number or priority of the vector and then calculate the eigenvector values and test their consistency, if they are not consistent then data collection (preferences) needs to be repeated. The eigenvector eigenvalue in question is the maximum eigenvector value obtained using the Excel program or manually. Before determining the max value of λ(lamda) or the total of the eigenvalues, first determine the weight (priority) value by dividing the value of the number of priority vectors by the number of aspects of the assessment criteria. After the results of the eigen value are obtained, a consistency test is carried out with the condition that if CR < 0.100 then the weight assessment can be used.

3. Results

3.1 Identification, Validation and KPI Specifications for Personal Competency Aspects

Personal competence. Lecturers are expected to be solid, stable, mature, wise and authoritative individuals, to be role models for students, and to have noble character and uphold the teaching professional code of ethics. Personality competence means that a lecturer must have a strong personality so that he can become a source of identification, especially for students, generally for fellow human beings, meaning that he has an exemplary personality, so that he is able to carry out leadership "Ing Ngarso Sung Tulada, Ing Madya Mangun Karsa, Tut Wuri Handayani.

Based on this definition, based on the literature review that has been carried out, several Key Performance Indicators (KPI) can be developed and formulated that can be used to measure the performance aspects of lecturer personality competencies in PHE. The results of the identification of KPIs on the aspect of lecturer professional competence which

were formulated based on theoretical studies which were strengthened by the results of the respondents' assessments can be described in Table 1.

Table 1 Formulation of Key Performance Indicators (KPIs)

No.	Formulation of Key Performance Indicators (KPIs)	Code
1	Authority as a personal lecturer	PC_1
2	Wisdom in making decisions	PC_2
3	Be an example in attitude and behavior	PC_3
4	Conformity of words with actions	PC_4
5	Ability to control oneself in various situations and conditions	PC_5
6	Fair in treating students	PC_6

The results of the identification of KPIs aspects of personality competence as shown in Table 1 have formulated 6 main performance indicators. All KPI formulations are determined based on the validation results of the average value of the respondent's rating weight based on the importance level of the KPIs formulation as shown in Figure 1.
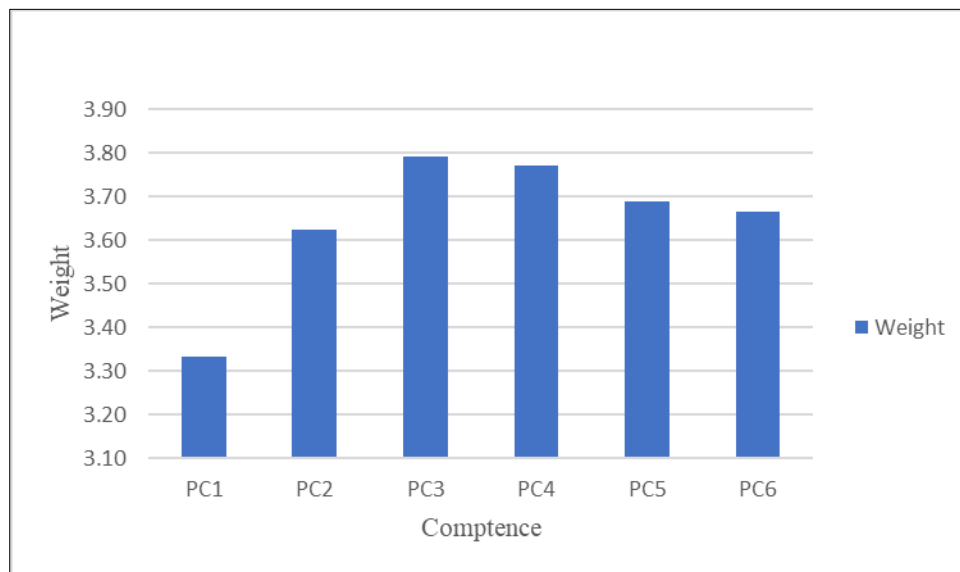
Figure 1 Graph of the average weighted level of importance for KPI aspects of personality competence

Based on the validation results of the 6 KPIs on the personality competency aspect, it shows that all of the main performance indicator formulations have an importance level greater than 3 where it is found that the lowest KPI weight value is 3.33 and the highest is 3.79. This indicates that all KPIs are considered important to be used in lecturer performance measurement. In addition to this level of importance, KPI validation is strengthened by the results of the validity test of 6 KPIs on the personality competency aspect as shown in Table 2. The validity test results show that all data from the respondents' assessment results are stated to be valid so that all Key Performance indicators (KPI) on the professional competence aspect can be accounted for accuracy.

Based on the calculated r value from the results of data processing using the SPSS Version 24 software which has been summarized in Table 2, it shows that all data on the 6 statement items in the questionnaire can be declared valid because they have an r count value greater than 0.285 (r table) . The reliability test results generated from the SPSS output provide information about the number of samples or respondents (N) in the research analyzed in the SPSS program, namely N as many as 48 lecturers with those who have requirements as respondents. These results indicate that there is no empty data in the sense that all respondents' answers are filled so that the number is 100% valid.

Table 2 KPI data validity test on aspects of personality professional competence

No.	Code KPI	R$_{count}$	r$_{table}$	Status
1	PC$_1$	0,552	0,285	Valid
2	PC$_2$	0,789	0,285	Valid
3	PC$_3$	0,792	0,285	Valid
4	PC$_4$	0,810	0,285	Valid
5	PC$_5$	0,702	0,285	Valid
6	PC$_6$	0,788	0,285	Valid

Based on the results of the data analysis output in Table 3 using SPSS 24.0, it is listed N of items or the number of questions in the questionnaire instrument, namely 6 question items with a Cronbach's Alpha value of 0.826. With respect to the Cronbach's Alpha value of 0.826 > 0.60, the reliability test can be concluded that the 6 question items on the questionnaire are reliable or consistent. Based on the results of this test, it shows that the questionnaire instrument used to identify the attributes of customer needs for chocolate products can be trusted. After testing the validity and reliability of data related to KPI on the aspect of pedagogic competence, the level of importance of each attribute needed in designing a lecturer performance measurement model can be determined. Table 3 shows the results of statistical values for the 6 statement items in the research questionnaire. In the Cronbach's Alpha if Item Deleted column, the Cronbach's Alpha value for all items is 0.826 > 0.60. This shows that the 6 item statements in the questionnaire are reliable or trusted. Based on the results of the validity and reliability tests, it can be concluded that 6 items attribute customer needs to aspects of packaging for chocolate products. Assessment of the level of importance of the level of importance of KPIs using a rating scale, namely: number 1 = very unimportant, number 2 = not important, number 3 = important, number 4 = very important. Based on the survey results using the questionnaire instrument, it shows that all KPI formulations can be used as Main Performance Indicators for aspects of pedagogic competence because all have an average value of importance level > 3 which means important and very important.

Table 3 KPI reliability test results on aspects of Pedagogic competence

Reliability Statistics	
Cronbach's Alpha	**N of Items**
0,826	6

After the validation process is carried out, the next step is to specify KPIs. In relation to the KPIs specifications, the names of 6 KPIs and their codes are defined as shown in Table 1. The KPIs specifications for the personality competence aspect require descriptions, objectives, linkages with measurement methods, KPIs targets and the frequency of KPIs measurements. In the description stage of each KPIs, an overview of the KPIs will be described. At the goal setting stage, each KPIs must have clear objectives in measuring lecturer performance. At the linkage determination stage, the linkages between KPIs and personality competency aspects must be clarified. At the specification stage, it is also explained clearly about how to measure KPIs and the frequency of their measurements.

3.2 Determination of personality competency KPIs weights

The analysis of determining the priority weight value of the main performance indicators (KPIs) on the criteria for aspects of the lecturer's personality competence begins by transforming the results of the expert respondent's assessment into a pair wise questionnaire as shown in Table 4.

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Table 4 Comparative assessment of the importance of personality aspects of KPIs

Comparative assessment of the importance of KPIs, personality competency sub-criteria				
PC1	⑨⑧⑦⑥⑤④③②	①	②③④⑤⑥⑦⑧⑨	PC$_2$
PC1	⑨⑧⑦⑥⑤④③②	①	②③④⑤⑥⑦⑧⑨	PC$_3$
PC1	⑨⑧⑦⑥⑤④③②	①	②③④⑤⑥⑦⑧⑨	PC$_4$
PC1	⑨⑧⑦⑥⑤④③②	①	②③④⑤⑥⑦⑧⑨	PC$_5$
PC1	⑨⑧⑦⑥⑤④③②	①	②③④⑤⑥⑦⑧⑨	PC$_6$
PC$_2$	⑨⑧⑦⑥⑤④③②	①	②③④⑤⑥⑦⑧⑨	PC$_3$
PC$_2$	⑨⑧⑦⑥⑤④③②	①	②③④⑤⑥⑦⑧⑨	PC$_4$
PC$_2$	⑨⑧⑦⑥⑤④③②	①	②③④⑤⑥⑦⑧⑨	PC$_5$
PC$_2$	⑨⑧⑦⑥⑤④③②	①	②③④⑤⑥⑦⑧⑨	PC$_6$
PC$_3$	⑨⑧⑦⑥⑤④③②	①	②③④⑤⑥⑦⑧⑨	PC$_4$
PC$_3$	⑨⑧⑦⑥⑤④③②	①	②③④⑤⑥⑦⑧⑨	PC$_5$
PC$_3$	⑨⑧⑦⑥⑤④③②	①	②③④⑤⑥⑦⑧⑨	PC$_6$
PC$_4$	⑨⑧⑦⑥⑤④③②	①	②③④⑤⑥⑦⑧⑨	PC$_5$
PC$_4$	⑨⑧⑦⑥⑤④③②	①	②③④⑤⑥⑦⑧⑨	PC$_5$
PC$_5$	⑨⑧⑦⑥⑤④③②	①	②③④⑤⑥⑦⑧⑨	PC$_6$

Based on the results of the comparison questionnaire in Table 4, it can be transformed into a criteria comparison matrix as shown in Table 5. Form a pairwise comparison matrix that describes the relative contribution or influence of each element on each objective or criterion level above. Comparisons are made based on the choices or judgments of expert respondents by assessing the importance levels of an element compared to other elements. In this pair wise questionnaire, there are 6 elements or KPIs that are compared to obtain elements of the value of expert respondents who have assessed the level of interest comparison to the 6 KPIs in the aspects of lecturer pedagogic competence. The KPIs sub-criteria comparison matrix on the personality competency aspect can be seen in Table 5.

Table 5 Matriks perbandingan sub kriteria KPI kompetensi kepribadian

	PC1	PC2	PC3	PC4	PC5	PC6
PC1	1	0,33	0,2	0,25	0,5	0,5
PC2	3	1	0,5	0,25	0,33	0,5
PC3	5	2	1	2	3	4
PC4	4	4	0,5	1	2	3
PC5	2	3	0,33	0,5	1	2
PC6	2	2	0,25	0,33	0,5	1

After the sum of the values in the matrix column, the stages of normalizing the value of each matrix element are carried out by dividing each numerical element in the matrix column by the total number value in the matrix column as shown in Table 6. Based on the results of normalizing the value of the matrix element comparison criteria, a step is taken to add up all the numeric values in the matrix rows in Table 7 to get the value of the number or priority of the vector and then calculate the eigenvector values and test their consistency, if they are not consistent then data collection (preferences) needs to be repeated. The eigenvector eigenvalue in question is the maximum eigenvector value obtained using the Excel program or manually.

Table 6 The results of the normalization of the criteria comparison matrix

	PC₁	PC₂	PC₃	PC₄	PC₅	PC₆
PC₁	0,059	0,027	0,072	0,058	0,068	0,045
PC₂	0,176	0,081	0,180	0,058	0,045	0,045
PC₃	0,294	0,162	0,360	0,462	0,409	0,364
PC₄	0,235	0,324	0,180	0,231	0,273	0,273
PC₅	0,118	0,243	0,119	0,115	0,136	0,182
PC₆	0,118	0,162	0,090	0,076	0,068	0,091
	1,000	1,000	1,000	1,000	1,000	1,000

Before determining the max value of λ(lamda) or the total of the eigen values, first determine the weight value (priority) by dividing the value of the number of priority vectors by the number of aspects of the assessment criteria, namely 6 as shown in Table 7. Based on the total value of the eigen value, the value obtained consistency index (CI) as the basis for determining the value of the consistency ratio (CR). The consistency ratio (CR) value is obtained based on the random index value (RI) for a matrix with n = 6 elements, so the RI = 1.24.

Table 7 KPI weight and eigen value values for aspects of professional competence

	PC₁	PC₂	PC₃	PC₄	PC₅	PC₆	Total	Weight	Eigen Value
PC₁	0,059	0,027	0,072	0,058	0,068	0,045	0,329	0,055	0,932
PC₂	0,176	0,081	0,180	0,058	0,045	0,045	0,586	0,098	1,203
PC₃	0,294	0,162	0,360	0,462	0,409	0,364	2,051	0,342	0,950
PC₄	0,235	0,324	0,180	0,231	0,273	0,273	1,516	0,253	1,094
PC₅	0,118	0,243	0,119	0,115	0,136	0,182	0,913	0,152	1,116
PC₆	0,118	0,162	0,090	0,076	0,068	0,091	0,605	0,101	1,109
	1,000	1,000	1,000	1,000	1,000	1,000	6,000	1,000	6,405

After the results of the eigen value are obtained, a consistency test is carried out with the condition that if CR < 0.100 then the weight assessment can be used. The stages and calculation results for determining the value of the consistency ratio can be described as follows:

$$CI = \frac{\lambda maks - n}{n-1}$$

$$CI = \frac{6,405 - 6}{6 - 1} = 0,081$$

Based on the CI value, the value of the consistency ratio (CR) can be determined with the following calculation:

$$CR = \frac{CI}{RI}$$

By paying attention to the random value of the consistency index according to Saaty, 1980 in Table 8, the CR value can be calculated.

Table 8 Ratio Consistency Index (CR)

N	1	2	3	4	5	6	7	8	9	10
RI	0,00	0,00	0,58	0,9	1,12	1,24	1,32	1,41	1.46	1,49

$$CR = \frac{0081}{1,24} = 0,065$$

Based on the calculation of the CR value, it was found that the CR value was (0.065) ≤ 0.1, so the results of the analysis of determining the KPI sub-criteria weight values for aspects of lecturer personality competence using the AHP method can be concluded that these weight values can be used.

4. Discussion

KPIs that can contribute to lecturer performance on personality aspects include indicators of authority as personal lecturers (CP_1), performance indicators of wisdom in making decisions (CP_2), performance indicators of being exemplary in attitude and behavior (CP_3), performance indicators of Conformity of words with actions (CP_4), performance indicators related to the ability to control oneself in various situations and conditions (CP_5), performance indicators are fair in treating students (CP_6). The performance indicator criterion that has the highest weighted value among the 6 KPIs is the CP_3 performance indicator with the highest weighted value of 0.342. It is important to note that lecturers have an important role to be role models when teaching students. The lecturer's example in the form of giving examples of discipline behavior, honesty, noble character can improve the obedience character of students. The research findings reinforce the impact of exemplary lecturers who apply moral values in a structured manner in lectures to increase student obedience and honesty [9]. Performance indicators for aspects of personality competence that have the second largest weight are words and actions alone. This is very important because in order to instill the values of student trust, lecturers must be able to manifest behavior in one word and action because this is also related to efforts to support the realization of exemplary attitudes for lecturers.

5. Conclusion

Personality competence is an important aspect in improving the performance of lecturers at in Private Higher Education (PHE), especially related to the implementation of lecturers' attitudes in providing examples of good behavior and behavior or exemplary behavior, this is reinforced by the results of the analysis which found that this performance indicator makes the greatest contribution to performance lecturers related to personality competence, namely 0.342 or 34.2%. This is reinforced by the results of research which found that the impact of exemplary lecturers who applied moral values in a structured manner in lectures was able to increase student obedience and honesty [9]. The KPIs for the personality competency aspect which also makes the second major contribution to the performance of the lecturer's personality competency aspect is words and actions.

Compliance with ethical standards

Disclosure of conflict of interest

In writing this scientific article, all authors do not have a conflict of interest.

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