



GRADUATE SCHOOL OF
**BUSINESS AND ADVANCED
TECHNOLOGY MANAGEMENT**



ABAC ODI JOURNAL Vision. Action. Outcome

ISSN: 2351-0617 (print) , ISSN: 2408-2058 (electronic)

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ABAC ODI JOURNAL. Vision. Outcome VOL 10 (1) pp. 287- 310

www. <http://www.assumptionjournal.au.edu/index.php/odijournal>

Published by the
Organization Development Institution
Graduate School of Business and Advanced Technology Management
Assumption University Thailand

ABAC ODI JOURNAL Vision. Action. Outcome
is indexed by the Thai Citation Index and ASEAN Citation Index

Factors Affecting Customer Loyalty: A Case of Kunming Mingzhu Environmental Protection Technology Co, Ltd

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Received: 14 February 2022

Revised: 21 June 2022.

Accepted 30 June 2022

Abstract

This study employs mixed-method research aiming to study the factors affecting customer loyalty of Kunming Mingzhu Environmental Protection Technology Co., Ltd. The research location is Kunming Mingzhu Environmental Protection Technology Co., Ltd. in Yunnan, China. The population is 100 and the sample size is 80. The research instruments include the questionnaire for the quantitative research method and the interview for the qualitative method. The data analysis treatment comprises of multiple linear regression for quantitative analysis and content analysis was used for qualitative analysis. The results show that service quality, product quality, brand image and brand awareness have a significant impact on customer satisfaction, and customer satisfaction has a significant impact on customer loyalty. Therefore, the enterprise must pay attention to these factors and strengthen their own service quality, product quality, brand image and brand awareness to improve customer satisfaction and customer loyalty.

Keywords: enterprise development, service quality, product quality, brand image, brand awareness, customer satisfaction, customer loyalty

Introduction

In recent years, water treatment agent has become an indispensable product in life. With the economic competition, more and more chemical industries begin to produce this product. The traditional manufacturers are facing the loss of customers due to the impact of external aspects, such as service quality, product quality and so on.

Customer loyalty is also gradually declining. As a local enterprise in Kunming facing the fierce external competition in the market environment, improving the customer loyalty is critical to sustain and strengthen the organizational productivity.

Kunming Mingzhu Environmental Protection Technology Co., Ltd., formerly known as

Kunming Nanba chemical plant, was founded in 1963. It was originally a medium-sized state-owned chemical production enterprise and renamed Kunming Mingzhu Environmental Protection Technology Co., Ltd. in 2019.

It mainly produces and develops water treatment agents (Aluminum). At present, Water Treatment Agent (Aluminum Sulfate) has become an important player in the Global Chemical Industry, and the main consumption areas include North America, Europe, Japan, Southeast Asia and India.

This product is suitable for domestic drinking water, industrial sewage recycling, papermaking, mineral processing, food preservation and other industries.

Research Background

The key subject of this study is Kunming Mingzhu Environmental Protection Technology Co., Ltd., which is a medium-sized chemical production enterprise. Since its establishment, it has more than 200 employees and belongs to an old local enterprise. It mainly produces and develops water treatment agents (aluminum). This product is suitable for drinking water, industrial sewage reuse, papermaking, beneficiation, food preservation and other industries. The product is mainly provided to water companies, sewage treatment plants and small enterprises.

The company sells the products to the small and medium local enterprises over the years. The after-sales service is critical when the customers need consultation or there is a problem with the product. For sustaining and improving the customer satisfaction and customer loyalty, improving the product and service quality including perception and attitude toward the company's brand image and brand awareness are critical things to do.

Statement of the Problem

The main problems are declining customer satisfaction and customer loyalty to the products of the organization. Customer demand for products has decreased by 10% compared to 2020. The customer loyalty of Kunming Mingzhu technology environmental protection Co., Ltd. decreased year by year from 80% in 2018, 75% in 2019, and 70% in 2020. Accordingly, the study aims to improve customer satisfaction and customer loyalty through the research and analysis of service quality, product quality, brand awareness, and brand image.

Research Questions

- 1) What factors affect the customer loyalty of Kunming Mingzhu Environmental Protection Technology Co., Ltd.?
- 2) What is the most important factor which strengthens customer loyalty of Kunming Mingzhu Environmental Protection Technology Co., Ltd.?

- 3) What is the influence of customer satisfaction on customer loyalty?
- 4) How to improve the customer loyalty of Kunming Mingzhu Environmental Protection Technology Co., Ltd.?

Scope of the Research

The scope of this study focuses on the service quality, product quality, brand awareness, brand image, customer satisfaction and customer loyalty of Kunming Mingzhu Environmental Protection Technology Co., Ltd.

Significance of the Study

This study aims to understand the effect of service quality, product quality, brand awareness, and brand image on customer satisfaction and loyalty to help the company encourage and support employees' innovation and learning and improve customer satisfaction and customer loyalty through service quality, product quality, brand awareness, and brand image.

Operational Definitions of Terms

Service Quality

Service quality is the customer's assessment of the supplier's service (Hong, 2001).

Product Quality

According to Kotler (2009), quality is defined as the overall characteristics and nature of goods and services that affect the ability to meet the stated or implied needs of consumers.

Brand Image

Brand image is defined as the mental image of what is being offered by customers and includes all symbolic meanings associated with particular product or service attributes, and it can reflect the customer psychology and trust in the brand (Keller, 2003; Salinas and Ambler, 2009; Bibby, 2011).

Brand Awareness

Brand awareness is composed of brand recognition and brand recall (Keller, 1993), and can be built up through advertisement, experience, and reputation (Kotler, 2000).

Customer Satisfaction

Oliver (1997) noted that satisfaction is a general psychological state which is about the expectation for emotions and experience from shopping behavior.

Customer Loyalty

Customer loyalty is when customers have the perception of faithful trust and a favorable impression of the store's employees, products, or services (Jones & Sasser, 1995).

Discussion of Variables

Service Quality

Many previous studies have shown that service quality has a significant influence on customer satisfaction (Lee, 2013). Parasuraman et al. (1991) believe that consumers' perception of service quality has a positive influence on their willingness to recommend the company to others, and that willingness to recommend is an important indicator of customer loyalty. Therefore, there is a positive relationship between consumers' subjective perception of service quality and customer loyalty.

Product Quality

Product quality refers to whether the product meets the national or industrial quality standards after leaving the factory. Any product is manufactured because someone needs it, so the product quality is formulated according to the product's characteristics such as durability and comfort.

Brand Image

Linking between brand image and customer satisfaction was admitted in some previous research (Anwar et al., 2019; Wu et al., 2011). Prior studies also showed that brand image was a predictor of customer satisfaction and positively impacted customer satisfaction (Anwar et al., 2019; Wu et al., 2011). Linking between brand image and customer loyalty also was revealed in some prior studies (Anwar et al., 2019; Hsieh et al., 2018; Tu et al., 2012).

Brand Awareness

Brand awareness is the basic concept established by enterprises to consumers. Most consumers believe that well-known brands have better quality and stronger usability than unknown brands. When consumers buy related brands, familiar brands make them more eager to buy because it is known that familiar brands can better protect their rights and interests.

Customer Satisfaction

Customer satisfaction is a measure of consumers' satisfaction after shopping, mainly reflected in whether consumers' satisfaction with the purchased items matches their hope value, that is, the index obtained by comparing the effect of consumers' use and perception of a product with their expected value.

Customer Loyalty

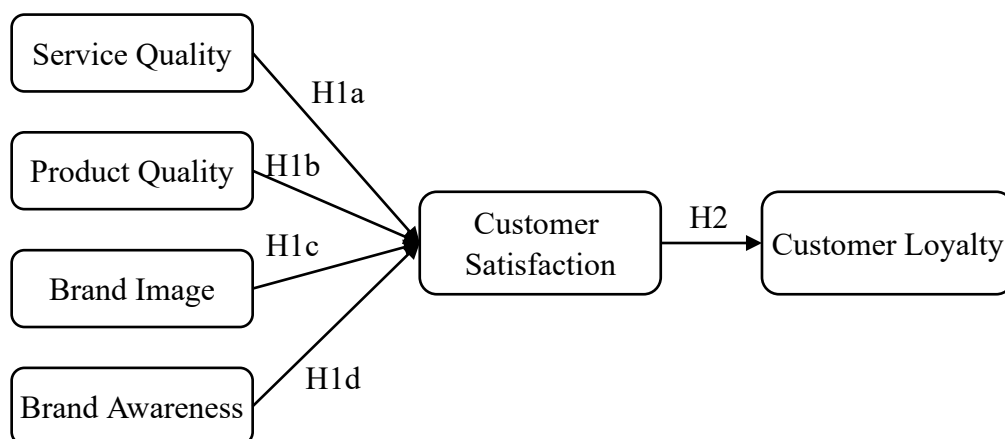
Griffin (1995) defines loyalty as regularly repurchasing certain products or services, the act of recommending these to others, and an immunity to promotions from other similar and competing products or services. Kotler (2003) proposes that the cost of developing a new customer is five times that of maintaining an existing customer in a competitive environment, highlighting the importance of improving or sustaining the loyalty of existing customers.

Conceptual Framework

By analyzing the company's current situation and reviewing relevant literature materials, the researcher develops the following conceptual framework. The independent variables are service quality, product quality, brand awareness, and image. Customer satisfaction is the intermediate variable and the dependent variable is customer loyalty.

Figure 1

Conceptual Framework



Constructed by the Author

Statistical Hypotheses

According to the conceptual framework, four hypotheses based on the independent variables, namely, service quality, product quality, brand awareness, brand image and one intermediate variable, customer satisfaction, were formulated for analysis and testing.

H1a₀: Service quality has no significant influence on customer satisfaction of Kunming Mingzhu Environmental Protection Technology Co, Ltd.

H1a_a: Service quality has significant influence on customer satisfaction of Kunming Mingzhu Environmental Protection Technology Co., Ltd.

H1b_o: Product quality has no significant on customer satisfaction of Kunming Mingzhu Environmental Protection Technology Co., Ltd.

H1b_a: Product quality has significant influence on customer satisfaction of Kunming Mingzhu Environmental Protection Technology Co., Ltd.

H1c_o: Brand awareness has no significant impact on customer satisfaction of Kunming Mingzhu Environmental Protection Technology Co., Ltd.

H1c_a: Brand awareness has significant influence on customer satisfaction of Kunming Mingzhu Environmental Protection Technology Co., Ltd.

H1d_o: Brand image has no significant impact on customer satisfaction of Kunming Mingzhu Environmental Protection Technology Co., Ltd

H1d_a: Brand image has significant influence on customer satisfaction of Kunming Mingzhu Environmental Protection Technology Co., Ltd.

H2_o: Customer satisfaction has no significant effect on customer loyalty of Kunming Mingzhu Environmental Protection Technology Co., Ltd.

H2_a: Customer satisfaction has significant influence on customer customer loyalty of Kunming Mingzhu Environmental Protection Technology Co., Ltd.

Research Methodology

Research Design

The research design is a mixed-method comprising quantitative and qualitative method.

Population

The target group of this study is the customers of Kunming Mingzhu technology environmental protection Co., Ltd. Total number of customers is 100.

Sample Size and Research Sampling Method

The sample size is 80 customers, determined by Krejcie & Morgan Table, randomly selected from 100 customers of Kunming Mingzhu Environmental Protection Technology Co., Ltd., The research sampling method is convenience sampling.

Table 1

Research Design

Research Method	Quantitative	Qualitative
Research Instruments	Questionnaire with Likert Scale Rating system from 1 to 5 (1 strongly disagree – 5 strongly agree). The reliability and validity test were applied before the distribution to all respondents.	Interview
Research Sampling	The researcher distributed 80 questionnaires to the respondents by convenience sampling method.	Randomly interview of 80 interviewees of different ages and working years
Data Collection	Online Questionnaire	Face-to-face interview
Data Analysis	Simple linear regression and multiple linear regression were used to analyze the data and test the hypotheses.	Descriptive analysis, content analysis

Research Instruments

This study adopts a combination of quantitative and qualitative methods. The research instruments are questionnaires to collect quantitative data and interview as the qualitative part to learn about the success factors of the company in the past, put forward some ideas on the future development of the company, and the should-be direction of the company on the development path.

The validity test and reliability test of the research instrument were applied before proceeding the data collection. There are three experts consider and validate the questions of each variable of the questionnaire including the interview questions which are design aligned to the research questions for strengthening the research findings and validity of the recommendations from the findings.

Validity of the Questionnaire

The validity of the research instruments was done by asking 3 experts to rate the items in the questionnaire using Item of Objective Congruence (IOC). In order for the questions to be valid, the score from the three experts must be equal to or higher than 1. The IOC, as the validity test, is aimed at seeking the expert's feedback on the degree of congruency between the research instrument questions and the research objectives of the study along with the definitions of terms.

The researcher designed a total of 20 questions in the questionnaire, which include 3 questions on service quality, 4 questions on product quality, 3 questions on brand image, 3 questions on brand awareness, 4 questions on customer satisfaction and 3 questions on

customer loyalty. The Likert Scale was applied with 1, which is strongly disagree, 2 disagree, 3 neutral, 4 agree, and 5 strongly agree.

Validity Test

The validity of the questionnaire and the qualitative questions were validated by three experts. The score of each question evaluated by 3 experts must be at least 0.6 for to pass the validity test. The researcher invited three experts to check and verify the validity of the quantitative and qualitative questions used in this study. The experts have gained a lot of knowledge in academic research, organizational development and management. The Item of Objective Congruence (IOC) is aimed at seeking the expert's feedback on the degree of congruence between the research instrument questions, the research objectives of the study, along with the definitions of terms. The criteria used for IOC is as follows, +1 is Congruent, 0 is Questionable, and -1 is Incongruent.

Reliability Test

After passing the validity test and before distributing the questionnaire, the researcher conducted the reliability test or pilot test. The Cronbach's Alpha testing is a step for calculating the internal consistency coefficient of the items which is created in the questionnaire (Budeekham and Tantasanee, 2020). In addition, it determines whether the questions are clear enough to be understood and relevant to the variables being measured. The Alpha Test Standard is 0.70 or above (Lin, Liang, & Tsai, 2015), and the results show the Cronbach Alpha of each variable is above 0.70. The questionnaire consists of six variables. They are service quality, product quality, brand awareness, brand image, customer satisfaction and customer loyalty.

For qualitative instrument, the researcher designs the following 3 interview questions for the customers or interviewees to express their perception about the improvement of customer satisfaction and customer loyalty based on product and service quality, brand awareness, and brand image. The following are qualitative open questions. The main purpose of the interview is to support the findings of the questionnaire. The interview questions are as follows:

1) What are your experiences with the company regarding tangibility, reliability, responsiveness, assurance and empathy that make you satisfied and impressed with the company?

2) Which areas of the company need to be improved in the future to provide better quality of service and give higher satisfaction in terms of tangible, reliability, responsiveness, assurance and empathy?

3) What are your recommendations to further improve the quality of service in terms of tangible, reliability, responsiveness, assurance and compassion to strengthen the customer satisfaction?

Table 2 illustrated the results of validity and reliability analysis of each question and variable. All questions of each variable had the score from the three experts higher than 0.67 which all pass the validity test. The Cronbach’s Alpha values are greater than 0.7: service quality (0.792), product quality (0.708), brand image (0.712), customer satisfaction (0.816), and the customer loyalty (0.807). This result shows that the questions under each variable are reliable for this study.

Table 2

Reliability & Validity Test of the Research Instrument

Service Quality				
Questions	Average score from 3 experts	Result from validity test	Cronbach's Alpha	Result from reliability test
Employees provide personalized services according to different customers effectively.	1	Accepted	0.792	Reliable
I am satisfied with the service quality of the company	1	Accepted		
The company can timely and effectively deal with the problems in the process of service quality.	1	Accepted		
Product Quality				
Questions	Average score from 3 experts	Result from validity test	Cronbach's Alpha	Result from reliability test
The company clearly communicated the product quality indicators and functions.	1	Accepted	0.708	Reliable
The product quality of the company meets the national specifications.	1	Accepted		
Compared with other similar products, the products of the company are more durable.	1	Accepted		
By using the company's products, I think the company's products	1	Accepted		

meet my requirements for product quality.				
Brand Image				
Questions	Average score from 3 experts	Result from validity test	Cronbach's Alpha	Result from reliability test
The company's brand image is very reliable.	1	Accepted	0.712	Reliable
The company's products and excellent service quality make its brand image highly praised.	1	Accepted		
The corporate brand image caused my satisfaction.	1	Accepted		
Customer Satisfaction				
Questions	Average score from 3 experts	Result from validity test	Cronbach's Alpha	Result from reliability test
I am satisfied with the quality of the company's products.	1	Accepted	0.816	Reliable
The company is always able to provide its promised services.	1	Accepted		
I want to establish a good relationship with the company.	1	Accepted		
Employees always answer my questions patiently.	1	Accepted		
Customer Loyalty				
Questions	Average score from 3 experts	Result from validity test	Cronbach's Alpha	Result from reliability test
When I want to buy products, the company has always been my first choice because of its impressive services and products.	1	Accepted	0.807	Reliable
When I buy back products, I prefer to choose the company's products.	1	Accepted		
The trust relationship between the	1	Accepted		

company and its customers has gradually developed.				
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Presentation and Discussion of Results

The researcher applies multiple linear regression analysis to test the significant influence of independent variables on the dependent variable, customer satisfaction, and applying simple linear regression to test the effect of customer satisfaction on customer loyalty. These methods supported the testing on the hypotheses of the research. The 5-point Likert Scale was used to answer the questionnaire to quantify the response.

Table 3

Data Analysis

Variable	Number of Items	Statistics Used
Service Quality	3	Multiple linear regression was applied to test the hypotheses from H1a to H1d and simple linear regression was used to test hypothesis 2.
Product Quality	4	
Brand Image	3	
Brand Awareness	3	
Customer Satisfaction	4	

Descriptive Analysis of Demographics Data

Table 4

Respondent's Gender

Gender			
Gender	Frequency	Valid Percent	Cumulative Percent
Female	39	48.8	48.8
Male	41	51.2	51.2
Total	80	100.0	100.0

In table 4, the number of respondents was categorized into male and female. Among the respondents, 39 respondents are female (48.8 percent of total respondents) and 41 respondents are male (51.2 percent of total respondents).

Table 5*Respondents' Age*

Age			
Age Range	Frequency	Valid Percent	Cumulative Percent
21-30 years old	11	13.8	13.8
31-40 years old	33	41.2	41.2
41-50 years old	34	42.5	42.5
More than 50 years old	2	2.5	2.5
Total	80	100	100

Table 5 shows details of the age range of respondents. "41-50 years old" is the higher-ranking age group (34 respondents or 42.5 percent of total respondents). The second-ranking is the age between "31-40 years old" (33 respondents or 41.2 percent of total respondents) and the third-ranking is the respondents who had an age between 21-30 years old (11 respondents or 13.8 percent of respondents). The last ranking was age over 50 years old (2 respondents or 2.5 percent of total respondents).

Multiple Linear Regression Analyses

Table 6*Multiple Liner Regression Model Summary of Hypothesis 1 (H1a-H1d)*

Model	R	R Square	Adjusted R Square
1	.881	.775	.763

a. Predictors:(Constant), SQ, PQ, BR, BI

According to table 6, the correlation coefficient (R) was 0.881. This result shows that service quality, product quality, brand awareness and brand image strongly correlate with customer satisfaction. In addition, R Square is 0.775 which means the service quality, product quality, brand awareness and brand image can explain the customer satisfaction at 77.5%.

Table 7*Summary of Coefficient for Multiple Linear Regression*

Variable	Standardized Coefficients	VIF	Sig
Service Quality	0.190	1.97	.478
Product Quality	0.305	3.14	.016
Brand Image	0.194	2.18	.003
Brand Awareness	0.332	2.13	.039
			<.001

a. Dependent Variable: Customer Satisfaction

Note: SQ =Service Quality, PQ=Product Quality, BI = Brand

Image, BA=Brand Awareness and CS = Customer Satisfaction

Based on Table 7, Multiple Linear Regression results illustrate that all independent variables significantly affect customer satisfaction because the significance values are less than 0.05. Brand Awareness gets the highest Beta Value (Standardized Coefficients) at 0.332 followed by Product Quality (Beta = 0.305), Brand Image (Beta = 0.194), and Service Quality (Beta = 0.19) respectively.

Table 8

Simple Liner Regression Model Summary of Hypothesis2

Model	R	R Square	Adjusted R Square
1	.746	.556	.550

a. Predictors: (Constant) CS

According to Table 8, the value of the correlation coefficient (R) is 0.746, which means that there is highly related with customer satisfaction as a singular result. Moreover, the coefficient of determination (R²) is 0.556, which means customer satisfaction can explain customer loyalty at 55.6%.

Table 9

Summary of Coefficient for Simple Regression Model of Hypothesis 2

Model	Standardized Coefficients	Sig
Customer satisfaction	.746	.183
		<.001

a. Dependent Variable: Customer Loyalty

It can be seen from table 9 that the significant value is less than 0.001 It is determined that customer satisfaction has a significant effect on customer loyalty.

Table 10*Summary of Hypotheses Testing*

Hypotheses	Standardized Coefficients (Beta)	Standardized Coefficients (Beta)	Level of Sig	Results
H1a _o	Service quality has no significant influence on customer satisfaction of Kunming Mingzhu Environmental Protection Technology Co., Ltd.	.190	.016	Reject H1a _o
H1a _a	Service quality has significant influence on customer satisfaction of Kunming Mingzhu Environmental Protection Technology Co., Ltd.			
H1b _o	Product quality has no significant influence on customer satisfaction of Kunming Mingzhu Environmental Protection Technology Co., Ltd.	.305	.003	Reject H1b _o
H1b _a	Product quality has significant influence on customer satisfaction of Kunming Mingzhu Environmental Protection Technology Co., Ltd.			
H1c _o	Brand awareness has no significant influence on customer satisfaction of Kunming Mingzhu Environmental Protection Technology Co., Ltd.	.194	.039	Reject H1c _o
H1c _a	Brand awareness has significant influence on customer satisfaction of Kunming Mingzhu Environmental Protection Technology Co., Ltd.			
H1d _o	Brand image has no significant influence on customer satisfaction of Kunming Mingzhu Environmental Protection Technology Co., Ltd.	.332	<.001	Reject H1d _o
H1d _a	Brand image has significant influence on customer satisfaction of Kunming Mingzhu Environmental Protection Technology Co., Ltd.			
H2 _o	Customer satisfaction has no significant influence on customer loyalty of Kunming Mingzhu Environmental Protection Technology Co., Ltd.	0.746	<.001	Reject H2 _o
H2 _a	Customer satisfaction has significant influence on customer loyalty of Kunming Mingzhu Environmental Protection Technology Co., Ltd.			

Summary of the Findings, Conclusions, and Recommendations

The first part summarizes the quantitative and qualitative research results, the second part is the conclusion, and the third part is the suggestions for the future development of Kunming Mingzhu Technology Co., Ltd.

Summary of Results

Demographic Profile

The sample size of this study was 80 respondents, mostly male, accounting for 51.2%. The highest number of respondents were in the age group 41-50 years old (42.5%).

Summary of the Quantitative Results

According to the results of multiple linear regression regression service quality, product quality, brand image and brand awareness have influence on customer satisfaction, and while customer satisfaction has significant influence on customer loyalty through simple linear regression analysis. At the same time, the researcher summarized the themes that emerged from the three interview questions.

Table 11

Summary of Answers for Question 1: What are your experiences with the company regarding tangibility, reliability, responsiveness, assurance and empathy that make you satisfied and impressed with the company?

Variables	Statement
Tangibility	I am satisfied with the after-sales service provided by the company.
Reliability	The customer is satisfied with the staff service.
Responsiveness	Customers trust the staff to help them when they need it.
Assurance	Customers have confidence in the company's services.
Empathy	Employees will actively care about customer needs.

Table 12

Summary of Answers for Question 2: Which areas of the company need to be improved in the future to provide better quality of service and give higher satisfaction in terms of tangible, reliability, responsiveness, assurance and empathy?

Variables	Statement
Tangibility	Update and upgrade the equipment in time
Reliability	Customers feel active, meticulous and thoughtful in the service process, correctly grasp the service opportunities, and better interact with customers.
Responsiveness	Customers feel that part of the staff in the service process is lazy, perfunctory, and not all of them are meticulous and thoughtful.
Assurance	Clients feel that there should be systems and norms to improve service quality.
Empathy	Employees need to provide customers with the trend and demand of products in the future market.

Table 13

Summary of the Answers for Question 3: What are your recommendations to further improve the quality of service in terms of reliability, tangible, responsiveness, assurance responsiveness, and compassion to strengthen the customer satisfaction ?

Variables	Statement
Tangibility	Gaining new knowledge about product usage from using the company's products and services is critical for improving the tangibility.
Reliability	Appropriate and comprehensive details of the company’s instructions are important issue of the understanding and the reliability of using the company’s products and services.
Responsiveness	Because of the particularity of the product, knowing and updating the country and the necessary indicators of the product and other requirements effectively and timely are critical.
Assurance	More technical support in the use of products is critical to strengthen the assurance.
Empathy	Keep abreast of changes in product updates.

Table 14

Quantitative and Qualitative Research Results

Quantitative	Qualitative
From hypothesis testing results, there is significant effect of service quality, product quality, brand image and brand awareness on customer satisfaction and the customer satisfaction has significant effect on customer loyalty.	<p>From the interview, the interviewees shared their affirmation of the service provided by the company and raised up critical ideas on the future development of the customer satisfaction and customer loyalty and also gave valuable suggestions about the preferred vision of the organization, which are the major research findings.</p> <p>The customers were satisfied with the service and believed that the staff would help them when needed. It is essential for customers to acquire new knowledge about the products. The effective and timely updating of the necessary indicators and other requirements of the products are important. In this process, customers gradually deepen their knowledge of the product and brand awareness, company's brand image and finally increase the customers' confidence about products and the company. The preferred vision for the corporation is to be the organization which satisfies the customers by sustaining</p>

	the quality of service which will enhance the engagement of the customers in the long term.
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Discussion of the Main Findings

The research findings consistent with the literature review. There is a significant influence between brand image and customer satisfaction. Linking between brand image and customer satisfaction was admitted in some previous research (Anwar et al., 2019; Wu et al., 2011). Prior studies also showed that brand image was a predictor of customer satisfaction and positively impacted customer satisfaction (Anwar et al., 2019; Wu et al., 2011). Linking between brand image and customer loyalty also was revealed in some prior studies (Anwar et al., 2019; Hsieh et al., 2018; Tu et al., 2012)

Whether the product meets the national or industrial quality standards after leaving the factory is another factor that affects customer satisfaction. Product quality is formulated according to the durability and comfort of the product, which can increase customer satisfaction with the product. The studies of Eskildsen et al. (2004) and Bastos and Gallego (2008) found the direct impact of product quality with repurchase intentions, performance, customer loyalty and satisfaction. Products with higher quality gain more acceptance that leads to satisfaction with wholesalers, retailers and organizations (Schellhase et al., 2000). Additionally, several studies provided strong empirical support about product quality was being an antecedent, with a positive relationship to overall customer satisfaction. Study of Chumpitaz and Paparoidamis (2004) claimed that high product quality always to customer satisfaction that further engender loyalty.

The more well known a brand, the higher the possibility of the brand being the choice of consumers when making a purchase. Dabbous and Barakat (2020) state that brand awareness has become an important variable that influences consumer perceptions of a brand. So, it can be assumed that a well-known brand can also affect the desire to buy or use a product more than once (repurchase intention). Brand awareness also acts as a critical factor in consumer buying interest. Certain brands will try to master their minds to influence consumer interests making it a choice among various existing brand alternatives (Curina et al., 2020). Brand awareness also have significant influence on customer satisfaction, which is also consistent with the research finding.

Another significant factor which influences customer satisfaction is service quality as the research finding. Service quality is the main element to influence customer satisfaction (Prabhakaran & Satya, 2003). Some researchers considered service quality as the main cause of customer satisfaction, which is the direct result of service quality (Anderson et al., 1994; Naeem & Saif, 2009). If the customer's expectations were fairly fulfilled from the purchase of products and services, the customers would increase their affective and cognitive perception of

their satisfaction (Kenneth & Oliver, 2002). Beerli et al. (2004) examined a positive relationship between service quality and customer satisfaction and proposed a reasonable explanation that satisfaction is an evaluative value judgment which is constructed by customers. Service quality is the antecedent element of customer satisfaction (Bedi, 2010; Kassim & Abdullah, 2010; Lam et al., 2011).

One important aspect that must be safeguarded by the company to maintain the existence of its business is the quality of service. According to Kotler (2012, p. 284) mentions five dimensions of service quality that must be met, namely "tangibles, empathy, reliability, responsiveness, and assurance". Based on the previous explanation, it can be concluded that service quality is the totality of the characteristics of goods and services that show their ability to satisfy customer needs, both those that appear clear and hidden with dimensions that include reliability, responsiveness, assurance, empathy and tangibility.

Some studies have confirmed the connection between customer satisfaction and customer loyalty which is aligned to the research finding. Customer satisfaction was an antecedent of customer loyalty. Customer satisfaction was an important variable that pointed to customer loyalty (Minta, 2018). Prior studies declared that customer satisfaction positively influenced customer loyalty (Anwar et al., 2019; Santouridis & Trivellas, 2010; Yap et al., 2012). Therefore, in order to improve customer loyalty, the company should improve the brand image, ensure product quality, establish brand awareness, and strengthen the training of employees in terms of improving the service quality.

The findings of this study will help Kunming Mingzhu Environmental Protection Technology Co., Ltd. to increase customer satisfaction and customer loyalty as the significance of the study.

Recommendations

According to the research results, improving not only customer satisfaction for Kunming Mingzhu Environmental Protection Technology Co., LTD., but also enhancing customer loyalty of the company are important. However, suggestions are made in the following aspects.

Brand Image: firstly, by joining the product association, the company becomes one of the member units of the association, and publicize and shape its own brand image with the help of the association platform, such as making company brochures, desk calendars or USB flash disks and mugs printed with the company's logo as gifts to customers, and these small gifts can be seen and touched by customers at any time. Secondly, uniform work clothes are made for the company's employees, so that employees wear the same work clothes not only during working hours, but also when providing service to customers. Finally, product packaging and product color as well as the company's logo should be explicitly displayed

Product Quality: The company should regularly upgrade equipment and use advanced equipment to update and upgrade the existing old equipment, so that the product quality always meets the requirements of national standards, exchange experience with peers, learn new technologies, optimize production, and ensure better quality stability and longer storage time. At the same time, through participating in the professional training of relevant industries, strengthening the skills of the employees of the production line, can help employees master the product quality in the operation process.

Brand Awareness: The company should increase the visibility of the product at the terminal, and let the customers remember the product through advertisements, so as to generate trust in the product, remember the product, attract attention, and then increase purchase activities. It combines the concept of personality, visual language, information dissemination and corporate image. In order to attract consumers' attention, enterprise products must have unique personality. In order to impress consumers with the company's products personalized messages, could be sent to customers.

Service Quality: The company should believe in itself, master work skills, serve effectively, save time, improve efficiency, and let customers experience good service. To improve service quality, employees should be calm, friendly and patient , The company should arrange planned return visits, and the product use process shall be tracked and tested regularly to ensure the use quality of products.

Customer Satisfaction: The company should strengthen after-sales service and technical guidance to customers in the process of using products and visit customers regularly to help customers understand how to use its products. According to the change of raw material price, timely reminder and guidance to customers would update customers about the latest sales price. More technical support when using the products should be provided to customers, and let customers know more about new products that could benefit them.

OD Intervention for Future Development and Suggestions

Table 15

OD Intervention

Finding of Research	Proposed OD	Expected Future Outcome
The brand image is not deep enough	Join the product association, become one of the member units of the association, publicize and shape their own brand image with the help of the association platform, such as making company brochures, desk calendars or USB flash disks and mugs printed with the company's logo as gifts to	Improve the company's image and attract more customer groups.

Finding of Research	Proposed OD	Expected Future Outcome
	<p>customers, and these small gifts can be seen and touched by customers at any time. Secondly, uniform work clothes are made for the company's employees, so that employees wear the same work clothes not only during working hours, but also when providing service to customers. Finally, product packaging and product color as well as the company's logo should be explicitly displayed.</p>	
<p>Product quality needs to be strengthened</p>	<p>Understand the upgrading of product quality, update and upgrade the existing old equipment, so that the product quality always meets the requirements of national standards, participate in professional training in relevant industries and exchange experience with peers.</p>	<p>The products used by customers always meet the national standards, and employees are more concerned about product quality.</p>
<p>Weak brand awareness</p>	<p>Brand awareness: to improve the popularity of terminal products, a unified concept, personality, sense of language, information dissemination and corporate image should be implemented. In order to impress consumers with the company's products personalized messages, could be sent to customers.</p>	<p>Customers' awareness of the brand is improved. When they see similar products, they can associate with the company's products, and their trust in the products is also increased.</p>
<p>The overall service quality needs to be strengthened</p>	<p>Master work skills, provide effective service, save time, improve efficiency and let customers experience good service. According to the particularity of the company's products, planned return visits shall be arranged, and the use process of products shall be tracked and tested regularly to ensure the use quality of products.</p>	<p>Gain the trust of customers, increase customer satisfaction, and attract more new customers through the publicity of old customers.</p>
<p>Improve customer satisfaction</p>	<p>Strengthen after-sales service and technical guidance to customers in the process of product use. Visit customers regularly to understand their use of products. According to the change of raw material price, let customers know the latest sales price. Let customers get more</p>	<p>Customers' satisfaction with the company has gradually improved, and they have more trust in the company's service, product quality and brand, and are willing to become loyal customers of the</p>

Finding of Research	Proposed OD	Expected Future Outcome
	technical support when using products, and let customers know more about newly developed products.	company.

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