The analysis of the factors affecting student loyalty

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Abstract
This research aims to analyze the factors that affect student loyalty. The research used a quantitative approach with a survey as a method. The data were analyzed using a Confirmatory Factor Analysis (CFA). 255 students were selected as the respondents using a proportionate stratified random sampling technique. The results of the First Order CFA indicate that the statements that make up the indicators of Student Loyalty are reliable statements in measuring the latent variables of Student Loyalty, while the value of the factor loading on the indicators of the Second Order CFA model is good at measuring Student Loyalty variables.

Keywords: student loyalty, quality assurance, higher education, confirmatory factor analysis

Introduction

Customerloyalty refers to product repurchases(Evans & Laskin, 1994;Oliver, 1999;Zeithaml, Bitner, & Gremler, 2013)from the same company and giving positive word of mouth referrals to other potential consumers(Evans & Laskin, 1994),from the preferred product consistently in the future(Oliver, 1999), because customers have shown a positive attitude towards the company's products/services(Zeithaml et al., 2013), have become habitual, and have shaped special characteristics without seeking external information and alternative evaluations(Blackwell et al. 2012).

The best service quality of education should be given by all universities as a mandate of every academic university(Doriza, 2019), especially in the fourth industrial revolution (4.0). Students are university customers who should be given quality services in accordance with education quality standards leading to their satisfaction with the quality of the service. In other words, student loyalty as a customer will be obtained if they feel satisfied(Li, 2013), is an important concern for higher education institutions(Yoonjoung & Lee, 2016)and overall, service quality has a positive impact on service loyalty(Debata et al., 2015).

When would students be considered loyal? The indications of student loyalty can be seen when they always feel satisfied with the services provided by the university. They will continue using the service because they are satisfied, trust the service and commit to using the services provided again and again. Student loyalty as a major customer(Sallis, 2010)must be sustainably maintained in order to keep the availability of university's allocative-distributive resources and hinder the entry of new services from competitors(Fitzsimmons & Fitzsimmons, 2006) through their persuasion. The purpose of this study is to find out the student loyalty by using CFA.

The results of the survey conducted to 200 active students per class indicate that on average only 21% of the students registered in university A based on the information from their relatives who had

ever studied there.The results indicated that 15% out of 200 new students claimed that they chose to enroll in UNJ because of the recommendation of their relatives who were students there. Such surveys were conducted to find out whether the enrollment of the currently active students and the new students in that university was due to the recommendations of their relatives. Based on the results of the surveys, many students' relatives who have experienced studying in a certain university did not recommend their relatives to become students in that university.

Method

The research used a quantitative approach with a survey as a method. The population of this research was all seventh-semester students of seven faculties in the UNJ amounting 4,364 students. They were chosen because they have experienced university services. 255 students were taken as the sample of this research referring to Isaac & Michael's Table for an error rate of 10%. The measure of goodness-of-fit for the such number of samples is between 200 and 300 students, meaning that the sample of 255 students has met the criteria to get goodness-of-fit measures. The sample was selected using a proportionate stratified random sampling technique because the students as the research population came from seven different faculties, including the Faculty of Education (56 students); Faculty of Languages and Arts (47 students); Faculty of Mathematics and Natural Sciences (25 students); Faculty of Social Sciences (32 students); Faculty of Engineering (35 students); Faculty of Sports Science (21 students); and Faculty of Economics (38 students).

Customer loyalty as a latent variable was the students' behavior after experiencing the services consistently provided by the university to continue becoming the university customers which was measured by filling out questionnaires about the student's behavior. The indicators of this research variable were: 1) continuously using the services provided; 2) being invulnerable against the competitors' persuasion; and 3) recommending the services to other people, with the measurement scale whose items consisted of 1 (Never); 2 (Seldom); 3 (Sometimes); 4 (Often); 5 (Very Often). These variables were unmeasured variables which were free from the systematic measurement of errors and were observed only indirectly through their effects on the observed variables(Bollen, 1989) based on the development of theoretical constructs.

The descriptors of each indicator above included (1) continuously using the services provided; the students' behavior after experiencing the university services repeatedly regardless of the state of the organization; (2) being invulnerable against the competitors' persuasion; the students' behavior which was not affected by persuasion from other universities offering services that were equal or better than the services experienced by the students; and (3) recommending the services they have experienced other people; the students' behavior informed others about the services provided by the university after they experienced such services.

The data were analyzed using CFA(Jöreskog, 1973).The goodness-of-fit model, based on the index number, was determined b: absolute fit measure, incremental fit measure, and parsimony fit measure.

Results and Discussion

The data concerning the latent variables of cus3tomer loyalty have 24 valid statements. Theoretically, the scores are in the range of 24 – 120; meanwhile, the empirical scores based on the data obtained are in the range of 43 - 115. The measures of the central tendency of latent variables of the customer loyalty have the mean, median and mode values of 78.47, 79 and 80, respectively. The results of data variation measures showed that the standard deviation equals 14.80 and the variance equals 219.18. The highest score distribution of the latent variables of customer loyalty lies in the interval of 79-87 (23.14%), while the lowest score is in the interval of 115 - 123 (0.78%). The mean score of the latent variables of Customer Loyalty is in the interval of 70-78.

Indicator Y13: Continuously Using the Services Provided

The data concerning the indicator Continuously Using the Services Provided (Y13) have 10 valid statement items, and theoreticall,y the score is in the range of 10 - 50. Based on the data obtained, the scores are in the range of 22 - 47. The measures of the central tendency of the indicator Continuously Using the Services Provided (Y13) have the mean, median and mode values of 34.05, 34 and 33, respectively. The results of data variation measures showed that the standard deviation equals 5.32 and the variance equals 28.32.

The distribution of the mean score of the indicator Continuously Using the Services Provided (Y13) is in the interval of 34-36 and is included in the fairly loyal category. Based on the 10 statements that make up this indicator, it is obviously seen that the mean score ranges from 3.23 to 3.52. If the highest mean score is 3.52, it means that the respondent's answers tend to oftenparticipategin lectures even though a projector (in-focus) is not available in some classrooms (Y13_12) with the standard deviation of 0.72. Meanwhile, if the smallest mean score is 3.23, it means that the respondents' answers are close to frequently taking advantage of the internet access facility through the UNJ Hot Spot to search and add lecture references (Y13_13) with the standard deviation of 0.68.

Indicator Y14: Being Invulnerable against the Competitors' Persuasion

The data concerning the indicator Being Invulnerable against the Competitors' Persuasion (Y14) have 5 valid statement items, and theoreticall,y the score is in the range of 5 - 25. Based on the data obtained, the empirical scores are in the range of 5 - 25. The measures of the central tendency of the indicator Being Invulnerable against the Competitors' Persuasion (Y14) have the mean, median and mode values of 15.01, 15 and 13, respectively. The results of data variation measures showed that the standard deviation equals 4.60 and the variance equals 21.18.

The distribution of the mean score of the indicator Being Invulnerable against the Competitors' Persuasion (Y14) is in the interval of 15 – 1, and is included in the fairly loyal category. Based on the 5 statements that make up this indicator, it is obviously seen that the mean score ranges from 2.827 to 3.133. If the highest mean score is 3.133, it means that the respondent's answers tend to approach "Often" for the statement "Continuously studying in UNJ even though there are other universities that are similar to UNJ in some respects (Y14_20)" with a standard deviation of 1.075. Meanwhile, if the smallest mean score is 2.827, it means that the respondents' answers tend to approach "Often" for the statement "I got an offer to move to another university and I always ignore the offer (Y14_14)" with the standard deviation of 1.084.

Indicator Y15: Recommending the Services They Have Experienced to Other People

The data concerning the indicator Recommending the Services They Have Experienced to Other People (Y15) have 9 valid statement items, and theoretically the score is in the range of 9 - 45. Based on the data obtained, the empirical scores are in the range of 9 - 45. The measures of the central tendency of the indicator Recommending the Services They Have Experienced to Other People (Y15) have the mean, median and mode values of 29.41, 29 and 26, respectively. The results of data variation measures showed that the standard deviation equals 7.02 and the variance equals 49.25.

The distribution of the mean score of the indicator Recommending the Services They Have Experienced to Other People (Y15) is in the interval of 29 - 33 and is included in the fairly loyal category. Based on the 9 statements that make up this indicator, it is obviously seen that the mean score ranges from 3.055 to 3.490. If the highest mean score is 3.490, it means that the respondent's answers tend to be "Often" for the statement "I like it when I know someone is praising UNJ in front of other people (Y15_23)" with a standard deviation of 0.922. Meanwhile, if the smallest mean score is 3.055, it means that the respondents' answers tend to approach "Often" for the statement "I told others that during my study at UNJ my academic needs have been fulfilled (Y15_25)" with the standard

deviation of 0.942. These results indicate that student loyalty will be built once they feel satisfied with their academic needs that have been fulfilled. This is in accordance with the results of the study(Li, 2013)confirming that customer loyalty will be built if the customer feels satisfied. Customer satisfaction will be obtained if the customer already receives quality service. In other words, the university must provide good services in order to make the students feel satisfied, and then it will gain its customer loyalty.

Table 1. Summary of the Results of First Order and Second Order CFA Model for Customer Loyalty Variables

Indicator/ Item Statement	Loading Factor	Error Measurement	t-count	Reliability		Validity and Reliability/ Conclusion Test Results
				CR	VE	
CFA Second Order						
Y13.				0.91	0.51	Good reliability
Y13_1	0.66	0.56				Good validity
Y13_2	0.69	0.52	9.88			Good / Significant Validity
Y13_5	0.65	0.58	9.31			Good / Significant Validity
Y13_6	0.68	0.54	9.79			Good / Significant Validity
Y13_8	0.71	0.50	10.11			Good / Significant Validity
Y13_9	0.76	0.43	10.70			Good / Significant Validity
Y13_10	0.75	0.43	10.66			Good / Significant Validity
Y13_11	0.78	0.39	10.97			Good / Significant Validity
Y13_12	0.72	0.47	10.31			Good / Significant Validity
Y13_13	0.71	0.50	10.07			Good / Significant Validity
Y14.				0.92	0.69	Goodreliability
Y14_14	0.85	0.28				Good validity
Y14_16	0.85	0.28	16.97			Good / Significant Validity
Y14_17	0.85	0.27	17.12			Good / Significant Validity
Y14_19	0.81	0.35	15.61			Good / Significant Validity
Y14_20	0.78	0.39	14.91			Good / Significant Validity
Y15.				0.94	0.62	Goodreliability
Y15_21	0.73	0.46				Good validity
Y15_22	0.80	0.34	12.64			Good / Significant Validity
Y15_23	0.80	0.35	12.69			Good / Significant Validity
Y15_24	0.77	0.40	12.28			Good / Significant Validity
Y15_25	0.79	0.38	12.54			Good / Significant Validity
Y15_26	0.78	0.40	12.46			Good / Significant Validity
Y15_29	0.81	0.35	12.82			Good / Significant Validity
Y15_31	0.82	0.32	13.11			Good / Significant Validity
Y15_32	0.79	0.38	12.46			Good / Significant Validity
CFA SecondORDER: CUSTOMER LOYALTY						
				0.85	0.66	Goodreliabilityy
Y13.	0.85	0.28				Good validity
Y14.	0.85	0.39	13.53			Good / Significant Validity
Y15.	0.78	0.38	13.67			Good / Significant Validity

Source: data processed

The results of the First Order CFA Model show that: (1) the load value of the raw factor between 0.65 to 0.85 is declared valid, where the values are above equal to 0.30; and (2) the t-count value which is greater than the t-table value (t-table = 1.96) at α = 0.005 is declared significant. This means that the factor loading value on the statements of the First Order CFA model is good at measuring the indicators of the Customer Loyalty variables.

The reliability test results on the First Order CFA Model show that (1) the CR values range from 0.91 to 0.94, where the values are above equal to 0.7; and (2) the VE values range from 0.51 to 0.69, where the values are above equal to 0.5. This means that the First Order CFA of Customer Loyalty has

Good Reliability values. The statements that make up the indicators of Customer Loyalty variables are reliable statements in measuring the latent variables of Customer Loyalty.

The results of the Second Order CFA Model also show that (1) the load value of the raw factor between 0.78 to 0.85 is declared valid, where the values are above equal to 0.70; and (2) the t-count value which is greater than the t-table value (t-table = 1.96) at α = 0.005 is declared significant. This means that the factor loading value on the indicators of the Second Order CFA model is good at measuring the Customer Loyalty variables.

The reliability test results on the Second Order CFA Model show that (1) the Construct Reliability (CR) value (0.85) is greater than 0., andd (2) the Variance Extract (VE) value (0.66) is greater than 0.5. These results indicate that the indicators that make up the Customer Loyalty variables are reliable indicators in measuring the latent variables of Customer Loyalty.

The results of the study show that the standard factor loadings which are below equal to 0.70 are not very significant standard factor loadings. Thus, such standard factor loadings are used as the findings of this study which will be discussed further in the discussion section. The values of standard factor loadings that are below equal to 0.70 include: (1) Y13_1: the students keep attending the lecture even though they do not like the lecturer in charge of the subject; (2) Y13_2: the students keep attending the lecture because the UNJ lecturers have competencies on the subject they are in charge of; (3) Y13_5: the students try to keep studying in the university although the services provided are often not appropriate; and (4) Y13_6: The ease of academic services provided by the Administrative Staff makes the students keep studying in the university.

The results of the goodness-of-fit model indicate that almost all index values show good results even though there are less good and fairly good values, but overall, the results of the calculated values of all the indices have achieveda good fit. This means that model of the latent variables of Customer Loyalty with its three observed indicators (Y13: continuously using the services provided; Y14: being invulnerable against the competitors' persuasion; and Y15: recommending the services they have experienced other people) is in accordance with its theoretical model so that it is feasible to measure the latent variables of Customer Loyalty. The summary of the indices of the goodness-of-fit model of the latent variables of Customer Loyalty is provided in Table 2 below.

Table 2. The Results of Goodness-of-Fit Model of CFA on the Latent Variables of Customer Loyalty

No	Index	Standard Score	Count score	Summary
Absolute Measure of Accuracy				
1	$\rho(X^2)$	> 0.05	0	Not Good
2	GFI	≥ 0.80	0.89	Good
3	RMSEA	≤ 0.08	0.046	Good
The measurese of Incremental Accuracy				
4	AGFI	≥ 0.80	0.87	Good
5	NFI	≥ 0.90	0.97	Good
6	NNFI	≥ 0.90	0.99	Good
7	CFI	≥ 0.90	0.99	Good
8	IFI	≥ 0.90	0.99	Good
9	RFI	≥ 0.90	0.97	Good
Size of Parsinomy Accuracy				
10	CN	> 200	196.42	Not Good
11	Normed chi-squared	Lower Limit = 1Higher Limits = 2 , 3, or 5	2.04	Good

Source: data processed

Conclusions

The results of the First Order CFA show that the statements that make up the indicators of Student Loyalty variables are reliable statements in measuring the latent variables of Student Loyalty, while the value of the factor loading on the indicators of the Second Order CFA model is good at measuring the Student Loyalty variables.

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