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Measurement of Service Quality and Customer Satisfaction in the SME Industry: Literature Study

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Abstract

SMEs is one of the pillars that can improve people's lives and is very meaningful for the government. In order for SMEs to continue to develop, even increase, it is necessary to measure service quality and customer satisfaction so that SMEs can identify weaknesses in their business as evaluation material. The research method begins by reviewing the literature related to the SMEs service industry, classifying, choosing what is appropriate for this research. The results of the research show that several methods can be used to measure, analyze, evaluate, and develop products. The KANO method with functional dysfunction assessment to identify customer desires based on attributes can have a significant influence on customer satisfaction. Servqual with a 5 gap analysis model for customer satisfaction analysis, IPA can be used to measure, test, analyze and determine service priority improvements, while QFD is broader. In addition to evaluating the quality of services and products, it is also for development or innovation and is not limited to the service industry but can be used to develop products for the manufacturing industry. Every business needs to be evaluated to improve performance, several approaches such as KANO, Servqual, IPA, QFD can be used as a reference for measuring, evaluating and developing to continue to improve and develop the business.

Keywords: SMEs, KANO, Servqual, IPA, QFD, Quality service.

1 | Introduction

Covid-19 pandemics have occurred almost all over the world, one of those affected by the outbreak is the economic sector that affects the lives of the people. Many people lost their jobs, businesses went bankrupt and it was necessary to find alternative businesses to survive in uncertain conditions. To restore the economy, the government needs to involve the community so that the economic situation returns to stability. For the community, Small and Medium Enterprises (SMEs) are an alternative to improve living standards in the family environment. The need for the role of society to develop SMEs need to measure performance, evaluate services and customer satisfaction related to products. Several approaches can be used to measure, evaluate, and develop products. Several approaches have been used in previous research in various areas of the SMEs industry to identify consumer needs, analyze and determine improvements based on priorities for service quality, and Quality Function Deployment (QFD) can be used for product development.



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Almost all countries in the world are experiencing a Covid-19 pandemic. One of the countries that is not immune to the COVID-19 pandemic is Indonesia. Countries located in Southeast Asia are also experiencing the COVID-19 outbreak. The impact of the COVID-19 pandemic has occurred in all sectors, one of the most influential sectors is the economy, which affects people's lives in Indonesia. Due to the Covid-19 pandemic, manufacturing industry sector experienced a decline in production and stock prices experienced a sharp decline, so many lost their jobs [1]. One of the industrial areas dominated by the manufacturing industry experienced layoffs due to various factors, such that, workers affected by layoffs had to continue to earn income to survive. One alternative to still have an income is to open a business and one form of business that is carried out is SMEs. SMEs are one of the pillars of the community's economy and a pillar of economic revival in Indonesia.

In running a SMEs business, of course, there are many obstacles, both internal and external. External constraints can come from consumers, including satisfaction with products and services. This will affect the business. Constraints are problems that must be resolved in order to find a solution. In running a business, when a problem arises, it needs to be resolved for the continuity of the business being run. For this reason, it is necessary to evaluate to find out the weaknesses of the business being conducted. The evaluation is conducted as a result of the community's evaluation of the products produced, one of the evaluations using the method of QFD for product satisfaction and customer service. The quality function application method is widely used in research. In addition to evaluating product and service satisfaction, the method can also be used for product development. Product quality cannot be known without evaluation. To be able to evaluate a product, the consumer knows how the product is. To determine product quality, customer needs are identified by determining quality characteristics that are then converted to product design using the QFD method [2]. In the study, the QFD approach uses a 3-phase methodological framework by identifying user needs, customer voice, VOC data processing; develop a fuzzy method based on reference comparisons to determine the relative importance of consumer needs in anticipation of uncertainties related to respondents' qualitative assessments and performance importance analysis to determine improvement priorities for customer satisfaction.

2 | Research Method

This research is conducted by seeking information sources through various national and international journals related to the study of literature, theory and concepts, which can be used as a the framework of thinking in this research is focused on the service industry. In this literature review, a systematic literature review approach was used to find references appropriate to the field of study [3]. As a first step in research, a framework for thinking in a literature review is needed as shown in the following *Fig. 1*.

The framework of thinking in this research is focused on the service industry, so that the theories, concepts and results of previous research related to the service industry in various fields are still relevant to the research objectives. The initial step of the research is to find ideas based on the conditions of the COVID-19 pandemic that occurred in Indonesia. Collect and review references related to servqual. The results of this literature review become one of the guidelines in research that is used to analyze service quality and customer satisfaction on the performance of the SME service industry. Collecting references after finding research ideas. The research idea is based on the conditions of the covid-19 pandemic that occurred in Indonesia.

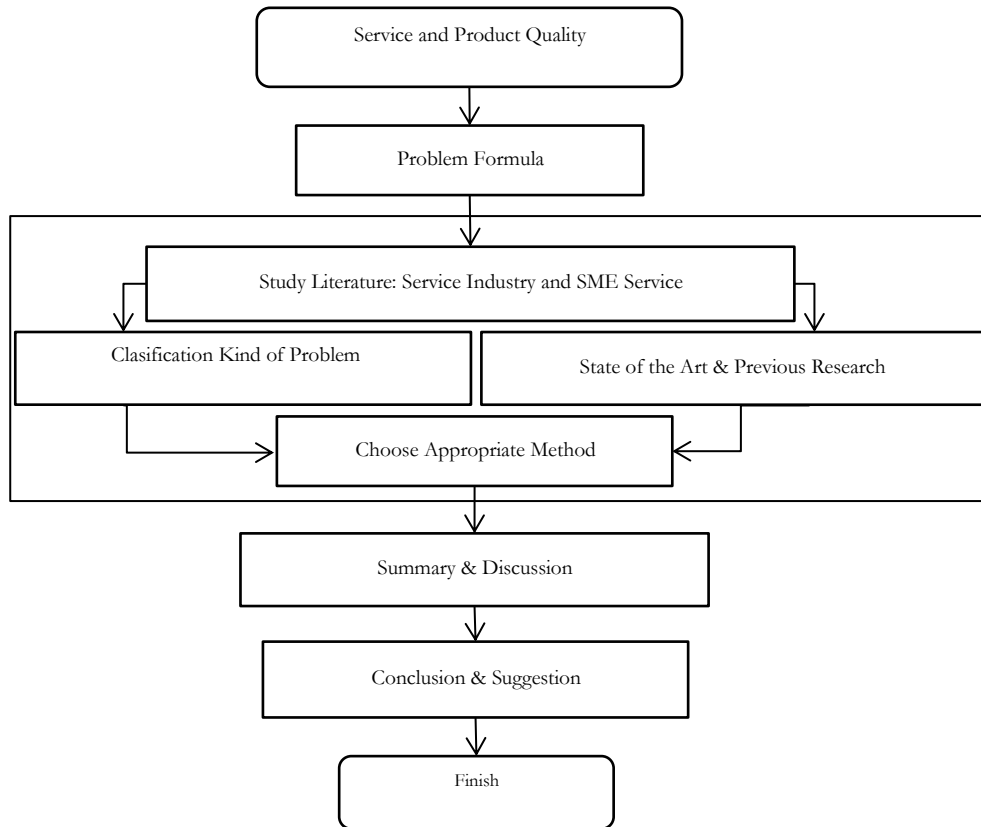


Fig. 1. Study framework.

The literature review is taken from journals published in the last 10 years and 1 reference for 10 years. Journals are taken from Google Scholar and Scopus as well as journal managers where the results of this research will be published. Previous research is a reference that forms the basis of further research, some previous research in the service sector that is a reference is listed in the following table:

Table 1. Previous research.

No	Researcher	Method	Result
1	Anggraini et al. [4]	SWOT, QFD, 4P marketing Mix	QFD, marketing mix and SWOT can analyze product attributes that are priorities for evaluation.
2	Fadillah [5]	Servqual, Interest Performance Analysis (IPA), Customer Satisfaction Index (CSI)	Servqual, IPA, CSI are methods for testing and analyzing services and prioritize for improvement.
3	Farhatan and Harisudin [6]	QFD	Prioritization improvement on technical requirements with the QFD approach.
4	Alfatiyah [7]	Servqual, QFD	The results of identification, evaluation and analysis using Servqual and QFD approaches show that service quality with the lowest percentage level is a priority for improvement.
5	Lukman and Wulandari [8]	QFD	Prioritize the improvement of quality attributes and customer satisfaction based on the results of analysis using KANO and QFD methods.
6	Rotar and Kozar [9]	KANO	Measuring consumer satisfaction and desire can use the KANO method.

Table 1. Continued.

No	Researcher	Method	Result
7	Septariadi et al. [10]	KANO, servqual, QFD	For culinary products, the QFD method can help identify critical product attributes that are improvement priorities.
8	Marisa and Darmawan [11]	QFD, Servqual, IPA	Technical requirements with the QFD method are a priority for improvement proposals in improving service quality.
9	Kurnia and Listanti [12]	QFD	Product development according to user demand is a priority based on technical requirements with QFD method.
10	Wibawa et al. [13]	Servqual, KANO, QFD	Improvements are prioritized in the field by identifying attributes to improve the quality of service to customers.
11	Rahmawan [14]	QFD	In the field of education, competencies have a strong relationship with the abilities of students according to the needs of the company.
12	Yolanda et al. [15]	CSI, IPA	To increase the level of consumer satisfaction, product taste, sales promotion, payment, display, labels become a priority.
13	Ginting and Yazid Ali [16]	KANO, QFD, Triz	The implementation of KANO, QFD and TRIZ methods is the right tool for improvement to improve the quality in the field of educational services.
14	Song et al. [17]	QFD	QFD is an approach to analyzing the quality of customer service.
15	Ishak et al. [18]	QFD, value engineering	To improve product quality and development, it can be done with QFD approach and value engineering to evaluate appearance related.
16	Purba et al. [19]	QFD	The composition of chocolate content is a top priority in product development based on evaluation by QFD method.
17	Pourkhandania et al. [20]	QFD, servqual	Technical requirements become an improvement priority based on analysis with a combination of Servqual, QFD and Fuzzy.
18	Syamsul Anwar et al. [21]	QFD	In culinary products, taste, variation and technical response are the priority of improvement based on the QFD method.
19	Cetinkaya et al. [22]	QFD	QFD is used in education to analyze course requirements in industrial engineering study programs to enhance learning.
20	Popoffa and Millet [23]	QFD, CSP	The implementation of QFD can be used to know the needs of consumers, products accepted by the community to improve sales performance.
21	Rif'ah et al. [24]	QFD, KANO	The Kano method concludes that the preferred consumer attributes are product quality visually, taste, texture, and aroma.
22	Prasad and Chakraborty [25]	QFD	QFD-based applications can be integrated to know the customer's voice in material selection.
23	Gangurde and Patil [26]	QFD, Canoeing	The priority of repairs based on technical needs and user voice is the result of identification with the level of importance through QFD.

Table 1. Continued.

No	Researcher	Method	Result
24	Sukmaningsih and Sri [27]	VE, QFD	The integration of VE and QFD can translate the emotional and functional needs of consumers into product development and consumer desires.
25	Xie et al. [28]	QFD, ANP, Fuzzy	Factors influencing customer satisfaction assessment are technical characteristics and consumer voice.
26	Nindiani et al. [29]	IPA	To determine the status of indicators related to product and service quality using the IPA method and generate improvement priorities to product quality, and service quality that are in quadrant A.
27	Hallencreutz and Parmler [30]		One of the indicators that influences a company's image is customer satisfaction.
28	Mensah and Mensah [31]	Servqual	Service quality has a significant effect on customer satisfaction, but customer satisfaction does not affect service quality for not repurchasing.
29	Chen et al. [32]	IPA KANOE	Effectiveness of KANO implementation methodology, IPA recommends optimal service strategies.
30	Ali et al. [33]	Customer satisfaction	The impact of technical and functional service quality on customer satisfaction and loyalty is influenced by privacy issues in online meetings.
31	Kowalik and Klimecka Tatar [34]	Servqual	The results of the analyzed processes form the basis for continuous improvement, so that service quality can be implemented into process management.
32	Medberg and Gronroos [35]		Service quality is a way to serve customers to focus on quality management.
33	Majid et al. [36]	Servquality	To increase customer loyalty, reputation and continuous improvement, improvement is needed from all aspects, including product quality, services, and corporate image.
34	Rachman et al. [37]	QFD	The basis for formulating real customer needs and customer complaints can be met with suggestions from the identification of technical features and critical parts.
35	Ramya et al. [38]	Servqual	To meet customer expectations more efficiently and effectively, consistency in serving customers is required by maintaining the quality of services and products.
36	Saragih et al. [39]	SWOT QFD	For product development according to customer expectations, a strategy to determine attributes based on a priority scale is required.
37	Fajri Hasibuan [40]	Fuzzy servqual	Consumer evaluation wants to prioritize improvements on the quality dimension of empathy criteria.
38	Permata and Dwiyanto [41]	QFD, IPA	Quality improvement on technical attributes is a priority, while customer requirements attributes are based on performance analysis of importance.
39	Mohammad Salameh et al. [42]	Servqual	Customer satisfaction is greatly influenced by the quality of service, but the effect can vary according to the level of technological advancement.
40	Tuncer et al. [43]	Servqual	Customer satisfaction is influenced by the quality of service so that it becomes a positive value in customer evaluation.
41	Scheidt and Chung [44]	Servqual	To improve customer service, it is necessary to measure and analyze KPIs so that they are more effective.

Table 1. Continued.

No	Researcher	Method	Result
42	Dam and Dam [45]	Servqual	Customer satisfaction and customer loyalty to service are interrelated.
43	Lukman and Wulandari [8]	Canoeing QFD	Product development prioritizes technical response and consumer demand.
44	Ingaldi and Ulewicz [46]	Servqual IPA	Servqual's approach to analysis and evaluation of service quality in general and improvement priorities are based on the results of the introduction with IPA.
45	Situmorang et al. [47]	QFD	Factors related to service quality become a priority for improvement.
46	Rottie et al. [48]	Dinerserv ZOT QFD	Technical service and response is a priority for improvement.
47	Ainu Syukri [49]	CSI	The highest gap between consumer expectations and service perceptions is a priority for improvement.
49	Berkes [50]	FIRE	Significant dimensions in the form of comfort in the culinary area become a priority for improvement.
50	Tursch et al. [51]	TRIZ QFD	The TRIZ method can shorten the process while QFD is capable of translating the user's wishes.
51	Jamilatur et al. [52]	QFD	Technical requirements in the production process are a priority for improvement.
52	Gozaly and Talar [53]	Servqual IPA	Consumer demand affects the quality of service.
53	Ginting et al. [54]	QFD	The results of the literature review indicate that the QFD method shows effectiveness in quality and product management.
54	Dyana et al. [55]	QFD	The results show product quality (taste) is a priority for improvement.
55	Nurwulan et al. [56]	Servqual	Research using the servqual method shows that customer perceptions of service are not in line with expectations.
56	Novrianto [57]	IPA	The results of the analysis with IPA show that the quality of service on the physical dimension is still unsatisfactory.

3 | Literature Research

KANO

Use of KANO method can identify the attributes that have the most influence on customer satisfaction, while QFD can identify priorities in improving product quality [8]. To know the properties desired by customers and the magnitude of their influence, it is necessary to analyze them first. One of the suitable methods used is a combination of KANO and QFD methods, an attribute that is an improvement priority is an important attribute for the user. For culinary products, the KANO method concludes that the preferred consumer attributes are product quality visually, taste, texture, and aroma [24]. Combination of KANO, QFD and TRIZ methods is a suitable improvement tool to improve the quality of educational services [16], while the KANO method is generally used to measure user satisfaction and desire [9].

Table 2. KANO assessment.

Customer Requirements		Disfunctional				
		1 Like	2 Must be	3 Neutral	4 Live with	5 Dislike
Functional	1. Like	Q	A	A	A	O
	2. Must be	R	I	I	I	M
	3. Neutral	R	I	I	I	M
	4. Live with	R	I	I	I	M
	5. Dislike	R	R	R	R	Q

Step 1. Answers between functional and non-functional were combined for each attribute of the number of respondents.

Step 2. Convert the answers into the forms A, M, O, R, Q, and I, then calculate the components in each question.

Step 3. Using the Blauth formula, define the KANO category for each attribute.

Step 4. After calculating by category, the customer satisfaction coefficient is sought by the equation.

$$\text{Better Satisfaction) = } \frac{A + O}{A + O + M + I} \cdot$$

$$\text{Worse ketidakpuasan) = } - \frac{O + M}{A + O + M + I} \cdot$$

Servqual

Service quality has a significant effect on customer satisfaction, but customer satisfaction does not affect service quality for non–repurchase [31]. Service quality to customer satisfaction and loyalty is influenced by privacy in online meetings [58]. The outcome of a process becomes the basis for continuous improvement, so that service quality can be implemented into process management [34]. To increase customer loyalty, reputation, and continuous improvement, it is necessary to improve all aspects, including product quality, services, and corporate image using the servqual method [36]. Servqual can also be used to meet customer expectations more efficiently and effectively, it requires consistency in serving customers by maintaining the quality of services and products [59]. Evaluation of customer satisfaction with fuzzy and servqual methods is used to determine the priority of improvement on the quality dimensions of the combined servqual and fuzzy empathy criteria [43], [40]. The level of technological advancement also significantly affects customer satisfaction [42]. To improve customer service, it is necessary to measure and analyze KPIs so that they are more effective [44]. Customer satisfaction and customer loyalty to service are interrelated [45].

Servqual is a service quality model as a reference in service management and marketing, developed by Parasuraman with the term gap analysis model related to customer satisfaction and known as the five main gaps of servqual [56]:

- I. Gap 1 is the gap between customer expectations and management perceptions (knowledge gap).
- II. Gap 2 is the gap between management's perceptions of consumer expectations and service quality specifications (standards gap).
- III. Gap 3 is the gap between service quality specification and service delivery (delivery gap).
- IV. Gap 4 is the gap between service delivery and external communication (communication gap).
- V. Gap 5 is the gap between perceived services and expected services (service gap).

The research variables were arranged with servqual based on five dimensions of quality and the number of respondents was determined based on the following equation [53].

$$n = \pi(1 - \pi) \left(\frac{Z}{E} \right)^2,$$

n = Minimum number of samples.

Z = Standard normal value according to confidence level (with a 95% confidence level, $Z = 1.96$).

π = Population share (0.5).

E = Maximum allowable error (10%).

Importance Performance Analysis

The significance performance analysis method was first developed by Martilla and James [60] with the aim of measuring the level of consumer satisfaction with a product or service in various fields [41]. One area that is now widely used by the public in online meetings, service quality, and customer satisfaction is influenced by privacy concerns during online meetings [58]. In its development, the IPA method is combined with servqual and CSI to test and analyze, as well as determine service priority improvements, based on customer satisfaction levels [5], [15]. The gap between consumer expectations and perceptions of service and product quality is a priority for improvement based on an analysis using IPA method shown in quadrant A Cartesian diagram [29], [49]. Meanwhile, significant dimensions in the form of comfort became a priority for improvement [61], the results of the analysis with IPA show that the quality of service on the physical dimension is still unsatisfactory [57]. Service quality is a way to serve customers to focus on quality management [35] and consumer demand affects the quality of service [53]. Servqual's approach to analysis and evaluation of service quality in general and improvement priorities are based on the results of the introduction with IPA [46]. Effectiveness of KANO implementation methodology, IPA recommends optimal service strategies [32]. The data needed for IPA analysis, by spreading questionnaires on level of importance and average level of expectation value of service and product quality are described in following formula:

$$\bar{X}_1 = \frac{\sum_{i=1}^k X_i}{n}.$$

\bar{X} = Average score of satisfaction level.

\bar{X}_i = Respondent satisfaction level score to-i.

n = Number of respondents.

$$\bar{X}_1 = \frac{\sum_{i=1}^k X_i}{n}.$$

\bar{Y} = Average score of importance.

\bar{Y}_i = The score of the respondent's importance level to-i.

n = Number of respondents.

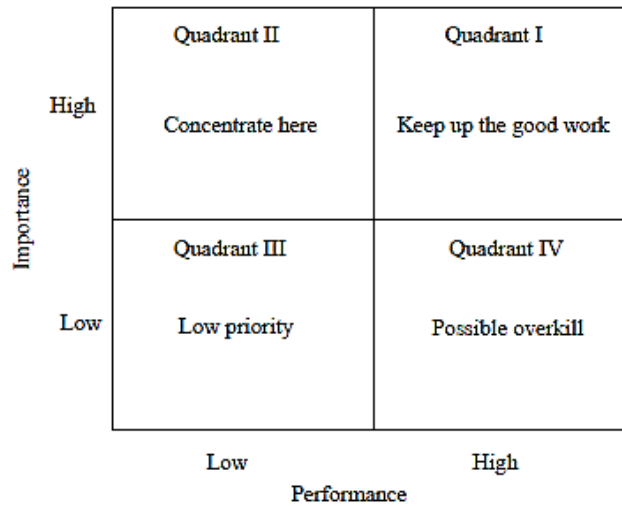


Fig. 3. Traditional IPA matrix [32].

The attribute elements in the IPA diagram consist of 4 quadrants. Quadrant I (top priority), this quadrant contains attributes that are considered important by customers, but these attributes have not met customer expectations or the level of customer satisfaction is still far from expectations. Attributes that are in this quadrant are a priority for immediate improvement. Quadrant II (maintain achievement), this quadrant contains attributes that are considered important by customers but are in line with expectations or customer satisfaction is already better than the attributes in quadrant I. This quadrant is in a category that must be maintained and maintained. Quadrant III (low priority), this quadrant contains attributes that are considered less important by customers and in fact the performance is not too special. Quadrant IV (excessive), this quadrant contains attributes that are considered less important by customers and even excessive, so that the attributes in this quadrant can be reduced to save costs [57].

Quality Function Deployment

The use of QFD is one of the methods used to evaluate the quality of services & products or to develop products. Currently, many service or manufacturing industries use the QFD method to develop products or to determine customer satisfaction with the products they produce. QFD method is very flexible because it is not limited to specific industries, so it can help organizations and industries in solving problems. In culinary products, taste, variation, and technical response are priority improvements based on the QFD method [21].

The basis for formulating real customer needs and customer complaints can be met with recommendations from the identification of technical features and critical parts in the sale of clothing [37]. In addition, a combination of QFD and other methods can be an alternative in product design selection to produce the best concept solution by selecting a combination score, including QFD, competitiveness (quality function–AHP), development design efficiency (data envelopment analysis-DEA) [62]. QFD is a method for organizations or companies in developing and improving product quality according to consumer expectations [63].

House of Quality

The target value and the benchmark approach with the QFD approach are determinants in determining the level of importance of each variable. To improve service quality using House of Quality (HoQ) method, obtain percentage value and weighted value with improvement priority starting from the lowest percentage level variable [6], [7] and priority for SME cuisine evaluation with SWOT, QFD and marketing mix [4]. Priority for improvement based on technical needs and user voice is the result of identification with the level of importance through QFD and KANO [25], [64]. QFD helps identify critical product attributes, service quality, development, and areas of improvement to improve customer service quality, which is a

priority improvement [10]–[13]. Technical requirements are a priority for improvement based on analysis with a combination of servqual, QFD and Fuzzy [52], [65], and quality and products [18]. QFD is an approach to analyze the quality of services & consumer desires [17], [51]. QFD method can identify the quality of taste in beverages, which is key in product development based on QFD method evaluation [19] for product development according to customer expectations, strategy for attribute determination based on priority scale [39] is required. QFD implementation can be used to know consumer needs, products accepted by society to improve sales performance [66]. QFD education is used for analyzing course requirements in industrial engineering study programs to enhance learning [66]. QFD-based applications can be integrated to find out customer voice in material selection [25]. Factors related to service quality are priorities for improvement [3]. The integration of VE and QFD can translate the emotional and functional needs of consumers in product development and consumer desires [27].

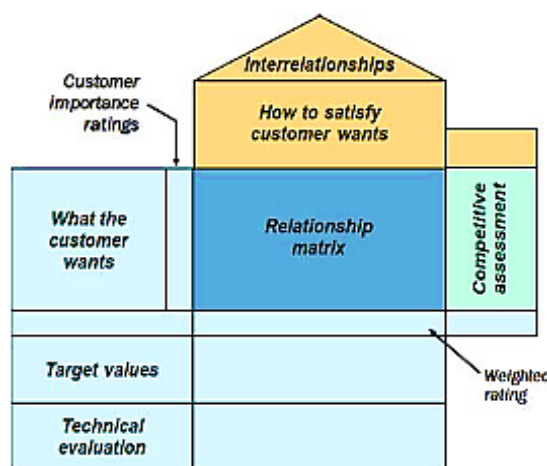


Fig. 4. Quality house [67].

4 | Result and Discussion

Several methods can be used to determine service quality in the service industry. In a literature review, the KANO method developed by Noriako [68] can identify customer desires by taking several steps to evaluate answers between functional and non-functional and using the Blauth formula. Servqual is known as the top 5 gaps or gap analysis model related to customer satisfaction. Gap 5 is a gap that is often used in the analysis of customer satisfaction because one of these gaps is related to the perception of service. Importance Performance Analysis (IPA) is used to measure customer satisfaction, test, analyze, determine several attributes that are priority for improvement based on the highest gap between consumer expectations and perceptions depicted in the Cartesian diagram in quadrant A. Furthermore, QFD analysis is carried out to determine the highest level of importance which is a priority for product/service improvement or development. QFD is not limited to any particular industry, making it more flexible to solve service, product and development related issues. QFD is described in the form of a HoQ which consists of customer requirements, planning matrix, technical requirements, communication matrix, and technical evaluation.

5 | Conclusions and Recommendations

To determine performance of the service industry, several methods can be used. One of KANO's approaches to functional dysfunctional assessment is by identifying customer desires based on attributes that have a significant influence on customer satisfaction. Servqual, with a 5 gap analysis model for customer satisfaction analysis, IPA can be used to measure, test, analyze and determine service priority improvements based on the highest gaps that are in quadrant A of the Cartesian diagram, while QFD can be used to determine priority improvements based on the highest value obtained of the relationship between customer need and technical response. In addition to evaluating service and product quality,

QFD can be used when developing or innovating and is not limited to the service industry but can be used to develop manufacturing industry products. To improve performance, several approaches such as KANO, Servqual, IPA, QFD are references in measuring, evaluating and developing as well as continuous improvement.

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