Quality Certification and Customer Satisfaction

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Abstract:

The purpose of this paper is to investigate what services have to be developed further for the innovative growth of an organisation. The study will highlight strategic measures that are needed to be taken by the Center for Industrial Certification as an effort to improve the quality of services.

The research uses descriptive explorative methods by means of data available for analysis using a Likert Scale and adopting a mixed methodology, qualitative and quantitative (Sekaran, 2003). Population and sample include a proportion of the industrial sector comprising of 391 companies which have obtained the certificate of the Indonesian National Standard (INS).

The dependent variable is the level of customer satisfaction and independent variables are Tangibles, Reliability, Responsiveness, Assurance, Empathy.

The Product Certification Body should be aware and understand the main priority needed and expected from certification service users. It is necessary to identify and clearly define the attributes of services based on customer requirements. One method of improvement is to improve the quality of the services provided to customers by using the Servqual (Service Quality) method.

The research illustrates that the customers' INS certification can better understand the procedures and mechanisms for providing ISO certification. Assigning priority measures needed to be done, as an effort to improve the quality of service. The results of the study were able to determine the classification of the attributes of service certification on the basis of the relationship between the level of customer satisfaction and the degree of fulfilment of certification.

Keywords*: Certifications service attribute; SERVQUAL, Customers satisfaction level.*

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1. Introduction

Currently, companies are facing a very tight competitive situation in producing a product desired by the market. The diversity of quality products desired by the market or the consumer is part of the company's challenge. The paradigm of quality was previously defined by the service provider/producer, however, now higher quality is encouraged to be able to meet customer needs (customer requirements). The Industrial Certification Agency BSI is an organisation of Product Certification under the patronage of the Ministry of Industry. BSI is an organisation engaged in Product Certification (product certification services) to industries that have applied for SNI status - compulsory or voluntary - and has been accredited by the Accreditation Committee National, National Standardisation Agency.

From the results of initial survey relating to customer satisfaction criteria and form the complaints submitted by the company to the certification body, there are several types of services demanded by customers that can be grouped as follows: Provision of all information related to the use of SNI marks; Implementation of the process of evaluation / audit of compliance to the requirements of SNI (technical competence of the certification process); Administration services certification (administrative competence of the certification process); and Time of certification process. After a preliminary evaluation, it was found that most of the valid complaints received from customers, verbally and in writing, on the services of the Industrial Certification Center, many were over the time process that exceeded the specified total time standard of maximum 41 working days. The samples taken in September 2013 did show that 25% (5 out of 20 customer companies) of those applying for certification were not able to be served in less than 41 business days.

Table 1. *Customer Satisfaction Index*

Value	Descp	Index Value Customer satisfaction	Conversion Interval Value
A	Very Satisfy	3.25 – 4.00	81.26 - 100.00
B	Satisfy	2.50 – 3.25	62.51 - 81.25
C	Satisfy Enough	1.75 – 2.50	43.76 - 62.50
D	Not Satisfy	1.00 – 1.75	25 - 43.75

From the Table above, it appears that LS Pro-BSI customers have not received the services they wanted with the value of IKP (Customer Satisfaction Index) on average still at 63.42 (Customer Satisfaction Recap in 2013) or lower limit satisfied (B Lowest), where there are 3 aspects that still do not meet the criteria which are: administration aspect; aspects of the certification process; general information aspects.

From the above background, BSI institutions are required to improve their services by performing continual improvement and undertake innovative processes, especially complaints related to service process time in accordance with time requirements for Certification. BSI secretariat services does facilitate the application of certification / certification customers, nor easy access to BSI agency information, and provide inappropriate and inconsistent service from the beginning. On the basis of this information, this research grouped the problem into two main categories (technical and functional), so the problem formulation will focus on what are the service attributes Certification which is required by service users? What service attributes need to be improved in quality and what service attributes should be maintained? What service attributes need to be developed further as part of the organisational innovative process? What strategic steps need to be taken by the Industrial Certification Agency in an effort to improve the quality of its services?

2. Literature Study

2.1 Quality Management
Quality is the degree to which a set of inherent characteristics of a product or service meet the requirements (QMS, ISO 9000: 2015). Quality objectives must be products and services that can provide customer satisfaction. To be successful, quality activities must be supported by management and be consumer-oriented. The quality of goods / services can be seen from customer satisfaction (Saravanan and Rao, 2007). Quality is a technical activity, through which we measure the quality characteristics of the product (goods and / or services), then compares the results to the desired product specifications of the customer and takes appropriate action when there is a discrepancy between actual and standard performance (Gaspersz, 2001).

2.2 Service Characteristics
A service is an activity or series of activities that are ordinarily intangible, but not always, in the interaction between the customer and the service provider. Sometimes physical resources or goods from the service provider, are used to provide solutions to Customers' problems (Gronross, 2001). The following characteristics of services that distinguish between goods and services can be grouped as follows (Kotler and Keller, 2007):
1. *Intangibility*. This characteristic is very different to the product goods, as goods can be seen, held and felt physically. The service is the opposite. Services is an effort / activity that produces added value that is not visible in the eyes of customers but can be felt, such as: satisfaction, enjoyment, comfort and others;
2. *Inseparability*. The involvement of consumers in terms of availability of services is one of the characteristics in which the process of availability of services is ranging;
3. *Perishability*. Service is a commodity that is not durable, because the service cannot be stored. Services are very sensitive in determining strategies especially where the level of demand for services is very volatile;

4.   *Variability*. The resulting output varies greatly. This means that the standards will depend on who, when and where the service is produced / given. There are 3 factors that affect the diversity of service quality, among others: (a) Cooperation or consumer participation during product delivery; (b) Morale and motivation of employees when serving consumers; (c) The company's workload in that if the company is understaffed then the condition of personnel will affect the quality of services provided.

2.3 Servqual Concept

Servqual method is a method used to determine the quality of services based on the gap results, namely the gap between perception and the expectations of customers. The use of servqual is based on the consideration that servqual is a compact scale but has a high level of truth, enough so that decision makers can understand better the perception and customer expectations of the services provided. Thus, in the end, the decision maker should act as the service user and this plays an important role so that the results obtained are used to create a standard comparison in evaluating the quality and customer satisfaction (Parasuraman *et al.,* 1985).

Parasuraman *et al.* (1988) identified 10 dimensions of service quality based on customer's satisfaction namely:
1. *Tangible*, the availability of physical facilities, workers and supporting facilities and infrastructure;
2. *Reliability*, the ability to perform services accurately and reliably / on time in accordance with the stipulated provisions;
3. *Responsiveness* - having the desire to help consumers and provide fast and precise service;
4. *Competence*, capable and skilled experts with enough ability in providing services;
5. *Courtesy*, courtesy and friendliness when giving a service;
6. *Credibility*, honest in providing services so that a mutual trust between consumers and service providers is built;
7. *Security*, free from danger, risk or harm to consumers;
8. *Access*, easy to obtain services;
9. *Communication*, providing information which is clear and easy to understand by consumers and
10. *Understanding the customer*, able to do something that aims to recognize the needs of consumers.

2.4 Merging Quality Dimensions

The grouping of 10 (ten) dimensions is then improved by Parasuraman *et al.* (1991) by combining several things, such as: communication, competence, courtesy, credibility and security (the other five dimensions have similarities and they are included in the first five). Similarly, access and understanding of the customer is considered to have a strong relationship so that these two are combined into empathy. Zeithaml *et al.* (2009) proposed the concept of 5 (five) major service

quality gaps that are potential sources of service quality problems. The concept is presented through the *"Delivering Quality Service Paper Back" (2009).* With the incorporation of dimensions of the same nuance, Parasuraman *et al.* (2001) grouped them into the below:

1. Tangible, the availability of physical facilities, workers and supporting facilities and infrastructure;
2. Reliability, the ability to perform services accurately and reliably / on time in accordance with the stipulated provisions;
3. Responsiveness, having the desire to help consumers and provide fast and precise service;
4. Assurance, knowledge, ability, friendliness, courteous and credible nature of service providers in providing services so that consumers feel safe and do not feel hesitant in receiving or using services;
5. Empathy, the attitude of service provider to give attention to consumer's difficulty and able to communicate well, be attentive, and to make the consumer feel comfortable.

Quality of service is the level of perfection expected and quality control of perfection is to meet customer desires. In other words, there are two main factors affecting service quality, i.e. expected service and perceived service. Servqual instruments are useful in gap analysis. Because services are usually intangible, communication gaps and understanding between employees and customers have a serious impact on perceptions of service quality. Gaps that usually occur and affect the quality of services includes:

☐ Gap 1 (Gap-1) is a gap between customer expectations and company management perceptions. The gap is due to the company's misunderstanding of what the company's customers expect.

☐ Gap 2 (Gap-2) is a gap between corporate management perceptions and service quality specifications. The gap occurs as a result of misinterpretation of the correct corporate management perceptions on the expectations of the company's customers in the form of quality service specifications. Management may be correct in understanding customer desires, but it is not appropriate to set specific implementation standards.

☐ Gap 3 (Gap-3) is the gap between service quality specifications and service delivery to customers. The existence of the gap is caused by the inability of human resources to meet the quality standards of service.

☐ Gap 4 (Gap-4) is a gap in service delivery to customers and external communications. The gap is formed because the company was not able to fulfil its promises communicated externally through various forms of promotion.

☐ Gap 5 (Gap-5) is the gap between customer expectations and the reality of service received. The gap exists because of unfulfilled customer expectations.

Among the five gaps, the fifth (Gap-5) gap is the most important and the key to eliminating the gap is to eliminate the 4th gap.

Figure 1. *Gap Model Servqual*
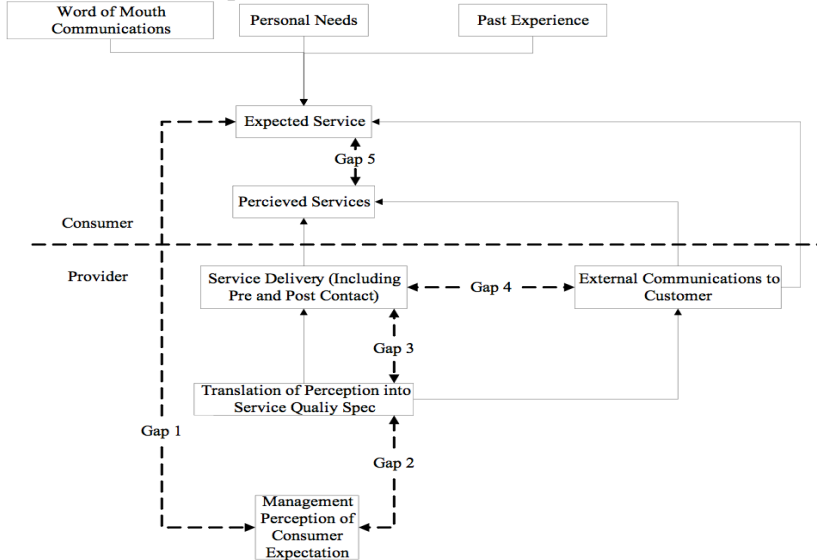
Source: Brysland and Curry (2001).

According to Parasuraman *et al.* (1998) the key to maximize quality is to minimize the gap between perceived performance (P) and customer expectation (E), or in other words augmenting the advantages of service received by the customer compared to the service expected by the customer. The assessment of service quality using the Servqual model includes calculating the differences between the values given by the customers for each pair of statements related to expectations and perceptions.

The quality of a company's services on the five subjects summarized by Parasuraman *et al.* (1998) can be calculated for all respondents, by calculating the average of their Servqual scores on statements reflecting each dimension of service quality. The average Servqual score can also include the degree of relative dimensional importance in the eyes of the customer, by assigning weight to each dimension, so as to obtain a weighted average.

Further data obtained through the Servqual instrument, can be used to calculate the score of service quality gap at various level in detail, item by item analysis, dimension by dimension analysis, and calculation of single measure of service quality or Gap Servqual (Seth and Delmulh, 2005). Through analysis of these gap scores, service firms can not only assess the overall quality of their services as perceived by customers, but also identify key dimensions and aspects of each dimension that require quality improvement. Servqual scores show a gap score between perceptual values and expected values and this can help to diagnose where

performance improvements are targeted. A high negative score gap gets priority for improving its performance. Conversely, if the gap score is positive, it means that the service is successful. This can be an evaluation to deploy (redeployment) resources in fixing items or attributes having low performance.

3. Research Methodology

The type of research used here is a descriptive exploratory method with quantitative data analysis using Likert scale as seen in the research design below (Sekaran, 2003). The variables of this study consist of the dependent variable that is the level of customer satisfaction and the independent variables are Tangibles, Reliability, Responsiveness, Assurance and Empathy. This method includes several stages of activity, among others:
1. The interview stage with the certification management (interview);
2. Sending questionnaires to customers;
3. Analysis and interpretation of data;
4. Validation / confirmation stages;
5. Explanatory stages. Includes estimation of the relationship between satisfaction factors and customer loyalty certification.

3.1 Research Variable
The research consists of 2 aspects related to the concept of Servqual that need to be understood in order to reach a conclusion:
1. The extent to which service conformity compares against the expectations of the certification customers.
2. To what extent the services provided match the perceptions that are in the minds of customers.

The questionnaires consisted of statements relating to various variables which the respondents had to rate on a scale from 1 to 5 by marking (٧) on the number which best describes their opinion. For "Hope" the score was as follows: 1. Not Important 2. Less Important 3. Quite Important 4. Important 5. Very Important. For "Perception" the score was as follows: 1. Strongly Disagree 2. Disagree 3. Neither agree or disagree 4. Agree 5. Strongly Agree. The data in this research is obtained from the input of questionnaire result from certified companies. Data collection was done by distributing questionnaires, interviews, observation and literature study.

3.2 Research Population and Sample
The sampling is cultivated randomly, in sufficient quantities and represents several industry sectors that have been certified. To determine the minimum sample size, the Slovin formula was used, (Arikunto Suharsimi, 2010). The proportion of industry sector samples who obtained SNI mark certificates were sorted from the largest sectors as follows: Rubber and Plastic Industry; Petroleum industry and related technology; Food Technology Industry; Metallurgy Industry; Construction and building industries; Electrical power industry; Glass & ceramics industry; Chemical

technology industry; Industrial fluid systems & general use components; Agriculture Industry; And other waste industries.

The domestic industry amounted to about 70% of the sample and overseas Industry to about 30%

3.3 Service Attribute Dimension

The identification of service attributes is based on the five dimensions of service quality proposed by Parasuraman *et al.* (1998), namely tangibles, reliability, responsiveness, assurance and empathy. On the basis of previously distributed questionnaires and inputs, and the consideration of BSI management the following list of discussion topics is proposed:

Tangibles
- ✓ BSI has adequate facilities (up to date);
- ✓ Hours of BSI secretariat services provided are convenient for the customer company;
- ✓ There is complete and detailed information about registration / certification process;
- ✓ There is ease of access to information related to BSI;
- ✓ The appearance of the auditor is neat, clean, and interesting at the time of assessment.

Reliability
- ✓ Provide appropriate and consistent service from the beginning; Good administrative procedures and not complicated; assessment programs and schedules are clear and accurate (meticulous and timely);
- ✓ The provision of the assessment schedule information is clear and presented in a timely manner;
- ✓ The ability of auditors to apply standards;
- ✓ The ability of auditors to convey nonconformities;
- ✓ Providing questioning / discussion opportunities for auditee;
- ✓ Provide accurate audit information (accurate and timely);
- ✓ The BSI Secretariat provides information to the customer / company to the extent the services have been made.

Responsiveness
- ✓ BSI Secretariat is quick and responsive during sudden events (changes of assessor, schedule, etc.);
- ✓ Secretariat can be easily contacted / met for consultation;
- ✓ The BSI Secretariat provides positive feedback on all complaints;
- ✓ Auditors provide positive feedback on auditee improvement actions;
- ✓ Customer Company receives immediate service from BSI secretariat.

Assurance

✓ Openness in the management and delivery of information required by the customer company;

✓ The speed of the Certification process (from registration to certificate issued) is in accordance with the Certification process plan;

✓ Transparency related to the cost of Certification;

✓ BSI secretariat knowledge about the Certification process;

✓ The auditor has the knowledge and skills in providing clear and understandable information to the auditee;

✓ BSI certification panel is competent in making decisions;

✓ The BSI Secretariat informs companies that certificates of use of the SNI mark have been prepared in accordance with the standard time.

Emphathy

✓ The availability of telephone lines and e-mail to serve and accept complaints;

✓ Information on the results of the assessment at the end of each activity;

✓ If the customer company gets problems and obstacles, then BSI personnel immediately answer with responsiveness and sympathy;

✓ The Secretariat is willing to accept input from customers as a review of BSI management improvement.

The steps taken after the preparation of the questionnaire is to test the validity and reliability of the questionnaire. Validity and reliability testing was conducted with the initial distribution of questionnaires to 30 respondents, namely the users of BSI certification services. Validity test is done by using product moment formula, while reliability test is done by using alpha coefficient. Each value of r coefficient is compared with the r value of the table. If the value of r coefficient> r table value, then the item (attribute) is declared valid, where the value of count is higher than the r table value (0,361) (Arikunto, 2002,).

4. Discussion

To perform the validity and reliability tests, the initial distribution of the questionnaires was made to 30 respondents in random fashion, i.e. the users of the certification services which are expected to be easy to immediately return the questionnaires for feedback. Furthermore, the authors immediately performed the initial calculation of the validity and reliability test.

Table 2. *Result Validity test for Group Expectation*

No Sample	Name Firm	R count	R Table	Descp	No Sample	Name Firm	R count	R Table	Ket Descp
1	ERJ	0,996	0,361	valid	16	ISM	0,996	0,361	valid
2	BSP	0,993	0,361	valid	17	EGI	0,998	0,361	valid

3	PLK	0,914	0,361	valid	18	ASP	0,995	0,361	valid
4	ENI	0,988	0,361	valid	19	ATI	0,998	0,361	valid
5	MLI	0,996	0,361	valid	20	ADA	0,998	0,361	valid
6	WAP	0,923	0,361	valid	21	HKG	0,998	0,361	valid
7	SIP	0,993	0,361	valid	22	SMS	0,996	0,361	valid
8	EPF	0,997	0,361	valid	23	MKI	0,996	0,361	valid
9	RNI	0,998	0,361	valid	24	AFG	0,996	0,361	valid
10	GPK	0,998	0,361	valid	25	YGI	0,995	0,361	valid
11	BTA	0,997	0,361	valid	26	CFM	0,997	0,361	valid
12	CTS	0,993	0,361	valid	27	MAG	0,998	0,361	valid
13	DKU	0,998	0,361	valid	28	LMP	0,995	0,361	valid
14	SIP	0,996	0,361	valid	29	IBD	0,995	0,361	valid
15	HMU	0,995	0,361	valid	30	JBI	0,993	0,361	valid

Source: *Primary data are processed.*

Table 3. *Result Validity Test for group perception*

No Sample	Name Firm	R Count	R Table	Desc	No Sampel	Name Firm	R Count	R Table	Desc
1	ERJ	0,992	0,361	valid	16	ISM	0,992	0,361	valid
2	BSP	0,994	0,361	valid	17	EGI	0,99	0,361	valid
3	PLK	0,987	0,361	valid	18	ASP	0,993	0,361	valid
4	ENI	0,991	0,361	valid	19	ATI	0,992	0,361	valid
5	MLI	0,996	0,361	valid	20	ADA	0,985	0,361	valid
6	WAP	0,997	0,361	valid	21	HKG	0,975	0,361	valid
7	SIP	0,982	0,361	valid	22	SMS	0,993	0,361	valid
8	EPF	0,982	0,361	valid	23	MKI	0,991	0,361	valid
9	RNI	0,993	0,361	valid	24	AFG	0,991	0,361	valid
10	GPK	0,991	0,361	valid	25	YGI	0,992	0,361	valid
11	BTA	0,992	0,361	valid	26	CFM	0,983	0,361	valid
12	CTS	0,996	0,361	valid	27	MAG	0,993	0,361	valid

13	DKU	0,993	0,361	valid	28	LMP	0,994	0,361	valid
14	SIP	0,985	0,361	valid	29	IBD	0,992	0,361	valid
15	HMU	0,979	0,361	valid	30	JBI	0,992	0,361	valid

Source: *Primary data are processed.*

Each value of r coefficient is compared with r value of table. That the calculation value is higher than r table value (r count> r table (0,361), then the item (attribute) is declared valid the reliability test done in this research is internal, that is by using Cronbach's Alpha formula, where the level of accuracy or Sampling error is assumed to be 5% with a 95% confidence assumption level.

Table 4. *Result Reabilitas Test*

No	Type Questionnaire	r hitung (*Alpha Cronbach*)	r Table	Description
1	Expectation level of service	1,030	0,361	Reliable
2	Expectation level of service	1,031	0,361	Reliable

Source: *Primary data are processed.*

Based on Table 4 it can be assumed that the value of r (Cronbach's Alpha coefficient) is greater than the criterion value at product-moment r at a certain level of n and confidence level (in this study we assumed 95%) (Arikunto, 2010). Furthermore, after conducting the initial survey of validity test and reliability test, the writer distributed questionnaires using Slovin formula (Arikunto, 2010) with a population of 391 companies using SNI mark certification services then further analysis of 200 companies.

5. Discussion of Servqual Score

By knowing the value of expectation and the perception value, the servqual score (gap score) from each service attribute certification of SNI mark use, is presented in Table 5:

Table 5. *Servqual Score (Gap Score) for SNI Marking Certification service*

Dimensions	Variable	Perception	Expectation	Gap Score (Skor Servqual)
Tangible	1	4.200	4.230	- 0.030
	2	4.240	4.285	- 0.045
	3	4.170	4.495	- 0.325
	4	4.115	4.375	- 0,260

	5	4.010	3.960	0.050
	6	3.710	4,420	- 0.710
	7	4.115	4.255	- 0.140
	8	3.955	4.230	- 0.275
	9	4.230	4.360	- 0.130
Reliability	10	4.425	4.520	- 0.095
	11	4.215	4,270	- 0.055
	12	4.080	4.120	- 0.040
	13	4.120	4.220	- 0.100
	14	4.030	4.120	- 0.090
	15	4.030	4.260	- 0.230
	16	4.070	4.100	- 0.030
Responsive -ness	17	4.010	4.010	0
	18	4.200	4.265	- 0.065
	19	4.165	4.385	- 0.220
	20	4.100	4.275	- 0.175
	21	3.950	4.325	- 0.375
	22	4.505	4.590	- 0.085
Assurance	23	4.250	4.425	- 0.175
	24	4.335	4.365	- 0.030
	25	4.110	4.145	- 0.035
	26	4.300	4.370	- 0.070
	27	4.355	4.565	- 0.210
	28	4.040	4.025	0.015
Empathy	29	4.320	4.475	- 0.155
	30	4.200	4.170	0.030
Jumlah tiap atribut semua responden		124.935	129.009	- 0.1358
Grand mean		4.1645	4.3003	

Source: Primary data are processed.

Table 6. *Priority Scale Improvement on the basis of Gap Rate (Gap Score)*

No Atribut	Questions Servqual	Gap Score	Scale Priority
6	Provide appropriate and consistent service from the beginning	-0.710	I
21	The speed of the certification process (from registration to certificate issued) in accordance with the certification process plan	-0.375	2
3	There is complete and informative information about registration / certification process	-0.325	3
8	Provide complete assessment of schedule information and sufficient time	-0.275	4
4	Easy access to information related to BSI	-0,260	5
15	BSI Secretariat is quick and responsive during sudden events (changes of assessor, schedule, etc.)	-0.230	6
19	SNI Applicant Company receives immediate service from BSI secretariat	-0.220	7
27	The availability of telephon / e-mail channels to serve and receive complaints	-0.210	8

Source: *Primary data are processed.*

From the data obtained it shows that the average score gap score (Score Servqual) obtained from 30 service attributes Certification of the use of SNI Mark is **-** 0.136. This indicates that in general (overall), the services provided are still less satisfactory to the users of this services. Service can be said satisfactory if Gap scores positive. If the Gap score is negative, then the quality of service has not been able to meet the needs of certification users. Whereas if the gap score is zero, it means the quality of service is in accordance with the expectations of service consumers Certification of the use of SNI marks.

6. Conclusion

Based on this research it can be concluded that the attribute of certification service in terms of the relationship of customer satisfaction level (Perceptions) to the fulfilment of service Certification (Hope) is positive. Using Servqual method with 30 attributes type of service quality it has   obtained the result that the overall average Gap score attribute certification service use of SNI mark is still not able to fulfil the desire and the requirement of a customer of SNI mark certification. The total value is equal to -0,136.

Further efforts to be made for organisational innovation is to look at the highest-ranking attribute/gap score (G) that is (G <-0.136) and then continue with attribute quality slightly below the average score of gap score or close to 0 (0> G> -0.136).

To improve the quality of certification service in the use of SNI marks, the steps that need to be done by the management on the basis of matrix gap score Table 6 above is to form a comprehensive strategic plan, which due to the interrelation between each attribute it is not possible to do remedial action Counter-measure independently of each of these attributes.

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