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Service Quality, Relationship Benefit and Experience Value in the Auto Repair Services Sector

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Abstract: The purpose of this study was to analyze how service quality, relationship benefit, and experience value affect the customers' intention to maintain a long-term relationship with auto repair centers through service quality and trust. To this end, a statistical analysis was performed, based on a total of 319 survey data from customers who possess experience in using auto repair services. It was found that all factors of service quality, relationship benefits, and experience values directly influence service satisfaction and affect long-term relationship through service satisfaction. In the case of relationship benefits and experience values, however, it did not affect service trust, and the relationship benefit factor did not affect the maintenance of a long-term relationship through service trust. Consequently, it was found that in the auto repair service sector, customers consider service satisfaction more important than service trust in maintaining the long-term use relationship with a service center or sales branch. This result confirms that auto repair service has a significant influence on customers through the quality of auto repair and customer satisfaction regarding the repair results through troubleshooting, unlike general services that are affected by psychological properties such as a products' brand and attractiveness.

Keywords: auto repair service; customer relationship; service quality; relationship benefit; experience value

1. Introduction

Generally, the automotive industry has developed based on manufacturing-centered sales, and auto repair services as an after-sales service form have been recognized as playing a secondary role to resolving problems occurring within the warranty period after the sale of new cars. For this reason, auto repair service companies have focused on improving technical and repair process expertise, with the goal of providing after-sales service with high cost-effectiveness in terms of time. Along with these changes, the size of the auto repair service market is estimated to be Euro 800 billion in 2017, and is expected to grow by 3% annually over the next 10 or more years. In addition, it is estimated that it will show a 6.1–7.5% growth rate in the markets of China and Asia, rather than the United States and Europe, and that the continuous growth of the auto repair service market is predicted worldwide [1].

However, as advanced cars such as smart cars, unmanned cars, and electric cars continue to be commercialized, new systems and technologies for car repair and management are required, and expand customer services based on smartphones, so does their need for more information, and the DIY repair of their cars. Furthermore, new service models, such as on-site repair and total management services using various business platforms, rather than service centers run by car companies' repair department and general individual entrepreneurs, are continuously activated. In addition, many global automakers continue exerting effort to maintain customer relationships by providing new service programs to enhance customer convenience and use, such as the 'Excessive Maintenance

Prevention Program' and 'One-hour Repair Service Program' to strengthen their brand maintenance service competitiveness [2].

In recent years, competition in the automobile market has been fierce. As the customer's various needs increase, detailed service needs rise in the overall use and management of the car beyond the purchase of the car, emphasizing the importance of improving the quality of the auto repair service [3]. Particularly, the reason why global automakers strive to improve repair service quality as much as the quality of automobile products is that car maintenance and management, upon using an after-sales service, are as important to the customers using cars today as the quality of the automobile products. Moreover, attracting new customers is important in the auto repair service industry, but maintaining existing customers and strengthening relationships are emerging an important issue since reducing the existing customer churn rate by just 5 percent would result in profits of about 25 percent or more of a company's financial income, as explained by preceding studies [4,5]. In the end, maintaining existing customers and strengthening long-term relationships can be an important marketing strategy for auto repair service companies, as much as steady profit generation and efficient management.

Today, most auto repair service companies are exerting effort to provide new services and benefits not only to customize strategies according to customer needs, but also to maintain continuous relationships with customers. Therefore, many companies lead customer participation through relationship marketing, respond sensitively to customer reactions, and strive to improve relationship values [6]. Also, various relationship marketing activities, such as building differentiated service devices for customer satisfaction and interaction that appear at the customer contact point in the service process, expanding communication tools, and maximizing experience values to enlarge direct interaction with customers [7] are carried out. Auto repair services also need to consider securing a customer group that has formed long-term relationships, while forming and maintaining relationships between companies and customers in line with market growth and fierce competition.

To date, however, studies in the field of auto repair services have been conducted in terms of technical management, such as on the level of technical maintenance and management system improvement, and those in terms of service quality or customer management are highly insufficient [8]. Hence, studies on customers' behavior in auto repair services may be necessary, because it is important to consider the perspective of service management, in which interaction with customers and customer contact point process management for the service provided to customers should be considered beyond the perspective of production management addressing car repair.

The purpose of this study is to verify the influence of factors, such as service quality, relationship benefits, and experience values, as perceived by customers using auto repair services, and carried out through service satisfaction, trust, and intention to create a long-term relationship. By analyzing which factors have the most important effect, and what results present when service satisfaction and service trust act as parameters, this study examined the relationship-oriented behavioral structure of consumers in auto repair services. The results of this study will serve as basic data on customer-oriented and service-oriented consumer behaviors for auto repair services, which have been lacking in prior studies, and will provide specific implications for establishing relationship marketing strategies of companies in the auto repair industry.

2. Literature Review and Hypothesis Development

2.1. Relationship Influence Factors on Service Satisfaction and Trust

2.1.1. Service Quality on Service Satisfaction and Trust

Service quality is a consumer's judgment on the overall excellence of perceived service and can be defined as a psychological evaluation rather than an objective quality, as well as a judgment made within the perception of the consumer [9,10]. SERVQUAL model, suggested by Parasuraman, Berry and Zeithaml [11] can be considered as the most typical model describing service quality. In SERVQUAL model, five levels, such as reliability, responsiveness, empathy, assurance, and tangibility

are suggested. Based on this, many previous studies suggested various models and factors [12–14]. In particular, service quality has been studied in relation to concepts such as customer satisfaction, customer retention, trust, and loyalty. Service companies must improve service quality and value in order to increase customer satisfaction [15–17].

However, the importance of subjective service quality has been emphasized in recent years, as customer needs and consumption patterns have rapidly changed due to the development of new distribution platforms and service technologies, following technological innovation. Olorulorun, Hsu, and Udo [18] divided service quality into objective quality and subjective quality. Objective quality is a concept for explaining the economic superiority of service, and previous studies have conducted service research based on objective quality. As Lamberton and Stephen [19] stated, service products, as well as customer-perceived service processes and service environments consisting of the subjective quality of service in the service delivery process, are important factors. Also, multidimensional factors such as interaction quality, result quality, and physical environment quality are emphasized [20,21].

The higher the service quality is, the higher the service satisfaction becomes. Service satisfaction is a key factor in forming the customer's desire to purchase, influencing their purchase and emotional response, as generated in situations where service performance exceeds expectations. As many previous studies claimed, service quality has a positive impact on service satisfaction, as well as customer purchasing, and impacts factors such as trust, immersion, and loyalty. In the end, a higher service quality can create a positive influence on service purchase and repurchase intentions. In considerations based on these previous studies, the quality of auto repair service will also affect customer-perceived service satisfaction and trust. Therefore, the following hypotheses are suggested in this study.

Hypothesis 1 (H1). *The quality of auto repair service will have a positive (+) effect on service satisfaction.*

Hypothesis 2 (H2). *The quality of auto repair service will have a positive (+) effect on service trust.*

2.1.2. Relationship Benefit on Service Satisfaction and Trust

Relationship benefit means all kinds of benefits provided to customers, and the benefits that companies provide to develop relationships with customers and keep them for a certain period of time [22]. In numerous studies, it has been argued that relationship benefits to service companies are directly related to the company's profits, and are an important means to secure a competitive advantage. In particular, it has been explained that, as a customer-oriented management environment develops, the improvement of service companies' understanding of customers and the maintenance of relationships with them becomes essential, so it is necessary to be able to handle relationship benefits strategically [23,24].

Relationship benefits are generally categorized into convincing benefits, social benefits, psychological benefits, informational benefits, and special treatment benefits [25,26]. In addition, Conze, Bieger, Laesser, et al. [27] defined relationship benefits that extend beyond psychological and social benefits to special handling and diversity seeking benefits. Eventually, these relationship benefits can lead to emotional trust and intimacy to benefits providers, and satisfaction increase due to convenience [28–30] and, consequently, through positive emotions about the provider at the service contact point, it can lead to active purchase and repurchase [31]. By connecting to the continuity of relationships, these relationship benefits can lead to an increase in economic profits through the reduction of customer churn [5], and can form word of mouth intention by the improvement of customers' positive emotions and experiences [32,33].

Furthermore, through many previous studies [34–36], it has been proven that relationship benefits have positive effects on factors that improve relationship qualities, such as customers' service satisfaction, trust, and immersion, among others. As claimed by Bai, Yao and Dou [33] relationship benefits produce a significant effect on customer satisfaction about relationships and, as a result, trust

can be created through satisfaction with services evaluated by customers. In this study, therefore, the hypothesis was established under the assumption that the relationship benefit factors that appear in these auto repair services will also affect customer satisfaction and trust in the services.

Hypothesis 3 (H3). *The relationship benefits of auto repair service will have a positive (+) effect on service satisfaction.*

Hypothesis 4 (H4). *The relationship benefits of auto repair service will have a positive (+) effect on service trust.*

2.1.3. Experience Value on Service Satisfaction and Trust

The service must be provided directly to the consumer, and the consumers who receive it experience the service provided. Experience refers to knowledge or functions formed by direct or indirect practices [37]. In this process, the customers evaluate the service through a direct experience of it, repurchasing and performing word of mouth according to a favorable or unfavorable memory. Furthermore, the service customers experience is described not just as a consumption process, but also as a psychological and pleasure factor that occurs even after consumption. It is likewise defined as various reactions, such as emotions, fantasies, and pleasures that customers feel while experiencing the service [38–41]. Ultimately, the context of the experience values are the same as the research of the customer's cognitive, behavioral, and emotional responses to the service, because the customers form the experience values through the relationship between experience and memory, and learn new things or respond to the intensity of the service experience [42,43].

In general, experience values are classified into functional values, emotional values, and social values [44,45]. Some argued that experience values according to environmental factors, such as the object, place, and distance from other customers, are important [46]. It is also claimed that practices in terms of interpersonal relations are important, since the essence of service is actions connected to people [47]. Furthermore, Kang [48] stated that the experience values depend on time, cost, customers' preferences and characteristics, situations and background, symbolism, and perceived quality. Parvin [49] found that the physical environment, accessibility, and promotion of experience value have a significant effect on service satisfaction. Service experiences are personal experiences of specific processes at specific times [50], so they can affect satisfaction, which is a response to tangible and intangible services. Therefore, the effect came from various factors, such as service environment, human and physical service level, and service process through which consumers obtain their experiences, and stimuli [51].

After all, when the service provider creates a new and positive experience within the service provision environment, and then the customers experience it, the customers continue to purchase the service and maintain a continuous relationship through high service experience value as a result [52,53]. In addition, this experience value acts as an important factor in the aspect of customer management for service companies. Kos-Koklic, Kukar-Kinney, and Vegelj [54] empirically stated that service experience values affect customer satisfaction, and Qazi, Tamjidyamcholo, Raj, et al. [55] described that experience values have a significant effect on satisfaction and behavioral intention. Also, many previous studies have argued that the quality of service experiences has a significant effect on improving service satisfaction, trust in service, and building customer loyalty [56–59]. Based on these previous studies, it was possible to design the hypothesis under the assumption of "Also in the auto repair service, customers' experience values significantly affect service satisfaction and trust".

Hypothesis 5 (H5). *The customers' experience values of auto repair service will have a positive (+) effect on service satisfaction.*

Hypothesis 6 (H6). *The customers' experience values of auto repair service will have a positive (+) effect on service trust.*

2.2. Service Satisfaction, Service Tust and Long-Term Relationship

The service must be provided directly to the consumer, and the consumers who receive it experience the service provided. Experience refers to knowledge or functions formed by direct or indirect practices [37]. In this process, the customers evaluate the service through a direct experience of it, repurchasing and performing word of mouth according to a favorable or unfavorable memory. Furthermore, the service customers experience is described not just as a consumption process, but also as a psychological and pleasure factor that occurs even after consumption. It is likewise defined as various reactions, such as emotions, fantasies, and pleasures that customers feel while experiencing the service [38–41]. Ultimately, the context of the experience values are the same as the research of the customer's cognitive, behavioral, and emotional responses to the service because the customers form the experience values through the relationship between experience and memory, and learn new things, or respond to the intensity of the service experience [42,43].

Continuous relationship maintenance between companies and existing customers becomes companies' important goal [60]. In the case of service companies, it is important to improve and maintain relational friendliness, because the mutually beneficial relationship between the company and the customer is formed through the formation of service experience beyond the purpose of sales [61]. Also, in a market environment in which the importance of word-of-mouth effects, such as viral marketing, is emphasized in recent years, maintaining a long-term relationship with customers can even play a role in maintaining the brand value and reputation of the company [62]. As claimed by Van Doorn [63], service providers can secure specific benefits, in terms of mutual benefits, by continuing long-term joint activities with customers, whereas customers can reduce uncertainty about transaction costs or future benefits.

The long-term relationship orientation between the service company and the customers represents a transactional relationship based on a companionship-based way of thinking [64], and this includes an interdependent attitude and an intention of action [65], described as the depth of the relationship through the period in which the relationship has been established and through repeated purchases during that period. The long-term relationship orientation is also influenced by perceived psychological state factors, because it appears as a result of consumers' conscious judgment or evaluation. Consequently, customer satisfaction over a service or an increase of trust in products or services, as mentioned in previous studies, is influenced [66,67].

Shang, Wu, and Sie [68] stated that trust and satisfaction with salespeople are the main factors that enable consumers to maintain a lasting relationship with sellers. To meet customer needs, Ganesan [64] argued that each party of the transactional relationship should act with a long-term outlook, recognize each other as a partner, and that factors such as trust, dependence, environmental uncertainty, reputation, and satisfaction affect long-term orientation. Gallagher, Ting, and Palmer [69] also argued that in the service sales and experience activities between companies and customers within various service industries, the improvement of relationship quality, such as satisfaction and trust between companies and customers, has a significant effect on long-term relationship orientation as a result [70,71]. Accordingly, the following hypothesis could be set in the auto repair service: that "The service satisfaction and trust factors felt by customers will significantly affect the long-term relationship orientation".

Hypothesis 7 (H7). *The customers' satisfaction with auto repair service will have a positive (+) effect on the formation of the long-term relationship.*

Hypothesis 8 (H8). *The customers' trust with auto repair service will have a positive (+) effect on the formation of the long-term relationship.*

3. Research Methods

3.1. Research Model

As shown in Figure 1, the research model was constructed based on the derived research hypothesis from previous researches [17,18,30,33,54,56,64,72–75].
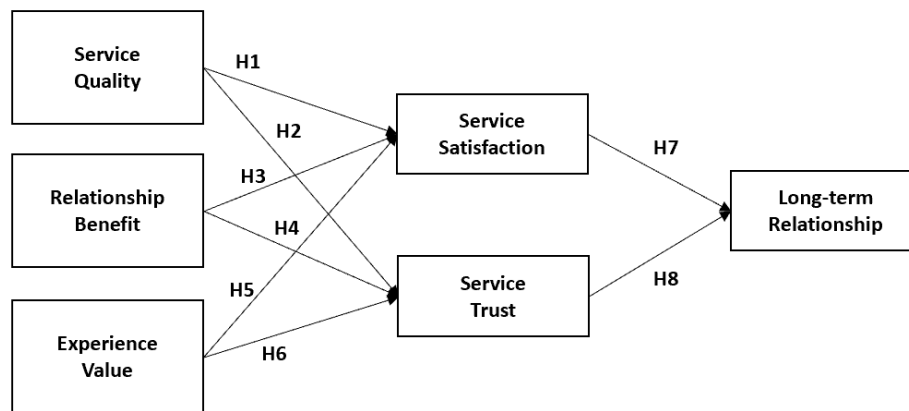

Figure 1. Research model.

3.2. Variables and Analytic Approach

A questionnaire was produced to collect data for the analysis of the research model and in construction of the questionnaire items. They were formed for each composition factor based on the previous studies as shown in Table 1 below, and were surveyed on a 5-point Likert scale. In the case of three independent variables, for 'Service Quality,' based on the studies of and Olorunniwo, Hsu, and Udo [18] and Pham and Ahammad [56], the three questionnaire items were composed as 'Physical quality,' 'Interaction quality,' and 'System quality' for the auto repair service that customers use. For 'Relationship Benefit,' based on the previous studies of Koritos, Koronios, and Stathakopoulos [30] and Bai, Yao and Dou [33] the three questionnaire items were composed of 'Convincing benefits,' 'Social benefits,' and 'Economical benefits' for the auto repair service that customers perceived. For 'Experience Value,' based on the studies of Kos-Koklic, Kukar-Kinney, and Vegelj [54] and Yuen [72], the four questionnaire items were composed as 'Expertise,' 'Technical skills,' 'Convenience,' and 'Level of interest' in auto repair service, under the criteria of 'Functional values' and 'Emotional values'.

The parameters were composed of service satisfaction and trust. 'Service satisfaction' means the level of customers' satisfaction in using auto repair service. Based on the studies of Kranzbuhle, Kleijnen, Morgan, et al. [17] and Balaji [73] two questionnaire items were written in this study as 'Overall satisfaction' and 'Satisfaction for the work method and repair results.' 'Service trust' means the level of customers' trust for the service and service company and, based on the study of Moreira and Silva [74], two questionnaire items were written in this study as 'Trust visit' and 'Service trust.' Lastly, the dependent variable is 'Long-term Relationship,' which is the intention of revisiting a center or agency that provides auto repair services, and continuously establishing relationships and maintaining transactions. Based on the studies of Schmitt, Joško Brakus, and Zarantonello [64] and Johnson and Rapp [39], three questionnaire items were composed as 'Continuous visit,' 'Transaction maintenance,' and 'Long-term relationship preference'.

Table 1. Measurement Variable and Question Items.

Factors	Question Items	No.	Reference
Service Quality	SQ1: Professional repair procedures and speed are important.	3	Olorunniwo, Hsu and Dou [18], Pham, and Ahammad [56]
	SQ2: Customer response and kindness are important.		
	SQ3: Mechanic's expertise and repair skills are important.		
Relationship Benefit	RB1: I have a firm belief in service quality.	3	Koritos, Koronios, and Stathakopoulos [30], Bai, Yao and Dou [33]
	RB2: I feel pleasure when using service.		
	RB3: The price of the service is reasonable.		
Experience Value	EV1: I feel professionalism when I experience the service.	4	Kos-Koklic, Kukar-Kinney, and Vegelj [54], Yuen [72]
	EV2: When I experience the service, I consider technical skills.		
	EV3: I am not anxious when experiencing the service.		
	EV4: When I experience the service, I am very much interested in the repair process.		
Service Satisfaction	SS1: I am satisfied with the overall service.	2	Kranzbuhle, Kleijnen, Morgan, et al. [17], Balaji [73]
	SS2: I am satisfied with the way employees work and repair results.		
Service Trust	ST1: I have trust in and visit the service center.	2	Moreira and Silva [74]
	ST2: I believe that the service center will do their best for customers.		
Long-term Relationship	LR: I will continue to visit the service center.	3	Schmitt, Joško Brakus, and Zarantonello [64], Johnson and Rapp [39]
	LR: I have no intention to change the service center.		
	LR: I will maintain a long-term relationship with the service center.		

This survey was conducted on experienced customers who were using auto repair service centers in Korea. We used the customer database of auto repair service centers of Kia, Hyundai, GM, Ssanyong Motors in Seoul and Gyeonggi-do in Korea. Selecting the random sample is based on the customer who visited the center more than two times in a year between March 2017 and March 2019. The survey was performed in 30 days from 1 July to 30 July, 2019 and was conducted online with a question about the experienced center name and the mainly used auto repair service. A total of 464 questionnaires were collected, but a total of 319 questionnaires were analyzed, excluding those that were inappropriately answered, had unperfected question items, or checked only one scale. SPSS 24.0 was used for data analysis to determine basic data reliability and validity after the evaluation of demographic characteristics, descriptive statistics, and exploratory factor analysis. In the discriminant validity, the Pearson method was used as the correlation coefficient. In the case of confirmatory factor analysis and model verification for structural equation model analysis, and path analysis, AMOS 25.0 was used for analysis, and indirect effects were analyzed using the Sobel test.

4. Analysis Results

4.1. Demographic of Respondent

As shown in Table 2, the demographic analysis results are as follows: First, the male ratio was 79.3% and the female ratio was 20.7%. This means that the male ratio was more than three times higher. In the case of the age groups, a similar pattern like 33.2% in the 40s, 29.2% in the 30s, and 26% in the 50s was shown, but the 40s bracket had the highest experience in patronizing repair centers. The occupational groups of the customers were the service industry (25.7%) and manufacturing/production (19.1%) groups, and it could be confirmed that customers belonging to various occupations were distributed according to the high-rate of others. It was found that 93.4% of customers visited auto repair centers for their own vehicles.

Table 2. Demographic of respondents.

Item		Frequency	Percentage
Gender	Male	253	79.3
	Female	66	20.7
	Total	319	100
Age group	Under 30-year-old	37	11.6
	30s	93	29.2
	40s	106	33.2
	Over 50-year-old	83	26.0
	Total	319	100
Occupational group	Manufacturing/Production	61	19.1
	Finance/Insurance	18	5.6
	Distribution industry	20	6.3
	Service industry	82	25.7
	R&D industry	8	2.5
	IT industry	17	5.3
	Others	113	35.4
	Total	319	100
Major types of car-owners	Private vehicle	298	93.4
	Company vehicle and other person's vehicle	21	6.6
	Total	319	100
Preference for the franchised car maintenance shops	Preferring	217	68.0
	Not preferring	20	6.3
	No matter	82	25.7
	Total	319	100

4.2. Analsis Results of Reliability and Validity

A two-step approach was used to analyze the reliability and validity of the structural equation measurement model [76]. Composite reliability was 0.871 ~ 0.967, and this means 0.7 or more in Nguyen, Jeong, and Chung [77] criteria, while an internal consistency reliability was obtained. In the case of convergent validity, factor loading was 0.732–0.966, value of Cronbach α was 0.863–0.966, and AVE value was 0.694–0.906; thus, under the criteria of Lusch, Vargo, and Tanniru [78], all were significant in terms of statistical point of view, so that convergent validity was obtained. As a result of analyzing the goodness of fit of the measurement model, χ^2 (df) was 242.271 and χ^2/the degree of freedom was 3.948. Under the criteria of the previous study of Hong and Kim [79], the configuration values of the goodness of fit of the measurement model were statistically significant as follows: Goodness-of-Fit-Index (GFI) was 0.932, Adjusted Goodness-of-Fit-Index (AGFI) was 0.900, Normal Fit Index (NFI) was 0.968, and Root Mean Square Error of Approximation (RMSEA) was 0.053 (see Table 3).

Table 3. Results of reliability and convergent validity test.

Variables	Measurement Items	Standard Loading Values	Standard Error	*t* Value	CR	AVE	Cronbach α
Service qualities	SQ1	0.855			0.914	0.781	0.913
	SQ2	0.884	0.053	20.424 ***			
	SQ3	0.912	0.051	21.290 ***			
Relationship benefit	RB1	0.854			0.871	0.694	0.863
	RB2	0.912	0.049	20.933 ***			
	RB3	0.732	0.05	15.135 ***			
Experience value	EV1	0.896			0.915	0.783	0.914
	EV2	0.915	0.042	25.261 ***			
	EV3	0.841	0.047	20.986 ***			
	EV4	0.885	0.038	25.333 ***			
Service satisfaction	SS1	0.918			0.936	0.829	0.936
	SS2	0.927	0.034	28.891 ***			
Service trust	ST2	0.913			0.925	0.861	0.925
	ST3	0.943	0.036	28.653 ***			
Long-term relationship	LR1	0.957			0.967	0.906	0.966
	LR2	0.966	0.024	41.788 ***			
	LR3	0.932	0.028	35.052 ***			

(1) Note: GFI of the measurement model: $\chi2(df)$ 242.271, *p* 0.0, DF 614, $\chi2$ /the degree of freedom 3.948, RMR 0.068, GFI 0.932, AGFI 0.900, NFI 0.968, TLI 0.984, CFI 0.980, RMSEA 0.053. (2) Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

In order to obtain discriminant validity, there must be a clear difference in the measured value between the variables. The most important criterion, therefore, is the AVE (Average Variance Extracted) value. As shown in Table 4, it could be confirmed that the discriminant validity was obtained, because the AVE square root value of each potential variable was greater than the correlation coefficient value between the variables.

Table 4. Correlation matrix and discriminant validity.

Factor	CR	AVE	SQ	RB	EV	SS	ST	LR
Service Quality (SQ)	0.914	0.781	0.884					
Relationship Benefit (RB)	0.871	0.694	0.507 **	0.833				
Experience Value (EV)	0.915	0.783	0.598 **	0.805 **	0.885			
Service Satisfaction (SS)	0.936	0.829	0.567 **	0.760 **	0.808 **	0.911		
Service Trust (ST)	0.925	0.861	0.589 **	0.733 **	0.778 **	0.859 **	0.928	
Long-term Relationship (LR)	0.967	0.906	0.559 **	0.672 **	0.690 **	0.777 **	0.738 **	0.952

(1) Note: The darker part of the diagonal indicates the square root value of each variable's AVE. (2) Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

4.3. Analsis Results of Structural Model

Table 5 shows the GFI of the structural model and hypothesis verification results. Firstly, in the case of the aspect of the GFI of the structural model under the criteria of Gefen, Straub and Boudreau [80], $\chi2(p)$ was 207.392 (0.000), and this was below the acceptable level. However, $\chi2$/the degree of freedom was 1.938, and this means the reliability was obtained, while Goodness-of-Fit-Index (GFI) and Adjusted Goodness-of-Fit-Index (AGFI) were all significant at 0.929 and 0.898, respectively. Moreover, Normal Fit Index (NFI) was 0.983, and Root Mean Square Error of Approximation (RMSEA) was 0.054, and thus they were good enough. Also, CFI was 0.983 and TLI was 0.979, so that the final model was proven as an appropriate one.

Table 5. Results of Hypothesis Test.

	Hypotheses	S.L.V.	S.E	C.R	Adoption
H1	Service quality → Service satisfaction	0.106	0.063	2.291 *	Accepted
H2	Service quality → Service trust	0.088	0.059	2.140 *	Accepted
H3	Relationship benefit → Service satisfaction	0.222	0.094	2.254 *	Accepted
H4	Relationship benefit → Service trust	0.089	0.087	1.026	Rejected
H5	Experience value → Service satisfaction	0.613	0.117	5.579 ***	Accepted
H6	Experience value → Service trust	0.033	0.121	0.299	Rejected
H7	Service satisfaction → Long-term relationship	0.666	0.138	4.987 ***	Accepted
H8	Service trust → Long-term relationship	0.167	0.13	1.254	Rejected

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

In observation of the results of hypotheses verification, all hypotheses were adopted because the service quality had effects on service satisfaction 2.291 ($p < 0.05$) and service trust 2.140 ($p < 0.05$). In the case of relationship benefits, the impact on service satisfaction was 2.254 ($p < 0.05$), indicating that relationship benefits had a positive (+) effect on service satisfaction. Hypothesis 4, however, was rejected because it did not affect service trust. Experience value also showed that service satisfaction had a positive effect of 5.579 ($p < 0.001$), but it did not affect service trust. The service satisfaction as a parameter was 4.987 ($p < 0.001$), which influenced long-term relationship, as the hypothesis was adopted. On the other hand, the hypothesis about the trust was rejected because service trust did not appear to affect long-term relationships.

As shown Table 6, using the bootstrapping method, indirect effect statistics—suggesting that service quality, relationship benefit, and experience value, affect long-term relationship factors through service satisfaction and service trust—were analyzed. As a result, through service satisfaction, service quality and experience value were significant at 0.082, $p < 0.05$, and 0.049, $p < 0.01$, respectively, but relationship benefit was found to not affect the long-term relationship through service satisfaction. Through service trust, service quality and experience value were significant at 0.099, $p < 0.05$, and 0.493, $p < 0.05$, respectively, but relationship benefit was found to not affect long-term relationship through service trust. In maintaining a long-term relationship with customers within the auto repair service, service quality and experience value can create influence through service satisfaction and trust, but the relationship benefits are not significant to influence through service satisfaction and trust.

Table 6. Results of indirect, direct, and total effects.

Dependent Variable	Explanatory Variable	Direct Effect	Indirect Effect	Total Effect
	Service satisfaction	0.772	-	0.772
	Service qualities	0.088	0.082 *	0.169
	Relationship benefit	0.089	0.172	0.260
Long-term relationship	Experience value	0.033	0.474 **	0.506
	Service trust	0.167	-	0.167
	Service qualities	-	0.099 *	0.099
	Relationship benefit	-	0.191	0.191
	Experience value	-	0.493 **	0.493

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

5. Conclusions

5.1. Summary and Implications

This study empirically analyzed how service quality, relationship benefits, and experience values affect long-term relationships through service satisfaction and trust in order to observe the customer's continued relationship orientation to auto repair services. The three major findings from the analysis are as follows: first, service quality, relationship benefits, and experience values were found to affect customers' service satisfaction, but relationship benefits and experience values did not influence service trust. While service quality is important for service trust, experience value is emphasized as the most important factor for service satisfaction. This shows that, in the end, it is important to strengthen service quality for service trust and satisfaction, but it may be important to consider the experience value of repair service to improve customer satisfaction.

Second, it was found that service trust as a parameter does not mediate long-term relationship properties to relationship benefit factors. This means that the relationship benefits do not play a major role, especially in forming trust in the service as much as service quality and experience value for customers who use the auto repair service. It was further confirmed that for customers, the quality value for repair results and the value through direct experience are factors in maintaining long-term relationship upon forming a trust, rather than the benefits that come from the relationship.

Third, it was found that customers using auto repair services consider service satisfaction factor a more important than service trust. Typically, previous studies emphasized that trust is as important as a satisfaction factor, because services have intangible characteristics [81,82]. However, in the case of an auto repair service, service satisfaction based on service quality is considered as the top priority, unlike other general services, because the service results for vehicles are directly checked and service characteristics that prioritize quality satisfaction for products target service. It was also confirmed that, even if service trust is formed, there is a characteristic of not continuing the relationship if satisfaction is not fulfilled.

5.2. Discussion: Open Innovation in the Auto Repair Service Sector

Based on these results, the following implications can be discussed: first, this study empirically revealed the relationship of the impact of customer-centered factors such as relationship benefit and experience value, extended from service quality for auto repair service By specifically examining customer satisfaction, trust, and long-term relationship formation in auto repair services, this study shows that the research results in the aspect of customer behavior of auto repair services, which was lacking in the previous researches and shows academic implications.

Second, in the practical aspect, advance information and reliability have a great impact on customers, as they indicate the propensity to purchase a new car through pre-reservation according to brand preference or reliability [83]. In the case of an auto repair service, however, a lack of technical knowledge of car repair and anxiety about disadvantages due to an unprecedented condition can breed significant results, even in a brand repair center. Therefore, it may be important to improve customer satisfaction and build trust by strengthening customers' direct experiences. In these contexts, auto repair service industry needs to provide a promotion that enhances the customer's direct experience, rather than the marketing approach that relies on the customer's choice [84,85]. It may even be necessary to change a marketing strategy to increase the number of visits to the center in the aspect of car operation management, thereby reducing the anxiety and the psychological distance that customers feel from repair services.

Third, the recent environmental changes of automobile industry are on growth of electrical and unmanned cars, diversifying customers' needs for car maintenance or repair services, and market environment in which new services are required to be provided [86]. In particular, customer movements appear according to various types of services, ranging from vehicle types, maintenance contents, repair processes, and parts prices, so there is a limit to a workshop operated by a small private business

operator. However, as a large-scale brand-based workshop, a repair service company with enough size and organizational power needs to establish a system by expanding the range of repair services to maintain satisfaction and relationship, as well as various types of repair service quality elements and applications, in accordance with professional manuals, in order to reduce customers' movement to other repair shops or their consideration to change repair centers.

5.3. Research Limitation and Future Researches

Nevertheless, this study is limited to the generalization of the research results, because the subject customers using auto repair services are only Korean. Since auto repair service shows a large difference according to national and cultural characteristics, it is necessary to conduct comparative studies considering market characteristics by country, and to carry out studies considering the global common influence factors of auto repair services. Second, it will show differences in service usage patterns and needs according to the age and driving experience of customers who use the auto repair services. This research could consider the subdivided characteristics of these customers. In future researches, therefore, it is necessary to conduct a study in consideration of customer characteristics such as age, car type, driving experience, and lifestyle patterns of customers who select auto repair services. Third, service differences and customer needs of auto repair services can be subdivided according to the car brand, specifications and characteristics, and type of service free. Therefore, future researches will require comparative studies by the subdivided service sector in the auto repair service field, as well as studies of customer service and relationship orientation considering differences.

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