Analysis of Factors Influencing Students' Decisions to Choose Universitas Terbuka

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Abstract

To decide to choose a university as a place to seek knowledge, students are influenced by many factors. This paper aims to identify which factors significantly influence the decision of students to choose Universitas Terbuka (Open University). Factors analyzed included: image of a tertiary institution, accreditation status, reference group, and family. The study was conducted by distributing questionnaires to 100 respondents, using the method of sampling Accidental Sampling. Validity test is done using Product-Moment Correlation (Pearson), and reliability testing uses Spearman Brown technique. Data analysis techniques were performed using the Cochran method. The analysis showed that the factors that significantly influenced the decision of students to choose an Universitas Terbuka included: the image of a tertiary institution, accreditation status, quality and quantity of learning modules, and location of learning.

Keywords:
Decision to choose, Accidental Sampling, Product Moment, Spearman Brown, and Cochran.

1. Introduction

Education has a very central and strategic role, especially if it is associated with efforts to improve the quality of human resources (HR). Because only with quality human resources will create an increase in dignity and true human dignity. Education is a conscious and planned effort to create an atmosphere of learning and learning process so that students actively develop their potential to have spiritual strength, self-knowledge, personality, intelligence, noble character, and the skills needed by the community, nation, and country. Higher Education as one of the important parts in the world of education is partly responsible for efforts to educate the nation's life and has a very strategic responsibility and role to take part in overcoming the problems of the quality of human resources (Abubakar, 2017; Wulandini and Saputra, 2017). Besides, the change in the paradigm of higher education management has shifted from a centralized approach to a decentralized approach and is bound to one goal. Indonesian Higher Education, namely in 2015 a higher education system can be realized including healthy tertiary institutions so that it can contribute to the nation's competitiveness with quality traits, provide access and justice and autonomy (Hartanto, 2009; Hidayat et al., 2018).

The rapid development of the tertiary institution is expected to contribute to the maximum development in various sectors. Besides, it is also hoped that in the future they will be able to take part and show their quality at national and even international levels. This large number of tertiary institutions, when viewed from the perspective of tertiary institutions, will result in intense competition in attracting prospective students. various potentials and advantages possessed by tertiary institutions will be mobilized to the maximum extent possible and become a positive selling value, but conversely, tertiary institutions that are unable and have no competitiveness will feel the impact of this competition in the form of a lack of students. Anticipating these facts, the student's decision-making process in choosing a particular tertiary institution is very important to be known by university managers through the study of consumer behavior (Zain et al., 2013; Wulandini and Saputra, 2017). Rudhumbu et al. (2017) state that the decision-making process as an important process is influenced by the external environment consisting of the marketing mix (product, promotion, price, distribution) and socio-cultural environment (family, information sources, non-commercial sources, social class, culture, and sub-culture). Then the internal environment (psychological factors) consisting of motivation, personality, learning, perception, and attitude.

The demands of consumers and prospective consumers on the attributes and performance of the education services they obtain trigger an increase in the intensity of competition among providers of higher education services. Now higher education service providers are demanded to be able to implement appropriate marketing strategies by trying to offer higher education services that are as expected by potential customers. In this globalization era, tertiary institutions must be based on quality, namely by conducting educational service activities that must have advantages compared to other tertiary institutions. The second is to develop as much excavation as possible about the desires of potential customers for the services they will receive is very important to do. Consumer desires will have a very significant impact on organizational strategy and marketing strategy (Tereza, 2013; Ilgan et al., 2018).

Based on the background above, in this paper researchers conducted about issues related to the influence of the marketing mix on consumer behavior in the choice of a college. This study aims to: 1) determine the contribution of promotional activities to student decision making in choosing tertiary institutions, 2) determine the contribution of Price towards student decision making in choosing tertiary institutions, 3) determine the contribution of Location to student decision making in choosing tertiary institutions, 4) determine the contribution of facilities and infrastructure to students' decision making in choosing tertiary institutions, and 5) determine the contribution of quality facilities and infrastructure to student decision making in choosing tertiary institutions.

2. Methods

2.1 Research Design
The research design used in this paper is an explanatory research or confirmation research that aims to explain the causal relationship between variables through hypothesis testing and is carried out with a descriptive and verification analysis approach through surveys (Taherdoost, 2016). The population of this research is the Universitas Terbuka students throughout Indonesia. The sample is a part or representative of the population under study proposing the formula for determining the minimum sample by taking the ratio of the 0.05 error level and the 95% confidence level. However, the number of samples set is 100, which is considered sufficient to represent the population. Determination of the sample for each faculty in the Universitas Terbuka is determined through Accidental Sampling.

2.2 Test Validity of Instruments
To test the validity of the instrument using the Product Moment Correlation of Karl Pearson with the following equation:

$$r_{xy} = \frac{N(\sum xy) - (\sum x \sum y)}{\sqrt{[N \sum x^2 - (\sum x)^2][N \sum y^2 - (\sum y)^2]}}, \tag{1}$$

where r_{xy} is the correlation coefficient of each item; x is value of each item; y is value of all items; and N is number of respondents. Using a significance level $\alpha = 0.05$ and degree of fredom $df = n - 2$, if $r_{xy} \geq r_{table}$ then the questionnaire is valid as a measurement tool (Taherdoost, 2016).

2.3 Reliability Test
Techniques for testing reliability are also performed using the Product Moment correlation coefficient equation (1). After the correlation coefficient between odd numbered and even numbered items is obtained, then substituted into the Spearman Brown equation as follows:

$$r_{sb} = \frac{2r_{xy}}{1 + r_{xy}}, \tag{2}$$

where r_{sb} is Spearman Brown correlation coefficient; and r_{xy} is correlation coefficient for numbered and even numbered items. Using a significance level $\alpha = 0.05$ and degree of fredom $df = n - 2$, if $r_{sb} \geq r_{table}$ then the questionnaire is reliable as a measurement tool (Taherdoost, 2016).

2.4 Data Analysis Technique
The data analysis technique in this paper is to use the Cochran test, which is an extension of the McNemar test, which tests more than two variables related to the dichotomy. The equations of the Cochran test are as follows:

$$Q = \frac{(k-1)\left[k \sum_{j=1}^{k} G^2 - \left\{\sum_{j=1}^{k} G\right\}^2\right]}{k \sum_{i=1}^{n} L - \sum_{i=1}^{n} L^2}, \tag{3}$$

where n is number of respondents; k is overall attribute or factor; L is the number of answers "Yes" to the i attribute; and G is the contents of each attribute (from 1 to k attributes) (Okeh et al., 2016).

The Cochran test steps in this paper are as follows: 1) creating a frequency table for respondents' answers; 2) make a table of statistical test results; 3) establish a hypothesis, where H_0: the proportion of the answers "Yes" to k factors is the same, and H_1: the proportion of answers "Yes" to k factors is not the same; 4) establish decision criteria, i.e. comparing statistical values of Q with X_{table}^2, when $Q < X_{table}^2$ or Asymp.Sig $> \alpha$ then H_0 is accepted, and when $Q \geq X_{table}^2$ or Asymp.Sig $\leq \alpha$ then H_0 is rejected; 5) the statistical value of X_{table}^2 is obtained from the Chi-Square table using degree of fredom $df = k - 1$ and the level of significance α; and 6) if H_0 is rejected then it needs to be recalculated by ignoring the factors that choose the "Yes" answer at least (Hartanto, 2009).

3. Results and Discussion
Data analyzed in the study were carried out by distributing questionnaires to 100 respondents of Universitas Terbuka students, using the sampling method Accidental Sampling. The collected data is then analyzed as discussed in the following sections.

3.1 Validity Test
The validation testing of the research instrument was carried out using the product moment correlation between each item, referring to equation (1). The goal is to measure a value based on a total scale score. The decision criteria used are if the correlation value $r_{xy} > r_{table}$ is obtained from the Pearson correlation table, or if the Asymp.Sig (2-tailed) $\leq \alpha$, then the relevant variable is declared valid. Where in this study the level of significance $\alpha = 0.05$ was set, and the degree of fredom $df = 100 - 2 = 98$. For $\alpha = 0.05$ and $df = 98$, the statistical value of $r_{table} = 0.197$, so the validity test results for all variables and decisions were given in Table 1 .

Table 1. Research Instrument Validity Test Results

Variables	Pearson Correlation (r_{xy})	Asymp.Sig (2-tailed)	Decision
Image of a Tertiary Institution	0.372	0.0003	Valid
Accreditation Status	0.454	0.0001	Valid

Facilities and Infrastructure	0.332	0.0002	Valid
Physical Building	0.572	0.0002	Valid
Cost of Education	0.395	0.0000	Valid
Location of Learning Process	0.325	0.0004	Valid
Promotion	0.347	0.0020	Valid
School Collaboration	0.344	0.0001	Valid
Reference Group	0.433	0.0000	Valid
Family	0.395	0.0000	Valid

3.2 Reliability Test

Instrument reliability testing is done by referring equation (1), which is to determine the correlation value between even numbered items and odd numbered items. Then the correlation value is substituted into the Spearman Brown formula referring to equation (2). Based on the calculation results obtained Spearman Brown correlation value $r_{sb} = 0.451$. For the significance level $\alpha = 0.05$ and $df = 98$, from the Spearman correlation table the r_{table} statistical value is 0.197, it is clear that $r_{sb} \geq r_{table}$ so that it can be decided that the questionnaire is reliable as a measurement tool.

3.3 Cochran Analysis

Cocran analysis is done by referring to equation (3), which tests ten factors which include: image of a tertiary institution X_1, accreditation status X_2, facilities and infrastructure X_3, physical building X_4, cost of education X_5, location of learning process X_6, promotion X_7, school collaboration X_8, reference group X_9, and family X_{10}. Based on the results of the questionnaire given to 100 respondents of Universitas Terbuka students, obtained the frequency of respondents' answers that answered 0 = No and 1 = Yes, as given in Table 2.

Table 2. Frequency of Respondents' Answers

Variables	Values	
	0 = No	1 = Yes
Image of a Tertiary Institution X_1	8	91
Accreditation Status X_2	11	89
Facilities and Infrastructure X_3	10	92
Physical Building X_4	29	70
Cost of Education X_5	31	68
Location of Learning Process X_6	8	92
Promotion X_7	32	68
School Collaboration X_8	52	49
Reference Group X_9	26	74
Family X_{10}	27	73

Step 1, Cochran testing was carried out on 10 factors (variables), namely $X_1, X_2, \cdots, X_{10}$. Using the data in Table 1, and referring to equation (3), the values $Q = 105.698$ and Asymp.Sig = 0.0000. For the significance level $\alpha = 0.05$ and degree of fredom $df = 98$, from the Cocran table, the value of $X_{table}^2 = 16.9201$ is obtained. Therefore, $Q > X_{table}^2$ or also Asymp.Sig $< \alpha$, so the hypothesis H_0 is rejected. This means that there is a significant relationship between factors (variables). Therefore, the Cochran testing process must be repeated to Step 2, ignoring the factors (variables) that have the smallest "Yes" answer, which in this case is the collaboration with school factor or variable X_8. The Cochran Step 2 test, and its equivalent, was carried out in the same manner as in Step 1, and a summary of the results is given in Table 3.

Table 3. Cochran Test Results Step 1 to 7

Step	Variables	Cochran's (Q)	degree of fredom (df)	Asymp.Sig	Decision
1	$X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}$	105.698	9	0.0000	Rejected H_0
2	$X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_9, X_{10}$	63.164	8	0.0000	Rejected H_0
3	$X_1, X_2, X_3, X_4, X_6, X_7, X_9, X_{10}$	55.832	7	0.0000	Rejected H_0
4	$X_1, X_2, X_3, X_6, X_7, X_9, X_{10}$	48.065	6	0.0000	Rejected H_0

5	$X_1, X_2, X_3, X_6, X_7, X_9$	34.952	5	0.0000	Rejected H_0
6	X_1, X_2, X_3, X_6, X_7	25.167	4	0.0000	Rejected H_0
7	X_1, X_2, X_3, X_6	2.416	3	0.5341	Accepted H_0

3.4 Discussion

In Step 7, the Cochran testing process was carried out on only four variables, namely: image of a tertiary institution X_1, accreditation status X_2, facilities and infrastructure X_3, and location of the learning process X_6. Deciding that the H_0 hypothesis is accepted, and the Cochran testing process is terminated in Step 7. Because at this step the H_0 hypothesis has been accepted, it means that the proportion of "Yes" answers is relatively the same for each factor (variable). Therefore, based on the results of the Cochran test that have been done show that four factors influence students choosing Universitas Terbuka, namely: image of a tertiary institution, accreditation status, facilities and infrastructure, and location of the learning process.

While other factors such as physical evidence of buildings, education costs, promotions, schools collaboration, reference groups, and families, have a very large possibility of a different "Yes" answer for each factor. Therefore, these factors not too significant in influencing the decision of students to choose Universitas Terbuka. In other words, the factors that significantly influence the decision of students to choose an Universitas Terbuka are higher education image, accreditation status, facilities and infrastructure, and location of the learning process.

4. Conclusion

This paper has discussed the factors that influence students' decision to choose Universitas Terbuka, as a place to study. Based on the results of the discussion it can be concluded that of the ten factors analyzed, there are only four factors that significantly influence the decision of students to choose Universitas Terbuka. These four factors include image of a tertiary institution, accreditation status, facilities and infrastructure, and location of the learning process. This was demonstrated through the Cochran test in step 7, which produced a value of $Q = 2.416$ and with Asymp.Sig = 0.5341, so that with a significance level $\alpha = 0.05$ and degree of freedom $df = 3$, the H_0 hypothesis was accepted. Therefore, this shows that the Cochran analysis method can be used to identify the factors that influence students' decisions in choosing Universitas Terbuka as a place to gain knowledge.

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