Validating Student Satisfaction Related to Persistence, Academic Performance, Retention, and Career Advancement in ODL Perspectives

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Track 5: Student success, retention and support

Abstract

Student satisfaction associated with persistence, academic performance, retention and its relations to career advancement were examined in this inquiry. It was aimed at measuring service quality as a foundation of satisfaction delivered by Universitas Terbuka Indonesia perceived by students. It was also of interests to exhibit on how and in what comportments all variables engaged interrelated within service quality context. The study was conducted under Mixed Methods (Explanatory Design; quantitative first, followed by qualitative). Data was collected proportionally and purposively by survey using questionnaire, followed by congregating them over again through unified in-depth interviews and focus group discussions. Population was 1,814 students domiciled overseas; 350 questionnaires were dispersed and 169 were completed (9.21%). Satisfaction was assessed by examining dimensions of service quality (reliability, assurance, tangible, empathy, and responsiveness). Both importance-performance analysis (IPA) and customer satisfaction index (CSI) were applied simultaneously to measure satisfaction and the level of its importance. Structural equation model (SEM) was then employed to validate influencing traits of variables engaged. Nine hypotheses developed were all significantly validated by the analysis. It was understood that aspects on responsiveness, assurance, tangible, reliability, and empathy were sequentially in harmony to satisfaction. Career advancement, retention, academic performance, and persistence were positively influenced by satisfaction respectively. Likewise, qualitative inquiry implemented afterwards was basically coherent with the previous findings accomplished quantitatively with slight and minor disparities.

Keywords: Service quality, satisfaction, retention, explanatory design, IPA-CSI, SEM

Introduction

It is observably recognized that there are some factors lead to student satisfaction and its relations to retention perceived from service quality outlooks (Brown, 2006; Arokiasamy & Abdullah, 2012). The framework on service quality leads to satisfaction has been formulated by Parasuraman *et al* (1988) and elaborated in educational sector by Tan & Kek (2004), Petruzzelis *et al* (2006), and Rojas-Mendez *et al* (2009). This effort is imperative as many students endeavored to earn degree failed to persist (Robert & Styron, 2009) as the service delivered is below the required standard. To certain extent, this phenomenon is relevant to Universitas Terbuka Indonesia ambiance (Sembiring, 2014 & 2015).

Issues relatable to persistence, academic performance, and retention as a result of satisfaction in Universitas Terbuka context are now indispensable consistent with maintaining the size and growth of student body. In 2014 for instance, it was expected students to total 361,461 nationally and 3,000 regionally; in this case students living overseas. The targeted number nevertheless dropped short of that goal and totaled to 333.501 nationally and 1,814 regionally (Universitas Terbuka, 2015b). This implies that there is a gap between the initial target and the realization. This serially drives us to explore: Was it as a result of many students graduated? Was it a question of less new student registered? Or, was it due to many students not re-registers themselves in the consecutive semester? If the latter is the most probable instance, then we come to the inquiry of student persistence and/or retention associated with student satisfaction in service quality configuration.

The primary aim of this study is therefore to evaluate service quality through its dimension/attributes as it was expected and experienced by students (especially those living overseas). It is also significant to reveal the crossing points between student satisfaction along with persistence, academic performance, retention, and career advancement in an Open and Distance Learning (ODL) setting. The answer to these questions is related to an effort on maintaining the size and growth of student body of the University such that all services provided meet as many students' needs and expectations as possible; see also Ostegard & Kristensen (2005). At the same time, the University will be able to anticipate and concentrate entire associated efforts productively with respect to assuring better and faster services observed from student outlooks.

Related Literature and the Framework

Service quality and satisfaction, including in educational sector, attract scholars in a wide variety of disciplines (Kitcharoen, 2004). The dimensions of service quality mentioned previously consisted of reliability, assurance, tangible, empathy, and responsiveness were adopted in this inquiry. Previous work by Tileng *et al* (2013) gives confidence to utilize this basis into Universitas Terbuka context. In addition, the origin of the study was service quality and satisfaction integrated with prominent constructs within retention and/or persistence (Tinto, 1982, 1993 & 1997) and attrition (Bean, 1983 & 1985). It makes such a progress in understanding elements of service quality, satisfaction and retention (Hanaysha *et al*, 2011). Furthermore, Ilias *et al* (2008), Mailany (2011), and Martirosyan *et al* (2014) understand that evaluation on satisfaction thoroughly leads to increasing academic performance. Similarly, students search for program that will prepare them for more promising and great career advancement in the future. It is then believed that many students even expect to gain more established forthcoming jobs (Archambault, 2008).

Having considered those expectations, it becomes right to introduce an integrated structure by uniting all relevant factors in a service quality framework, satisfaction and associated possible links as the conceptual framework of this research, shown in Figure 1.
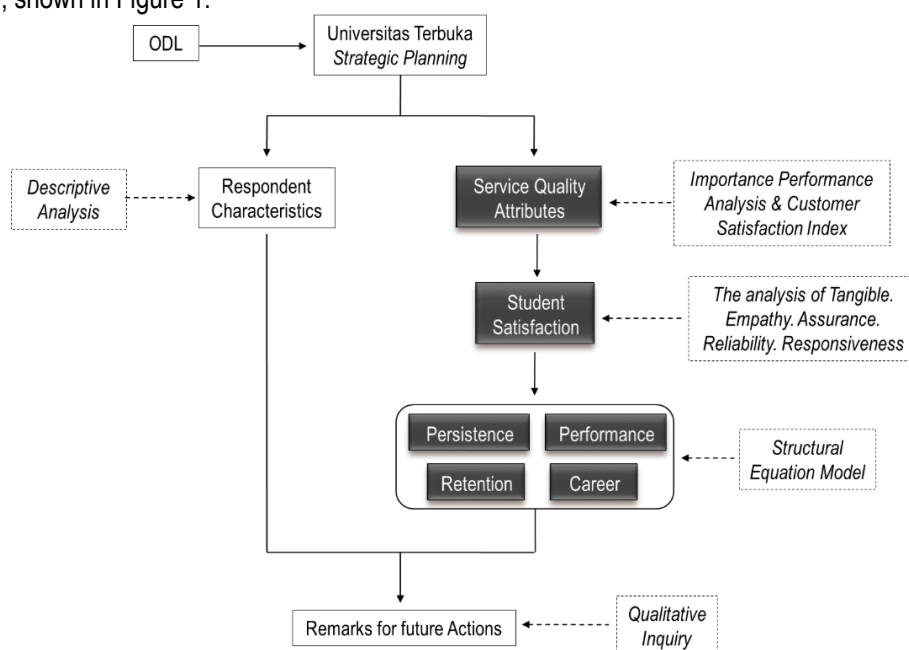

Figure 1 The Conceptual Framework

This conceptual framework (Figure 1) would be a tool for measuring student satisfaction and its inferences viewed from a service quality outlook. This in turn would allow ODL institutions to change important aspects of their operations to accommodate student expectations. It might also focus on institutional directions to fulfil student needs extensively so that the universities can maintain and make progress on the size and growth of their student bodies as it was planned.

Before establishing the operational framework as a furtherance of the conceptual one, it is worth to note that student satisfaction is conceptually determined by service quality. Service quality is demarcated operationally on five main dimensions; they are reliability, assurance, tangible, empathy, and responsiveness. Each dimension is further elaborated into attributes accordingly. Moreover, satisfaction is operationally a pointer to persistence, academic performance, retention, and career advancement. To ease the design practicable, all variables engaged associated with their dimensions/attributes are systematically arranged in the following table (Table 1).

Table 1 Variable, Dimension, and Question of the Research

No	Variables	Dimensions	Questions
1	Tangible X_3	• Website Design • Information in web • Web interactivity	X_{31} : Design of the web (www.ut.ac.id) X_{32} : Information inside the web X_{33} : Interaction from students to the university via electronic media, and vice versa
2	Empathy X_4	• Attention • Support • Complaints	X_{41} : Response from student service official X_{42} : Tutor support X_{43} : Handling student complaints
3	Assurance X_2	• Services • Schedules • Fees	X_{21} : Student service through electronic media X_{22} : The university academic calendar X_{23} : Tuition fee and other related expenses
4	Reliability X_1	• Curriculum • Relevance • Reputation	X_{11} : Curriculum of the program X_{12} : Relevance between program and the work X_{13} : acknowledgement from the society in large
5	Responsiveness X_5	• Feedback • Communication • Access	X_{51} : University feedback mechanism to students X_{52} : Information delivery system to students X_{53} : Student access to the management
6	Satisfaction $Y_{(1-5)}$	• Registration • Modules • Tutorials • Exams • General admin	Y_1 : Student registration service Y_2 : Module distribution system Y_3 : Tutorial management system, classroom & online Y_4 : Implementation of semester final exam Y_5 : Tuition fee payment scheme
7	Persistence $Y_{(6-8)}$	• Re-register • Active in tutorial • Active in group	Y_6 : Re-registering regularly in each semester Y_7 : Enthusiastically participate in tutorial activity Y_8 : Involve in study group activity via available media
8	Academic Performance $Y_{(9-10)}$	• Assignments • GPA (Grade Point Average)	Y_9 : Assignments in the tutorial session are helpful Y_{10} : I am satisfied with the results (GPA) in the previous final exams
9	Retention $Y_{(11-13)}$	• Study up to finish • Further study • Recommend to others	Y_{11} : I will do my best to complete my study at any cost Y_{12} : I will continue my next degree in this University Y_{13} : I will recommend the University to others
10	Career Advancement $Y_{(14-15)}$	• Future career • Civic contribution	Y_{14} : I do believe that after completing my degree here then my career will be more improved Y_{15} : I am happy to contribute to the nation through the alumni association

Table 1 is used as a basis to develop the instrument in the form of questionnaire. In Table 1, all questions incorporated in **X**, as independent variables (X_{11}–X_{53}), are answered two times by respondents simultaneously. The first and the second answers measure the satisfaction and the level of its importance respectively. The rests are answered by respondents to view the impact of satisfaction related to persistence, academic performance, retention, and career advancement from student's perspectives.

At this stage, it is on the right spot to establish the operational framework of the study in accordance with the structure of conceptual framework (Figure 1) and the essence of variables involved (Table 1) and then followed by their dimensions/attributes. They are all displayed diagrammatically in Figure 2. This below figure will be used

as the basis of determining the methodology used, research design, and the way on how to ensue the analysis accomplished further.
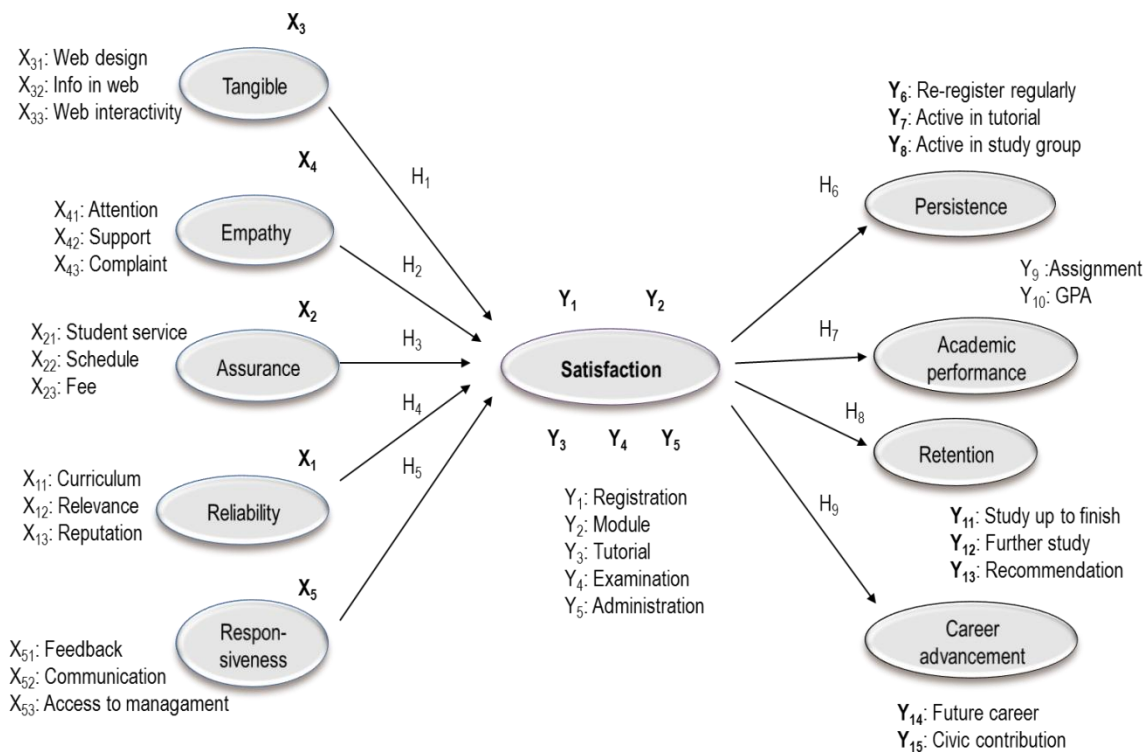

Figure 2 The Operational Framework

Methodology, Design, and the Hypotheses

This study utilizes Mixed Methods, i.e., Explanatory Design (Creswell & Clark, 2011). Technically, the research is prearranged to be implemented under quantitative approach first and then followed by qualitative sequence. Two instruments are developed; questionnaire for quantitative purpose and list of questions for in-depth interviews and/or focus group discussions qualitatively.

Figure 2 describes the highlights affecting Student Satisfaction (Y_{1-5}) leading to Persistence ($Y_{6,7,8}$), Academic Performance ($Y_{9,10}$), Retention ($Y_{11,12,13}$), and Career Advancement ($Y_{14,15}$). Satisfaction (Y) includes Registration (Y_1), Module (Y_2), Tutorial (Y_3), Examination (Y_4), and Administration (Y_5). Satisfaction (Y) was assessed by perceiving the component of service quality, including the dimensions/attributes of Reliability (X_1), Assurance (X_2), Tangibility (X_3), Empathy (X_4) and Responsiveness (X_5). The instrument consists of 2x20 questions related to satisfaction and the level of its importance, plus ten additional questions to validate whether or not persistence, academic performance, retention, and career advancement were relatable each other to satisfaction. This approach is meant to quantitatively address the conceptual framework, the model, research design, hypotheses, the survey and sampling technique, data collection and processing, and finally drawing the conclusions. Serially, these results will be unified with the results obtained under qualitative approach afterwards.

The variables involved are explored through the questionnaire inspired by Tjiptono & Chandra (2011). A survey is implemented to collect data from respondents following Singarimbun & Effendi (1989). A proportional (quantitative purposes) and purposive (qualitative purposes) sampling techniques were chosen to select eligible respondents (Sugijono, 2012). An Importance-Performance Analysis (IPA) and Customer Satisfaction Index (CSI) were utilized simultaneously to measure the satisfaction level, along with its importance (Kitcharoen, 2004; Silva & Fernandez, 2010; Wong *et al*, 2011). A Structural Equation Model (SEM) is utilized to detect probable relations among the variables engaged (Wijayanto, 2008).

These methodological approaches will assess the *hypotheses* (H), which consisted of nine entries (see Figure 2), they are: Satisfaction is directly influenced by Tangible (H_1), Empathy (H_2), Assurance (H_3) Reliability (H_4), and

Responsiveness (H_5). Moreover, Persistence (H_6), Academic Performance (H_7), Retention (H_8), and Career Advancement (H_9) are directly influenced by Satisfaction.

Results and the Arguments

Before conferring the outcomes, it is valuable to represent the qualities of the respondents as shown in Table 2, as this will enhance the perspective on the results.

Table 2 Respondents Characteristics

Number of Countries where Students Domiciled Overseas = 27		Total Students = 1,814	Questionnaires	Distributed = 350	
		Respondents = 169 (9.21%)		Completed = 169	

Student Domicile (%)	Hong Kong	18.34	Taiwan	17.75	South Korea	18.93
	Malaysia	19.52	Singapore	17.15	Others	8.28
Study Program (%)	Communication	25.43	Management	23.66	English	38.46
	Business Admin	2.36	Accountancy	8.28	Others	1.77
Profession (%)	Public Service	0.00	Private Sector	23.07	Industry	28.99
	Own Business	5.32	Non Formal	38.46	Others	4.14
GPA (2014, %)	0.00 – 1.99	4.73	2.00 – 2.49	12.82	2.50 – 2.59	50.88
	3.00 – 3.49	21.30	3.50 – 3949	10.65	3.50 – 4.00	0.59
Age (Year, %)	18 – 25	40.82	26 – 30	28.99	31 – 35	23.66
	36 – 40	4.73	41 – 45	1.18	46++	0.59
Selected Respondents	Hong Kong	1	Malaysia	1	South Korea	1
	Taiwan	1	Singapore	1	Others	3

The results of analyses are detailed in the following clarification, table, and figures.
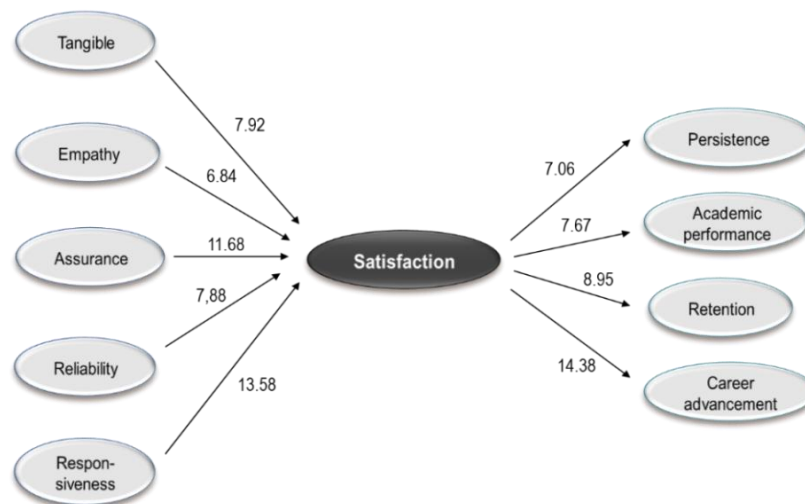

Figure 3 The t-Value of the Model

Figure 3 evidently shows that all the nine hypotheses were validated by the analysis. They are: (1) H_1=7.92 (Tangible to Satisfaction), H_2=6.84 (Empathy to Satisfaction), H_3=11.68 (Assurance to Satisfaction), H_4=7.88 (Reliability to Satisfaction), H_5=13.58 (Responsiveness to Satisfaction), H_6=7.06 (Satisfaction to Persistence), H_7=7.67 (Satisfaction to Academic Performance), H_8=8.95 (Satisfaction to Retention), and H_9=14.38 (Satisfaction to Career Advancement); as all of the t_{values} ≥ 1.96 (for α=5%); which means that they are all confirmed positively and directly by the analysis.

Before describing the end results, it is worth revealing the satisfaction level and the degree of its importance obtained from the IPA and CSI structures. The analysis generates the spots of service quality components with respect to the related quadrants to comprehend the degree of their importance (Figure 4).
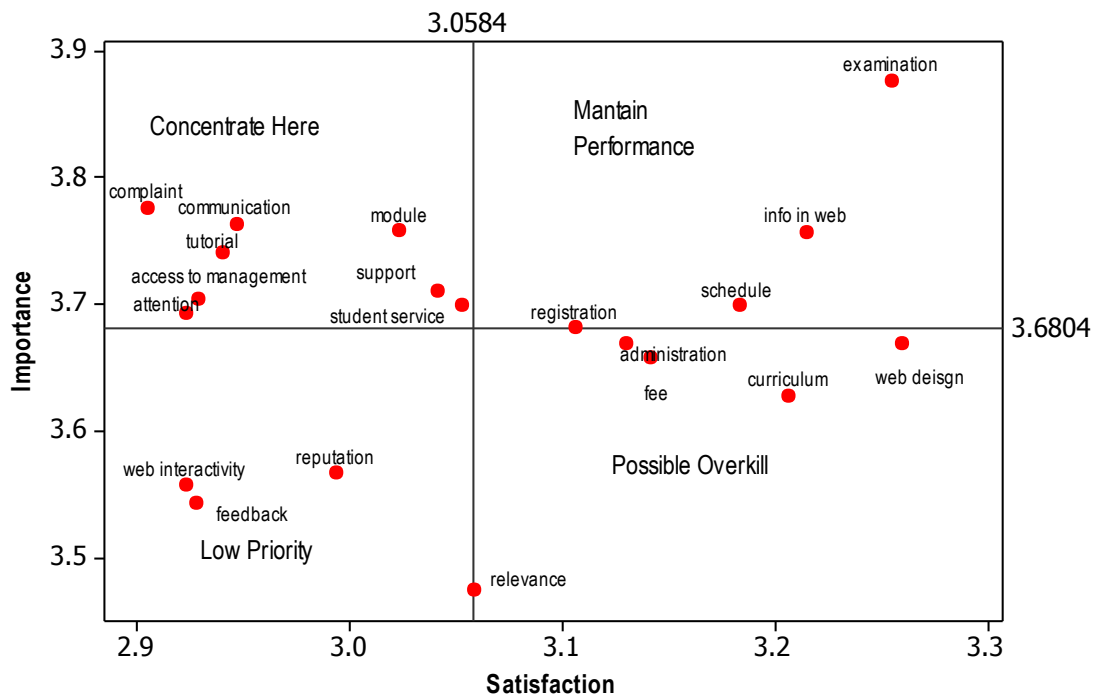

Figure 4 The IPA Chart of the Model

Figure 4 has four quadrants, they are: (1) Concentrate Here, (2) Maintain Performance, (3) Low Priority, and (4) Possible Overkill; following Wong *et al* (2011).

Quadrant 1 (*Concentrate Here*) has eight important attributes that should be seriously noted by all means. They are: (i) Handling Complaints, (ii) Communication, (iii) Tutorial, (iv) Access to Management, (v) Attention, (vi) Module, (vii) Support from Faculty, and (viii) Student Service. This Quadrant (Concentrate Here) indicates that satisfaction is at a low level whereas the degree of its importance is high. The University must pay attention to these eight critical facts and put them in a very top priority such that student expectations can be fulfilled and they are more likely to continue and complete their studies as intended.

Quadrant 2 (*Maintain Performance*) includes four points that should be recognized. They are: (i) Examination, (ii) Info in the Web, (iii) Schedule, and (iv) Registration. This Quadrant (Maintain Performance) is a symptom of both satisfaction and the degrees of its importance being concurrently placed at a high level by the students. The University, therefore, must take care of these aspects, so that more students will get the advantage of these conditions and will pursue their studies with intent. All attributes that fall into this quadrant are the strength and pillar of the University, and they should become the pride of the University.

Quadrant 3 (*Low Priority*) has three points which should be attended to. They are: (i) Reputation, (ii) Web Interactivity, and (iii) Feedback Mechanism. This Quadrant (Low Priority) is an indication that both satisfaction and the degree of its importance are in the low category. The University should classify these aspects as 'the next' focus after concentrating on the critical spots found in Quadrant 1 and Quadrant 2. Therefore, any of the attribute that falls into this quadrant is not important and poses no threat to the University.

Finally, in **Quadrant 4**, five points are classified as *Possible Overkill*, they are: (i) Administration, (ii) Fee, (iii) Curriculum, (iv) Web Design, and (vi) Relevance of the Program. This Quadrant (Possible Overkill) indicates that the service quality provided is considered less important but respondents considered them as high in

satisfaction. Here, attention to the attributes included can be less focused so that the University can save costs by redirecting them to take up vital spots in Quadrant 1 and maintain fundamental spots in Quadrant 2.

Having positioned the variables and dimensions as they should be in relation to the appropriate quadrants based on IPA-CSI approach, we are now in the position to relate loading factors of the model to observe the power of relations each variable involved in the framework as a model under SEM (Wijayanto, 2008 & Hair *et al*, 2009) to work out the end results (Figure 5).

X_{31}: Web design=0.89
X_{32}: Info in web=0.72
X_{33}: Interactivity=0.69
Tangible

X_{41}: Attention=0.80
X_{42}: Support=0.69
X_{43}: Complaint=0.66
Empathy

X_{21}: Service=0.39
X_{22}: Schedule=0.11
X_{23} Fee=0.99
Assurance

X_{11}: Curriculum=0.86
X_{12}: Relevance=0.84
X_{13}: Reputation=0.49
Reliability

Respon-siveness
X_{51}: Feedback=0.26
X_{52}: Communication=0.09
X_{53}: Access=1.00

0.19
0.16
0.34
0.18
0.40

Satisfaction

Y_1: Registration=0.86
Y_2: Module=0.70
Y_3: Tutorial=0.78
Y_4: Examination=0.80
Y_5: Administration=0.76

Y_6: Re-register regularly=0.81
Y_7: Active in tutorial=0.69
Y_8: Active in study group=0.83
Persistence

Y_9: Assignment=0.68
Y_{10}: GPA=0.44
Academic performance

Y_{11}: Study up to finish=0.91
Y_{12}: Further study=0.74
Y_{13}: Recommend=0.10
Retention

Career advancement
Y_{14}: Future career=0.83
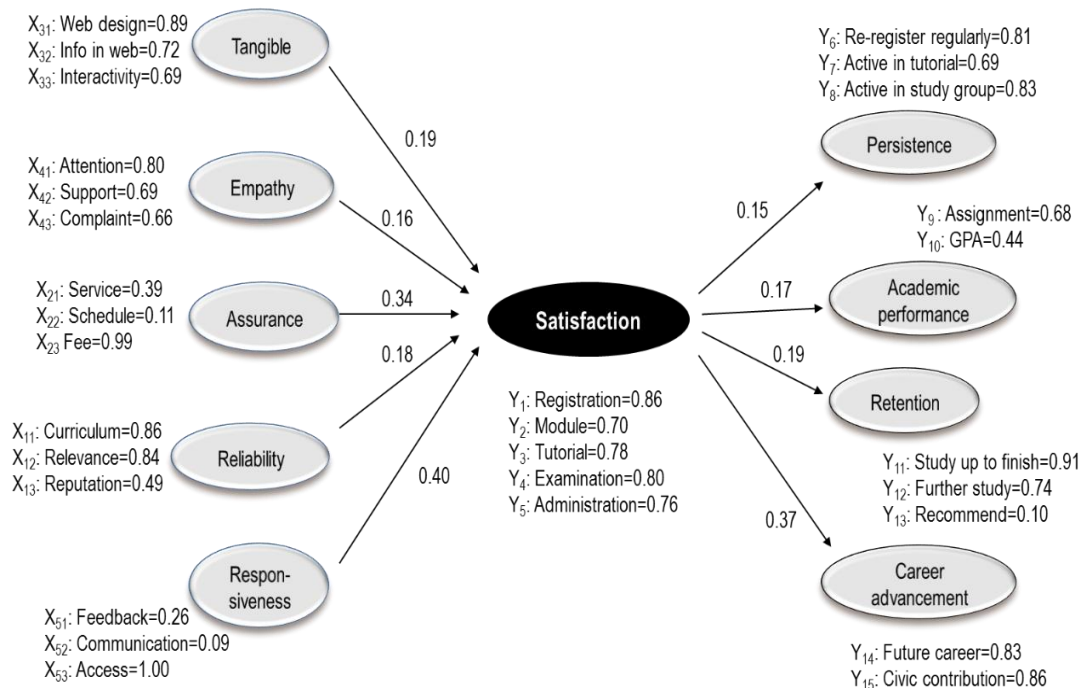Y_{15}: Civic contribution=0.86

0.15
0.17
0.19
0.37

Figure 5 Loading Factor of the Model

Figure 5 displays the five prime finale upshots quantitatively, they are:

- The first is related to the main five variables which directly influence satisfaction (orderly rank). They are: (i) Responsiveness (X_5=0.40), (ii) Assurance (X_2=0.34), (iii) Tangible (X_3=0.19), (iv) Reliability (X_1=0.18), and (v) Empathy (X_4=0.16).

- The second finding relates to the ranks of the dimensions in Responsiveness (X_5). They are: (i) Access, (X_{53}=1.00), (ii) feedback (X_{51}=0.26) and (iii) Communication (X_{52}=0.09). The ranks in the dimension of Assurance (X_2) are: (i) Fee (X_{23}=0.99), (ii) Service (X_{21}=0.90) and (iii) Schedule (X_{22}=0.11). The standings of the dimensions in Tangible are: (i) Web design (X_{31}=0.89), (ii) Info in web (X_{32}=0.72), and (iii) Interactivity (X_{33}=0.69). The positions of the dimensions in Reliability (X_1) are: (i) Curriculum (X_{11}=0.86), (ii) Relevance (X_{12}=0.84), and (iii) Reputation (X_{13}=0.49).The ranks in the dimension of Empathy (X_4) are: (i) Attention (X_{41}=0.80), (ii) Support (X_{42}=0.69) and (iii) Complain (X_{43}=0.66).

- In the third finding, respondents put the order of satisfaction (Y) from the provision of services related to: (i) Registration (Y_1=0.86), (ii) Examination (Y_4=0.80), (iii) Tutorial (Y_3=0.78), (iv) Administration (Y_5=0.76), and (v) Module (Y_2=0.70).

- The fourth result is associated with the power of relations between satisfaction (Y) and Persistence ($Y_{6,7,8}$), Academic Performance ($Y_{9,10}$), Retention ($Y_{11,12,13}$), and Career Advancement ($Y_{14,15}$). From Figure 5, it clearly confirms that satisfaction has a significant effect on: (i) Career Advancement (0.37), Retention (0.19, (iii) Academic Performance (0.17), and Persistence (0.15) successively.

- The fifth effect is the ranks on the dimensions of: (1) Career Advancement: (i) Civic contribution (Y_{15}=0.86) and (ii) Future Career (Y_{14}=0.83); (2) Retention: (i) Study up to finish (Y_{11}=0.91), (ii) Further study (Y_{12}=0.74), and (iii) Recommend to others (Y_{13}=0.10); (3) Academic Performance: Assignments (Y_9=0.68) and (ii) GPA (Y_{10}=0.44); and (4) Persistence: (i) Active in study group (Y_8=0.83), (ii) Re-register regularly (Y_6=0.81), and (iii) Active in tutorial (Y_7=0.69).

Before moving into the next remarks, i.e., findings obtained from qualitative approach, it is worth considering whether the result of using SEM is labelled as a 'good fit' category, so it is possible to assess the hypotheses and engender the loading factors of the model. The analysis showed that they are all considered 'good fit' (Table 3), which means that the model is suitable; the conceptual and basic (operational) model in this research substantially and methodologically are aligned with one to another (Wijayanto, 2008).

Table 3 Goodness of Fit of the Model

Goodness of Fit	Cut-off Value	Results	Notes
RMSEA – Root Mean Square Error Approximation	≤ 0.08	0.063	Good Fit
RMSR – Root Mean Square Residual	< 0.05 or < 0.10	0.008	Good Fit
GFI – Goodness of Fit	≥ 0.90	0.960	Good Fit
AGFI – Adjusted Goodness of Fit Index	≥ 0.90	0.950	Good Fit
CFI – Comparative Fit Index	≥ 0.90	0.980	Good Fit
NFI – Normal Fit Index	≥ 0.95	0.950	Good Fit
RFI – Relative Fit Index	≥ 0.90	0.940	Good Fit

Having collected and aggregated outcomes accomplished from **qualitative** inquiry, it can be inferred that there are *three* major effects need to be noticed thoughtfully. The first outcome is related to the conceptual and operational framework of the research (refers to Figure 1, Figure 2 and Figure 3; including Table 1). The second is on the IPA chart results (refers to Figure 4). The third is concerning the methodology used.

It is understood that the structure of the conceptual framework quantitatively confirms career advancement as the primary aspect and then followed by retention, academic performance, and persistence successively. In general, this result is in agreement with the qualitative inquiry. It implies that the four factors are also found from in-depth interview and focus group discussions. In terms of its order, however, the selected respondents are prefer to express satisfaction leads to (in different order of ranks than that of quantitative one): (i) Academic Performance, especially for the GPA, (ii) Persistence, especially for re-register regularly in consecutive semester, (iii) Retention especially for study up to finish, and (iv) Career Advancement especially for future career. These are the things that are most preferable behold by the selected respopndents. This, to certain extent, is comparable to the work of Swail (2004).

In this upshot, it also seems that there is a slight discrepancy between quantitative and qualitative outcomes in terms of the positions of the variables involved as well as their dimensions in conjunction with student satisfaction in the sense of service quality outlook. This gap is lightly exists but it does not create a vivid contradictory that shall drive us to take opposite position further. It rather gives us a wider perspective to be kept on mind for further consideration just in case we are going to conduct comparable research in the future.

In addition, the quantitative outcomes partially put access to management (X_{53}=1.00) as the prime attribute in the prime variable (X_5, Responsiveness) that leads to Satisfaction (Y). From the discussions, it was detected that the selected respondent is prefer to place communication as the top rank in this dot. This is so and imperative since the students are domiciled overseas and at the same time they are not a full time-base student. This implies that they have a shortage of time to attend academic activities, such as face to face tutorial or student orientation with regular and fixed schedules for instance (Sawitri & Sembiring, 2013). Student prefers to have another communication arrangement that allows them to access activities despite they are not able to come physically to the specified activities or sessions. Again, this result is not contradicted one to another such that they are totally considered to be opposite each other in the level of variable. This even gives us broader angles that there are so many little tiny aspects should be taken care of to fulfil various student needs and expectations.

The rests of quantitative outcomes other than explained above are entirely consistent with the qualitative marks. It implies that from the five dimensions of service quality only two of them have slightly different ranks from the initial frameworks; they are only different in terms of the rank. Besides, as the dependent variables, the case is the same either, since the difference between what was obtained quantitatively versus qualitatively among the impact of satisfaction were just in the sense of the rank of variables involved; including some ranks in attributes within the variables/dimensions, i.e., career advancement, retention, academic performance, and persistence.

Referring to the second finding from IPA Chart (Figure 4), it can be dsescribed that results from qualitative inquiry are exclusively equivalent with the quantitative one. To some extent, it implies that they are remarkably the same. What a pity, however, the communication system is fell in Quadrant 1 (Concentrate Here). All the same, students consider this attribute is critical for most of them, especially those students living overseas, are a part time-base student; this is inline with Roberts & Styron (2009). Students moreover believe that communication system in academic context is extremely important and at the same time most of them found it in "unsatisfied" level. Additionally, access to management is extremely crucial according to students, it is nonetheless fell in the first quadrant either. This entails that the University should put these two attributes as the top priority to particularly be tackled to suit the needs and expectations of overseas students.

Support from faculty and tutorial support services are also dropped in this quadrant. These two services however are tightly related to academic service. It implies that the two services are crucial according to students and concomitantly they found it unsatisfied. This vital issue should be seriously taken care of since it will promptly influence student performance in academic sense; it will affect students' GPA straightaway.

Looking up to the third effect, from methodological magnitude, it appears that Mixed Method used in this study is obviously proper. There are slight and minor differences in terms of the end results but they are firmly limited in numbers as well as trivial or low in implications and consequences with respect to the initial conceptual and operational framework of the study. The differences in terms of end results take place in the level of ranks, not in the sense of conceptual or even theoretical outlooks. Despite they are differ, it does not indicate that they are in contradictory dots one another. In this stage, to certain extent, it can be inferred that the differences took place are actually in the sense of widening our perspectives that they are in fact supported each other methodologically in the practicable intensity (Creswell & Clark, 2011).

From methodological direction, the outcomes of the study give us durable bases that the Mixed Methods with the choice of Explanatory Design is clearly suitable to assess service quality and its dimensions with respect to their plausible linkages. Quantitatively, it is understandable that the IPA-CSI approach is able to display distinctively what are the things should be placed within the top priority to be controlled prudently (Quadrant 1, Concentrate Here). The approach is moreover proficient enough to classify what are the things should be persistently maintained (Quadrant 2, Maintain Performance) and at the same time what are the things classified as the next priority and pose no threats (Quadrant 3, Low Priority) and the things that considered to be less important so there is no need to be rush and taking them into account by all means (Wong *et al*, 2012).

Correspondingly, the IPA Chart effects are reinforced quantitatively by the SEM outcomes. By combining these end results, it will objectively direct the University to formulate alternative course of actions for future needs with respect to student outlooks. It is fortunate that the qualitative inquiry is also in accordance with the previous results implemented under quantitative approach. It has been a phenomenon that most of universities are generally limited by tangible resources, they are referred to the so-called as 5-M (man, money, material, machine, and method). By considering this constraint, it is then just right to formulate "new" ideas on how to effectively re-direct the available resources such that there are sufficient efforts and related supports to primarily concentrate dealing with aspects in Quadrant 1 and maintaning aspects in Quadrant 2 (Tileng *et al*, 2013).

In Universitas Terbuka contexts, this result will be incredibly useful to "re-formulate" on what are the things should be put as a top priority to fulfil student's expectations in conjunction with satisfying the needs of those students living overseas. At least the eight aspects that dropped into Quadrant 1 should be brilliantly controlled with high intent. Additionally, the four aspects that drop into Quadrant 2 should also be repeatedly preserved as they are the pillar and the pride of the University. If possible, some of aspect from Quadrant 1 can be moved onto

Quadrant 2. If this takes place, it will improve the number of students getting satisfied from the University. The more students satisfied, the more likely they persist in the program. In this research, persistence is operationally defined as students do their registration regularly in each and every semester. It implies that the University will be able to maintain the size and growth of student body properly as it was initially planned (Archambault, 2008).

Concluding Remarks

The research has initially created a quantitative model of student satisfaction and its dimensions with respect to their links extended from a comprehensive analysis of educational perspective in terms of student's behavior literatures in general. The model was validated using SEM which assessing the empirical data a survey of 169 students of Universitas Terbuka living overseas. The study ascertains satisfaction leads to career advancement, retention, academic performance, and persistence successively. Besides, satisfaction is in well-ordered affected by responsiveness, assurance, tangible, reliability, and empathy. Under IPA-CSI procedures, eight aspects should be taken into account cautiously (they are: handling complaint, communication, tutorial, access to management, attention, module, support, and student service) perceived from student standpoint. Methodologically, the result under quantitative approach is consistent with the result from qualitative one. Despite there is the difference, but they only slightly differ in terms of the ranks of dimensions/attributes; not in the theoretical or conceptual level. In other words, it can be inferred that they are empirically supported and supplemented one to another.

Further research is also necessary, including follow-up studies with the students who did not enroll in each semester successively. It should explore satisfaction level beyond attributes were already included in the five dimensions. The scope should also be broadened beyond students living overseas. By doing so, it would put forward a more comprehensive perspective especially on persistence, academic performance, retention, and career advancement, since meeting the needs of students as an ODL student will improve at least for both the persistence and retention rates (Sampson, 2003).

It is hope that this will provide some opportunity for the University to be more contributive, particularly in helping the government of Indonesia to eradicate restraints for the nation to gain access to higher education as well as improving their qualification. In a more general sense, if this experience is emblematical of universities worldwide, then all universities management and academic would positively be well recommended to cogitate on student satisfaction as being the instruments to prolonged accomplishment and continued existence of their institution. For Universitas Terbuka itself, if student persistence and retention can be achieved through excellent service quality (Athiyaman, 1997), this implies that the University is on the right direction to encourage its upright mission making higher education open to all with respect to "membangun pagar bangsa" (Protecting the nation through flexible quality education). Last but not least, the University will be poised to achieve its broader vision mainly of becoming a world quality institution in the provision of graduates with the world quality standard (Universitas Terbuka, 2015a).

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