Proceeding Paper

Turning Crises into Business Opportunities: An Exploratory Investigation of Customers' Pain Points in the Automobile Maintenance Industry Based on a Computer Database [†]

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Abstract: Companies need to decrease service failures through service recovery and by managing customers' emotions, which is important. Customer databases are vital to understand needs and service innovation. Utilizing data, companies can identify pain points and innovate services, reducing customer complaints. We examined 140 customer records from an auto maintenance company's database and found 602 failure descriptions. The main complaints include maintenance performance, service attitude, and professionalism. Employee behavior accounted for most failures. Pain points in the process were the most common, followed by support, financial, and productivity issues. Such results suggest that service innovation is needed.

Keywords: service failure; pain point; customer complaint; customer service database; service technology innovation

1. Introduction

Scholars have identified customer flow as a revenue stream for enterprises, emphasizing that the effective management of customer complaints is pivotal for optimizing profit growth. Customer complaints encompass actions or inactions undertaken by consumers in response to unsatisfactory experiences following the purchase of goods or services [1]. In essence, customer complaints denote efforts by consumers to rectify dissatisfaction.

Singh [2] stated that when confronted with service failures, consumers typically exhibit various behaviors, including switching providers, directly addressing grievances with the service provider, seeking assistance from third parties or social networks, disseminating negative word of mouth (WOM) about their experiences, or passively accepting the situation. Day and Landon [3] classified dissatisfied consumer responses into two categories based on their proactive engagement: "non-action" and "action-taking". In the latter category, responses are delineated into "public action" and "private action". Public actions involve legal measures and complaints with consumer advocacy groups, while private actions entail boycotting products or sharing unsatisfactory experiences with acquaintances.

Numerous companies encounter challenges in effectively managing customer complaints, resulting in over half of customers harboring increased aversion towards the company following complaint resolution efforts. After a service failure, a secondary mishap engenders a "double deviation" phenomenon, amplifying customers' negative perceptions of the company, eliciting adverse reactions, and thereby exerting adverse impacts on the company's profitability and performance [4]. In food consumption, Dai and Wang underscored that heightened service quality provision by restaurant operators correlates

with diminished customer complaints. Additionally, consumers emphasizing meal quality exhibited reduced satisfaction with service providers, consequently heightening the propensity for complaint behaviors.

However, customer complaints precipitate detrimental outcomes such as customer churn or compromised brand loyalty. Studies elucidated the potential for customer complaints to yield positive value for companies. For instance, Umashankar, Ward, and Dahl [5] posited that customer complaints serve as invaluable feedback mechanisms conducive to nurturing social bonds and thereby fostering enhanced brand loyalty. Similarly, Morgeson, Hult, Mithas, and Keiningham [6] claimed that the relation between service recovery and customer loyalty assumes heightened significance within economies characterized by elevated growth rates, intense competition, luxury market segments, and high levels of consumer satisfaction, as well as industries characterized by elevated expectations for tailored service provisions.

When service failure occurs, companies take service recovery actions [7]. In addition to solving the problems encountered by customers, they deal with the current negative emotions of customers to save potential losses. However, it is important to avoid service failure. Service innovation based on exploring customer complaints helps avoid the occurrence of the next customer complaint. Customer databases are an important source of information for smart business and brand marketing. The starting point of customer data mining is to discover the customer needs hidden in the data and make good use of the pain points to meet customers' needs for the innovation and development of service technology [8]. Such service innovation helps companies grow in the future.

Thus, we explored the reasons for customer complaints, the types of service failures that cause customer complaints, the customer pain points caused by service failure, and the relationship between service failures and pain points.

2. Research Method

2.1. Data Collection

The automobile maintenance service industry is mature and characterized by relatively low barriers to entry. The service is distinguished by a high degree of professionalism, intricacy, and technological sophistication. Variances exist between customers regarding satisfactory and unsatisfactory service outcomes. To understand customer failures, we selected 140 customer records from the database of an automotive maintenance enterprise. Subsequently, we investigated customer complaint records to unearth prevalent issues and dissatisfactions in the maintenance service. By understanding customer needs, companies can refine and innovate their service process.

2.2. Operational Definitions

The research variables of this study include customer complaints, service failure and its types, and functional pain points. Their definitions are presented in Table 1.

2.3. Analysis

We used a content analysis method to analyze customer complaint text. A content analysis was used to examine the information or content of written, symbolic materials [15]. The analysis steps are as follows: (1) propose research questions or hypotheses and review and examine the literature, (2) determine the scope of the research to determine the subject area of the research, (3) randomly select research samples, (4) establish category rules, (5) determine the unit of analysis, (6) code the data, and (7) conduct data statistics based on the research purpose.

2.4. Validity

The robustness of this research was validated using triangulation. Triangulation is a fundamental tool used in qualitative research, involving diverse methods or datasets to investigate the same phenomenon [16]. We analyzed customer complaints, observational records, and other pertinent datasets concerning automotive maintenance services. By

harnessing multiple streams of evidence characterized by diverse data formats and contents and facilitating experts in the analysis and deliberation processes, the research results were presented in a comprehensive, nuanced, and realistic manner. Using the data sources and triangulation, the limitations inherent in a singular methodological approach were mitigated, and the potential for bias was reduced.

Table 1. Definitions of research concepts.

Variable	Dimension		Operational Definition
Customer complaints [2,9,10]	Reactions that customers have when faced with dissatisfaction after purchasing a product or service		
Reason for customer complaint	Work execution problems	Low reactivity	Unable to perform work correctly
		Low security	Not possessing the knowledge and abilities required to perform the services
	Professional performance problems	Low reliability	Service staff failed to demonstrate courtesy, consideration, and respect
		Poor competency	Service staff's credibility and honesty are low
	Service personnel problems	Poor manners	Customer was not served immediately
		Low reliability	Failure to help customers to avoid risky and unsafe situations
	Service resource planning problems	Low accessibility	Waiting time for receiving services is inappropriate or the work process is inconvenient
		Poor tangibility	Physical facilities for services, such as poor tools or equipment for services
	Failure to understand customer needs	Poor communication	Failure to listen to customers or communicate with them in a way that customers understand
		Low understanding	Not understanding customers' needs or asking about their special needs
Service failure [11–13]	Consumers' interactions during the service delivery process include interactions with personnel, the physical environment and facilities, and other intangible factors; once a mistake occurs and causes an unpleasant feeling to the customer, this phenomenon is called a service failure		
Types of service failure	Service delivery system failure		When errors occur in the provision of major services or products, policies, operating procedures, and other factors, errors that are subjectively determined by customers will affect their mood
	Customer need response failure		In normal delivery service behavior, the customer feels unhappy when the service staff is unable to meet the customer's order or special request
	Employee personal behavioral failure		The service attitude, skills, and professional knowledge of employees may affect customers' poor perception of the overall service, or the personal behavior of employees may cause customers to have unpleasant feelings
Functional pain point [8,14]	Financial pain point		Not obtaining value for money refers to pain points related to money and expenses
	Productivity pain point		No one rushes to help employees get work done; impact on productivity or time-related pain points
	Process pain point		Unable to smoothly complete all aspects of the service process
	Support pain point		No one can help when employees need help

3. Results

3.1. Reasons for Customer Complaints

To understand the reasons for customer complaints, we conducted a content analysis on the customer data. A total of 602 descriptions were analyzed for five reasons: work execution, professional performance, service personnel, service resource planning, and failure to understand customer needs (Table 2).

Table 2. Reasons for customer complaints.

Number	Complaints	Frequency	Percentage	Reason	Frequency	Percentage
1	Work execution problems	188	31.23%	low reactivity low security	106 82	17.61% 13.62%
2	Professional performance problems	161	26.74%	low reliability poor competency	143 18	23.75% 2.99%
3	Service personnel problems	138	22.92%	poor manners low reliability	38 100	6.31% 16.61%
4	Service resource planning problems	74	12.29%	low accessibility poor tangibility	66 8	10.96% 1.33%
5	Failure to understand customer needs	41	6.81%	poor communication low understanding	29 12	4.82% 1.99%
	Total	602	100.00%		602	100.00%

3.2. Service Failure Types

We divided the types of service failures into three categories. Employees' behavioral failures occurred the most (375 times, accounting for 62.29%), followed by customer demand response (157 times, accounting for 26.08%) and service delivery system failures (70 times, accounting for 11.63%) (Table 3).

Table 3. Analysis of service failures.

Order	Service Failure Type	Frequency	Percentage
1	Employees' personal behavioral failure	375	62.29%
2	Customer demand response	157	26.08%
3	Service delivery system failure	70	11.63%
	Total	602	100.00%

3.3. Pain Points

We divided functional pain points into four types: 49.50% were categorized as process, 24.42% as support, 18.44% as finance, and 7.64% as productivity (Table 4).

Table 4. Analysis of functional pain points.

Order	Functional Pain Point	Frequency	Percentage
1	Process pain point	298	49.50%
2	Support pain point	147	24.42%
3	Financial pain point	111	18.44%
4	Productivity pain point	46	7.64%
	Total	602	100.00%

3.4. Pain Points and Types of Service Failures

We conducted a crosstab analysis on the types of pain points and service failures. Employees' behavioral failures showed the highest rate (78.52%) in process pain point, followed by failures in responding to customer needs. Regarding to support pain point, the highest type was the service failure of responding to customer needs (68.71%). The most common financial pain points were employee behavioral failures (53.15%) and service delivery system failures (46.85%). The productivity pain points comprised employee behavioral failures (100.00%) (Table 5).

Table 5. Analysis of service failures with pain points.

		Service Delivery System	Employee Personal	Customer Demand Response	Total
Pain Point	Process	2.68%	78.52%	18.79%	100.00%
	Support	6.80%	24.49%	68.71%	100.00%
	Financial	46.85%	53.15%	0.00%	100.00%
	Productivity	0.00%	100.00%	0.00%	100.00%
Total		11.63%	62.29%	26.08%	100.00%

4. Conclusions

The causes of customer complaints included work execution problems, professional performance problems, service personnel problems, service resource planning problems, and failure to understand customer needs. Work execution problems occurred most frequently, with nearly one-third of customer complaints being related to the ineffective execution of service processes or the lack of professionalism of the service personnel. Therefore, it is important to improve service processes to deliver services efficiently and accurately. Additionally, the lack of professionalism of the service providers is also significant. Apart from standardized operating procedures, it is important to ensure the professional standards of each service provider and provide ongoing education and training.

The most frequently occurring type of service failure was "employee behavior". Consistent with the aforementioned findings, employees' service attitudes, skills, and professional knowledge impacted customers' negative perceptions and dissatisfaction. In automobile services, the professional competence of the service provider is important. Functional pain points were the most frequently occurring, accounting for nearly 50%. Process pain points were related to the effectiveness of completing the service process; thus, it is imperative for employees to assist other employees in completing or executing the service process.

The highest rates of process, support, financial, and productivity pain points were attributed to "failures in employee behavior", while the highest rate of support pain points was attributed to "failures in responding to customer needs". Additionally, the highest rate of financial pain points was linked to "failures in responding to customer needs", and the highest rate of productivity pain points was associated with "service delivery system failure".

Failure in employee behavior is associated with multiple pain points, including process, support, finance, and productivity. Car warranty service providers prioritize the cultivation of their employees' service attitudes, skills, and professional knowledge, as well as addressing their behaviors. By improving employees' behaviors, functional pain points can be removed.

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