THE EFFECT OF SERVICE QUALITY ON STUDENT'S SATISFACTION AT TECHNICAL EDUCATION AND VOCATIONAL TRAINING

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Abstract

The purpose of this research is to analyze service quality of training in Technical Education and Vocational Training that based on measurement of training service quality dimension and examine the effect of service quality on customer satisfaction. The method used in this research is SERVQUAL using primary data from survey questionnaire given to training students in BBPLK Bekasi and partial least square to detemine the effect of service quality. The results show that there were gaps in all attributes of service quality provided with the expected. And by using Matrix Importance Performance Analysis (IPA), there are two attributes that are included in the main priority for the improvement which is the attribute of training equipment in accordance with the latest technology and the quality of training materials and training modules. And from partial least squares, six from nine dimension of service quality are positively affect overall satisfaction. These dimensions can be priority reference for development and service quality improvement for TVET.

Keywords: SERVQUAL, Education, Training, TVET, Service Quality, Importance-Performance Analysis (IPA), Partial Least Square

1. Introduction

According to Brenan (2014) the industry needs most job seekers to have the knowledge, skills and attitudes that will enable them to find work, to keep working and create new ideas and new companies that can adapt and develop. BLK provides opportunities and facilities to trainees to attend training according to industry needs and competency tests whose results are proven by certificates according to work competence that has been followed, as explained by Karmel (2014).

Quality of service is an important factor in education and training and this agency needs to ensure that the services provided will give customers a positive impression (Ibrahim, Ab Rahman, and Yasin, 2012). Quality of service in education is also unique compared to other sectors (Quinn, Lemay & Johnson, 2009). The uniqueness is the difficulty to focus on different types of customers and stakeholders. The education sector should pay attention not only to the knowledge and skills of alumni on education / training but also on the experience of the students / trainees during the training if they are to continue to win in the competition. Therefore, measuring the quality of the BLK service as a training institution is important to be careful because the performance of good training, services and facilities will increase the satisfaction of various types of customers and improve the quality of training graduates (Ibrahim, Ab Rahman & Yasin, 2012; Mahapatra & Khan, 2007; Sahney, 2016)

Groonros (1984) also revealed that quality should be evaluated by the users or consumers of the services provided. Each service company continually disseminates the questionnaire and uses it to perform customer satisfaction analysis and service quality (Dotchin and Oakland, 1994).

In conducting the evaluation has been done with a variety of measurement instruments with different quality dimensions and different depending on the object of research. Limited research on service quality that uses specific service training service attributes measured and analyzed to evaluate service quality, prioritize service development and provide direction and develop service.

The purpose of this study is to provide a review of the results of the measurement of service quality of training center training workshops based on the measurement dimensions of training services and determine the priority of improvement in order to improve the quality of service to improve the satisfaction of trainees and to know the effect of measurement dimensions on the students' satisfaction training.

2. Literature Review

2.1 SERVQUAL

Service quality dimensions were first introduced by Parasuraman, Berry and Zeithaml in 1985. Parasuraman (1988) revealed that service quality is a comparison between perceived services (perceptions) of consumers with the quality of services consumers expect. And in his research, Parasuraman explained 10 (ten) service quality dimensions. But in later research Parasuraman, Zeithaml, and Berry (1988) found an overlapping between several previously mentioned dimensions. Therefore, they simplify the ten dimensions which later in its development into five determinants of service quality known as Q-RATER.

In an early attempt to build a conception of the quality of service, Parasuraman, Zeithaml, and Berry proposed a scheme as shown in Figure 1. From the picture shows that the scheme is divided into two parts. The top is the point of view of the customer (consumer) and the bottom from the point of view of the seller (marketer). Thus, the service quality of the drawing can be concluded to be a comparison between customer expectation (E) on perception of the actual service received (P). If E> P then there is a discrepancy and vice versa if E <P is considered good.

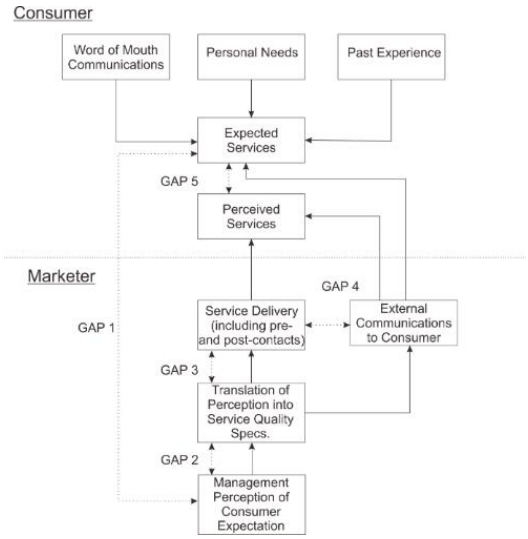

Figure 1. Quality Service Scheme
Source: Parasuraman, Zeithaml, and Berry (1988)

2.1 *Importance-Performance Analysis (IPA)*

This method was first introduced by John A. Martilla and John C. James in 1977. The results of their research is delivered in the form of 2 dimensional quadrant that is graphic and easy to interpret. Factors are ranked and grouped into four quadrants in the Cartesian diagram and are limited by two lines intersecting perpendicular to the point (X, Y).

Sumarno (2013) explains that the comparative score / performance / perception score with interest / expectation score. The result of this comparison is called the level of conformity that will determine the order of priority factors that affect customer satisfaction.

And then the horizontal axis (X) will be filled by the perception level score, while the upright axis (Y) will be filled by the expectation score. The results of the research quadrant exemplified by Martilla and James can be seen in Figure 2 as follows (Martilla and James, 1977):

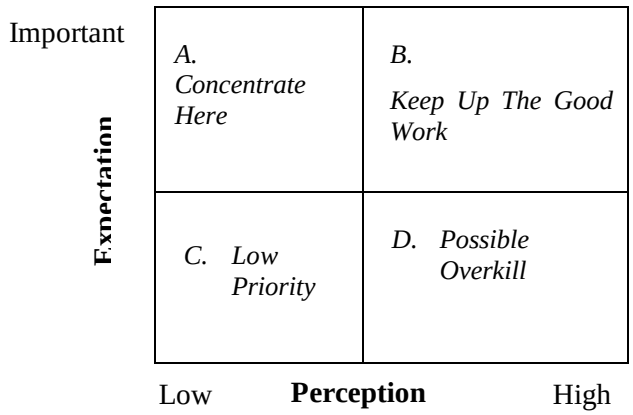

Figure 2 Quadrant Distribution Diagram of Importance Performance Analysis

2.2 Partial Least Squares (PLS) Structural Equation Modeling

According to Hair et al. (2014) Structural Equation Modeling or so-called SEM allows research that includes unobserved variables to be measured indirectly through indicator variables or observed variables. There are two

types of SEM are Covariance-based SEM (CB-SEM) and Partial Least Square SEM (PLS SEM). Comparison between CB-SEM and PLS SEM can be seen in table 1 (Chin and Newsted, 1999)

According to Wold (1980) PLS is a powerful method of analysis because it is not based on many assumptions. The PLS method has its own advantages such as: the data should not have multivariate normal distribution (indicator by category scale, ordinal, interval until the ratio can be used on the same model) and sample size should not be large. Although PLS is used to confirm the theory, it can also be used to explain the relationship exists between latent variables.

Table 1 Comparison between CB SEM and PLS SEM

Criteria	**CB SEM**	**PLS SEM**
Purpose	Based on parameter	Based on prediction
Approach	Covariance Based	Covariance Based
Assumption	Generally normal distribution and independent observation (parametric)	Predictor specifications (nonparametric)
Estimated Parameter	Consistent (uncertain)	Consistent as indicators and sample size increase
Latent Variable Value	Only with reflective indicators	Explicit estimates
The relationship between latent variables and observed variables	Only with reflective indicators	Can be modeled in formative or reflective form
Implication	Optimal for parameter accuracy	Optimal for predictive accuracy
Model's Complexity	Great complexity	Small complexity
Sample Size	Power analysis is based on the portion of the model with the largest predictors. Recommendation minimum sample size 30 - 100 samples.	Based on power analysis of a specific model. Recommendation minimum sample size 200 - 800

3. Research Methodology

3.1 Data Source

The data used in this study was obtained by distributing questionnaires to trainees in the period March - April 2017. The questionnaire was distributed to 144 respondents

3.1 Service Quality Dimensions and Indicators

The dimensions of service used in this study are 9 (nine) dimensions of educational services proposed by Mohd Zuhdi Ibrahim, Mohd Nizam Ab Rahman and Ruhizan M. Yasin (2014) ie Training Environment (Campus Environment), Physical Facilities (Physical Facilities), Equipment Training Equipment, Instructor, Curriculum, Training Delivery, Support Services, Library, Training Management and Overall Satisfaction. The dimension has also been addressed to BBPLK Bekasi and has been accepted as a measure of service quality dimension.

4. Data Processing

Data processing conducted in this research is divided into 3 (three) stages which is measurement of service quality of training implementation using SERVQUAL method, prioritizing service quality improvement using Importance-Performance Analysis (IPA) and last seen influence of 9 (nine) dimension which made as determinant. The quality of the service to the overall training participants' satisfaction.

5. Result

From the data processing found that the quality of services provided by BBPLK Bekasi still needs to be improved again. This is evident from the gap that is negative across all service size indicators. The gap value for each indicator can be seen in detail in Table 2

Table 2 Gap of Each Dimension of training delivery service quality

No	Dimensions	Training Delivery Indicators	Gap
1	Campus Environment	Overall physical appearance of the institute	-0.875
2		Cleanliness of the institute.	-0.715
3		Environment conducive for learning	-0.931
	Average		-0.84
1	Physical Facilities	Conducive classroom.	-0.799
2		Sport and recreation facilities.	-2.125
3		Cafeteria	-1.778
4		Accommodations / hostel.	-2.500
	Average		-1.801
1	*Training Equipment*	Training equipment suitable to current technology.	-1.368

2		Training equipment suitable to training programme.	-1.306
3		Sufficient training equipment and materials.	-1.368
4		Opportunity of every student to use training equipment.	-0.806
5		Equipment in good and working condition.	-1.139
	Average		-1.197
1	Instructor	Knowledge of the subject.	-1.076
2		Skills in the subject.	-1.201
3		Effective two-way communication with student.	-0.646
4		Punctuality.	-1.167
5		Accessibility and availability	-1.188
	Average		-1.056
1	Curriculum	Attractive content and ability to stimulate students' interest.	-1.326
2		Relation of training to practical work.	-1.347
3		Ability of training content to meet job market requirements.	-1.549
4		Provision of training content in the early training sessions	-1.389
	Average		-1.403
1	Training Delivery	Training schedule suitable and not burdensome to students.	-0.785
2		Effectiveness of training delivery.	-0.944
3		Use of appropriate language in training delivery.	-0.660
4		Quality training materials and notes.	-1.750

5		Assessment method.	-1.257
	Average		-1.079
1	Support Services	Good counseling services.	-1.111
2		Effective induction programme for new students.	-1.153
3		Safety and welfare of students.	-0.972
4		Effective career guidance services.	-1.194
5		Attitude of support staff.	-1.188
	Average		-1.124
1	Library	Availability of textbook and learning materials.	-2.806
2		Ease of borrowing process.	-3.257
3		User friendliness	-2.486
4		Suitable operation hours.	-3.306
Average			-2.964
1	Management of institutes	Service provided within the time promised.	-1.292
2		Good keeping of students' record.	-0.951
3		Operating hours suitable with students' need.	-1.035
4		Effective feedback mechanism and suggestion system.	-1.097
5		Ability to address students' suggestion and feedback in a proper manner.	-1.174
Average			-1.110
1	Overall Satisfaction	Satisfaction towards overall training and service quality.	-1.090
2		Satisfied with the decision of selecting this institute.	-0.806

3		Meaningful and exciting experienced while study in this institute.	-0.493
4		Recommend this institute to relatives or friends.	-0.542
Average			-0.733

Furthermore, to determine the priority of improvement, mapping is done by using Importance-Performance Analysis (IPA) matrix by combining the importance factor and satisfaction factor in two-dimensional graphic which facilitate the explanation of data and get the practical suggestion. In this IPA matrix, the value of performance is associated with the expected value of each training service delivery indicator, so it can be known which indicators are in the quadrant and can determine the priority of improvement to be done. The IPA diagram for all dimensions can be seen in Figure 3.

From Figure 3 there are 2 attributes that are in quadrant 1 that is the attribute of training equipment that has been in accordance with the latest technology of training equipment dimension and attribute of quality of training materials and training module from training implementation dimension. These two attributes are a priority improvement that must be done first because these attributes are considered important by the trainees but the quality of service provided is still far below expectations.

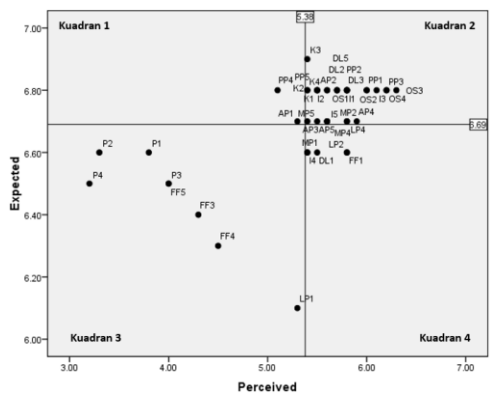

Figure 3 IPA diagram on all dimensions of service quality

As a training institution, the training participants' satisfaction with the training services has a high value. To see whether the dimensions used in performing the service quality measurement were positively affected the overall satisfaction of the training participants, hypothesis testing was performed using partial least squares SEM (PLS SEM). Furthermore, for the submission of hypothesis can be seen in table 3

Table 3 Hypothesis

H1	Campus environment positively affects overall satisfaction
H2	Physical facility positively affects overall satisfaction
H3	Training equipment positively affects overall satisfaction
H4	Instructor positively affects overall satisfaction
H5	curriculum positively affects overall satisfaction

H6	Training delivery positively affects overall satisfaction
H7	Support services positively affects overall satisfaction
H8	Library positively affects overall satisfaction
H9	Management of institutes positively affects overall satisfaction

Each of these hypotheses is proposed to see a positive relationship of independent constructs to dependent constructs. Positive relationship of training environment, physical facilities, training equipment, instructors, curriculum, training implementation, service support, library and training management with overall satisfaction. Hypothesis testing is done by using SmartPLS 3.0.

For reflective model measurement, there are three general criteria that need to be assessed. The criterion is consistency reliability, by looking at the value of composite reliability and cronbach's alpha. Consistency reliability assessment results can be seen in table 4.

From the value shown in Table 4 internal reliability of all dimensions is greater than the minimum value used. Before checking the value of outer loading, the examination of the average variance extracted (AVE) value included in convergent validity should be done first.

Table 4 Internal Consistency Reliability Assessment

Criteria	**Minimal Value**	**Value of Estimated Results**
Composite Reliability	0,6 (Sekaran, 2003)	Campus environment : 0,821 Physical facilities : 0,895 Training equipment : 0,889 Instructor : 0,881 Curriculum : 0,935 Training Delivery : 0,910 Support services : 0,873 Library : 0,953 Management of institutes : 0,910 Overall Satisfaction : 0,920
Cronbach's Alpha	0,6 (Sekaran, 2003)	Campus Environment : 0,682 Physical facilities : 0,853 Training equipment : 0,839 Instructor : 0,847 Curriculum : 0,910 Training Delivery : 0,877 Support services : 0,820 Library : 0,935 Management of institutes : 0,878 Overall Satisfaction : 0,883

From the value in table 5 can be seen that the convergent validity of all dimensions is greater than the minimum value used. Furthermore, the construct assessment is discriminant validity.

In accordance with the hypothesis mentioned earlier in Table 3, the path is made using Smart PLS 3.0 and can be seen in Figure 4.

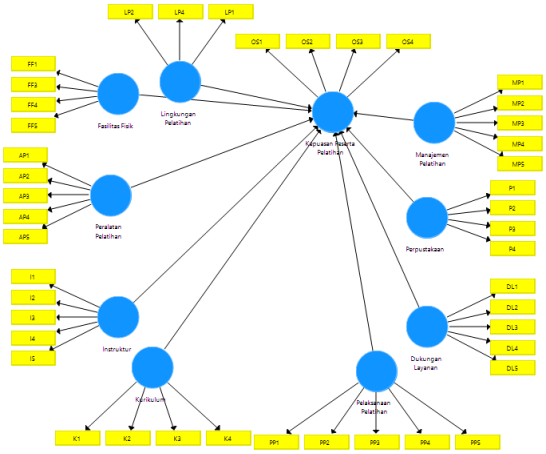

Figure 4 Results of Path Analysis

Table 5 Assessment of Convergent Validity

Criteria	Minimal Value	Value of Estimated Results
Average Variance Extracted (AVE)	0,5	Campus environment: 0,612 Physical facilities: 0,681 Training equipment: 0,626 Instructor : 0,608 Curriculum : 0,783 Training Delivery: 0,671 Support services: 0,584 Library : 0,835 Management of institutes: 0,670 Overall Satisfaction: 0,744

Table 6 The Value of Coefficients and Results of Hypothesis Testing

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Significant	Accept
Campus environment -> Overall Satisfaction	0.026	0.028	0.076	0.346	0.730	No	Yes
Physical facilities -> Overall Satisfaction	-0.130	-0.124	0.067	1.934	0.054	No	No
Training equipment -> Overall Satisfaction	0.063	0.065	0.113	0.553	0.581	No	Yes
Instructor -> Overall Satisfaction	-0.566	-0.560	0.106	5.315	0.000	Yes	No
Curriculum -> Overall Satisfaction	0.383	0.381	0.079	4.862	0.000	Yes	Yes
Training Delivery -> Overall Satisfaction	0.535	0.533	0.091	5.869	0.000	Yes	Yes
Support services -> Overall Satisfaction	0.250	0.245	0.061	4.113	0.000	Yes	Yes

Library -> Overall Satisfaction	-0.245	-0.246	0.055	4.470	0.000	Yes	No
Management of institutes -> Overall Satisfaction	0.488	0.481	0.111	4.391	0.000	Yes	Yes

From table 6, the structural model calculation is obtained from PLS. Training environment ($\beta = 0.063$, $p > 0.05$), curriculum ($\beta = 0.383$, $p < 0.05$), training implementation ($\beta = 0.535$, $p < 0.05$), service support ($\beta = 0.250$, $p < 0.05$), and training management ($\beta = 0.488$, $p < 0.05$) indicated that these six dimensions positively affect the satisfaction of the trainees. Whereas for physical facility ($\beta = -0{,}013$, $p < 0{,}05$), instructor ($\beta = -0{,}566$, $p < 0{,}05$), and library ($\beta = -0{,}245$, $p < 0{,}05$) Overall satisfaction.

6. Conclusion

This study focuses on measuring the quality of The conclusions that can be taken from this research are:

1. Quality measurement instruments with SERVQUAL applied to BBPLK Bekasi have a high validity and reliability. It can be seen from the previous discussion that the value of validity and reliability of the instrument of this study exceeds the minimum limit for the validity of 0.963 and 0.961.
2. The highest gap is seen in the appropriate library operating hours indicator and this is due to operational hours coincided with training hours so that trainees can only access the library before the training begins or after the training ends. And the lowest gap is seen in a meaningful and interesting experience indicator during training in this institution.
3. Based on the results of the analysis with Importance - Performance Analysis (IPA) Matrix, which describes the level of participants' satisfaction and also the priority improvement for service attributes. Of the 44 service attributes that exist there are 2 attributes that become priority improvement. These attributes are attributes of training equipment that are compatible with the latest technology and quality of training materials and training modules.
4. From the attributes are given recommendations to the management of BBPLK Bekasi which can be used as a reference in undertaking non-binding improvements. For attributes of training equipment that are compatible with the latest technology are provided recommendations for improving or even replacing old and unusable training equipment. And to attribute the quality of training materials and training modules are given recommendations to improve the quality of training materials that will be given to the trainees and print training modules better.
5. Based on the result of hypothesis analysis of service quality dimension influence to overall trainee's satisfaction, from nine dimensions of service quality measurement under study there are six dimension which influence to overall satisfaction that is the dimension of training environment, training equipment, curriculum, training implementation, service support and management training. The six dimensions that affect positively can be used as a reference for the development and improvement of service quality in the future.

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