

# Academic excellence as a determinant of self-confidence among graduates of ODL programs

Academic  
excellence and  
self-confidence

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## Abstract

**Purpose** – This study envisioned plausible influential factors on service quality and academic excellence relatable to graduate self-confidence in an open distance learning (ODL) outlook. The objective was to expose the moderating role of academic excellence (graduate satisfaction) between service quality and self-confidence (engagement, achievement, loyalty and opportunity, EALO). It was also of interest to explore how, in what routines factors involved interrelated.

**Design/methodology/approach** – This study utilized exploratory design. Qualitatively, service quality included acclimation, advising, module, tutorial, assessment, feedback and referral factors. Service quality led to academic excellence (GPA, study length, relevance and recognition). Besides, academic excellence influenced self-confidence. Quantitatively, service quality, academic excellence and self-confidence were the independent, moderating and dependent variables. Respondents were randomly selected through a survey of eligible Universitas Terbuka alumni.

**Findings** – 11 hypotheses were assessed under structural-equation modeling (SEM). Responses from 122 out of 500 graduates were completed. Eight hypotheses were validated by the analysis. The tutorial was the most influential factor followed by module, assessment and acclimation; advising, feedback and referral were excluded. Academic excellence also led to self-confidence. The study was able to visualize a substantial role of academic excellence in moderating service quality to EALO. Besides, important-performance analysis and customer-satisfaction index (IPA-CSI) recognized 21 out of 32 attributes as the pillars of academic excellence.

**Originality/value** – Three of the hypotheses were invalidated by the quantitative analysis. Further inquiry with much broader coverage is then required to diminish the variance to finally find the ideal framework.

**Keywords** ODL, Service quality, IPA, CSI, SEM

**Paper type** Research paper

## 1. Introduction

Service quality related to students' satisfaction was the basis of academic excellence associated with persistence, loyalty and future career in an open distance learning (ODL) perspective. It was identified that student orientation, academic counseling, learning materials, tutorial supports, evaluation systems, feedback mechanisms and referral schemes as the main elements of service quality. This configuration was initially observed by Universitas Terbuka Indonesia students domiciled overseas (Sembiring, 2017).

Besides, another comparable study was used as a foundation of this inquiry (Sembiring and Rahayu, 2019). In that study, service quality was viewed from tangible aspects, empathy, assurance, reliability, responsiveness and referral aspects related to students' accomplishments. Accomplishments here consisted of students' performance, loyalty and future career. This study is therefore an extension of the previous two related studies with comparable independent variables but modified dependent variables, including adjusted



dimensions and/or the attributes in and of each variable. In this inquiry, the dependent variable is referred to as the so-called students' self-confidence. Self-confidence to a certain extent, according to [Aluwihare and De Silva \(2016\)](#), is not part of the institutional barrier but more on the student-related personal and/or psychological impediments. The two previous related studies ([Sembiring, 2017](#); [Sembiring and Rahayu, 2019](#)) were essentially in the frame of and related to students' persistence as highlighted by [Chuah and Lim \(2018\)](#).

Correspondingly, service quality was leading to satisfaction in a general sense and had been summarized by [Parasuraman et al. \(1988\)](#). They were further particularized in educational sectors by [Tan and Kek \(2004\)](#), [Petruzzellis et al. \(2006\)](#) and [Rojas-Mendez et al. \(2009\)](#). Several factors leading to satisfaction with respect to retention (more precisely persistence) perceived from service quality outlooks had also been underlined by [Brown \(2006\)](#) and [Arokiasamy and Abdullah \(2012\)](#). Those attempts were important in the ODL environment as many students strived to earn a degree but still ineffectively accomplished their goals since the service provided was under a required quality standard ([Roberts and Styron, 2009](#)).

To a certain extent, there was still a negligible question left on services delivered utilizing ODL methods in confirming students' accomplishments. Several fundamental uncertainties, for instance, consisted of: (1) on students' grade point average (GPA) achievement, (2) whether the students are able to accomplish their program up to the end as scheduled and/or (3) on the social recognition of their study through ODL mode. It is also appropriate to have worried whether the ultimate of ODL graduates will be well-equipped with hard and soft skills as compared to graduates of face-to-face interaction. All these concerns are still relatable to the Universitas Terbuka context as previously detailed by [Sembiring \(2015\)](#), [Sembiring \(2017\)](#), and [Sembiring and Rahayu \(2019\)](#).

After carefully considering those central issues, this study was activated to explore conceivable and significant factors (variables, dimensions or attributes) as the origin of service quality toward graduates' self-confidence moderated by academic excellence. In detail, this study investigates: (1) What are factors underpinning academic excellence. (2) How academic excellence influenced self-confidence (EALO). (3) How are interrelations amongst all factors engaged and in what routines they interrelated with one another. (4) How are current details on service quality and academic excellence with respect to self-confidence in Universitas Terbuka tradition behold by graduates.

## 2. Related literature and the frameworks

In general, it was recognized the five fundamentals of service quality with respect to satisfaction, we called it here as "excellence". They were comprehensively amalgamated as tangible, empathy, assurance, responsiveness and reliability ([Parasuraman et al., 1998](#)). Service quality and satisfaction, especially in an educational sphere, influenced many specialists in a wide variety of disciplines ([Kitcharoen, 2004](#)). Earlier finding by [Tileng et al. \(2013\)](#) provided positive support to use this groundwork as it is comparable and fitting in the higher education context; including in Universitas Terbuka ambiance.

The origin of the study was service quality and satisfaction (excellence) integrated with other prominent constructs with respect to accomplishment, loyalty and career advancement ([Sembiring 2015](#)). The comparable structure was acknowledged by [Ilias et al. \(2008\)](#), [Mailany \(2011\)](#), and [Martirosyan et al. \(2014\)](#). They identified that satisfaction (excellence) led to increased academic performance. Students also search for a program that will prepare them for more promising career advancement in the future. It is then believed that many students expected to gain more established forthcoming jobs afterward ([Archambault, 2008](#)).

Referring to the previous elaboration, academic excellence (satisfaction) will be perceived from service quality perspectives with a different set of dimensions as introduced by [Sembiring \(2017\)](#) and [Sembiring and Rahayu \(2019\)](#) with improved consequences as well. Having completed a comprehensive series of literature reviews (including an interview with

experts) and focus group discussion series, the study comes to proposing the more established conceptual configuration.

These elaborated key elements are related to the vision of the university to produce world-quality graduates. A world quality graduate is referred to as the ultimate results of academic excellence. Academic excellence can be achieved by providing good (excellence) service quality for assuring satisfaction viewed from users' perspectives (here exclusively viewed by graduates). Satisfaction is expected leading to EALO (self-confidence) through the Universitas Terbuka tradition. The consequences of academic excellence related to engagement and achievements were intentionally selected referring to the fact that most of the students in the ODL milieu were part-time students and had multiple roles. It was also believed that many students could not see their opportunity will be greater on the condition that they finish their degree as scheduled with a satisfying (good) GPA. These major concerns were referred to as the so-called self-confidence upshot.

It was understood that qualitative processes consisted of literature reviews (including interviews with experts) and focus group discussions prior to an establishment of the operational framework. Therefore, academic excellence (satisfaction) was conceptually defined as the ultimate of total service quality systems that positively leads to graduates' self-confidence. Conceptually, they are simplified as illustrated in Figure 1.

It was also designed that the operational framework followed the conceptual framework (Figure 1). The conceptual framework ends up with the established set of hypotheses. In the operational stage, there will be an elaboration of all factors engaged in conquering the operational definitions. The definitions were established based on the furtherance of the conceptual framework as streamlined in Table 1.

Operationally, the acclimation program ( $X_1$ ) was defined as the dimension of service quality in providing relevant and practical materials for orientation concerning ODL to a student with good substance, adequate frequency and delivery mode as well as useful for students' success. Advising assistance ( $X_2$ ) was defined as the dimension of service quality in giving applicable academic counseling to wide-open access, high-quality response and worth in controlling the duration of study in the ODL atmosphere. The provision of module or learning material ( $X_3$ ) was defined as the dimension of service quality in providing high-quality course materials in the ODL setting in the forms of printed and digital as well as for supplementary and additional materials in confirming academic performance. Tutorial support ( $X_4$ ) was defined as the dimension of service quality in offering and implementing

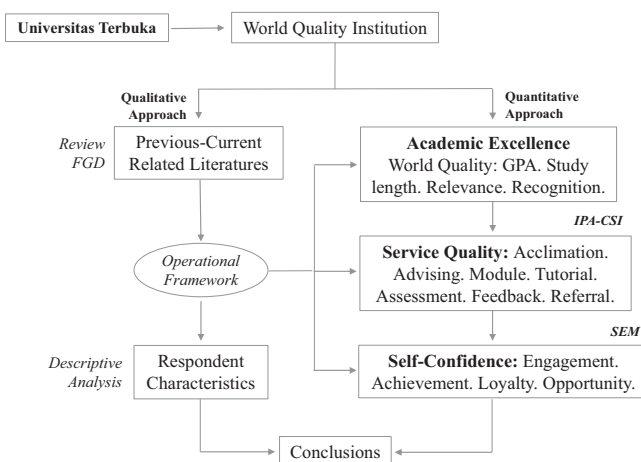


Figure 1.  
The conceptual  
framework

**Table 1.**  
Variables and  
dimensions involved

No	Variables	Dimensions	No	Variables	Dimensions
1	Acclimation $X_1$	$X_{11}$ : Substance $X_{12}$ : Frequency $X_{13}$ : Delivery $X_{14}$ : Useful	7	Referral $X_7$	$X_{71}$ : Availability $X_{72}$ : Validity $X_{73}$ : Liability $X_{74}$ : Flexibility
2	Advising $X_2$	$X_{21}$ : Access $X_{22}$ : Quality $X_{23}$ : Worth $X_{24}$ : Strengthening for exam	8	Service Quality Satisfaction $Y_1$	$Y_{11}$ : GPA $Y_{12}$ : Study length $Y_{13}$ : Relevance $Y_{14}$ : Social recognition
3	Module $X_3$	$X_{31}$ : Printed $X_{32}$ : Digital  $X_{33}$ : Supplement $X_{34}$ : Additional	9	Engagement $Y_2$	$Y_{21}$ : Group activity $Y_{22}$ : Assignment completion $Y_{23}$ : Tutorial session $Y_{24}$ : Exam preparation
4	Tutorial $X_4$	$X_{41}$ : Face to face $X_{42}$ : Media/online $X_{43}$ : Webinar $X_{44}$ : On-demand	10	Achievement $Y_3$	$Y_{31}$ : Assignment score $Y_{32}$ : Tutorial mark $Y_{33}$ : Exam result $Y_{34}$ : Writing grade
5	Assessment $X_5$	$X_{51}$ : Paper-based $X_{52}$ : Proctoring/online $X_{53}$ : Assignment $X_{54}$ : Treatment	11	Loyalty $Y_4$	$Y_{41}$ : Regular registration $Y_{42}$ : Study up to finish $Y_{43}$ : Further study $Y_{44}$ : Recommend to others
6	Feedback $X_6$	$X_{61}$ : Standardized $X_{62}$ : Accuracy $X_{63}$ : Response time $X_{64}$ : One-stop	12	Opportunity $Y_5$	$Y_{51}$ : Job performance $Y_{52}$ : Career advancement $Y_{53}$ : Civic effect $Y_{54}$ : Enhancing income

tutorial service to the students in the form of face-to-face, media/online, webinar and on-demand for being prepared with high final assessment result.

Additionally, the assessment system ( $X_5$ ) was defined as the dimension of service quality in evaluating students' competency in the form of paper-based tests, proctoring/online exams, structured assignment and individual treatment in helping the students to master their registered courses. Feedback mechanism ( $X_6$ ) was defined as the dimension of service quality in devoting encouragement upon students' complaints by providing a standardized format with high accuracy, quick response time and in one-stop service mode. Referral scheme ( $X_7$ ) was defined as the dimension of service quality in reinforcing students' success to find additional academic support materials beyond the given set of learning materials, and they are always available, valid and liable with high flexibility.

Academic excellence (graduate's satisfaction,  $Y_1$ ), was defined as a condition where the ultimate of service quality thoroughly included a good GPA, measured study length, program relevance and getting social recognition. Likewise, engagement ( $Y_2$ ) was defined as the willingness to participating in a study group activity, completing assignments on time, active in the tutorial session and being ready for each semester exam. Achievement ( $Y_3$ ) was defined as the function of academic excellence to enable them to attain the required assignment score, acceptable tutorial mark, high semester exam result and fulfilled the academic writing requirement. Loyalty ( $Y_4$ ) was defined as the function of academic excellence to do a regular registration each semester, commitment to study up to finish, eagerness to have further study in the same university and being available to recommend the university to others. Opportunity ( $Y_5$ ) was defined as the belief that the ultimate of academic excellence will equip them to achieve increased job performance and positive career advancement, being recognized by society and enhancing their income.

This structure will be employed to establish the operational framework and then scrutinized utilizing a quantitative approach. Before launching it, remember that

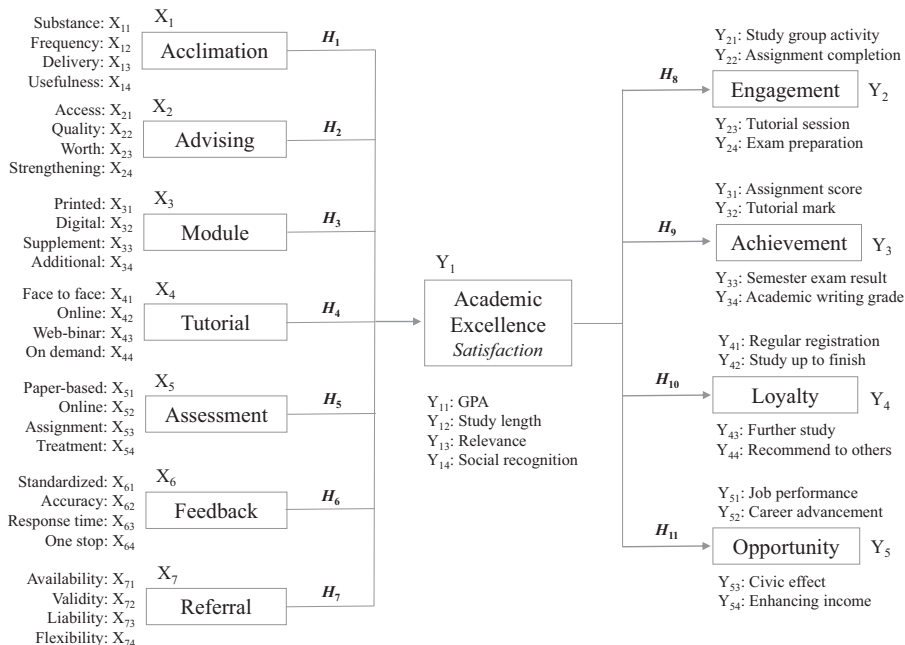
academic excellence was determined by service quality, and it then leads to self-confidence (EALO).

### 3. Research design and hypotheses

The next stage is to launch the operational framework. This is consolidated by reflecting the grand design of the study based on Figure 1. Besides, it is a manifestation of variables and dimensions involved as summarized in Table 1. This operational framework is then utilized as a basis to determine the design and approach of resulting the analysis prior to deducing conclusion under a quantitative procedure including the IPA-CSI analysis and SEM technique (following Sembiring, 2018a, b).

This inquiry used mixed methods, i.e., an exploratory design (Creswell and Clark, 2011). It is organized under a qualitative approach first and then followed by a quantitative sequence. Two kinds of instruments were established. They are the list of queries for the interview and focus group discussion activities (for the qualitative process) and the questionnaire as an instrument to accumulate data from respondents (for quantitative purpose).

Table 1 (will be transformed later as seen in Figure 2) underlined the essentials of academic excellence (satisfaction) to self-confidence (EALO). Academic excellence ( $Y_1$ ) was perceived from GPA, study length, program relevance and social recognition. Academic excellence ( $Y_1$ ) was measured by recognizing dimensions/attributes of:  $X_1$  (acclimation: substance, frequency, delivery and useful);  $X_2$  (advising: access, quality, worth and strengthening);  $X_3$  (module: printed, digital, supplement and additional materials);  $X_4$  (tutorial: face-to-face, media/online, webinar and on-demand);  $X_5$  (assessment: paper-based, proctoring/online, assignment and special treatment);  $X_6$  (feedback: standardized, accuracy, response time and one-stop) and  $X_7$  (referral: availability, validity, liability and flexibility).



**Figure 2.**  
The operational  
framework

An instrument for the qualitative process included four specific essential queries. They are: (1) What are conceivable factors (variables/dimensions/attributes) concerning academic excellence. (2) How interrelations behavior of factors involved is revealed. (3) Why academic excellence is pertinent in the ODL environment. (4) How the basic ideas of academic excellence are relevant to ODL institutions, primarily to the Universitas Terbuka context.

Instruments for quantitative approach consisted of 81 statements  $\{(32 \times 2) + (1 \times 16) + 1^*\} = 81$  and Likert Scale 1–5 (referring to Table 1). They are developed in accordance with the excellence (satisfaction) level and its importance degree. Besides, 17 items are proposed as additional statements to validate the independent variables (service quality) with respect to the dependent variables (EALO) moderated by academic excellence. The questionnaire is explored considering variables and dimensions and/or attributes engaged by following Shahzavar and Tan (2011).

Purposive sampling was chosen to select experts for qualitative purposes. Simple random sampling was used to determine respondents for quantitative purposes (Cochran, 1977). A survey was started to accumulate data from respondents (Fowler, 2014). The IPA-CSI was adopted and applied to simultaneously measure the excellence level (of graduate satisfaction) along with their importance degree (Wong *et al.*, 2011). SEM is applied to detect relations power amongst all variables and dimensions engaged (Marks *et al.*, 2005; Hair *et al.*, 2009).

The operational framework is finally synchronized so that can be much easier to understand as illustrated in Figure 2.

This inquiry finally establishes and then scrutinizes 11 hypotheses later ( $H_1$ - $H_{11}$ , Figure 2). Openly, academic excellence ( $Y_1$ ) is influenced by: acclimation ( $H_1$ ), advising ( $H_2$ ), module ( $H_3$ ), tutorial ( $H_4$ ), assessment ( $H_5$ ), feedback ( $H_6$ ) and referral ( $H_7$ ). Besides, engagement ( $H_8$ ), achievement ( $H_9$ ), loyalty ( $H_{10}$ ) and opportunity ( $H_{11}$ ) are influenced by academic excellence ( $Y_1$ ).

These hypotheses will be examined under the SEM technique to validate the relations amongst variables and dimensions engaged. The validation is aimed at examining the significance level of the relations. Having validated the significance of relations, it is then utilized to scrutinize the loading factors to observe the power of their relations. This is done to observe how and in what routine all variables involved (including dimensions and/or attributes) interrelated one another.

#### 4. Results and arguments

Prior to inferring the result, it is useful to note the features of respondents (Table 2). This will give a clearer basis to interpret the outcomes. The analysis will be described in detail after obeying the respondents' characteristics below.

The population of the study was 550 graduates who attended the graduation ceremony organized by Universitas Terbuka Makassar Regional Center, 10–11 April 2019. 500 questionnaires (the second set) are provided and then distributed to participants. 122 questionnaires were completed and then analyzed. Respondents are entirely from the Faculty of Education and Teacher Training. They are teachers; in primary school (57%) and early

**Table 2.**  
Respondents  
characteristics

Respondents: 122 (500)	%	%	%	%	%
Teaching in . . . School	High: 0	Junior: 0	Primary: 57	Early Child: 43	Others: 0
Status	Public: 22	Private: 23	Pact: 22	Contract: 31	Others: 2
GPA	2.00–2.49: 39	2.50–2.99: 41	3.00–3.49: 19	3.50–3.99: 1	4.00: 0
Study Length <i>years</i>	≤5: 32	6: 31	7: 31	8: 6	≥9: 0
Experience <i>years</i>	≤5: 9	6–10: 30	11–15: 36	16–20: 17	≥21: 8
Age <i>years</i>	<25: 8	26–30: 28	31–35: 37	36–40: 22	≥41: 5
Gender	Female: 88	Male: 12	<i>Status</i>	Married: 76	Single: 24

childhood programs (43%). They are categorized as graduates from the basic education program of Universitas Terbuka. This implied that the study represents graduates from the Basic Education Program of Makassar Regional Office (one of 40 regional offices).

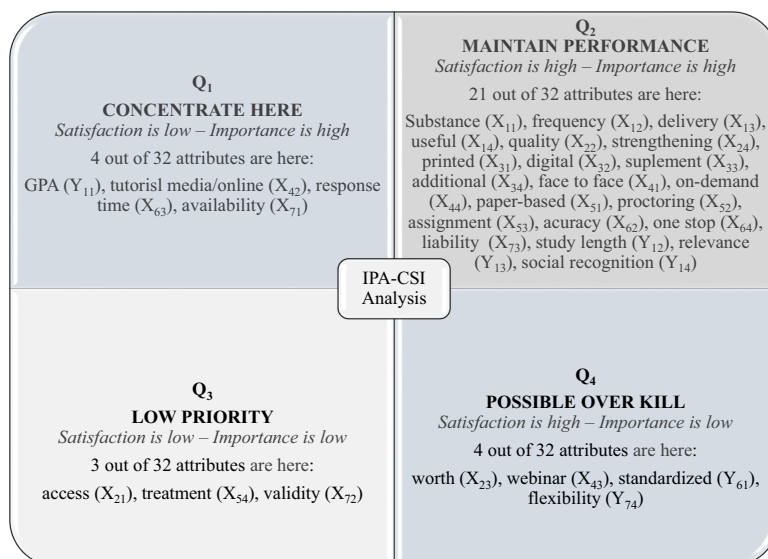
In general, respondents are full-time workers (teachers) and dominated by women, married. More than 65% can be categorized as a young and energetic teacher with a good GPA. Besides, they are smart as most of them can accomplish the program at most in seven years. In the ODL context, this is still good as they are full-time workers and adults. They mostly resided in a relatively remote area with high constraints in terms of time and space issues. Most of them also confronted limited access to communication and transportation problems.

In the next step, it is worth exposing the level of excellence and the degree of its importance resulted from the IPA-CSI Chart analysis. The analysis generates attributes related to the relevant quadrants to understand the interrelation behaviors. Graphically, the IPA-CSI Chart has four quadrants (Q). They are: Q<sub>1</sub> (concentrate here!), Q<sub>2</sub> (maintain performance!), Q<sub>3</sub> (low priority!), and Q<sub>4</sub> (possible overkill!), following [Deng and Pierskalla \(2018\)](#).

Q<sub>1</sub> indicates graduate excellence attribute is at a low level while the degree of its importance is high. Q<sub>2</sub> indicates both excellence attribute and the degree of its importance are being concurrently placed at a high level. Q<sub>3</sub> indicates both excellence attribute and the degree of its importance are at a low level. Q<sub>4</sub> indicates the excellence attribute is at a low level of importance with high satisfaction. The results of the IPA-CSI analysis are shown in [Figure 3](#).

Q<sub>1</sub> [concentrate here]. There are four out of 32 attributes ([Table 1](#) and [Figure 2](#)) falling into this quadrant: GPA (Y<sub>11</sub>), media/online (X<sub>42</sub>), the response time (X<sub>63</sub>) and availability (X<sub>71</sub>). This implies the university must notice these critical attributes. It was considered to be important but low in excellence. The university should cautiously handle these attributes.

Q<sub>2</sub> [maintain performance]. 21 attributes fall into this quadrant. They are: a substance (X<sub>11</sub>), frequency (X<sub>12</sub>), delivery (X<sub>13</sub>) and useful (X<sub>14</sub>); quality (X<sub>22</sub>) and strengthening (X<sub>24</sub>); printed (X<sub>31</sub>), digital (X<sub>32</sub>), supplement (X<sub>33</sub>) and additional (X<sub>34</sub>); face-to-face (X<sub>41</sub>) and on-demand (X<sub>44</sub>); paper-based X<sub>51</sub>, proctoring/online (X<sub>52</sub>) and assignment (X<sub>53</sub>); accuracy (X<sub>62</sub>)



**Figure 3.**  
IPA-CSI chart analysis

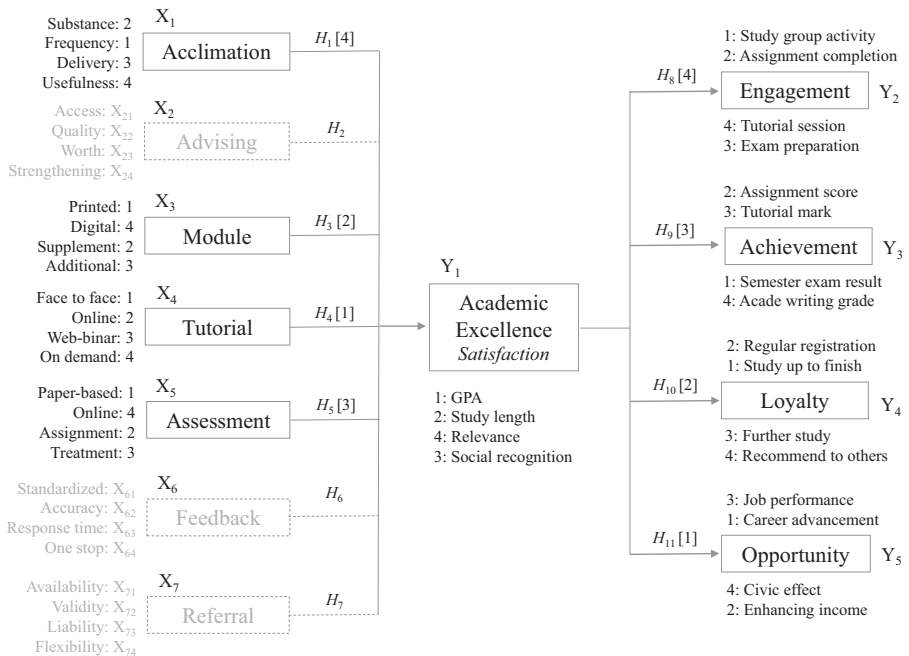
and one-stop service ( $X_{64}$ ); liability ( $X_{73}$ ); study length ( $Y_{12}$ ), relevance ( $Y_{13}$ ) and social recognition ( $Y_{14}$ ). The university must take care and keep maintaining these attributes prudently as they are the fundamentals of academic excellence. Attributes falling in this quadrant are the strengths and pillars of academic excellence in Universitas Terbuka. These attributes become the pride of the university as a favorable basis for maintaining the level of excellence in the future. Most respondents have been aware of these attributes as reassurance to provide a high standard of service quality.

$Q_3$  [low priority]. Three attributes fall into this quadrant: access ( $X_{21}$ ), treatment ( $X_{54}$ ) and validity ( $X_{72}$ ). The university should classify these notions as the next focus after concentrating to maintain the critical points in  $Q_2$ . Attribute(s) falling into this quadrant had no threat. The university may redirect resources to attributes fall in  $Q_1$  to provide quality service and shift them into  $Q_2$ .

$Q_4$  [possible overkill]. There are four points as the members of this quadrant. They are worth ( $X_{23}$ ), webinar ( $X_{43}$ ), standardized ( $X_{61}$ ), and flexibility ( $Y_{74}$ ). Consideration of attributes in this quadrant can be less focused too. The university can save costs by redirecting critical points in this quadrant and anticipating no attributes will fall again into  $Q_1$  and concurrently maintain vital attributes in  $Q_2$ .

After locating related attributes in accordance with the IPA-CSI Chart, it is time to associate the loading factors of quantitative analysis to discern the power of relations amongst factors involved in applying the SEM technique. This is to disclose the final required results (referring to Marks *et al.*, 2005 and Hair *et al.*, 2009).

On the hypothesis effects, the analysis positively revealed that three out of 11 hypotheses established were not confirmed by the analysis (Figure 4). They are: advising ( $H_2$ ), feedback ( $H_6$ ) and referral ( $H_7$ ) with respect to academic excellence ( $Y_1$ ), as the  $p_{\text{value}} \leq 1.96$ ,  $\alpha = 5\%$ . The other eight hypotheses are validated by the analysis, as the  $p_{\text{value}} \geq 1.96$ ,  $\alpha = 5\%$ . The validated hypotheses are acclimation ( $H_1$ ), module ( $H_3$ ), tutorial ( $H_4$ ) and assessment ( $H_5$ ) to



**Figure 4.**  
Hypothesis and the  
loading factors  
analyses



academic excellence ( $Y_1$ ) and so is academic excellence ( $Y_1$ ) to engagement ( $H_8$ ), achievement ( $H_9$ ), loyalty ( $H_{10}$ ) and opportunity ( $H_{11}$ ).

Having considered the hypotheses analysis results, there are five convincing consequences of a quantitative procedure that needs to be particularized further (refer to Figure 4).

- (1) The first result was on the variables and dimensions that directly influenced academic excellence (graduates' satisfaction) ( $Y_1$ ). They are: tutorial ( $X_4$ ) and then orderly followed by module ( $X_3$ ), assessment ( $X_5$ ), and acclimation ( $X_1$ ). However, academic excellence is not positively influenced by advising ( $X_2$ ), feedback ( $X_6$ ) and referral ( $X_7$ ).
- (2) The second effect is associated with the order of attributes in the tutorial ( $X_4$ ). They are: face-to-face ( $X_{41}$ ), media/online ( $X_{42}$ ), webinar ( $X_{43}$ ) and on-demand ( $X_{44}$ ). The order of attributes in the module ( $X_3$ ) is: printed ( $X_{31}$ ), supplement ( $X_{33}$ ), additional ( $X_{34}$ ) and digital ( $X_{32}$ ). The order of attributes in assessment ( $X_5$ ) is: paper-based ( $X_{51}$ ), assignment ( $X_{53}$ ), treatment ( $X_{54}$ ) and proctoring/online ( $X_{52}$ ). The order of attributes in acclimation ( $X_1$ ) is: frequency ( $X_{12}$ ), substance ( $X_{11}$ ), useful ( $X_{13}$ ) and delivery ( $X_{14}$ ).
- (3) The third consequence is related to the power of the relations of moderating variable and dependent variables. Academic excellence ( $Y_1$ ) has direct influences mainly on: opportunity ( $Y_5$ ) and then orderly followed by loyalty ( $Y_4$ ), achievement ( $Y_3$ ) and engagement ( $Y_1$ ).
- (4) The fourth concern is on the order of attributes in academic excellence. They are: GPA ( $Y_{12}$ ) and then followed by study length ( $Y_{12}$ ), social recognition ( $Y_{14}$ ) and relevance ( $Y_{13}$ ).
- (5) The fifth corollary is related to the rank of attributes within the opportunity ( $Y_5$ ). They orderly are: career advancement ( $Y_{52}$ ), enhancing income ( $Y_{54}$ ), job performance ( $Y_{51}$ ) and civic effect ( $Y_{53}$ ). The rank of attributes in loyalty ( $Y_4$ ) is: study up to finish ( $Y_{42}$ ), regular registration ( $Y_{41}$ ), further study ( $Y_{43}$ ) and recommend to others ( $Y_{44}$ ). The rank of attributes in achievement ( $Y_3$ ) is: semester exam result ( $Y_{33}$ ), assignment score ( $Y_{31}$ ), tutorial mark ( $Y_{32}$ ) and academic writing grade ( $Y_{34}$ ). The rank of attributes in engagement ( $Y_2$ ) is: study group activity ( $Y_{21}$ ), assignment completion ( $Y_{22}$ ), exam preparation ( $Y_{24}$ ) and tutorial session ( $Y_{23}$ ).

Before confirming the end results under the mixed methods, we need to consider whether the SEM result is systematically in the "good-fit" category or not. If the answer is yes, it is then reliable to use the hypotheses analysis and engender loading factors to intensify the power of interrelations. The goodness-of-fit test in Table 3 verified that it was still satisfactory despite

Goodness of Fit	Cut-off values	Results	Notes
RMR: Root Mean Square Residual	$\leq 0.05$ or $\leq 0.10$	0.08	Good Fit
RMSEA: Root Mean Square Error of Approximation	$\leq 0.08$	0.08	Good Fit
GFI: Goodness of Fit	$\geq 0.90$	0.91	Good Fit
AGFI: Adjusted Goodness of Fit Index	$\geq 0.90$	0.91	Good Fit
CFI: Comparative Fit Index	$\geq 0.90$	0.88	Marginal Fit
NFI: Normed Fit Index	$\geq 0.90$	0.91	Good Fit
NNFI: Non-normed Fit Index	$\geq 0.90$	0.92	Good Fit
IFI: Incremental Fit Index	$\geq 0.90$	0.89	Marginal Fit
RFI: Relative Fit Index	$\geq 0.90$	0.89	Marginal Fit

**Table 3.**  
The goodness of Fit of the validated framework

the comparative fit index (CFI), incremental fit index (IFI) and relative fit index (RFI) are in marginal-fit categories.

Referring to the effects of the goodness-of-fit analysis, it is practical to use it as a point of reference to draw the statistical inference. Three basic valuations ought to be explored. The first concern is on the gap obtained under exploratory design. The second is referring to respondents' characteristics. The third is on the implication of findings for future study. These are the elaborative explanation from explanatory design utilized in this inquiry.

*First.* The exploratory design was accomplished by evaluating and amalgamating related theories and end up with an established set of hypotheses (Creswell and Clark, 2011). Under the qualitative procedure, academic excellence was interlinked with service quality (base on the seven dimensions). The moderating variable ( $Y_1$ : academic excellence) was interrelated with independent variables. It was intended to measuring the qualitative aspects of the exploratory outcomes. In fact, there were three dimensions of the independent variables (advising, feedback and referral) that were not directly interrelated with the moderating variable. This means that the qualitative and quantitative results visibly diverged despite they did not oppose one another in high intensity. In addition, the order of dimensions/ attributes engaged in the initial frame was also differed as compared to the quantitative upshots. It obviously implies that the quantitative approach was unable to thoroughly approve the qualitative exploratory discoveries.

*Second.* Referring to Table 2, it is clear that respondents were teachers and most of them resided in relatively remote areas. This is the reason why the three dimensions (advising, feedback and referral aspects) were excluded by the analysis. They have less interaction through media information and communication technology (ICT). So, they also seldom utilize available advising assistance, feedback mechanism and referral scheme. This is mainly due to geographical (communication and transportation) constraints. Besides, this explains why the GPA, media/online tutorial, response time, availability of referral scheme fall in ( $Q_1$ ) and putting face-to-face tutorial as the first attribute the most excellent service instead of other services with ICT-based. This is, again due to geographical conditions and leads to limited access to indirect academic supports.

*Third.* Future research might involve respondents beyond graduates and not limited only to Makassar Regional Office. This means that for the next study it should involve students from other faculties (Faculty of Economics, Faculty of Social Science, and Faculty of Mathematics and Natural Science). This effort is related to an effort of finding a balance between qualitative and quantitative outcomes. So, just keep in mind that preparing, providing and delivering high standard service quality to students are important to assure students' self-confidence (engagement, achievement, Loyalty and opportunity).

## 5. Conclusions

This study has encountered differences between what was obtained under qualitative as compared to the quantitative approach. Three of 11 hypotheses scrutinized were not statistically validated by the analysis. This implied that the established qualitative framework was imperfectly approved by the quantitative procedure; it clearly needs further research for this diverse outcome.

Refer back to the four questions initially identified. (1) This inquiry is able to elucidate seven main factors underpinned academic excellence despite three of them are not significantly interdependent one another. (2) The study is also able to expose how and in what routines factors involved interrelated one another. (3) The results positively showed that academic excellence reflected by graduate satisfaction is dependable to support self-confidence. (4) The university has been in service for 35 years of experience. It has more than

1.8m graduates and is serving 300,000 students per semester. Having considered those facts, it is then believed that Universitas Terbuka is on the right path in making higher education open to all with quality service in the Indonesia context (Universitas Terbuka, 2017).

To make UT more contributing to Indonesia on one hand and to ODL development on the other hand, it needs to cautiously focus on the following considerations. There are still many Indonesians who must be reached at the tertiary level. Many of them live in areas that do not have higher education institutions. Through a high-quality open distance higher education system, Universitas Terbuka can play a central role in developing human capital. At the same time, the development of communication and information technology in education will place Universitas Terbuka as a pioneer and a benchmark for the implementation of an open distance higher education services not only at the national level but also at the regional level (Asia).

Further inquiry nonetheless is needed to attain those dreams by enlarging the scope of this study and involving other respondents not only from one but also from other 39 regional offices. This is to reach consequences much closer by utilizing exploratory design and approaching the real condition to support the university becoming one of the leading ODL institutions in the region. Good to note as well that under the IPA-CSI procedure, 21 main attributes were identified as the core evidence that the excellence level in Universitas Terbuka is favorable related to educating the nations for a better future.

In short, again, the study is able to simplify the factors involved in underpinning academic excellence. They are orderly: tutorial, module, assessment and acclimation. Besides, the result is able to display how and in what behaviors factors were interrelated with one another. The result is able to convince us that academic excellence is pertinent to reinforce Universitas Terbuka as the pioneer of the cyber university in the near future (Universitas Terbuka, 2017). These expectations can be realized if the service quality provided and delivered is able to assure students' self-confidence moderated by academic excellence.

## References

- Aluwihare, S. and De Silva, S. (2016), "Prolonged time taken to complete the degree programs at the faculty of engineering technology of the open university of Sri Lanka barriers and remedies", *Asian Association of Open Universities Journal*, Vol. 11 No. 2, pp. 136-148, doi: [10.1108/AAOUJ-09-2016-0027](https://doi.org/10.1108/AAOUJ-09-2016-0027) (accessed 14 October 2020).
- Archambault, L.Z. (2008), "Measuring service performance, student satisfaction and its impact on student retention in private, post-secondary institutions", Edith Cowan University, *Proceedings EDU-COM International Conference*, available at: <http://ro.ecu.edu.au/ceducom/2> (accessed 24 April 2013).
- Arokiasamy, A.R.A. and Abdullah, A.G. (2012), "Service quality and students' satisfaction at higher learning institutions: a case study of Malaysian university competitiveness", *International Journal of Management and Strategy*, Vol. 3 No. 5, pp. 1-16, available at: [http://www.facultyjournal.com/webmaster/upload/Copy%20of%200017ARA\\_SQ\\_Student%20Satisfactio\\_UC.pdf](http://www.facultyjournal.com/webmaster/upload/Copy%20of%200017ARA_SQ_Student%20Satisfactio_UC.pdf) (accessed 24 April 2013).
- Brown, R.M. (2006), "Factors driving student satisfaction and retention in Australian universities: the importance of institutional image", *Rockhampton, Paper presented at the 20th Annual ANZ Academy of Management Conference*, 6–10 December 2006.
- Chuah, P.L. and Lim, P.K. (2018), "Applying quality tools to improve student retention supporting process: a case study from WOU", *Asian Association of Open Universities Journal*, Vol. 13 No. 1, pp. 60-72, doi: [10.1108/AAOUJ-01-2018-0003](https://doi.org/10.1108/AAOUJ-01-2018-0003) (accessed 14 October 2020).
- Cochran, W.G. (1977), *Sampling Techniques*, 3rd ed., John Wiley and Sons, New York, NY.
- Creswell, J.W. and Clark, V.L.P. (2011), *Designing and Conducting Mixed Methods Research*, 2nd ed., Sage Publication, Los Angeles, LA.

- Deng, J. and Pierskalla, C.D. (2018), "Linking importance-performance analysis, satisfaction, and loyalty: a study of Savannah, GA", *Sustainability*, Vol. 10 No. 704, pp. 1-17, doi: [10.3390/su10030704](https://doi.org/10.3390/su10030704), available at: [www.mdpi.com/journal/sustainability](http://www.mdpi.com/journal/sustainability) (accessed 27 April 2019).
- Fowler, F.J. Jr (2014), *Survey Research Methods*, 5th ed., Sage Publication, Los Angeles, LA.
- Hair, J.F. Jr, Black, W.C., Babin, B.J. and Anderson, R.E. (2009), *Multivariate Data Analysis with Readings*, 7th ed., Prentice Hall, New Jersey, NJ.
- Ilias, A., Hasan, H.F.A. and Rahman, R.A. (2008), "Student satisfaction and Servqual: any differences in demographic factors?", *International Business Research*, Vol. 1 No. 4, pp. 131-143.
- Kitcharoen, K. (2004), "The importance-performance analysis of service quality in administrative departments of private universities in Thailand", *ABAC Journal*, Vol. 24 No. 3, pp. 20-46, available at: [http://www.journal.au.edu/abac\\_journal/2004/sep04/ajvol24n3\\_article3.pdf](http://www.journal.au.edu/abac_journal/2004/sep04/ajvol24n3_article3.pdf) (accessed 9 July 2015).
- Mailany, H. (2011), *Study on the Factors Affecting Student Satisfaction in Bogor Agriculture University*, Thesis, IPB University.
- Marks, R.B., Sibley, S.D. and Arbaugh, J.B. (2005), "A structural equation model of predictor for effective online learning", *Journal of Management Education*, Vol. 29 No. 4, pp. 531-563.
- Martirosyan, N.M., Saxon, D.P. and Wanjohi, R. (2014), "Student satisfaction and academic performance in Armenian higher education", *American International Journal of Contemporary Research*, Vol. 4 No. 2, pp. 1-5, available at: <http://www.aijcrnet.com/journal/index/646> (accessed 9 July 2015).
- Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1988), "SERVQUAL: a multiple-item scale for measuring consumer perception of Servqual", *Journal of Retailing*, Vol. 64 No. 1, pp. 12-40.
- Petruzzellis, L., D'Uggento, A.M. and Romanazzi, S. (2006), "Student satisfaction and quality of service in Italian universities", *Managing Servqual*, Vol. 16 No. 4, pp. 349-364.
- Roberts, J. and Styron, R. Jr (2009), "Student satisfaction and persistence: factors vital to student retention", *Research in Higher Education Journal*, AABRI, pp. 1-18, available at: <http://www.aabri.com/manuscripts/09321.pdf> (accessed 9 July 2015).
- Rojas-Mendez, J.L., Vasquez-Paraga, A.Z., Kara, I. and Cerda-Urrutia, A. (2009), "Determinants of student loyalty in higher education: a tested relationship approach in Latin America", *Latin American Business Review*, Vol. 10 No. 1, pp. 21-39, doi: [10.1080/10978520903022089](https://doi.org/10.1080/10978520903022089).
- Sembiring, M.G. (2015), "Validating student satisfaction related to persistence, academic performance, retention, and career advancement within ODL perspectives", *Open Praxis*, Vol. 7 No. 4, pp. 325-337, (ICDE Prizes for Innovation and Best Practice, 2nd Ed), doi: [10.5944/openpraxis.7.4.249](https://doi.org/10.5944/openpraxis.7.4.249).
- Sembiring, M.G. (2017), "Exploratory study of academic excellence associated with persistence in ODL setting", *Asian Association of Open Universities Journal*, Vol. 12 No. 2, pp. 125-136, doi: [10.1108/AAOUJ-01-2017-0015](https://doi.org/10.1108/AAOUJ-01-2017-0015).
- Sembiring, M.G. (2018a), "Modeling the determinants of effective online tutoring programs", *The Turkish Online Journal of Distance Education*, Vol. 10 No. 3, pp. 128-139, available at: <http://tojde.anadolu.edu.tr/volume-19-issue-3-year-2018.html> (accessed 27 April 2019).
- Sembiring, M.G. (2018b), "Validating student satisfaction with a blended learning scheme in Universitas Terbuka setting", *International Journal for Mobile Learning and Organisation*, Vol. 12 No. 4, pp. 394-412, doi: [10.1504/IJMLO.2018.095166](https://doi.org/10.1504/IJMLO.2018.095166), available at: <https://www.inderscience.com/offer.php?id=95166> (accessed 27 April 2019).
- Sembiring, M.G. and Rahayu, G. (2019), "Verifying the moderating role of satisfaction on service quality and students' accomplishment in ODL Perspective", *Asian Association of Open Universities Journal*, Vol. 15 Nos 1, 1/10-12, doi: [10.1108/AAOUJ-08-2019-0035](https://doi.org/10.1108/AAOUJ-08-2019-0035) (accessed 9 October 2020).
- Shahzavar, Z. and Tan, B.H. (2011), "Developing a questionnaire to measure students' attitude toward the course blog", *The Turkish Online Journal of Distance Education*, Vol. 13 No. 1, pp. 200-210.

- Tan, K.C. and Kek, S.W. (2004), "Servqual in higher education using an enhanced Servqual approach", *Quality in Higher Education*, Vol. 10 No. 1, pp. 17-24.
- Tileng, M.Y., Wiranto, H.U. and Latuperissa, R. (2013), "Analysis of Servqual using Servqual method and IPA in population department, Tomohon city, South Sulawesi", *International Journal of Computer Applications*, Vol. 70 No. 19, pp. 23-30.
- Universitas Terbuka (2017), *Rencana Strategi Bisnis Universitas Terbuka 2017-2020*, Universitas Terbuka, Tangerang Selatan.
- Wong, M.S., Hideki, N. and George, P. (2011), "The use of IPA in evaluating Japan's e-government services", *Journal of Theoretical and Applied Electronic Commerce Research*, Vol. 6 No. 2, pp. 17-30, available at: [www.jtaer.co](http://www.jtaer.co) (accessed 9 July 2015).

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