Framework of Service Quality Evaluation in Supply Chain Management Using Integration of SERVQUAL, Kano and QFD in Cigarette Company XYZ: A Literature Review

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Abstract. Service quality is one of the essential values in Supply Chain Management (SCM). One of the elements from SCM is retailers. Both in principle and in practice, retailers must receive a good quality service from the producers or distributor so that the retailers then would not switch to other producers. The same system also applies to SCM practices in cigarette companies. As the largest tax contributor in Indonesia, cigarette companies certainly have a lot of demand which in one way or another has an impact on the large number of retailers needed with the objective that, for example, the consumers can enjoy the company's cigarette products with utmost satisfaction. A lack of evaluation of service quality in cigarette companies can lead the retailers' complaints. This research methodology is Systematic Literature Review (SLR). Objective of this present study is to provide an applicative framework for evaluating and improving service quality with integrate SERVQUAL, Kano and QFD methods. Besides, this integration of methods helped the researchers qualify analyses and also weighed in on the attributes that will be prioritized for improvement. In conclusion, cigarette companies must evaluate and improve service quality to build a good working relationship between the producer and the retailers.

Keywords: SCM, SERVQUAL, Kano, QFD, Cigarette Company

1. Introduction

The development of industry 4.0 gave birth to supply chain management that can help companies meet customer satisfaction. Susanto [1] explained that supply chain management is a series of activities that are integrated from the process of procuring materials and services to converting them into semi-finished goods or finished goods to be distributed to consumers. One of the values of supply chain management is satisfaction [2]. The existence of a series of integrated supply chains aims to meet customer satisfaction. Consumer satisfaction is not measured by the product alone, but also by the quality of the service.

This is reinforced in a study [3] which explains that customer satisfaction is obtained from the aspect of the quality of the service it receives. Evaluating and improving the quality of company services can be one of the strategies in supply chain management. In supply chain activities, there is also the involvement of many parties who are synergized and coordinated with each other–one of which is retailers [4]. The existence of good cooperation between business actors in the supply chain can produce added value that is more optimal.

The success of a company is also determined by the dependence activities of the retailer with the company [5]. In order to continue to have a good working relationship, the company is constantly updating itself in order to meet retailer satisfaction. Many manufacturing choices allow retailers and consumers to switch and choose manufactures with the best quality products and services. Therefore, improving service quality is one of the strategies in the company's supply chain management. The improvement strategy must be based on accurate data so that it can be measured and then corrected appropriately. Data sources are taken directly from retailers so that data analysis is in accordance with real conditions in the field.

Based on the description above, it can be seen that the evaluation and improvement of services are very important to research. Improving service quality can have a positive impact in the form of establishing good business relationships between companies and retailers. On the academic side, research on the evaluation and improvement of service quality has not been done much, especially in manufacturing companies, namely cigarette companies. In this way, this present research can contribute to the development of related research in the future.

In a study conducted by Pahlawan et. al [6], it was found that Makassar drinking water supply companies needed a better supply chain activity improvement. Improving supply chain management performance is the key to customer satisfaction and company performance. The management strategy that will be carried out is to improve the quality of service and quality of drinking water. This has an impact on improving the quality of supply chain management and customer satisfaction which automatically improves company performance.

The importance of paying attention to service quality from companies to retailers was also emphasized in the research conducted by Kempa and Janitra [7]. The study explains that retailers are an important part of a series of supply chain activities. Fostering a sense of trust and commitment to retailers can be formed from the satisfaction received by retailers from the service they feel. Thus, the lack of research on the evaluation of service quality in manufacturing companies, namely cigarette companies, then prompted the researchers of this present study to research on this matter by relying on the integration of SERVQUAL, Kano Model and QFD in order to provide some suggestions for the necessary improvements of PT. XYZ.

Cigarette companies are one of the highest tax contributors in Indonesia [8]. The high demand for cigarettes undeniably makes cigarette companies to have a major contribution to workforce absorption [9]. The level of worker welfare must be kept in mind so that workers produce good performance in accordance with the company's vision and mission [10]. One example is providing quality services to retailers. If this happens, the retailer's satisfaction level will be high and will have an impact on long-term work relationships. Therefore, the existence of cigarette companies can still be calculated, improved and researched.

One method that can be used to get retailer responses about service quality is the SERVQUAL method. The advantages of SERVQUAL compared to other methods are [11] as follows: 1. It helps in knowing the value of the gap (value of service quality) of each requirement attribute; 2. How expectations and how customer satisfaction are in relation to the services provided; and, 3. Which attributes the focus of further improvement should be. The SERVQUAL method has become the standard for assessing various dimensions of service quality. Various studies have shown that the SERVQUAL method is valid for various service contexts and the questionnaire is reliable. This means that the questions are perceived to be the same by different respondents.

Five dimensions in this method will help researchers to see the gap between expectations and perceptions of retailers on the quality of services provided by the company. The use of SERVQUAL sometimes leads to an irregularity in the relationship between retailer satisfaction and service level delivery [12]. The Kano model can help to overcome this by classifying the attributes of the dimensions in SERVQUAL based on their effect on customer satisfaction. The advantage of this model is that it allows researchers to predict certain behaviours by creating surveys based on the classification of quality elements that have been determined by getting implicit or explicit conclusions from various segments

of the population [13]. The Kano model aims to categorize the attributes of a product or service that is able to meet the customers' needs in several categories.

Furthermore, the data will be processed by the Quality Function Deployment method [14]. QFD is a method for planning and developing structured products. Researchers can clearly define customer wants and needs. The proposed service evaluation process is formed systematically to meet consumer needs. QFD was developed in order to guarantee suggestions for improvements that can satisfy retailers' needs or desires.

The three methods above are rarely used in examining the level of service quality in manufacturing companies, especially in cigarette companies. The importance of developing research in the future was also emphasized by Meng [15] in relation to service quality in order to integrate the three models in manufacturing companies. Data in the field shows that the cigarette company PT. XYZ has not conducted a structured evaluation and improvement which resulted in the repair process not being carried out properly. The result of this research is an analysis of the improvement of service quality at the cigarette company PT. XYZ in Indonesia. The conclusion of this study is that cigarette companies must evaluate and improve the quality of services for retailers to grow and develop their companies.

2. Methods

The approach used in this research is systematic literature review [16]. The aim is to find gaps in previous research related to service quality in supply chain management. The research was conducted by collecting, extracting and categorizing sources related to the theme of service quality. Furthermore, this review will result in the similarity of research data from several sources so that gaps in research that have not been studied could be indicated and investigated.

The data source that this research uses is primary and secondary data. Primary data were obtained from unstructured interviews with respondents from the cigarette company PT. XYZ. Secondary data were obtained, on the other hand, through literature review, review of previous research and various related sources. The similarity of data between the research gap and the data in the field interests the researchers to review more thoroughly about the evaluations and suggestions for improvement of service quality at the cigarette company PT. XYZ in Indonesia.

This literature review is carried out by looking into several published research articles which were made accessible through Google Scholar, Science Direct, National Library and LIPI with the specified keywords. The published articles span from years 2015 to 2021 which can be accessed in full text in pdf format. The literature review below will discuss supply chain management, service quality, integration of SERVQUAL, Kano and QFD. The number of articles obtained is thirty-one (31) in total which all are relevant to the research topic. There are five (5) main articles to be compared by considering the following things: year of publication, method, quality of company service, customer or retailer satisfaction.

The integration of the SERVQUAL, Kano and QFD methods will make it easier for the companies to collect and filter customer satisfaction information. The attributes that have been created will be tested using SERVQUAL and the Kano Model. Attributes that have negative satisfaction scores or values and are attractive attributes or in one dimension will be reprocessed. The satisfaction score will be multiplied by the Kano attribute weight. The results will be added up and submitted to Pareto. The attribute that is included in the highest cumulative score is 80% because Pareto is included in the quality of the house [17]. The "what" area contains attributes in a cumulative 80% Pareto. The "how" is filled with the voice of the engineer and can provide an alternative in the "what" field. The relationship matrix shows the relationship between "what" and "how". The most important "how" in relation to "what" would be the solution for attribute improvement. However, this framework has not been tested, especially at the cigarette company PT. XYZ. Further research is needed to implement this framework in order to be effective and efficient in improving service quality. The expected result in this research is to find suggestions for improvement from evaluating service quality according to the retailers' needs. Respondents in this study are the cigarette retailers PT. XYZ in Indonesia. The research framework used is the integration of SERVQUAL, Kano and QFD in the Cigarette Company.

3. Discussion

When it comes to literature review, the researchers of this present study observe that existing criteria conditions affect the number of articles obtained. The researchers realize that research on the topic of cigarette company service quality to retailers with the integration of SERVQUAL, Kano Model and QFD is still limited. This makes the researchers decide to expand the criteria for service quality research in all companies by including the subjects of consumers or retailers. Finally, the researchers were able to gather five (5) primary research articles out of thirty-one (31) articles. As for the specific locations which become the primary concern of this present study, the research covers these three countries, namely: Indonesia, China and Taiwan. The objects in the article include logistic services, chocolate companies, *Subway* fast food, PT Pos and machine companies. The research subjects have similarities, namely focusing on the final consumer. This article describes the effect of service quality on customer satisfaction and its impact on the objects under study. The measurement models used include SERVQUAL, Kano Model, QFD, DINERSEV and Kansei Engineering.

3.1 Supply Chain and Service Quality

One of the goals of any supply chain is to meet consumers' needs and generates profits [18]. One way of fulfilling these needs is through the satisfaction that consumers get from the quality service of the producers. In other studies, it is explained that in general the benefit of supply chain management for companies is in its ability to convert raw materials into finished products and deliver them to end consumers [19]. Another benefit is that it acts as market mediator, namely, ensuring that what is supplied by the supply chain reflects consumers' aspirations. This study shows clearly that customer satisfaction is noteworthy because it is related to the sustainability of the company.

Before the goods reach the consumers, one of the important elements in supply chain management, as stated above, is the retailers. Retailer satisfaction is important because it has an impact on the business relationship between the two–the producers and the consumers [20]. One way of assessing retailer satisfaction is through the quality of service received. If the service received does not match the retailers' expectations, of course this will consequently have an impact on the company itself which can be seen in the reducing purchases by the retailers. Another impact is that, worse, the retailers will shift to other competing companies.

3.2 SERVQUAL, Kano Model and QFD Integration

This literature review describes how the approach to SERVQUAL, Kano's Model and QFD methods can be applied to service improvements in trading companies. Evaluation of services received by the retailers can be measured cognitively, including knowledge, beliefs and information. This assessment is measured by the quality of service results perceived by the retailers. The concept used in seeing the gap between the perceptions of retailers' expectations and the services provided by the company can be the SERVQUAL concept. The main dimensions in SERVQUAL include tangibles, reliability, responsiveness, assurance and empathy [21].

In-depth understanding of customers' needs and expectations is a prerequisite for achieving customer satisfaction. As explained above, the use of the SERVQUAL method sometimes creates an irregularity in the relationship between customer satisfaction and service level delivery to consumers [22]. The KANO model can help to overcome this by classifying the attributes of the dimensions of SERVQUAL method based on the effect on customer satisfaction [23]. The quality of existing services is often not in accordance with consumers' expectations. In fact, when viewed from a traditional point of view, the level of service performance that occurs with the level of customer satisfaction is linear. This shows that there is non-linearity between existing services and customer satisfaction. Therefore, KANO distinguishes three types of service requirements or needs that affect customer satisfaction, namely must be, one-dimensional, and attractive requirements [24].

The KANO model also has a customer response category to the requirements of the service, namely indifferent, reverse and questionable. Indifferent is a situation where customer satisfaction is not affected whether the service is available or not. Reverse means customer satisfaction will decrease if service is

provided, but if the service is not provided the satisfaction will increase. Questionable is a condition where the level of customer satisfaction is inconsistent whether a service is received or not received. Cohen [25] in his article explained that QFD is a structured method that can be used in the product development and planning process to determine the specification of the needs and expectations of consumers. This method can also be used to systematically evaluate the capabilities of a product or service in order to meet consumers' needs and expectations. Another study conducted by Laricha et. al [26] stated that QFD strives to improve the quality of service required by consumers. The hope is that consumers will attain satisfaction and not disappointment. In the QFD method, consumers are involved as early as possible in the process of developing a service or product. This shows that QFD is a practice for process design in response to the consumers' needs.

3.3 Quality of Service at XYZ Cigarette Company

Service is important for companies [27]. In the context of the company-retailer relationship, service quality will be an evaluation for retailers to decide what to do next to the company, whether making another purchase or looking for another company instead. A company that never evaluates its service quality will have a negative impact on the company's development. This is because the results of the evaluation will provide information for the company regarding the development of retailers' needs so that the company can make appropriate improvements.

In the scope of the supply chain in cigarette companies, the quality of company services to retailers is important to analyze because service is part of the key supply chain process. One example that can be used is the accuracy of the distribution of goods. This is a form of service that the company provides to the retailers.

If there are errors in the process of distributing goods, there will be complaints that may have an undesirable impact on the company. Retailers' complaints can be in the form of requests for new goods or not wanting to place orders anymore. If there is a request to return goods, it will have an effect on the available inventory. If the retailer does not want to place any more orders, it will have an impact on forecasting and demand.

There are quite a lot of services in this company, but there has never been a comprehensive evaluation of whether the current services have met customer satisfaction or not. For the record, company services during the time of a pandemic will of course be treated differently as compared to normal or non-pandemic situations. Therefore, as this study suggests, it is very important for companies to evaluate and improve their quality service by integrating SERVQUAL, Kano Model and QFD methods. This research can help to target significant improvements for retailer satisfaction.

3.4 Service Quality Improvement

Service quality is very important to evaluate because it can be a measure of how much satisfaction a retailer (or consumer) has with the company. This evaluation should be carried out not only at service companies, but also at trading companies. The high level of competition causes companies to strive to provide the best service in all aspects, not only for consumers, but also for retailers. Evaluation really needs to be done not only for the satisfaction of the consumers, but also for the retailers who have a crucial role in the supply chain management process for trading companies. Table 1 contains a summary of previous research on improving service quality.

Table 1. Summary of Recent Related Research on the Integration of SERVQUAL, Kano and QFD in Manufacturing and Service Companies

CHARACTERISTICS				
Country & Author	**Method**	**Object**	**Subject**	**Results**
Indonesia; Hartono et.al	Kansei Engineeri	Logistic Sector	Logistics Service Consumers	Development of logistics services with the integration of KE, Kano and QFD resulting in improvements to the helmet system; provision of

[28]	ng, Kano and QFD			application software for submitting comments and ratings; as well as making confirmation/cancellation is considered a high priority.
Indonesia ; Lukman dan Wulandari [29]	Kano and QFD	XYZ Chocolate Factory	XYZ Chocolate Consumers	Kano can help determine the attributes that have a significant effect on customer satisfaction. QFD can give priority to efforts of improving the quality of chocolate products according to consumers' desires.
China; Meng et. Al [15]	Kano	Machine Sector	Consumers	This research produces systematic and quantitative solutions to improve service quality in the machine industry.
Taiwan; Chen et. al [30]	DINESE RV, Kano and QFD	Fast Food - Subway	Consumers	The Kano and QFD models are combined to determine the attributes of service quality elements to be improved in fast food restaurants (*Subway*).
Indonesia; Yanti dan Murni [31]	SERVQUAL, Kano and QFD	PT. POS	Consumers	This study found a gap of -1.02. This value explains that the overall service quality at PT Pos Indonesia Bengkulu branch has not met the expectations of the consumers. The results of House of Quality (HOQ) data processing: there are 11 technical responses that must be improved and enhanced.

3.5 Conceptual Framework

Based on the explanation above, it is known that the quality of service is important to be examined. This is to support customer satisfaction which of course will have an impact on the company. In order for future research to be more structured, researchers created a conceptual framework. Conceptual framework is a network of concepts that provide a comprehensive understanding of an event. The conceptual framework can be used as a foundation for further action. Conceptual frameworks are not a collection of several concepts but rather a building where each concept has an integral role [16].
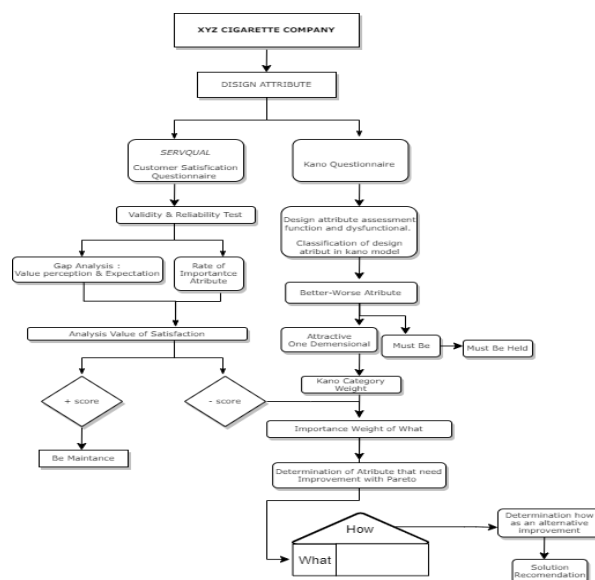
Figure 1 Proposed Service Quality Framework with Integration of SERVQUAL, Kano and QFD in Cigarettes Company Modified from Hartono [12]

4. Conclusions, Limitations and Suggestions

Service quality is important to be evaluated and improved in order to meet customer satisfaction. The literature review study strengthens previous research for improved service quality results. The gap that can be seen in the primary article sources is that there is no evaluation and service improvement in cigarette companies specifically that have come independently from the retailer subject. The conceptual framework will guide the future research process to improve service quality at the cigarette company PT. XYZ with SERVQUAL, Kano and QFD integration.

This research is limited because it only presents a gap and conceptual framework but has not conducted research directly in cigarette companies. Future researchers can carry out data collection and direct implementation for the integration of the three models in cigarette companies of national scale.

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