



Service Quality Improvement Strategy in The Auto Insurance Industry: Customer Perspective Study

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DOI: <https://doi.org/10.30880/ijie.2023.15.01.006>

Received 24 August 2021; Accepted 13 October 2021; Available online 28 February 2023

Abstract: Service quality is one of the parameters of conformity between consumers' perceived and expected services and influences the company's sustainability. In an insurance company, quality service is essential because advising quality services is important to develop more trusted engagement with the whole customers. In this study, the analysis of quality services was performed using gap analysis and quality function deployment (QFD) in auto insurance companies with intense competition. Gap analysis is required to identify the quality dimensions to be improved. While technical improvement actions are generated using the QFD method by mapping consumer needs and technical actions through the house of quality (HOQ) matrix. The results showed that using the integration of gap analysis and QFD, the auto insurance company received the gap scores and obtained recommendations for technical actions that could be adopted for continuous improvement. We propose continuous improvement by using a service blueprint to show the entire service process.

Keywords: Auto insurance, gap analysis, quality function deployment, quality improvement, service quality

1. Introduction

Most people are risk aversion, and hence they choose various insurance policies to protect themselves and their properties [1]. A risk-averse person prefers to pay a premium to the insurance company to avoid its risks and uncertainties. By paying a risk premium, an individual can insure himself against significant losses due to any risk, losses, and damage, as well as get a guaranteed or specific compensation. There will be a greater likelihood of a more risk-averse individual purchasing higher insurance coverage while also taking more extraordinary precautions to prevent any occurrence of loss [2-4].

Many insurance companies have insurance programs, such as property, health, medical, and auto insurance [5]. With a more excellent alternative and an escalating awareness, there is a perpetual increment in the customers' expectations, and they oblige more trustworthy quality service. It makes their business more competitive [6-8]. In the insurance industry that is specific and unique, proposing quality services is essential in generating a closer engagement with the whole customers [9, 10]. An insurance company should focus on enhancing service quality to obtain customer satisfaction that leads to customer loyalty. Several studies revealed that customer satisfaction mediates the relationship between perceived service quality and customer loyalty [11]. Knowing and fulfilling customer needs is closely linked with the insurance intermediaries' quality service improvement [12, 13].

This study was conducted on insurance companies with various insurance types, such as auto insurance, oil and gas insurance, and property insurance. Their most enormous premium income comes from auto insurance. The increase in transportation accidents is related to increased auto insurance sales [14]. In order to finance the losses incurred, the driver may consider purchasing auto insurance to cover risks, such as roads, driving time, weather conditions, driver fatigue, collisions, theft, or other unfortunate events [15, 16]. However, there are some complaints about the service of the auto insurance program, i.e., the service is not satisfactory, the claim process is complicated and lengthy, limited-time service, the service is difficult to reach, and others. These complaints are primarily about the company's service

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quality. Service quality improvement is an essential key issue in insurance services to customer satisfaction [17-19]. Assessing the relationship between service quality and customer satisfaction can help managers better meet customer needs by providing superior service.

Quality service is becoming a global concern that demands continuous improvement to fit the unstable environment and uncertain customer needs [20, 21]. Consequently, study related to service quality and customer satisfaction in the insurance industry has also grown significantly [22-24]. They analysed the gap between consumers' perceived and expected service quality [25, 26]. Even though it successfully identified the gap, it was less successful in determining what technical action improvements could be performed by the insurance company. Service quality requires much attention because of its intangible yet apparent relationship with customer satisfaction [27]. Therefore, in addition to determining gaps, another analysis must also establish technical improvement actions to fulfil customer expectations and needs.

Many studies have extensively used quality function deployment (QFD) to generate technical improvements regarding customer needs and expectations [28, 29]. QFD is a structured method that can specify the customer needs and evaluate the capability of the product or service to meet the customer needs [30]. With the QFD method, the company knows about the customers' expectations and perceptions of the quality that satisfies them. The objective of this study analyses the service quality and proposes technical improvement actions to improve the service quality for gaining and retaining loyal customers and maintaining the competitive advantage in the market.

This paper is organized in the following sequence: the first section is the introduction; the second section presents the literature review; the third section develops the research methodology; the fourth section presents the results and discussion; and the last section summarizes the conclusions and implications of the present paper, as well as the future research.

2. Literature Review

The insurance industry development is a substantial driver of sustainable economic growth for countries in the world [31]. Although the insurance industry is increasing in both developed and developing countries, several issues persist unclearly, one of which is how the insurance industry improves its services. The insurance industry is unique, not only providing products but also delivering an extra principal with services. Hong and Kim affirm that car repair services significantly affect customers through the car repairs quality and customer satisfaction on problem-solving repair [32]. In contrast to general, the service industry is influenced by psychological attributes such as brand and product attractiveness.

Ghobadian et al. explained that quality improvement is a vital concern for many services [33]. They developed a service quality model to examine the salient features of service quality and its determinants. Liu et al. pointed out that the number of claims is an essential indicator of service quality in the insurance industry [34]. Customers play an important role in increasing satisfaction and service quality. Hong et al. mention that car maintenance and repair services should consider a customer-focused service strategy [35]. Gera et al. analyse the direct and indirect effects of service quality, customer satisfaction, and service value on customers' integrity and behavioural effects in the insurance industry to determine the best fitting model [36]. Their study contributes to developing and verifying a hierarchical model on behavioural intentions to understand better the three encounter constructs of service quality. Arokiasamy and Hon Tat summarized a positive relationship between service quality and customer satisfaction in the automotive insurance industry [37]. They suggested measuring and improving the customer satisfaction level by improving service performance.

Previous studies have focused on improving quality through the cost function of insurance [38]. Ramamoorthy et al. explored the relationship between service quality, satisfaction, and behavioural intentions [39]. This study validates the findings of previous studies that identified reliability and responsiveness as critical dimensions of service quality in the insurance industry. Since quality is defined as meeting customer needs, product needs are essential in customer satisfaction [40]. Therefore, it is inherent to utilize a customer-focused design strategy to develop products and services to satisfy customer expectations [41].

Quality Function Deployment (QFD) is one of the quantitative methods in Total Quality Management to develop customer-driven products [42]. QFD is a four-phase structured methodology for translating customer requirements into design requirements and subsequently into part characteristics, process plans, and associated production requirements [43-45]. In QFD, the customer requirements planning matrix, also known as the house of quality (HOQ), is the first phase in investigating customer requirements and market requirements [46, 47].

There have been numerous reports of successful QFD applications in the service sector. Apornak explains that QFD presents descriptive information and expert advice to identify customer needs and translate them into interpreted needs [48]. His research paper measures customer satisfaction using service quality and QFD models in an educational institution. Awasthi et al. address the problem of logistics service quality management considering multiple stakeholders' points of view, i.e., shippers, customers, municipal administrators, city residents, traffic managers, and others [49]. They proposed a hybrid approach based on gap analysis, QFD, and AHP to improve logistics service quality. Moradi & Raissi and Camgöz-Akdağ et al. also studied quality function deployment (QFD) methodology and mathematical optimization to improve service quality in different companies' sectors [29, 50]. To the best of the

author's knowledge, there has been no research on service quality problems in the service industry, especially the auto insurance industry, that uses a customer perspective to develop structured improvements. The authors hope this research will contribute theoretically and practically by bridging the dimensions of service quality and the QFD approach in the service industry using empirical studies on the auto insurance industry.

3. Research Methods

The study began with field and literature studies to identify the problems. The data collected was a primary, form questionnaire split into two questionnaires, the open-ended question and the close-ended question from the sample related to auto insurance service. The questionnaire was arranged based on service quality dimensions: reliability, responsiveness, assurance, empathy, and tangible. The total respondents for the questionnaire were 192 respondents that were collected by probability sampling method. The respondents for the questionnaire were the customers in the auto insurance program and the company's employees from several insurance companies.

After collecting the data, the next step was processing and analyzing the data. It started by testing the questionnaire's reliability, measuring the gap, and constructing a house of quality (HOQ). A reliability test is conducted by comparing the correlation scores of question items with r tables. If the correlation score is more significant than the r table, then the attributes in the questionnaire are considered highly reliable [51]. At the same time, the gap measurement aims to calculate the service gap from perceived service received to the expected service based on the questionnaire results.

Quality improvements were analyzed using the HOQ method. It began compiling a customer's voice matrix, making a planning matrix, and determining other matrices, such as technical responses, technical benchmarks, and technical correlations to performance standards. Finally, a visualization of the concepts selected for service improvement is displayed in the service blueprint. We illustrate our research framework on a flowchart in Figure 1.

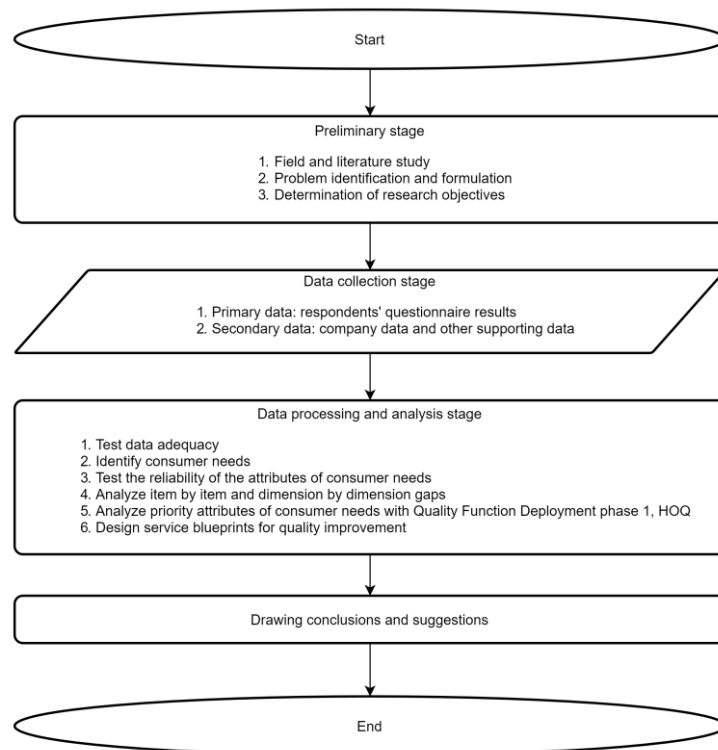


Fig. 1 - Service quality research flowchart

3.1 Service Quality

Service quality is a parameter to measure the quality of service and can be used as input to analyze the causes of service issues. Five main dimensions are used to measure service quality [52]. This study applied reliability, responsiveness, assurance, empathy, and tangible as the dimensions. Reliability is the company's ability to provide accurate services. Responsiveness is the ability of employees to help and respond to customer requests. Assurance is the behavior of employees to foster trust and a sense of security of customers towards the company. Empathy is the company's understanding and attention to the problems of its customers. The last dimension, tangible, is the physical attraction, equipment, and materials associated with the company.

3.2 Gap Analysis

Five gaps might occur in the services provided by the company to customers, as can be seen in Figure 2 [53]. They are the gap between consumer expectations and management perceptions; the gap between management perceptions and service quality specifications; gaps between service quality specifications and service delivery; gaps between service delivery and external communications; and the gap between perceived service and expected service. The last gap is Gap 5 and is often referred to as the service gap. In this study, the gap analysis used is service gap analysis.

This gap shows that the perceived service is not the same as the expected service. The score on the gap shows the value of service quality or service quality score. It can be measured through item-by-item, dimension-by-dimension, and total gap. Eq. (1) to (3) can be used to calculate the gap score.

$$Gap_i = P_i - E_i \tag{1}$$

$$Gap_k = \frac{(P_1 + \dots + P_k)}{k} - \frac{(E_1 + \dots + E_k)}{k} \tag{2}$$

$$Gap_T = \frac{(P_1 + \dots + P_T)}{T} - \frac{(E_1 + \dots + E_T)}{T} \tag{3}$$

Where Gap_i , P_i , and E_i are gap score, perceived score and expected score for each item. At the same time, Gap_k and Gap_T are gap score for each dimension and total. The results of the measurements are calculated to obtain the service quality score. If the result is positive, then the quality of service exceeds customer expectations and vice versa.

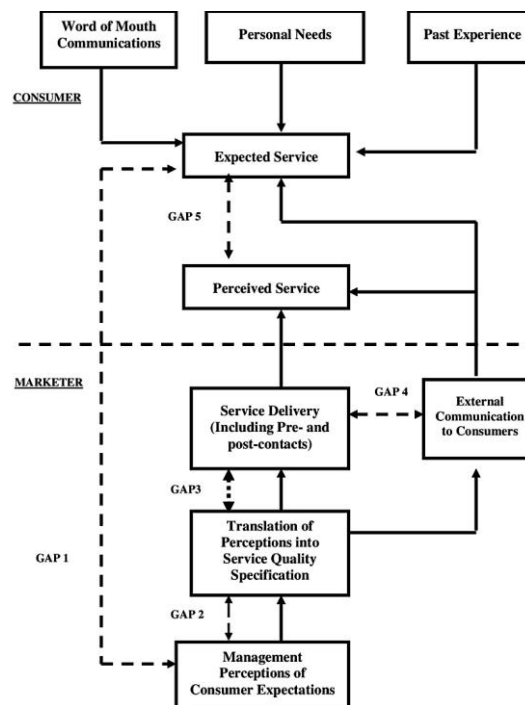


Fig. 2 - Gap analysis in service industry

3.3 Quality Function Deployment

Quality function deployment (QFD) is an approach to product planning and development structured to prioritize, improve, and determine customer wants and needs and improve processes to achieve maximum effectiveness [54]. QFD is one of the total quality management philosophy applications, including strategic product planning, part deployment, process planning, and production planning [55]. QFD is also widely applied to service quality improvement [56]. Fitzsimmons has applied the QFD concept to service companies [57]. They use the service quality instrument proposed by Parasuraman to incorporate customer input into the service design process by focusing on five dimensions of service quality. Service quality dimensions are analyzed in the house of quality matrix. From this matrix, we obtain information that can be used to design, redesign, and continuous improvement.

House of quality (HOQ) is a matrix established in the first stage of applying the QFD methodology, i.e., strategic product planning [58, 59]. This study uses HOQ to convert customer needs into technical responses or specifications of the products or services produced. The form and description of each section of the HOQ matrix can be seen in Figure 3.

There are six main rooms. The first, second, and so on are room for consumer needs, technical response, relationship, technical correlation, planning matrix, and technical matrix. The output of this analysis is determining the target score related to the product or service to be improved. It is also helpful to determine the priority of improvements that need to be done first.

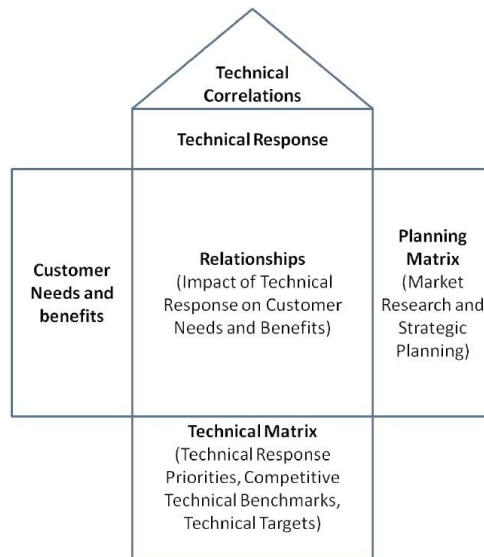


Fig. 3 - House of quality matrix

4. Results and Discussion

Results and discussion arranged based on the collected data. This section begins with identifying the customer needs to display the improvement using the service blueprint.

4.1 Demographic of Respondents

Distributing questionnaires can identify market research and customer needs [25]. In this study, 192 respondents were collected by probability sampling method. The minimum sample required using Eq. (4) was 118 samples. Thus, the number of respondents has met the minimum number of samples required [60].

$$n = \frac{N}{1 + Ne^2} \quad (4)$$

Where N , n , and e are populations, sample size, and sampling error. The questionnaire respondents were customers and employees from the auto insurance companies with 22 and 170, respectively. Most of the respondents were male (77%), aged 31-40 years (51%), and private employees (57%).

4.2 Identify of Customer Needs

The customer needs were obtained from the open-ended questions and close-ended questions. Open-ended questions aimed to know about the strength and weaknesses of the auto insurance program. The results of this questionnaire are the voices of customers that can be seen in Table 1.

The list of customers' voices is compiled as a basis for questions in the following questionnaire, the closed-ended question. This questionnaire contains customer needs. The voice of customers is interpreted into customer needs. Moreover, transforming customers' voices into customer needs was essential to ease the customer's need interpretation. Eighteen customers need formulating. Table 2 shows the list of customer needs for this study.

The respondents appraised the close-ended questionnaire regarding the importance level, expectation level, and perception of the competitor level. The importance level and expectation level measure the importance of attributes (question) and the customer's expectations from the services—the perception measures what its customers perceive. The question attributes are grouped based on the five dimensions of service quality, tangibles, reliability, responsiveness, assurance, and empathy. The dimensions were identified through the interview and discussion with the experts in the insurance companies. We additionally reviewed from literature.

Table 1 - Voice of customers for auto insurance industry

Aspects	Voice of Customers
Strengths	The calculation of the annual premium and the compensation is accurate; Many variations of the insurance program; The employee understands the insurance claims; The employee is kind enough; The employee is polite.
Weaknesses	The building lacks light and blurry signboard; The employee’s uniform is not the same dis-attractive; The vehicle’s repair for insurance claims is slow; The difficulty to contact the call center; The hotline phone is charged; Limited tow trucks; Limited substitute car during claim procedure; Limited the official workshop in many regions; Limited Marketing Program; Unprofessional behavior in vehicle repairment; The employee is unready to help customers; The employees is not fast in the registration, premium payment, and claims procedure; The difficulty to contact the partnership workshop.
Innovation & Improvement	Make the signboard larger; The employees wear the same uniform and neat; Improving in the digital services (online); The hotline services are free for 24 hours; Providing substitute car during claim procedure; Providing tow truck services; The reward system for the customers; The discount program for the customers; The safeness during the insurance claim procedure.

Table 2 - Customer needs for auto insurance industry

Code	Customer Need Attributes
C1	The employee’s appearance is attractive and neat.
C2	The building is comfortable, clean, and has a clear signboard.
C3	The annual premium and compensation calculations are accurate.
C4	Various insurance programs.
C5	The employee is skillful in the registration procedure, the premium payment, and the claim procedure.
C6	The vehicle repair of the claim procedure is fast.
C7	Twenty-four hours free hotline services.
C8	Providing substitute cars during the claim procedure.
C9	The tow truck service for 24 hours.
C10	The employee understands the claim procedure.
C11	The vehicle repair is handled professionally.
C12	The kind employees during the service.
C13	Various media advertisements of the company.
C14	The customer and vehicle protection during the claim procedure.
C15	The digital services (online) in the registration procedure, premium payment procedure, and claim procedure.
C16	The partnership workshop is contactable.
C17	The official workshop in many regions.
C18	The reward system, bonus, or discount for the customers.

After collecting the data, the next step was the reliability test. The attribute is reliable if the Corrected Item - Total Correlation $> r$ table. The value of r table (alpha = 5%) is 0.167. The minimum score of Corrected Item - Total Correlation for importance, expectation, and perception level were 0.252 (C11), 0.268 (C18), and 0.172 (C3), respectively. It can be concluded that all the attributes of the question were reliable because the score for each level is greater than 0.167.

4.3 Gap Analysis for Attributes and Service Quality Dimensions

The analysis was conducted to calculate the gap, the expectation and perception level from each attribute, and service quality dimension. The gap analysis aimed to know the gap of each attribute used in customer need for HOQ. We conducted gap analysis for item-by-item and dimension-by-dimension. Then, we calculated the total gap in this study as follows.

The gap analysis of item by item was aimed to investigate the gap in each attribute (question). Based on the reliability test, 18 attributes were calculated into the gap calculation. The gap calculation results are obtained from reducing the perception level with the expectation level for each attribute (Eq. 1). A gap in each item produces a negative score, which indicates that the expectations level is higher than the perception level. Figure 4 shows the result of the gap item analysis. The attribute that had the highest gap was C9, the tow truck service for 24 hours, and the lowest gap was C1, the employee's appearance is attractive and neat. Both have scores of -1.357 and -0.515, respectively.

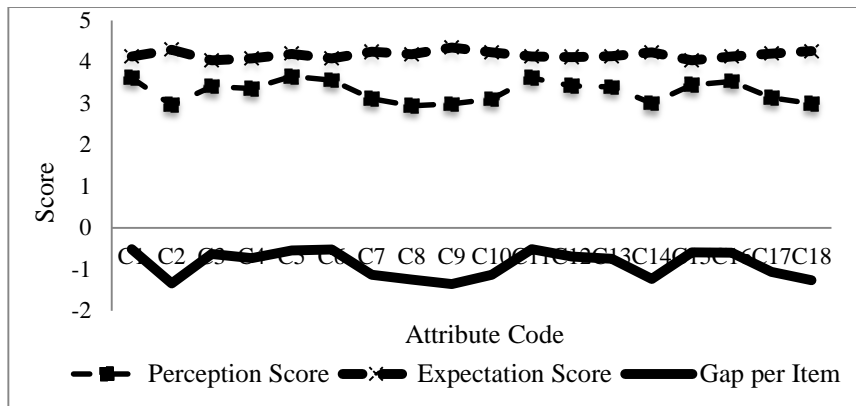


Fig. 4 - Gap item by item analysis for the auto insurance industry

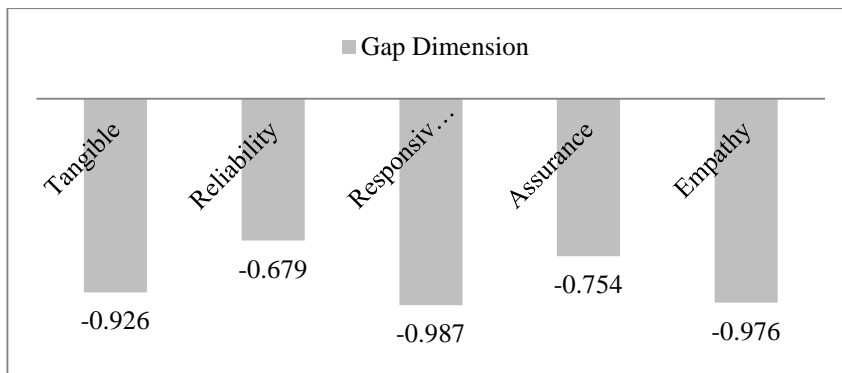


Fig. 5 - The gap of dimension by dimension item by item analysis for auto insurance industry

Furthermore, the gap analysis of dimension by dimension investigates the entire gap in the company. Figure 5 shows the gap from each dimension. For example, the tangibles dimension consists of customer need attribute numbers 1 (C1) and 2 (C2), then by using Eq. (2), the gap score for tangible dimensions is -0.926. On the other hand, the reliability dimension consists of C3 and C4. The responsiveness dimension consists of C5, C6, C7, C8, C9, and C15. The assurance dimension consists of C10, C11, C12, C13, and C14. The remaining attributes are included in the empathy dimension. The lowest gap score was in the responsiveness dimension, -0.987, and the highest gap score was in the reliability dimension, -0.679. Attributes of customer needs included in this dimension of responsiveness are the ability of employees to respond to customer requests and ease of procedures such as claims, and the company's speed in providing services. In line with the gap per item that produces a negative score, all dimensions also produce a negative gap score. Therefore, further analysis is performed in proposing improvements for all dimensions.

Lastly, the total gap analysis determines the overall gap that occurs in the auto insurance industry. Using Eq. (3), the total gap obtained for this industry is -0.880, which shows that the services provided still do not meet customer expectations. Based on the three gap analyses, it is necessary to improve the quality of its services in improving the quality of its services. Therefore, the next stage in this study is an analysis to get the best improvement recommendations following customer needs using the house of quality (HOQ) approach. The analysis was conducted with the first matrix of quality function deployment (QFD), house of quality (HOQ) [58]. The stages of HOQ in this study started from determining customer needs to determining performance standards.

4.4 Quality Function Deployment in Auto Insurance Industry

The analysis was conducted with the first matrix of quality function deployment (QFD), house of quality (HOQ). The stages of HOQ in this study started from determining customer needs to determining performance standards.

- Customer need. From the service quality analysis, all attributes of the customer need in Table 2 were passed the reliability test and had no positive value in gap analysis. Thus, all attributes could be further analysed with HOQ and can be seen in Figure 6.
- Planning matrix. The stage was continued with analyse the planning matrix. It analysed the scores from importance to customer, customer satisfaction performance, and expected satisfaction performance. Those three scores are used to obtain a score of improvement and raw height ratio. Improvement ratio measures the effort required to change the level of satisfaction obtained (customer satisfaction performance) to attribute a customer's needs and achieve the desired objectives (expected satisfaction performance). In comparison, the raw height ratio

is a score that describes the overall importance of each customer's needs based on the level of importance to the customer and the score improvement ratio. The analysis pointed that attributes C2, C8, and C9 have the highest score of 0.064. At the same time, the attributes of C5, C6, and C11 have the lowest score of 0.049.

- Technical response. The technical response was aimed at the company to realize the customer needs. It was generated through discussions with experts from the company. Nineteen technical responses were successfully generated. The technical responsibility for the auto insurance industry and can be seen in Figure 6.
- Relationship matrix. The relationship matrix has analysed the relationship between customer needs and technical responses. This matrix showed to be the priority for the improvement of the company. The relationship matrix is shown in Figure 6. For example, customer needs of C1, the employee's appearance is attractive and neat, are realized through the first, second, and thirteenth technical responses. They are employee performance standards, employee neatness standards, and the provision of employee personality training, respectively. They are the company's efforts to be able to answer customer needs.

House Of Quality		HOWs																		
		1. Employee Appearance Standards	2. Employee Neatness Standards	3. Providing New Room Facility	4. The frequency of cleaning the room	5. The position of company's signboard	6. Providing tools for premium calculation	7. Providing various insurance programs	8. The frequency of employees training	9. The partnership workshop standards	10. The number of Hotline Services	11. The number of substitute vehicle	12. 24 hours tow truck service	13. Providing Employee Self Development	14. Types of Media Advertising	15. Types of Insurance Program	16. Providing Online Feature	17. Providing List of Workshop Phone Number	18. The number of referral workshop	19. The frequency bonus for customers
WHATs	The employee's appearance is attractive and neat	⊙	⊙											⊙						
	The building is comfortable, clean, and has a clear signboard			⊙	⊙	⊙														
	The accuracy of annual premium and compensation calculation						⊙													
	Various insurance programs							⊙												
	The skilled employee in registration, premium payment, and claim procedure								⊙											
	The speed of vehicle repairing during claim procedure									⊙										
	24 hours free hotline services										⊙									
	Providing substitute car during the claim procedure											⊙								
	24 hours tow truck service												⊙							
	The online digital services in registration, premium payment, and claim procedure																⊙			
	The employee understands about claim procedure									⊙										
	The vehicle repairing is handled professionally										⊙									
	The kindness from the employees during the service														⊙					
	Various media advertisements for insurance product															⊙				
	The customer and vehicle protection during claim																⊙			
	The partnership workshop is contactable																	⊙		
	The official workshop in many regions																		⊙	
	The reward system, bonus, or discount for the customers																			⊙

Fig. 6 - Relationship matrix for auto insurance industry

- Technical correlation. Technical correlation aimed to analyze the relationship between each technical response. The relationship could be positive or negative. Figure 7 shows the technical correlation of the company. For example, employee performance standards and neat employee standards have a positive relationship because the two are interrelated. When employees look attractive and neat will provide a positive effect on customers.
- Benchmarking. The benchmark analysis was a stage that compared the insurance company to other insurance companies or the competitor. This stage aimed to analyze the attribute that could be improved or better than the competitor. Benchmarking is analyzed not only based on customer needs but also technical responses. Technical benchmarking identified the unconformity between the company's services and the competitor based on several parameters. Analysis based on customer needs shows that some of the company's attributes align with or outperform competitors, such as C1 and C3, attractive and tidy-looking employees, and accurate monthly premiums and compensation calculations. In addition, the company attributes that are also superior to competitors based on perception scores are C5, C6, C10, and C11. However, many other points must be improved to compete with other competitors to maintain its business for the long term.
- Performance standards. This room determined the technical response that must be prioritized to conduct first. It contains the expected design, standard design, and direction of improvement, as shown in Figure 8. The expected

design is the design desired by the company to improve services where the value of the design must be equal to or greater than the standard design. The assessment is carried out based on the results of discussions with company expert representatives by considering the results of previous rooms on the HOQ matrix. The attributes that have met the target and do not require improvement are employee appearance standards, room cleaning time frequency, partner workshop standards, and types of insurance provided. On the other hand, we recommend companies to improve the remaining attributes. The performance standards show 15 attributes that require improvement: the standard attributes of employee neatness, the provision of waiting room facilities, the laying of company name signs, providing premium calculation tools, and others. The improved attributes are also based on benchmarks against competitors as external factors.

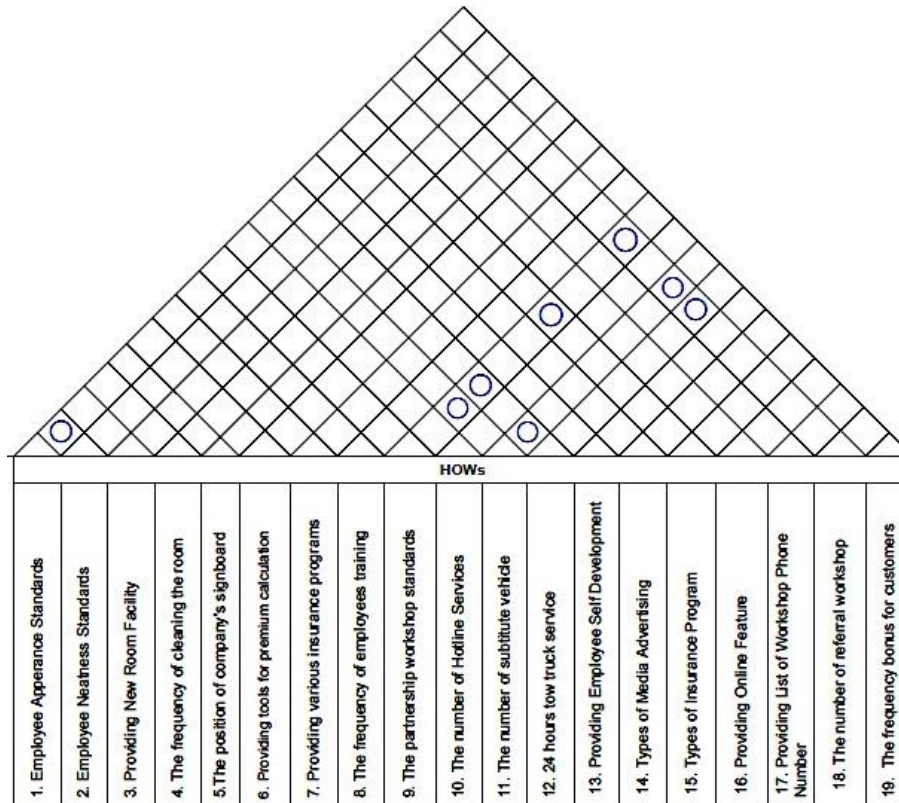


Fig. 7 - Technical correlation for auto insurance industry

House Of Quality	HOWs																		
	1. Employee Appearance Standards	2. Employee Neatness Standards	3. Providing New Room Facility	4. The frequency of cleaning the room	5. The position of company's signboard	6. Providing tools for premium calculation	7. Providing various insurance programs	8. The frequency of employees training	9. The partnership workshop standards	10. The number of Hotline Services	11. The number of substitute vehicle	12. 24 hours tow truck service	13. Providing Employee Self Development	14. Types of Media Advertising	15. Types of Insurance Program	16. Providing Online Feature	17. Providing List of Workshop Phone Number	18. The number of referral workshop	19. The frequency bonus for customers
Absolut Importance	40.8	40.8	52.4	52.4	52.4	42.2	43.6	79.8	81.3	49.8	52.1	52.4	56.6	50.8	40.9	48.5	40.8	48.0	50.6
Relative Importance	0.04	0.04	0.05	0.05	0.05	0.04	0.04	0.08	0.08	0.05	0.05	0.05	0.06	0.05	0.04	0.05	0.04	0.05	0.05
Priority	170.2	170.2	281.8	281.1	281.1	182.3	194.6	652.9	677.2	253.5	278.2	280.8	328.2	264.7	171.6	240.9	170.2	236.5	261.9
Number of Priority	18	18	4	4	4	15	14	2	1	11	8	7	3	9	16	12	17	13	10
Expected Design	Good	Good	Good	3	3	Good	Good	3	Good	3	3	2	3	Good	Good	Good	Good	Good	Good
Standard Design	Good	Good	Good	3	2	Good	Good	3	Good	3	2	2	3	Good	Good	Good	Good	Good	Good
Direction of Improvement		↑	↑		↑	↑	↑	↑		↑	↑	↑	↑	↑		↑	↑	↑	↑

Fig. 8 - Performance standards for auto insurance industry

The house of quality analysis results in Figure 8 show 15 technical items that need to be improved. In priority, the highest technical items that need improvement are employee training frequency, employee self-development training, and new room facilities. However, based on field studies and discussions with the company's expert team, we found

that improvements to the highest technical item impacted other technical items in the overall service process. An example is the frequency of employee training by providing employee self-development training and providing various insurance programs. They can be involved in the service process for the registration procedure.

Another example is the standard partnership workshop technical item with 24 hours' tow truck services and substitute vehicles. They can be included in the service process for warranty claim procedures. Therefore, we propose an improvement method at a later stage using a service blueprint. The service blueprint can describe the whole service process from the customer's perspective and improve technical items simultaneously [61]. In this case, we apply the service blueprint to propose service process improvements in the auto insurance industry.

4.5 Service Blueprints for Quality Improvement

The service blueprint was arranged based on service quality analysis, gap analysis, and HOQ output. The results of the HOQ analysis show 15 attributes that require improvement based on the importance of each characteristic and performance standard. Since many technical items need to be improved and interrelated, we propose an improvement design through a service blueprint to show the overall relationship per item of the service delivery process while keeping the customer perspective in mind. Based on discussions with company experts, we propose two service blueprints on registration and claims procedures. Figures 9 and 10 show the service blueprint for this study. It illustrates how the company, such as registration procedure and claims procedure, should provide the service. For example, there are several improvements for the claim procedure, such as 24 hours' free hotline service and the tow truck service. During the repair, the customers can claim the company. The claim can be processed full two weeks after the accident. After the claim was accepted, the customer will get compensation.

Our service blueprint shows the before (existing) and after (new) conditions using distinct squares, continuous lines, and dotted lines. New conditions are technical items that we propose based on the results of the HOQ analysis, while the existing conditions already exist in the company. However, that does not mean that improvements are not applied to existing conditions. For example, a service blueprint for employees who serve customers on registration procedures covers existing technicalities. However, it still needs improvement with the support of training or increasing the standard of employee neatness.

Recently, the number of people seeking auto insurance is snowballing as having a car insurance contract for both drivers and car owners are mandatory in many areas worldwide. Therefore, satisfying customers in every service industry plays a vital role for insurance companies. By serving the needs of their customers with superior and professional service, many insurance companies can reap huge profits. We suggest that companies, especially service providers, continuously improve their services to increase customer retention, loyalty, and company profits. Assessing the relationship between service quality and customer satisfaction can help managers better meet customer needs by providing superior service. In addition, this study can be helpful for other service companies to measure and improve their customer satisfaction level by improving service performance.

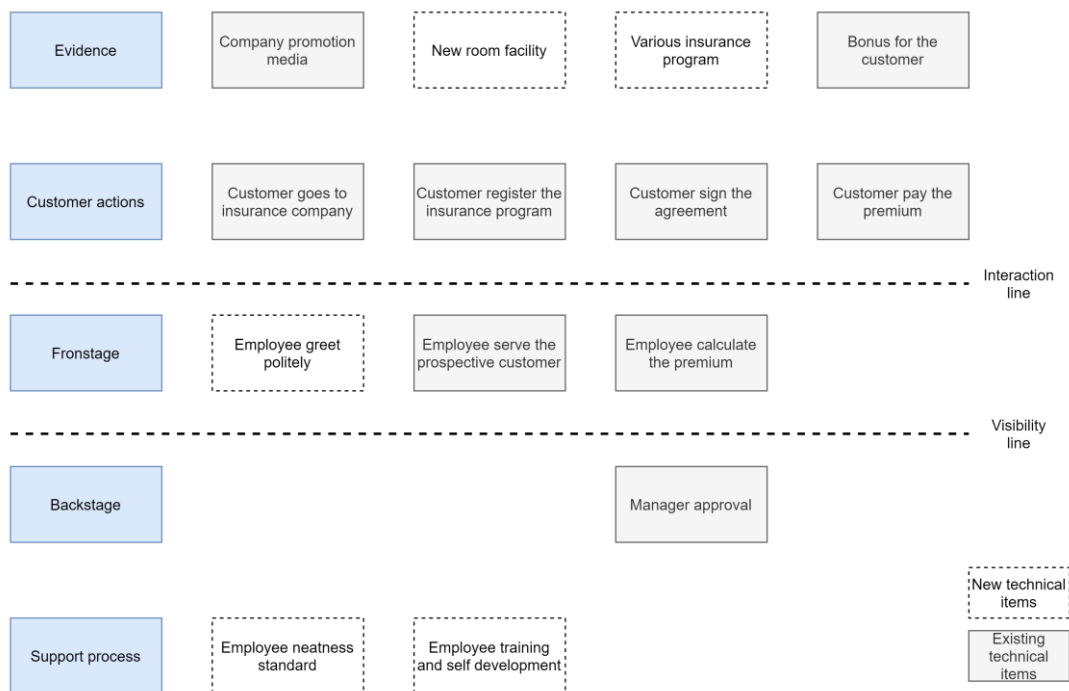


Fig. 9 - Service blueprint for the registration procedure

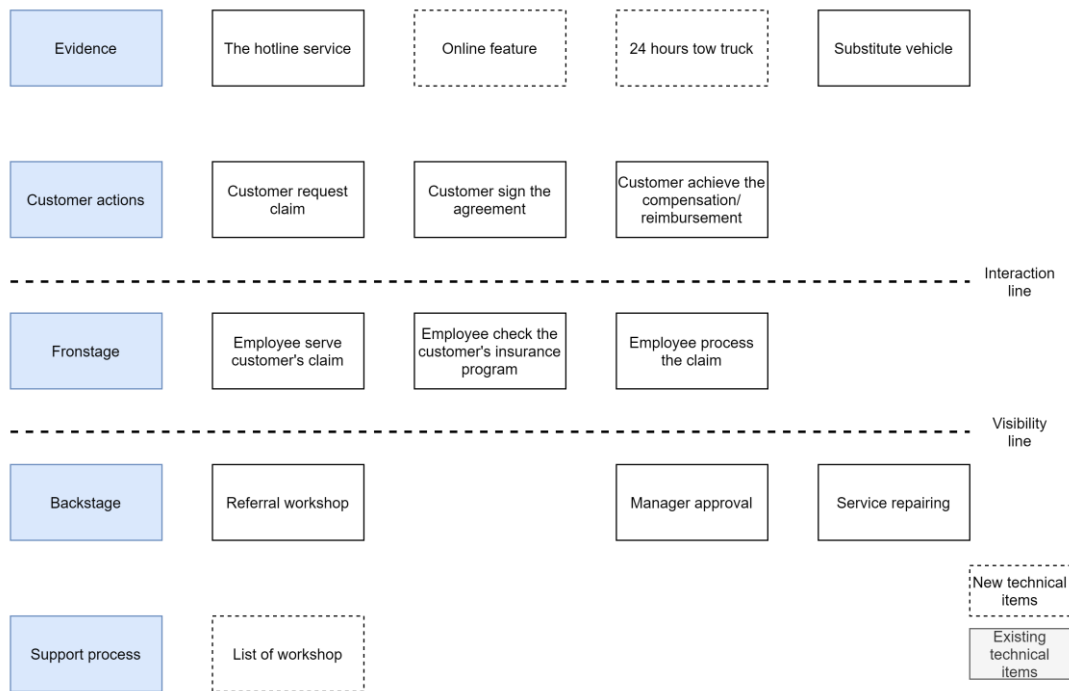


Fig. 10 - Service blueprint for the claim procedure

5. Conclusions

We propose improving service quality in the auto insurance industry by integrating gap analysis and the house of quality as part of quality function deployment in this study. Gap analysis is performed using the quality dimension by reviewing item-by-item, dimension-by-dimension, and total gap. The gap analysis results show 18 attributes with negative values and still do not meet the importance of consumer expectations. In the gap analysis item per item, the highest gap value is in the provision of 24-hour tow truck services -1,357. Meanwhile, in the gap dimension per dimension study, the highest gap value is the responsiveness dimension, -0.987. From this analysis, priority quality dimensions must be improved, which in this study are responsiveness dimensions. In this study, an example is an improvement for employee neatness standards.

House of quality analysis formulates technical responses that the company can implement to improve its services. The analysis results show 15 attributes that require improvement based on the importance of each characteristic and performance standard, i.e. the improvement of employee neatness standards. Because many technical items need to be improved and interrelated, we propose an improvement design through a service blueprint to show the overall relationship per item of the service delivery process while considering the consumer's perspective. Based on discussions with company experts, we propose two service blueprints on the registration and claim procedures.

Company management can consider the implications of improving their services as an investment in the sustainability of their businesses. This investment will also gain and maintain the competitive advantage in the market, gain new market, retain loyal customers, and cooperate in every area in the company. They should further investigate to gain conclusions valuable for both customers and insurers. Moreover, this study contributes to enriching of the literature on quality management in service improvement and has limitations. Our limitations are the lack of budget information related to company costs and revenues. In addition, exploration is limited to auto insurance and planning improvements. Future studies should investigate the effectiveness of these service improvement proposals through a gap study between companies that implement the service improvements and those that do not. In addition, it can generalize results for other insurance service processes or organizations and apply other methods to find the most effective for companies to use and assess the dynamics of service quality improvement practices.

Acknowledgement

The author expresses gratitude to Brawijaya University, Malang, Indonesia, for the remarkable support.

Appendix A: Open Questionnaire for Quality Improvement in the Auto Insurance Industry

Open Questionnaire for Quality Improvement in the Auto Insurance Industry

A. Respondent Identity

Name:

Age:

Gender:

Occupation:

Phone:

B. Please fill in the following questions based on your experience. Thank you.

1. Do you have auto insurance for your vehicle(s)?

.....
.....

2. If (1) yes, have you ever used auto insurance services?

.....
.....

3. If (2) yes, what are the advantages of the auto insurance you use?

.....
.....

4. If (2) yes, what are the disadvantages of the auto insurance you use?

.....
.....

5. If (4) yes, what improvements should the auto insurance you use make for services?

.....
.....

.....,

Signature

(.....)

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