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**Validation of The Satisfaction Assessment Tool Among University Graduates**

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**Ma. Erenita V. Bahian**<sup>1</sup>(corresponding author)<sup>1</sup>Education Department, Eastern Visayas State University-Ormoc City Campus  
(maerenita.bahian@evsu.edu.ph; <http://orcid.org/0000-0002-2243-8279>)

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**ABSTRACT**

It is important to assess the level of satisfaction among university students because research findings linked satisfaction with academic performance. This study aims to validate the level of satisfaction assessment tool, which would measure the characteristics of the instrument. The respondents were 231 students of the university. The data were collected using a survey questionnaire. Exploratory factor analysis and descriptive statistics were the methods utilized. Estimation of main components of the analysis utilized the Varimax rotation method, extraction of factors used *eigenvalues* greater than one, and for selection of items. Reliability of assessment tool was measured with the use of Cronbach's alpha. The analysis resulted three factors which explained 51.7% of the total variance. The three factors were: Personal and Professional satisfaction, Student Support satisfaction and Instruction-related satisfaction. The reliability of the scale was  $\alpha = .861$ , and its factors were 0.810, 0.753, and 0.717, respectively. These were within the minimum acceptable value. Results showed that the scale was reliable and valid tool to determine the level of satisfaction among university students.

**Keywords:** Student's satisfaction, Factor analysis, Reliability, Validity

**INTRODUCTION**

Fulfillment of a person's desires which gives pleasure explicates satisfaction. At a student's viewpoint satisfaction becomes subjective which makes it hard to measure. The level of satisfaction varies with each one of us. In addition, student satisfaction is correlated with his education and is constantly shaped by repeated experiences during his stay in the institution.

Different instruments were similarly used to assess students' level of satisfaction. The tool assess student's personal information-perception<sup>(1)</sup>, to evaluate internal system<sup>(2)</sup>, and determine respondent's degree of agreement.<sup>(3)</sup> Measurement of student satisfaction determines the special fields which are in need of enhancement thus this goes beyond just merely assessing slender focus but including wide aspects of student. Knowing factors contributing student's satisfaction is not enough, rather through level determination.<sup>(4)</sup> Several instruments have been created to measure the level of satisfaction, however, not validated, hence this study. Further, this paper was aimed to validate and determine the reliability of the assessment tool utilizing exploratory factor analysis and the method of Varimax rotation to evaluate the analyzed components. The developed tool was subjected to reliability test using Cronbach's alpha.

**METHODS**

A cross-sectional method was utilized in the analysis of the data aimed to develop and validate the level of satisfaction assessment tool. This was done in Eastern Visayas State University, Ormoc City Campus, Ormoc City for the graduates of school year, 2018-2019. Graduating students in the University taking up Education, Engineering and Technology programs reported their level of satisfaction based on their experience in the university. A total of 231 participants (95 males; 135 females) with aged 19 years or older.

A researcher-made questionnaire which consist of 16 items was used in the study. Participants rated their level of satisfaction based on their experience during their entire stay in the university. An example item was "I am recommending the university to other people who wish to acquire globally competitive education". Participants rated the questionnaire that uses a scaling of five-point ranges from 'strongly agree' until 'strongly disagree'. Questionnaires were given at random to 250 respondents during their graduation practice at the Sports Centre in the University. Respondents reported their level of satisfaction based on their experience in the university. The response rate was 95.2 % (238), of which seven questionnaires were rejected as a result of major data missing.

Analysis of the data was done using descriptive statistics and exploratory factor analysis. Sample sufficiency was measured using Kaiser-Meyer Olkin Criterion (KMO) with 0.70 cut off value.<sup>(5),(6)</sup> Test of Sphericity by Bartlett's, was utilized in examining of items of the scale are inter-independent; and must be significant at  $p < 0.05$ . The method of rotation utilized the Varimax with Kaiser normalization to assessed the analysis major components; extraction of factors, greater than one value of eigenvalues; item correlated with other item at 0.30<sup>(7)</sup> and factor loadings of greater than .40 for the selection of items.<sup>(8),(9)</sup> Commonalities,  $>0.30$  must be the satisfactory value.<sup>(10)</sup> Coefficient of Cronbach's alpha with a value of  $>0.70$  was utilized in measuring the internal consistency level of satisfaction assessment tool. Normality was examined using Kolmogorov-Smirnov test. All statistic were done using SPSS software version 23.0.

## RESULTS

Table 1. Demographic variables

Variables	Frequency	Percentage
Gender		
Male	95	41.1
Female	136	58.9
Age		
20 & below	86	37.2
21 – 25	130	56.3
26 & above	15	6.5
Program		
Education	100	43.3
Engineering	49	21.2
Technology	82	35.5

Table 2. Kaiser-Meyer-Olkin criterion and sphericity test results

Kaiser-Meyer-Olkin Criterion		0.876
Test of Sphericity of Bartlett	Approx. Chi-Square	1088.201
	Df	105
	Sig.	0.000

Table 3. Total variance of the assessment tool

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	3.077	20.516	20.516
2	2.953	19.684	40.201
3	1.730	11.534	51.735

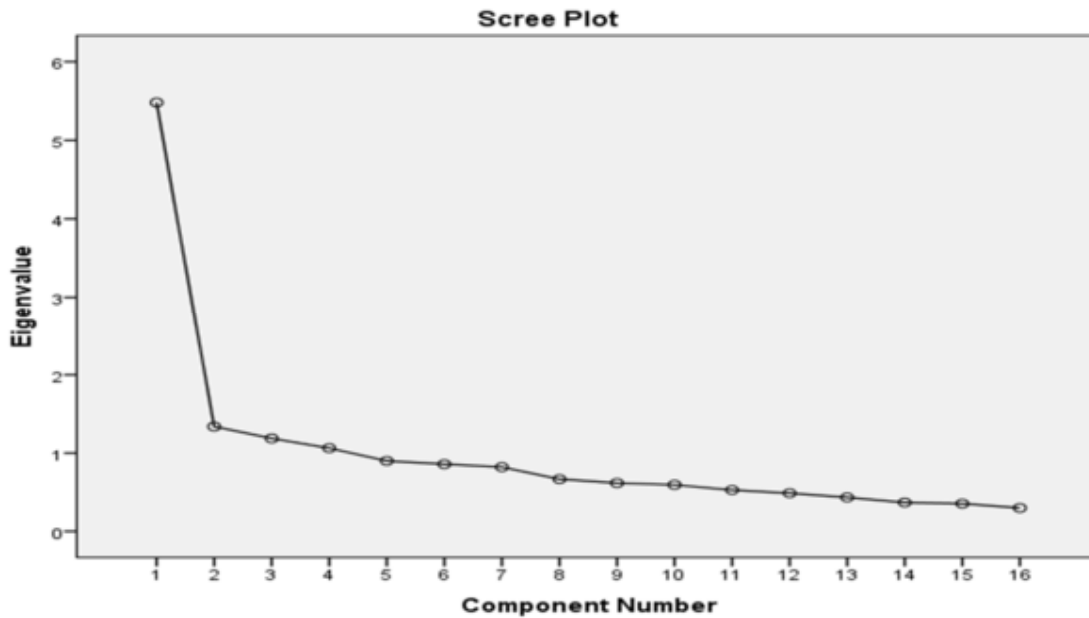


Figure 1. Scree plot graph of the scale of the student’s level of satisfaction

Table 4. Component loadings and communalities of the assessment tool

Scale Items	Component			Communality
	1	2	3	
Item 15 I am recommending the university to other people who wish to acquire globally competitive education.	0.764			0.612
Item 16 I am satisfied in my entire stay and experience in the university.	0.723			0.654
Item 12 I am contented and satisfied with the university’s sponsored cocurricular activities.	0.703			0.575
Item 13 I am fulfilled with the university’s type of governance as evidenced by its policies and guidelines.	0.649			0.504
Item 14 I am grateful to continue my educational life at the university through enrolling and post-graduate program offerings in the future.	0.638			0.517
Item 6 I feel the sense of safety and security in the university.	0.451	0.432		0.398
Item 9 The student’s service support and its designed programs were very useful in our present work		0.660		0.509
Item 4 The university’s support staffs were friendly and accommodating towards their stakeholders.		0.648		0.483
Item 8 I am satisfied with university support facilities.		0.617		0.469
Item 7 The university library is accessible in terms of the needed instructional resources.		0.589		0.434
Item 3 The university canteen offers food which is affordable and nutritious as well.		0.577		0.413
Item 10 The university clinic staffs as a support system are accommodating and hospitable.		0.528		0.389
Item 5 The university offers a systematic enrolling system.		0.512		0.324
Item 2 The teaching and instruction of the university were effective.			0.844	0.780
Item 1 The teachers and learning facilitators were competent in their field of specialization			0.756	0.701

Table 5. Reliability and normality of the assessment tool

Factor	Cronbach's Alpha	Normality Test Statistic	Asymp. Sig. (2-tailed)
Personal and Professional Satisfaction	0.815	0.115	0.000
Student Support Satisfaction	0.753	0.090	0.000
Instruction-related Delivery Satisfaction	0.717	0.234	0.000

Table 6. Proposed scoring scheme of the validated tool

Score Range	Adjectival rating
25 and below	High
26-50	Moderate
51 and above	Low

### DISCUSSION

A total of 231 newly graduates of Eastern Visayas State University-Ormoc City Campus served as respondents of the present study using a survey questionnaire. The respondents were selected using convenience sampling method. Majority of the respondents were female (136, 58.9%), belonging to the age group 21-25 (130, 56.3%), and taking Education program (100, 43.3%).

Initially, the sixteen items (16) of the level of satisfaction assessment tool were examined using several assumptions and criteria mentioned above. First run in the factor analysis resulted in one item (item 11) failing to meet the criterion of cross loading of 0.3 or above; thus was eliminated. The value of Test of Sphericity was 1035.6 at  $p < 0.001$  and was considered significant (Table 2) and 0.869 was the value of KMO, was considered high, above the recommended value of 0.6. Thus, it was acceptable to proceed to factor analysis.

Factor analysis for the assessment tool was re-run, the method of Varimax rotation with Kaiser Normalization and initial eigenvalue  $\geq 1$  was used for determining the number of factors. Results extracted three factors explaining 51.7 % of the total variance. The first factor explained 20.5 %; second factor, 19.7 %; and third factor, 11.5 % of the total variance (Table 3). Rotation was converged in 6 iterations.

Further analysis was done using a scree plot with eigenvalues plotted against the factor numbers (Figure 1). Three factors were extracted with *eigenvalues* greater than 1, thus, resulting to a scale with 3 factors (Field, 2002). Factor 1 consists of six items (15, 16, 12, 13, 14 and 6) whose factor loadings ranges from 0.451 to 0.764; Seven items consisted factor 2 (8, 4, 3, 9, 10, 7 and 5) with factor loadings ranging from 0.512-0.660; and Factor 3, two items (2 and 1) with factor loadings of 0.756 to 0.844. Communalities were all above 0.3 (Table 4). Overall, a three-factored scale consisting of 15 items were obtained. Moreover, the factors extracted were given labels: Factor 1- *Personal and Professional satisfaction*; Factor 2 - *Student Support Satisfaction*; and Factor 3 - *Instruction-related Satisfaction*.

In addition, internal consistency and normality of the factors were measured using Cronbach's alpha and Kolmogorov-Smirnov test. The alpha for Personal and Professional satisfaction was 0.815, Student Support Satisfaction, 0.753 and Instruction-related Satisfaction, 0.717, respectively. The three new factor that affects the level of satisfaction of students were tested using the normality test. Test of the three factors did not satisfy the assumption of normality ( $p < 0.05$ ).

Lastly, the validated tool having 15 items proposes the use of the scoring scheme to determine the level of satisfaction among university graduates. The tool which utilized five-point scale (3- high, 2- moderate and 1- low) has a highest possible score of 75 points while the lowest score is 15. The researcher suggests the following interpretation of the scores: 25 and below- high, 26-50- moderate, and 51 and above- low Table 6).

### CONCLUSION

The findings suggest that the Level of Satisfaction Assessment Tool (LSAT) is valid and has a high degree of reliability. Personal and Professional Satisfaction, Student Support Satisfaction and Instruction-related Satisfaction were the three major factors that are associated in the tool. The level of satisfaction is determined using the scoring scheme designed for interpretation.

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