

THE ROLE OF SERVICE QUALITY MANAGEMENT IN STUDENTS' RE-ENROLLMENT

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Received: 14/02/2019 Accepted: 16/09/2019

ABSTRACT

The students' re-enrollment can reflect as one of the indications of an educational institution's service quality and student loyalty. The re-enrollment is identified by the condition that students enrolled in one semester would re-enroll in the next immediate semester. The main concern of this article is that there are many interrelated variables affecting students' re-enrollment. Those variables mainly included service quality management of higher distance education, student characteristics, student academic success, accessibility to student learning support services. The study applied ex-post-facto method with a sample of 3539 students and used a statistical technique of the binary logistic regression to identify factors related to student re-enrollment in three regional office centers of Universitas Terbuka, Indonesia, identified as low, medium, and high in service quality management. The results revealed that the students' re-enrollment is affected by the level of service quality management modulated factors: (1) the student personal characteristics, (2) the level of success in previous semesters, and (3) the participation in the learning support services. The paper discusses the implications of managing the students' re-enrollment based on the findings.

Keywords: Service quality management, regional office center, re-enrollment, distance higher education, support services.

INTRODUCTION

The primary mission of distance education, especially in developing countries like Indonesia, is to improve access to higher education for people, who for various reasons, can not reach conventional higher education. In Indonesia, the participation rate of higher education is currently only 29%, whereas the Ministry of Higher Education set the target to be 35%. To achieve the objective, the Indonesian government plans to open higher distance education in conventional higher education. Also, the government encouraged the Universitas Terbuka, which was the only open and distance university in Indonesia which was founded in 1984 and had about 300,000 students, to increase the number of students to further contribute to higher education enrollment rates.

Distance education can indeed be a solution to increase enrollment rates in higher education. As stated by the rector of the Open University at the ICDE Conference in 2015 that in Indonesia, Universitas Terbuka (UT) contributes 12% of the participation rate in higher education (Sharma, 2015). The contribution of higher distance education to participation rate in higher education has also occurred in other countries. For instances in China, by the end of 2007 more than six million people had graduated with a degree or certificate, and over 40 million people had received various training through distance education (Li, 2009). In 2017, 24 percent of all enrollments in higher education in India was in distance education (Daniel, 2017).

The success of higher distance education to contribute significantly to the enrollment rates in higher education depends on how the higher distance education recruits new students and retains existing students to keep re-registration every semester. For simplification, the relationship between the number of students in a semester could be expressed in the equation as follows:

$$\text{Total Students in Current Semester} = (\text{Total New Students}) + (\text{Total Students Re-enrolled from previous Semester})$$

In this paper, the definition of re-enrollment is an event that a student re-enrolled in one semester after he/she enrolled as a new student in the previous semester. The problem faced by distance education institutions is that the percentage of non-re-enrollment student tends to be high. Students' re-enrollment tension is a severe problem of Universitas Terbuka (UT) and probably also in any open and distance learning universities since the unenrolled phenomena could be an early warning for students' withdrawal. In UT, the average percentage of students' re-enrollment was around 75%. In the UK, Simpson (2016) reported that the re-enrollment rates for several distance institutions compared with the UK full-time showed that distance institutions tended to have much higher dropout rates than the UK full-time. Therefore, in the case of UT as in many other distance higher education institutions, students' re-enrollment has become the primary concern in increasing public participation in higher education nationally.

Some theoretical frameworks could explain the re-enrollment phenomena in the distance higher education context. The theoretical approach used here was the student-university fit theory. The theory emerged from person-environment (P-E) fit theory based on the assumption that "performance is a function of the interaction between people and their environment, and that good fits promote well-being and contribute to feelings of mastery, self-confidence, and satisfaction, while poor fits are expected to result in negative outcomes such as dissatisfaction, boredom, depression, somatic complaints, and increased smoking and drinking" (Gilbreath, Kim, & Nichols, 2011, p. 48). Some researchers have applied the student-university fit theory to explain student performance in a university environment. Applying the student-university fit theory Le, Robbins & Westrick (2014) found that persistent learning behavior was affected by individual difference factors, including ability and interest for college students of science, technology, engineering, and mathematics. Accordingly, Smart, Feldman & Ethington (2006) provided a theoretical linkage between variations in patterns of students' re-enrollment that students' re-enrollment indicated as the fit or congruence between their personality types and their chosen academic environments. The relationship between students' characteristics and university norm have been reported by Suhlman, Sassenberg, Nagengast & Trautwein (2018) that one-third of university students drop out from undergraduate studies affected by the fit between students' self-construal and university norms.

The above student-university fit theory could be applied to distance higher education with some notions as follow: (1) an academic environment of the distance higher education reflected in various quality service in offering students learning support services including distributing learning material, face-to-face tutorial, online tutorial, face-to-face examination, and online examination, (2) students' personal characteristics, included gender, age, working status, and marital status, could be considered as personality types which would be fit or unfit with the academic environment,, (3) students' academic attainment (GPA and credits attained) could be viewed as rewarded or reinforced by the academic environment, and (4) the students' re-enrollment indicated the fit between students and the academic environment of the distance higher education, therefore, it is possible that a better fit of the student-university could result in improving the students' re-enrollment.

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Service quality in a service organization is a measure of the range to which the service delivered meets the customer's expectations (Yousapronpaiboon, 2014). The customer of distance higher education are students and the employer of alumni. Students expect to finish their study in time and academic attainment they planned. The employer of alumni expects the graduates have competencies fit the nature of the work, for instances that the graduate can adapt their skills to the demands of the task. The quality assurance system is a management tool to achieve service quality objectives. Universitas Terbuka pays excellent attention to service

quality management system. Universitas Terbuka has a particular unit, the Center for Quality Assurance, to handle service quality management systems. Since UT's students spread out in distant areas, then the real service quality felt by the students are the services provided by the regional office centers. In practice, the central office of Universitas Terbuka specified a service quality policy as listed in the document of Distance Education Management System, the regional offices implement it as a guideline, and the implementations will be audited every year by external auditors. The Distance Education Management System of Universitas Terbuka has a vital role in quality assurance in Universitas Terbuka, as described by Darajat (2018):

The university has had a formal quality management system, known as Simintas UT since 2003, adapted and contextualized from the [Asian Association of Open Universities]- AAOU's QA framework. AAOU's Quality framework has been regarded as a leading model for the university self-assessment and shared by all staff at UT head office and regional centers. These quality guidelines clearly explain quality criteria for different quality areas. Along with the use of the quality manuals, the university has used the results of quality audit to inform its current practices through different strategies including the development of QA manuals. UT's quality manuals also constitute the university's QA policies that must be regarded as a major reference for all units or departments in developing internal mechanism and implementing quality. With regard to the implementation of QA in different quality areas, it was found that the application of QA has been supported by the development of [Standard Operating Procedure]-SOPs equipped by their work instructions. (p. 86).

The Center for Quality Assurance of UT coordinates the process of audit for each regional office centers. UT used an external organization, which is internationally recognized, to conduct the process of auditing. The Center for Quality Assurance also managed the results of the auditing process and could be used to rank the 39 regional office centers based on the level of quality service in managing higher distance education. Based on that ranking, one could classify the regional office center by Low, Medium, and High in quality service quality management. In this paper, the classification of regional office centers as a Low, Medium, High in quality service management based on information from the Center for Quality Assurance.

Several pieces of research regarding interrelated among academic environment discussed the variables of student personal characteristics, student academic attainment, and student re-enrollment as an indication of students' success. Hamid & Yip (2019) studied service quality in distance education for comparing private distance education institution and public distance education; however, the study did not mention the students' re-enrollment. Choi, Lee, Jung, & Latchem (2013) discussed the re-enrollment issues without relating it to service quality directly, instead to stress on the importance of feedback from institution to the students that a lack of feedback in students' studying at a distance were directive subjects to non-re-enrollment.

Furthermore, it confirmed that the learners' perceptions about the value of the degrees and their ages, gender, and educational backgrounds were also found to have generally led to the decisions not to re-enroll. Godfrey & Matos-Elefonte (2010) showed that student backgrounds, academic societies, and academic characteristics played a role in the likelihood of reaching student goals that would reflect in student re-enrollment; this report discussed re-enrollment without explicitly connecting to service quality. Similarly, Stephan, Davis, Lindsay, & Miller (2015) described the early college success of students affected by (1) enrolling in only non-remedial courses in the first semester, (2) completing all attempted credits in the first semester, and (3) persisting to the second year of college. The study also found that variables for student demographic characteristics, high school academic achievement, and behavior related to whether a student achieved success in the early college years or not. The University of Maryland University College (2015) reported an analysis of predictive models of students' success in college and identified that a factor associated with the students' success was the students' GPAs. The results showed that students' performance in their first semester at UMUC remained crucial in relating to re-enrollment, retention, and graduation and the first term GPA might be an indicator of factors contributing to students' success, beyond academic abilities. Sugilar (2018) predicted that the students' re-enrollment in the distance higher education and concluded that age, GPA, credits earned, and face-to-face tutorial participation were significant predictors for re-enrollment.

The above studies highlighted, although no study mainly discussed the role of service quality in re-enrollment, the position of students' characteristics, utilizing learning resources within a learning environment, and

feedback received by the students from the environment, to the students' success in a learning environment. Some hypotheses proposed in this report were that the quality of learning environment as reflected by the quality level of regional office mediated the factors of the students' personal characteristics (gender, age, marital status, and working status), academic achievement (GPA, credits attained), and utilizing learning resources (participating in online tutorial, online examination, and face-to-face tutorial) in affecting the student success and satisfaction as indicating in student' re-enrolling.

The main focus of this paper is to explain how the service quality of the regional service center has a role in the students' re-enrollment. The students' re-enrollment was defined by the event that new students enrolled in one semester will re-enroll in the immediate next semester. In UT context, there are 39 regional offices which are spread out within vast areas and islands in Indonesia. A factor affecting re-enrollment in one area will not inevitably affect the students' re-enrollment in other areas. Does the service quality of regional office centers have a role in the effect of the students' characteristics, academic achievement, and the students' level of utilizing learning resources to students' re-enrollment?

METHOD

This quantitative study using the ex post facto investigation aims to identify factors influencing of students' re-enrollment. Kerlinger and Rint (1986) explained that an ex post facto research aims to study some relationships of variables through observation to a condition which already exists. Therefore, an ex post facto research uses data already collected and not necessarily purposed for research. Cohen, Manion, & Morison (2000) asserted that an ex post facto research was similar to an experimental research, i.e., an experiment research used different treatments to groups to determine differences in the dependent variables, meanwhile, an ex post facto research begins with groups that are already different that brought the differences on the dependent variable.

This research used three regional office centers selected from existing 39 regional office centers of UT. The Office of Quality Assurance UT identified those three regional office centers as Low, Medium, and High in quality service management. The data of new students in the 1st semester of 2017 and the re-enrollment data in the 2nd semester of 2017 were available in the database of Student Record System (SRS). The SRS is a computer application system which was developed by UT to manage the student data.

SRS provided the 3539 records of the new students registered in the three Regional Office Centers with low-medium-high in services quality. Every record of the student consists of regional office centers code (one of the three regional offices centers understudied), student identification, gender code, age, GPA, academic credit attainment, participation in face-to-face tutorial, participation in online tutorial, participation in online exam, and status of re-enrollment in the 2nd semester of 2017.

The statistical technique used for analyzing the data was the binary logistic regression (Peng, Lee, & Ingersoll, 2002). The binary logistic regression has been successfully applied to predict enrollment decisions of prospective students of distance education programs (Ozturk, 2019). The binary logistic regression only requires the dependent variable to be binary variable (for example, the value of the variable is 0 or 1) while independent variables can be an interval, ordinal, or categorical. In this paper, the dependent variable was the re-enrollment status variable which was denoted by 1 for re-enroll and 0 for the non-re-enroll student. The independent variables were the hypothetical variables affecting students' re-enrollment. The independent variables consisted of the level of quality service of the regional office centers (Low, Medium, High), personal characteristics (age, gender, and marital status, academic achievement GPA, credits attained), and student participation in learning support services (face-to-face-tutorial, online tutorial, and online examination). To avoid the occurrence of too many empty cells and to make a more straightforward interpretation, the independent variable is set to have a value of 0 or 1, except for the quality service of regional office centers that have the level values as Low, Medium, and High. Therefore, the variables age, GPA, and credits attained were valued by 0 or 1 according to the median of the data; for example, the GPA was valued by 1 if it was more than 2.0, otherwise valued by 0, since the median of GPA was 2.0. Similarly, the variables of age and credits attainment split into 1 or 0 according to their median value.

The binary logistic regression uses the Wald Chi-square statistics to test the statistical significance of regression coefficients. Hosmer & Lemeshow Test test the goodness of fit of the regression model to the data. As R^2 in the multiple linear regression, in the binary logistic regression, the parameter of Nagelkerke's R^2 for describing the number of variations in the dependent variable that can be explained by the independent variables.

FINDINGS

The 3539 new students in the 1st Semester of 2017 in the three regional offices of UT were categorized as re-enrolled and non-re-enrolled students in each regional office in the 2nd Semester of 2017 as shown in Table 1.

Table 1. Re-enrollment of the three regional offices in 2017

The Service Quality Management of Regional Office Centers	The Number of New Students enrolled in the 1 st Semester of 2016/2017	The Percentage of Students re-enrolled in the 2 nd Semester of 2016/2017
Low	518	428 (82.6%)
Medium	1173	998 (85.1%)
High	1848	1314 (71.1%)
	Total = 3539	Average = 79.6%

Table 1 shows in general that the average of students' re-enrollment percentage of the three regional offices was 79.6%. The medium quality service of the regional office center of UT has the highest percentage of students' re-enrollment by 85.1%. This regional office center has recognition as the regional offices with the most students participating in the face-to-face tutorial. Meanwhile, the high-quality service of the regional office of UT attained a re-enrollment level of 75.2%. This regional office center was a regional office categorized as the highest number of students in 2017. The low-quality service of the regional office of UT attained 82.6%. Chi-square test based on Table 1 showed that there was a relationship between the service quality in managing distance education in the regional office centers and the level of students' re-enrollment, (Chi-Square value = 89.591, df = 2, p = 0.00).

Table 2. Percentage of students' re-enroll among regional offices and categories of indicators

Factors / (Variable Value)	The Service quality management of Regional Office Centers		
	Low	Medium	High
A. Personal Characteristics			
1. Gender			
Female (0)	82.5%	83.6%	68.7%
Male (1)	82.8%	87.0%	73.7%
2. Age			
≤ 24 (0)	82.2%	87.3%	71.1%
> 24 (1)	82.8%	80.9%	71.1%
3. Marital Status			
Unmarried (0)	78.5%	85.7%	70.6%
Married (1)	86.3%	83.0%	72.3%
4. Working Status			
Unemployed (0)	80.7%	86.2%	69.6%
Employed (1)	83.0%	84.3%	71.3%

B. Academic Attainment				
5. Credits Attained				
≤ 84%	(0)	73.5%	75.9%	48.9%
> 84%	(1)	91.9%	94.1%	89.6%
6. GPA				
≤ 2.0	(0)	78.1%	65.0%	58.8%
> 2.0	(1)	95.0%	92.6%	93.4%
C. Participation in Learning Support Services				
7. Participation in Online Tutorial				
No	(0)	83.6%	81.4%	51.7%
Yes	(1)	83.6%	88.9%	74.4%
8. Participation in Online Examination				
No	(0)	82.5%	84.6%	70.3%
Yes	(1)	85.0%	97.6%	92.4%
9. Participation in F2F Tutorial				
Yes	(0)	82.6%	62.8%	69.6%
No	(1)	0%	89.6%	85.5%

Table 2 presented a description in more detail that the level of service quality management showed to modulate the effect of the factors to re-enrollment. The descriptive statistics in Table 2 was intended to introduce the problem for further conclusions using statistical hypotheses testing in the next discussions. Table 2 uncovered some description of factors related to re-enrollment, as follows:

- For the variables of student personal characteristics, the gender variables indicated to differentiate the re-enrollment; however, in the low-quality service management of the regional office center, there was a slightly different between female and male in the percentage of re-enrollment, 82.5% of female and 82.8% of male. For the students' age variable, in the medium-quality regional office center, the age seemed like differentiated the percentage of re-enrollment, i.e., 87.3% for the students with age lower or equal to 24 years and 80.9% for age over 24. In the low-quality regional office center, 86.3% of married students were re-enrolled more than the percentage of 78.5% for unmarried students. In the high-quality regional office center, the working status variable slightly differentiated the percentage of re-enrollment, 69.6% of the unemployed students to 71.3% of the employed students.
- For the variables of academic attainment (credit attained and GPA), in all three regional office centers, students' credits attainment differentiated the percentage of re-enrollment. In the low-quality regional office center, the percentage was 78.1% for the lower group of credits attainment (less or equal to 84% credit attainment) and 95.0% for the higher (more than 84% credit attainment). In the medium-quality regional office center, the percentage was 65.0% for the lower group and 92.6% for the higher group. In the high-quality regional office center, the percentage was 58.8% for the lower group and 93.4% for the higher group. When it comes to GPA, the re-enrollment percentage of students with a higher GPA (more than 2.0) showed to have higher re-enrollment percentage than the students with a lower GPA (less or equal to 2.0), i.e. 78.1% and 95.0% in the low-quality regional office center, 65.0% and 92.6% in the medium-quality regional office center, and 58.8% and 93.4% in the high-quality regional office center.
- In the variables of utilizing support services, students' level of using learning support services looked like to differ the re-enrollment percentage in the high and medium-quality management of regional office centers, but not in the low-quality management of regional office center. Participation in online tutorial showed to have the most percentage of re-enrollment in the high-quality regional office center, 51.7% for non-participating, and 74.4% for participating. Participation in the online examination appeared to have a more significant effect to the percentage of re-enrollment in the high-quality regional office centre since there were 70.3% students re-enrolled for non-participating and 92.4%

students re-enrolled for participating students. Participating in the face-to-face tutorial looked to have a more significant effect in the medium-quality regional office center, 62.8% for non-participating and 89.6% for participating. Unfortunately, there was no data for participation in the face-to-face tutorial in the low-quality regional office center.

As mentioned earlier, Table 2 showed descriptive statistics and needed to test for statistical significance for conclusions. Table 3 presented the statistical significance of the individual regression coefficients (β s) tested with the Wald Chi-square statistic. The test was generated using SPSS with splitting output by the quality service management of regional office centers (Low, Medium, and High). The Hosmer & Lemeshow test of the goodness of fit suggested that the model was fit to the data as $p=0.168$ (> 0.05), $p=0.525$ (> 0.05), and $p=0.757$ (>0.05) respectively for Low, Medium, and High regional office centers. Nagelkerke's R^2 suggested that the model explained roughly 15%, 27%, and 35% of the variation in the outcome for Low, Medium, and High-service quality of regional office centers, respectively. The result was impressive since the more level of service quality of the regional office was then the more the factors understudied give a positive direct effect to the re-enrollment.

According to Table 3, in the significance (sig.) column, the significance values of gender factor were 0.845, 0.930, and 0.678 for Low, Medium, and High of quality service management of regional office centers respectively. Since the significance values were higher than 0.05, then the gender variable did not affect re-enrollment regardless of quality service management of regional office centers. However, age and working status made a significant effect on re-enrollment in the medium quality service management of the regional office, as well as marital status in the regional office with low-quality service management. Meanwhile, credit attained and grade point average made a significant effect on the re-enrollment regardless of the quality service of the regional office. The online tutorial made effective only in the high-quality service of a regional office, but not in the medium or low-quality service of a regional office. The online examination and face-to-face tutorial made an effect on the regional offices with high and medium service quality management.

Table 3. The coefficients of regression

Variables		The QMS of ROCs	B	S.E	Wald	Df	Sig.	Exp(B)
A. Personal Characteristics								
1. Gender		Low	-.053	.271	.038	1	.845	.948
Female	(0)	Medium	-.017	.193	.008	1	.930	.983
Male	(1)	High	.051	.124	.173	1	.678	1.053
2. Age		Low	-.379	.346	1.200	1	.273	.685
≤ 24	(0))	Medium	-.757	.268	7.987	1	.005*	.469
> 24	(1)	High	-.026	.148	.031	1	.861	.974
3. Marital Status		Low	.636	.298	4.565	1	.033*	1.889
Unmarried	(0)	Medium	.120	.294	.166	1	.684	1.127
Married	(1)	High	.182	.163	1.248	1	.264	1.200
4. Working Status		Low	.003	.343	.000	1	.993	1.003
Unemployed	(0)	Medium	.490	.223	4.824	1	.028*	1.632
Employed	(1)	High	.048	.180	.072	1	.789	1.049
B. Academic Attainment								
5. Credits Attained		Low	1.125	.280	16.158	1	.000*	3.081
≤ 84%	(0)	Medium	1.264	.216	34.278	1	.000*	3.539
> 84%	(1)	High	1.755	.132	177.248	1	.000*	5.785
6. GPA		Low	1.248	.427	8.527	1	.003*	3.482
≤ 2.0	(0)	Medium	1.220	.231	27.829	1	.000*	3.386
> 2.0	(1)	High	1.546	.183	71.384	1	.000*	4.694

C. Participation in Learning Support Services								
7. Online Tutorial		Low	-.066	.259	.064	1	.800	.937
No	(0)	Medium	.299	.196	2.321	1	.128	1.348
Yes	(1)	High	.546	.158	11.966	1	.001*	1.726
8. Online Examination		Low	.537	.657	.668	1	.414	1.711
No	(0)	Medium	2.487	1.039	5.732	1	.017*	12.026
Yes	(1)	High	1.400	.499	7.885	1	.005*	4.054
9. Face-to-face Tutorial		Low	-	-	-	-	-	-
Yes	(0)	Medium	.855	.248	11.902	1	.001*	2.351
No	(1)	High	.548	.259	4.463	1	.035*	1.729

*) *Significant at*

The last column, EXP(B), presents a calculation exponent of the coefficient of regression, eB. For example, the gender factor in the high-quality service management of the regional office center have B coefficient equal to 0.051, so give $EXP(B) = e^{0.051} = 1.053$, as seen in Table 3. The EXP(B) values are used to interpret the B coefficient of binary logistic regression, that a change of one unit in a predictor variable implied a change in the likelihood of dependent variable (Park, 2013; Field, 2013). For predictor with binary values, interpreting the EXP(B) was more natural, since change one unit in predictor variable mean change from 0 to 1. For example, the $EXP(B) = 1.03$ in the column of gender factor and the high-quality service management of regional office center on Table 3 said that male (denoted by 1) students were 1.03 times more likely to re-enroll than female (denoted by 0) students. However, the value of $B = 0.051$ was not significant, as indicated by $p\text{-value} = 0.678 (> 0.05)$; hence, the data did not support the conclusion. In the following discussions, the findings will only focus on the significant variables in Table 3:

A. Students' Characteristics

- The EXP(B) of the age variables was .469 in the regional office center with medium-quality service, implying that the students aged below or equal to 24 years were 0.469 times less likely to re-enroll than the students aged over 24 in the subsequent semester. In other words, older students have $1/0.469 = 2.132$ times more likely to re-enroll than younger students.
- The EXP(B) of the marital status variable was 1.889 in the low-quality service management of the regional office, indicated that the married students were more likely to re-enroll than the unmarried students. It meant that the married students were 1.889 times more likely to re-enroll than unmarried students.
- The EXP(B) of the working status variable was 1.632 in the medium quality service management of regional office center, indicated that the employed students (with the variable value equal to 1 in Table 2) were more likely to re-enroll than the unemployed students (with variable value equal to 0 in Table 2). It meant that the odds of the employed students were higher than unemployed students to re-enroll by 1.632 times.

B. Academic achievement

- The EXP(B) for the credits attained was 3.081, 3.539, and 5.785 respectively for Low, Medium, and High-quality service management. It indicated that the students with credits attained more than 84% were more likely to re-enroll than the students with credits attained less than or equal to 84% by 3.081, 3.539, and 5.785 times in low, medium, and high-quality service regional offices respectively.
- For GPA variable, it revealed that the EXP(B) of the GPA was 3.483, 3.386, 4.694 for the Low, Medium, and High-quality service management of regional office centers respectively. Its showed that the students with GPA more than 2.0 were more likely to re-enroll than the students with GPA less than or equal to 2.0 by 3.483, 3.386, 4.694 times in the regional office with Low, Medium, and High-quality service management respectively.

C. Learning support service

- The EXP(B) of the participation in the online tutorial variable was 1.726 in the high-quality service of the regional office. The result indicated that, in this regional office, the students who participated in the online tutorial were more likely to re-enroll than the unparticipated students by 1.889 times. In other words, participation in the online tutorial had an effect on re-enrollment for the students who registered in a regional office with high-quality service management.
- The EXP(B) of the participation in the online examination was 12.026 and 4.054 in medium and high-quality service of regional offices respectively, but it was not significant in low-quality service of the regional office. It indicated that in medium and high-services quality regional office centers, the students who participated in the online examination were more likely to re-enroll than the students who did not participate in online examination by 12.026 and 4.054 times respectively.
- In regional office centers with Medium and High-service quality management, the EXP(B) of the participation in the face-to-face tutorial was 2.351 and 1.729, respectively. The result offered a point that the students who participated in the face-to-face tutorial were more likely to re-enroll than the students who did not participate by 2.351 and 1.729 times, respectively.

CONCLUSION AND RECOMMENDATION

This paper considers that the students' re-enrollment is an indication of service quality management of a distance higher education institution to maintain the student's success and to increase students' retention. The students' retention in the distance higher education environment, as indicated by their re-enrollment in each semester, is due to various factors. This research specifically identified that the students' success related to five factors. Firstly, the level of service quality management of regional office centers affected the students' re-enrollment. Secondly, the individual characteristics related to maturity, as specified by age, marital status, and working status, affected the students' re-enrollment, i.e., the more mature the students are, the more chance the students have for re-enrolling and succeeding. Thirdly, the academic success in previous semesters, as showed by GPA and credits attained, contributed to re-enrollment, i.e., the more GPA and credits earned in the previous semester the more probability for the students to re-enroll in this semester. Fourthly, the availability of learning support services had an effect to re-enrollment especially for regional office centers with High or Medium quality service management, in the Low-quality service management of regional office centers the students' participation in the learning support service did not affect re-enrollment. Fifthly, the level of service quality management provided by the regional office centers modulated the effect of student characteristics, students' academic attainment in the previous semester and students engaged in learning support services on students' re-enrollment, the more level of service quality was the more these factors affect positively to the students' re-enrollment.

There is a growing number of higher education institutions to adopt quality assurance to enhance students' educational experiences (Tezcan-Unal, Winston, & Qualter, 2019). However, some academics scrupled to adopt quality assurance in higher education. Ryan (2015) reported that academics felt the quality audit was futile and bureaucratic because their work focuses on research and teaching, and the academics want to maintain autonomy. Nicholson (2011) informed that the adoption of quality assurance programs from the world of business into higher education tends to inhibit innovation in the instructional process rather than advance it. Also, the adoption of the quality assurance into education institutions tend to encourage mechanistic activities in an educational setting (Plimmer, Clarke-Okah, Donovan, and Russell, 2012; Ryan & Brown, 2012;). On the controversy of adopting quality assurance in the distance higher education institution, this study unveiled that adopting quality assurance in distance higher education of UT through its regional office centers indeed has positively affected student's satisfaction and loyalty as reflected in students' re-enrollment, and the level of quality service management of the regional office centers changed positively to the effect of the factors affected on students' success.

The essence of quality service management of regional office centers could be traced to the principal in managing service in the distance higher education. Dzakiria, Kasim, Mohamed, & Christopher (2013) asserted that the structure of ODL provides learners with the most considerable flexibility and provides control over time, place and pace of learning and that "one important element, in accordance with the

flexibility, that tends to define success factors for students attending an ODL program is the level of interactivity within the student-tutor-content dyads.” (p. 1). It has thus become highly essential that to improve the ODL experience, increase attrition rates, and maintain good long-term standing, equitable provision of such interaction and interactivity should be a non-negotiable priority for ODL institutions. Above all, the service quality provided by distance higher institutions is the heart of managing the students’ re-enrollment.

The quality service management of a distance higher education institution should cover aspects of quality education delivered by the institution to satisfy the stakeholder’s needs. The quality service should emphasize students’ success through providing interaction and interactivity of the student-tutor-content. Hence, the future research of quality assurance effectivity should focus on the role of quality service management of a distance higher education institution to students’ success in academic achievements, such as improvement of students’ GPA, the students’ credits attainment, and the students’ length of time to complete their study. Furthermore, the future research of quality assurance should emphasize improving the quality of interaction between tutor and student, as well as content and student. Also, the future research should scrutinize the role of quality service management of a distance higher education institution to quality of learning material preparation and learner support services and quality of assessment on students’ learning.

The practical recommendation could improve the service quality of regional office centers of UT:

- UT should strengthen human resources in regional offices should be strengthened by having much training in delivering services to the students.
- UT should equip the regional office centers with high-tech for facilitating students to interact with tutors, learning resources, and other students.
- The Quality Assurance Center of Universitas Terbuka should supervise the regional office centers exhaustively by formulating the service quality guidance, coaching how to perform service quality, and arrange sufficiently intensive auditing.
- The regional office centers are the display of UT in regions and areas far from the headquarters and confront directly to the students; therefore the regional office centers should receive enough funding for delivering service to the students.

Acknowledgements: The early draft of this article was presented in the 31st Annual Conference of the Asian Association of Open Universities, 2017, with full funding from Universitas Terbuka. I am grateful to the Rector of Universitas Terbuka, Prof. Ojat Darajat for any assistance for finishing this report. Very special gratitude goes to Prof. Karnedi and Prof. Gorky Sembiring, the heads of Institution of Research and Community Services of Universitas Terbuka, for arranging a workshop for finalizing this manuscript.

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