



STUDENT SATISFACTION INVENTORY (SSI) - METHODOLOGICAL REVIEW

Tanti Irawati Muchlis, Neuneung Ratna Hayati and Mame S. Sutoko

Widyatama University, Indonesia

Widyatama University, a private university in Bandung, Indonesia, has conducted a student survey based on Student Satisfaction Inventory (SSI) since 2005. The dimensions utilized are based on: level on importance, satisfaction level and performance gap between the importance and satisfaction levels. The original SSI does not include statistical analysis. This research intended to improve the methodology by using non parametric test in order to prove whether the result is statistically valid.

Keywords: Quality Improvement (CQI), Student Satisfaction Inventory (SSI), Customer Satisfaction, Methodological, Satisfaction Level Performance Gap.

INTRODUCTION

Indonesian Higher Education is very competitive especially for private sectors. To maintain survival of the institution, the private sectors has to manage wisely their limited financial sources, permitting accumulation of capital that leads to a long term objective of quality improvement. Up to this point, the concept of mass production applied in industry becomes so relevant and drives the private sectors towards market share strategy in order to increase their student body. Only those who are able to reach the minimum economic number of students can maintain education operational cost and some saving for capital investment.

On the other hand, Higher Education is one of the most challenging and interesting area for quality improvement (Evans and Lindsay, 2001). The process of students from freshmen as the "input" to transform into graduates as "output", is dependant heavily on institutions' abilities in providing them with customer satisfaction . The measurement of customer satisfaction (student survey) become an important a tool for evaluation and improvement of programs to attract new students, as well as retain student body.

Widyatama University regularly conducts student satisfaction survey as their basis for improvement. Since academic year of 2005, Widyatama University has used the Noel-Levits Student Satisfaction Inventory (SSI) to measure its students satisfaction and made it the basis for improvement programs.

The method of Noel Levits Student Satisfaction Inventory is measure the students satisfaction as well as the importance of the issue being rated. Roszkowski (2003) explained Noel-Levits contends that the importance and satisfaction ratings should be used to classify into the quadrants of a "Matrix for Prioritizing Action". The SSI's publisher also indicates that the satisfaction and importance ratings can also be used to calculate gap scores between importance

and satisfaction. The Gap is purported to indicate how well institution performs relative to student expectation.

However, after using SSI to measure student satisfaction and its level of importance for more than 4 years, we noted that there are some changes of student's perception in importance and satisfaction ratings when we made the comparison of year by year SSI data results. This findings suggest that we need an integrated evaluation of corrective and preventive action.

Since the original SSI does not include statistical analysis, in this study we intended to improve the methodology by analyzing the different of performance gap for each variable from data of academic year 2008 to 2010 using non parametric test in order to prove whether the result is statistically valid.

The primary purpose of this paper is to share the author's experience in analyzing Student Satisfaction Inventory result which is very useful in continuous improvement programs of Widyatama University.

HIGHER EDUCATION SECTOR IN INDONESIA

The history of higher education in Indonesia dated back to early of 20th century where the first university was established in Jakarta under the Dutch administration bearing the name University Indonesia. A number of state owned universities have been established since then reaching actually around 80 state higher learning institutions.

The growing demand for higher education after the national independency in 1945 in one side and limited public fund in the other side became the driving forces that led private initiatives to start the establishment of private higher learning institutions. Actually, around 4,2 million students are pursuing their higher study programs in approximately 2800 national higher learning institutions (University, Institute, Academy, Polytechnic, Higher Learning School).

Lack of financial aids from public source and any other independent donating agencies have left the private institutions to rely heavily on student tuition fee as the only financial source to cover operational cost and capital investment necessary for conducting teaching learning processes, and sustainability of the establishment.

It can be imagine, the above condition in a country with relatively low income per capita, has provided nothing more than the classical development strategy "low price, low quality for low income people" to be adopted which became the general pattern in most of Indonesian private institutional development since a philanthropic financial sources is still hard to believe.

To maintain survival of the institution, the private sectors has to manage wisely their limited financial sources, permitting accumulation of capital that leads to a long term objective of quality improvement. Up to this point, the concept of mass production applied in industry becomes so relevant and drives the private sectors towards market share strategy in order to increase their student body. Only those who are able to reach the minimum economic number of students can maintain education operational cost and some saving for capital investment.

Despite the fact that national private higher learning Institutions serve actually more than 70% of Indonesian tertiary students, however for more than 5 decades, public fund is only accessible by the State Universities. Only recently the government budget is available for private institutions through a competitive grant scheme.

With the new decree of national act on education, the higher education sector in Indonesia is presently entering the framework of system to be dominated by the doctrine of private initiative,

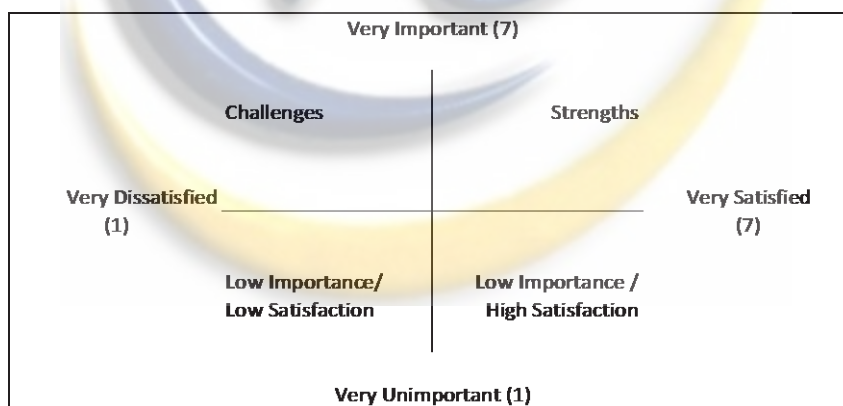
organized by the rule of competition, regulated by market mechanism and constrained by more and more restricted regulation.

STUDENT SURVEY INVENTORY (SSI)

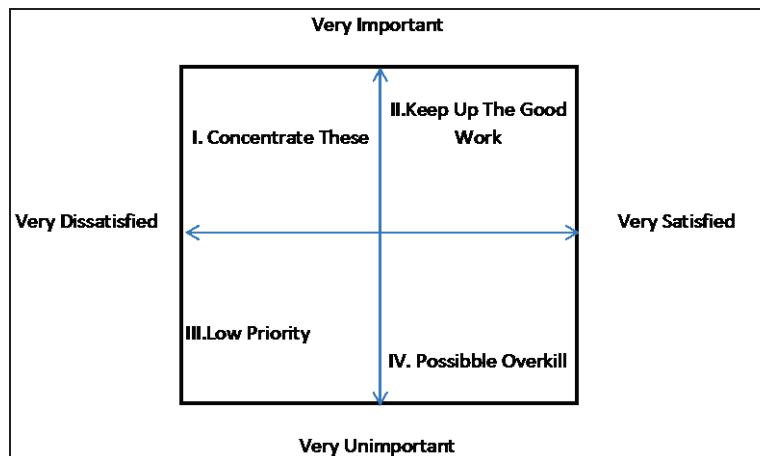
University student satisfaction is a concept that has become more prevalent in higher education research journals as college impact models have emerged and evolved over the years (Odom, 2008). He also mention that the assesment of student opinions and attitudes is a modern-day necessity as institutions of higer education are challenged by the climate of decrease funding, demand of public accountability, and increased competition for student enrollments. By examining and adjusting institutional services to meet the needs (or expectations) of their student population, colleges and universities are better able to engage student in the college experience – thus resulting in a high degree of student integration and satisfaction.

One of most popular standardize satisfaction measures in higher education is Student Satisfaction Inventory (SSI) is marketed by Noel-Levitz, a consulting firm specializing in higher education (Roszkowski, 2003). On the SSI students report their satisfaction as well as the importance of the issue being rated. The importance-rating component of the SSI is being rated as a major strength of the instrument.

The importance and satisfaction ratings should be used to classify into the quadrants of a “Matrix for Prioritizing Action”, namely: (a) high importance-high satisfaction, (b) low importance-low satisfaction, (c) high importance – low satisfaction, and (d) low importance – high satisfaction



Rowszkowki (2003) mention that according to Noel-Levitz the corresponding action to be based on these quadrants are: (a) strength to be featured in promotional literature, (b) opportunities to examine areas with the low status, (c) key challenge that require immediate correction (risk/opportunity), and (d) insignificant strength. While Kotler (2000) calls the corresponding quadrants: (a) Keep up the good work, (b) low priority, (c) concentrate here, and (d) possible overkill.



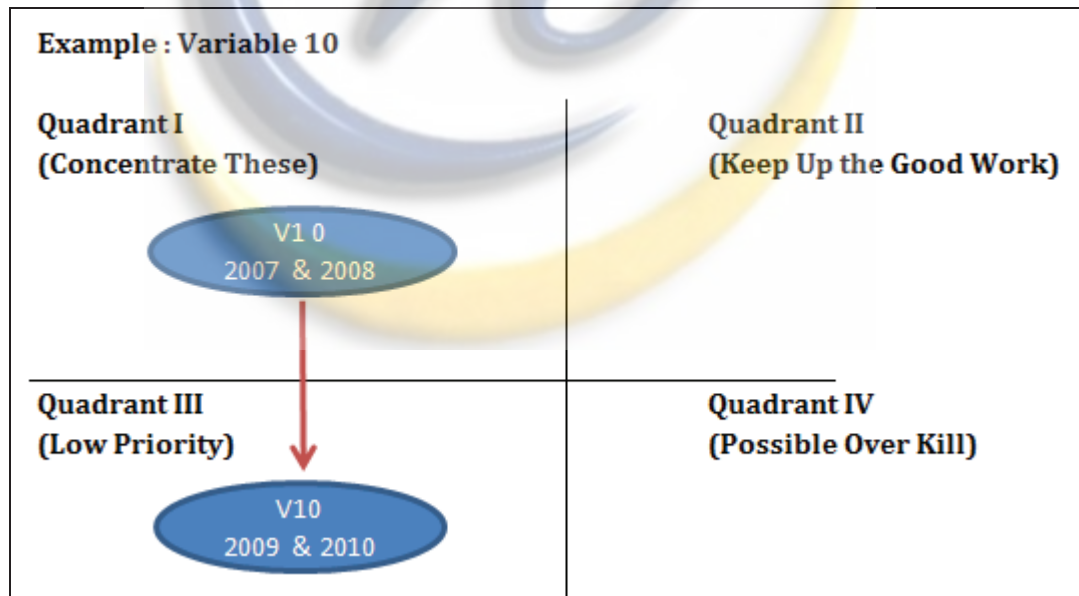
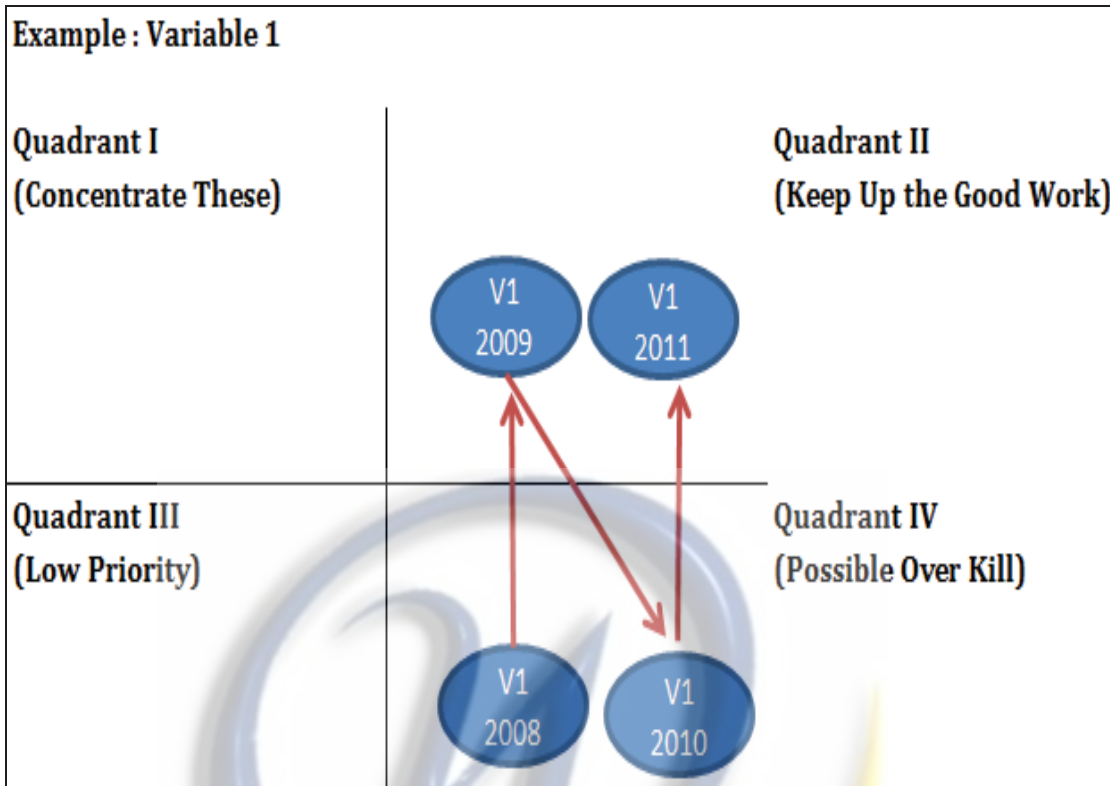
The satisfaction and importance rating also can be used to calculate gap scores between importance and satisfaction. A performance gap is determined for an attribute by subtracting the satisfaction rating from the importance rating. The gap indicate how well the institution perform relative to student expectations. The largest the gap, the worse the performance.

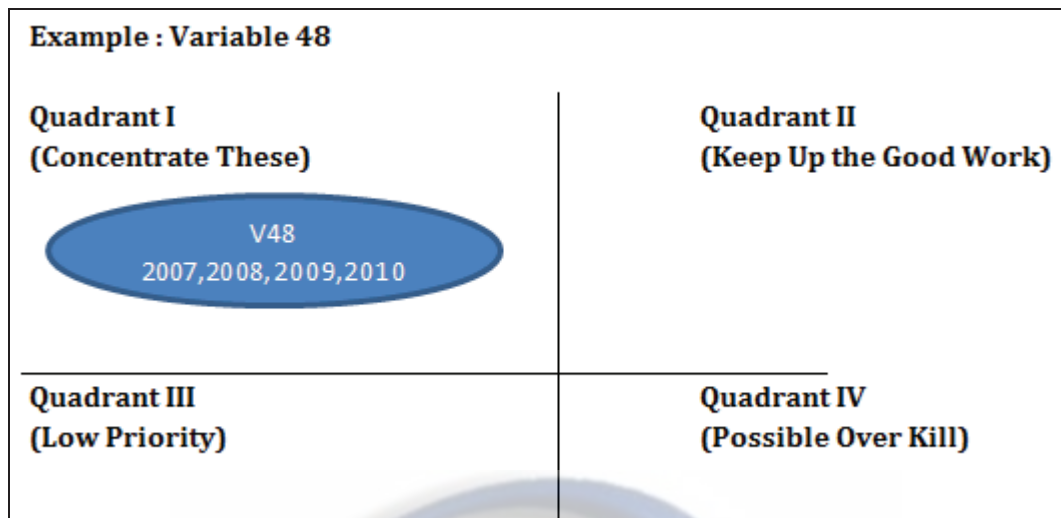
WIDYATAMA UNIVERSITY'S SSI RESULT

Widyatama University, is a private higher learning established in Bandung since 2001. In term of its total student body, it is actually ranked at 5-6 position among 150 private higher learning institutions operating in Bandung region and its vicinity.

Since the cademic year of 2005, Widyatama University has used the Noel-Levits Student Satisfaction Inventory (SSI) to measure its students satisfaction and made it the basis for improvement programs using into the Matrix for Prioritizing Action. However, after using SSI to measure student satisfaction and its level of importance for more than 4 years, we noted that there are some changes of student's perception in importance and satisfaction ratings when we made the comparison of year by year SSI data results.

For example, for Variable 1: Student Counseling (in Dimension: Academic Advising), the position of satisfaction and importance on the matrix's quadrant has shifted back and forth from **low importance – high satisfaction** (in 2008 and 2010) to **high importance-high satisfaction** (in 2009 and 2011). While the position for variable 10: Facility Complaint (in Dimension: Campus Climate) on the matrix's quadrant has shifted from **high importance–low satisfaction** (in 2007 and 2008) to **low importance-low satisfaction** (in 2009 and 2010). And other example of variable 48: Transparency and fairness from scoring system (in Dimension: Instructional Effectiveness) remain on the same quadrants of **high importance–low satisfaction** (from 2007 until 2010).





Since the original SSI does not include statistical analysis, in this study we intended to improve the methodology by analyzing the different of performance gap for each variable from data of academic year 2008 to Academic Year 2010 using non parametric test in order to prove whether the result is statistically valid.

METHODOLOGY

This research is adapted from the Student Satisfaction Inventory (SSI) by Noel Levitz. The research variables commonly used for United States Universities which has 11 dimensions and divided into 75 variables. SSI measured importance level and satisfaction from respondents (students) for each variables. The differences between importance level and satisfaction perceived received by student is calculated as Performance Gap

This research used a cross-sectional study (Cross-Sectional Analysis) involved observation of all of a student at Widyatama University during period of 2008-2011. The distribution of questionnaire used convenience sampling technique, where subjects are selected because of their convenient accessibility and proximity to the study.

Number of questionnaires processed is as follows :

Academic Year	2008	2009	2010
Department of Management	554	561	561
Department of Accounting	649	720	770
Total*	1203	1281	1331

Approximately ±25% from total student body

Then the data used tested by validity and reliability test. The final results is examined to determined consistency from rank for each variable in every year.

Stages carried out in data processing are as follows :

1. Calculate the average value for each variable for importance level
2. Calculate the average value for each variable for satisfaction level

3. Calculate the performance gap (difference between point 1 and 2)
4. Calculate the average value for point 1, 2 and 3 for each dimension
5. Sort the largest values to smallest for point 1, 2, 3 and 4 (or vice versa)
6. Analyze the result using importance- satisfaction matrix using quadrant
7. Test the correlation between rank of importance, satisfaction and performance gap

Hypothesis used in this research are:

1. Student Perception (Importance) are the same every year
2. Student Satisfaction are increasing
3. Performance (gap) are decreasing

RESULT AND DISCUSSIONS

The result are as follows

Importance (2-tailed)

The result describes that there are no difference perception of Importance.

2009 – 2010, the correlation is lower than others but otherwise still significant.

Importance (2-tailed) Department of Accounting

Year	Pearson Correlation	Significant at the 0.01 Level
2008 – 2009	0.928	0.00
2008 – 2010	0.929	0.00
2009 – 2010	0.894	0.00

Importance (2-tailed) Department of Management

Year	Pearson Correlation	Significant at the 0.01 Level
2008 – 2009	0.908	0.00
2008 – 2010	0.937	0.00
2009 – 2010	0.912	0.00

Satisfaction (1-tailed)

The result describes Satisfaction are increasing.

2009 – 2010, the correlation is lower than others but otherwise still significant.

Satisfaction (1-tailed) Department of Accounting

Year	Pearson Correlation	Significant at the 0.01 Level
2008 – 2009	0.959	0.00

2008 – 2010	0.968	0.00
2009 – 2010	0.971	0.00

Satisfaction (1-tailed) Department of Management

Year	Pearson Correlation	Significant at the 0.01 Level
2008 – 2009	0.981	0.00
2008 – 2010	0.988	0.00
2009 – 2010	0.981	0.00

Gap (1-tailed)

The result describes Gap are decreasing (Performance getting better)

Gap (1-tailed) Department of Accounting

Year	Pearson Correlation	Significant at the 0.01 Level
2008 – 2009	0.969	0.00
2008 – 2010	0.980	0.00
2009 – 2010	0.951	0.00

Gap (1-tailed) Department of Management

Year	Pearson Correlation	Significant at the 0.01 Level
2008 – 2009	0.980	0.00
2008 – 2010	0.973	0.00
2009 – 2010	0.973	0.00

The overall result indicating that the gap of importance and satisfaction is decreasing which confirmed that continuous improvement programs have been taken is on the right track.

However the result of research on student satisfaction is not enough, we have review and make classified which dimension and variables are priorities in the long period. Not only shoot in the one point or year per year.

CONCLUSIONS

Despite of SSI is only mapping the Importance – Satisfaction in one period, this method still a good measure to represent the student satisfaction

A longitudinal research on student satisfaction and the adoption of Student Satisfaction Inventory (SSI) gives the clear picture on evolution of quality dimension in each study program (globally in university) actually based on student perception. Evolutionary position exposed by this simple moved dimension/variables gives a lot of information supporting strategic assessment necessary for the development of future strategic programs.

REFERENCES

1. Kotler, Philip; *Marketing Management: Millenium Edition*, (10th edition), Upper Saddle River, NJ, Prentice Hall, 2000.
2. Letcher, David W.; Neves Joao S., *Determinants of Undergraduate Business Student Satisfaction*, *Research in Higher Education Journal*, <http://aabri.com/manuscripts/09391.pdf>.
3. Odom, Leslie R; *Investigating the Hypothesized Factor Structure of the Noel-Levitz Student Satisfaction Inventory: A Study of the Student Satisfaction Construct*, Dissertation, University of North Texas, 2008.
4. Roszkwski, Michael J; *Nature of the Importance-Satisfaction Relationship in Ratings: Evidence from the Normative Data of the Noel-Levitz Student Satisfaction Inventory*, *THE, Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*. 2003. www.FindArticles.com 18 Oct, 2011.
5. Sutoko, Mame S; Muchlis, Tanti Irawati; *The Product Portfolio: Revisited Assessing Competitive Position In Educational Services Sector*, *Review of Management Innovation and Creativity*, Volume:4, Issue:9, 2010, <http://www.intellectbase.org>
6. Watkins, Leah; *The Cross-cultural Appropriateness of Survey-based Value(s) Research A Review of Methodological Issues and Suggestion of Alternative Methodology*, *International Marketing Review* Vol.27 No.6, 2010, p.694-716.

